CHAPTER 4. ACADEMIC STANDARDS AND ASSESSMENT

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§ 4.1. Purpose.

The purpose of this chapter is to establish rigorous academic standards and assessments applicable only to the public schools in this Commonwealth to facilitate the improvement of student achievement and to determine parent and community views of school performance.

§ 4.2. Statutory authority.

The statutory authority for this chapter is the School Code.

GENERAL PROVISIONS

§ 4.3. Authority.

The provisions of this chapter are issued under the Public School Code of 1949 (24 P.S. §§ 1-101—27-2702), unless otherwise noted.

§ 4.4. Source.

The provisions of this chapter adopted January 15, 1999, effective January 16, 1999, 29 Pa.B. 399, unless otherwise noted.

Cross References

This chapter cited in 22 Pa. Code § 11.27 (relating to graduation); 22 Pa. Code § 11.31 (relating to students not enrolled in public schools due to private tutoring); 22 Pa. Code § 16.1 (relating to definitions); 22 Pa. Code § 16.22 (relating to gifted multidisciplinary evaluation); 22 Pa. Code § 49.14 (relating to approval of institutions); 22 Pa. Code § 49.42 (relating to letter of eligibility); 22 Pa. Code § 49.81 (relating to general); 22 Pa. Code § 49.101 (relating to general); 22 Pa. Code § 49.111 (relating to Supervisory Certificate); 22 Pa. Code § 49.121 (relating to Administrative Certificate); 22 Pa. Code § 49.141 (relating to general); and 22 Pa. Code § 339.2 (relating to operation).

PROVISIONS RELATING TO OTHER THAN PUBLIC SCHOOLS

§ 4.5. Waivers.

Waivers may be granted by the Secretary of Education to other than public schools in the Commonwealth, to facilitate the improvement of student achievement and to determine parent and community views of school performance.


The school profiles shall be submitted to the Secretary of Education for review and approval.

ENFORCEMENT AND IMPLEMENTATION

§ 4.7. Waivers.

Waivers may be granted by the Secretary of Education to other than public schools in the Commonwealth, to facilitate the improvement of student achievement and to determine parent and community views of school performance.


Allegations of deficiencies shall be investigated by the Secretary of Education or his designee.

§ 4.9. Exceptions.

Exceptions may be granted by the Secretary of Education to other than public schools in the Commonwealth, to facilitate the improvement of student achievement and to determine parent and community views of school performance.

§ 4.10. Reserved.

Reserved.

§ 4.11. Enforcement.

The provisions of this chapter issued under the Public School Code of 1949 (24 P.S. §§ 1-101—27-2702), unless otherwise noted.

Source

The provisions of this chapter adopted January 15, 1999, effective January 16, 1999, 29 Pa.B. 399, unless otherwise noted.

Cross References

This chapter cited in 22 Pa. Code § 11.27 (relating to graduation); 22 Pa. Code § 11.31 (relating to students not enrolled in public schools due to private tutoring); 22 Pa. Code § 16.1 (relating to definitions); 22 Pa. Code § 16.22 (relating to gifted multidisciplinary evaluation); 22 Pa. Code § 49.14 (relating to approval of institutions); 22 Pa. Code § 49.42 (relating to letter of eligibility); 22 Pa. Code § 49.81 (relating to general); 22 Pa. Code § 49.101 (relating to general); 22 Pa. Code § 49.111 (relating to Supervisory Certificate); 22 Pa. Code § 49.121 (relating to Administrative Certificate); 22 Pa. Code § 49.141 (relating to general); and 22 Pa. Code § 339.2 (relating to operation).
Authority
The provisions of this § 4.2 amended under sections 121, 2603-B and 2604-B of the Public School Code of 1949 (24 P.S. §§ 1-121, 26-2603-B and 26-2604-B).

Source

§ 4.3. Definitions.
The following words and terms, when used in this chapter, have the following meanings, unless the context clearly indicates otherwise:

AVTS—Area vocational-technical school—A public school that provides vocational-technical education to secondary school students, out-of-school youth and adults in a geographical area comprised and operated by one or more school districts and established under sections 1840—1853 of the School Code (24 P.S. §§ 18-1840—18-1853).

Academic standard—What a student should know and be able to do at a specified grade level.

Apprenticeship program—A competency-based program that coordinates and integrates classroom instruction with a structured work-based employment experience designed for students.

Assessment—A valid and reliable measurement of student performance on a series of academic standards in a subject area that captures student understanding of the set as a whole and the central concepts, knowledge and skills of each content area.


Chief school administrator—The superintendent of a school district, the superintendent of an AVTS or the chief executive officer of a charter school.

Cooperative vocational-technical education—A planned method of instruction developed through a signed cooperative arrangement among school representatives, students, parents and employers in the community to provide students with an opportunity to alternate in-school academic and vocational-technical instruction in entry-level paid employment in an occupational field in which the student has demonstrated capacity for education in the field.

Curriculum—A series of planned instruction aligned with the academic standards in each subject that is coordinated and articulated and implemented in a manner designed to result in the achievement at the proficient level by all students.

Department—The Department of Education of the Commonwealth.

ESOL—English to speakers of other languages.

Employment area—A geographic area where vocational-technical education program completers are most likely to be employed.

Intermediate unit—A regional educational service agency established under sections 951—974 of the School Code (24 P. S. §§ 9-951—9-974), which provides educational services to participating school districts as part of the public school system of this Commonwealth.

Keystone Exams—State-developed end-of-course exams. Designated exams will be used to determine, in part, a student’s eligibility for high school graduation.

Local Assessment Validation Advisory Committee—An advisory committee established by the Department composed of up to two representatives each from the Department and Board, four representatives from the Pennsylvania School Boards Association and up to four additional members who are jointly selected by the Committee. The purpose of the Committee is to develop the criteria for the local validation process and criteria for selection of approved validation entities.


PSSA—Pennsylvania System of School Assessment.

Performance Level Advisory Committee—an advisory committee established to review, evaluate and make recommendations for the Keystone Exam performance level descriptors and performance level cut scores. The Committee includes the following members: teachers, principals, school board members, higher education officials, Pennsylvania Association of Intermediate Units, Council of Chief State School Officers, and the Pennsylvania School Boards Association. The purpose of the Committee is to develop performance level descriptors and performance level cut scores for the Keystone Exams.

Prekindergarten—A program offered by a school district or by a community agency to children who are at least 3 years of age and completed prior to the school district’s entry age.

Planned instruction—Instruction offered by a school entity based upon a written plan to enable students to achieve the academic standards under § 4.12 of the School Code.

Performance Level cut scores—Are the scores that define the performance levels for each Keystone Exam.

Pennsylvania Core Standards—Academic standards for English language arts and mathematics based upon a Nationwide, state-led process coordinated by the National Governors Association and the Council of Chief State School Officers, and in consultation with teachers, parents, and other stakeholders. The standards ensure that all students are college and career ready by the time they graduate from high school.

Planned instruction—Instruction offered by a school entity based upon a written plan to enable students to achieve the academic standards under § 4.12 of the School Code.
Authority

School entity
—A local public education provider (for example, public school district, charter school, cyber charter school, A VTS or intermediate unit).

School organization
—the organization of a school district’s programs into kindergarten, primary, intermediate level, middle level and high school programs, including programs operated at A VTSs.

Secretary
—the Secretary of Education of the Commonwealth.

State assessment
—a valid and reliable measurement of student performance on a set of academic standards as measured by the Pennsylvania System of School Assessment or the Keystone Exams.

State Assessment Validation Advisory Committee
—an advisory committee established by the Department to advise it on its plans to conduct a validity study of the Keystone Exams and review and provide feedback on study findings. The Committee is composed of up to two representatives each from the Department, Board, Pennsylvania State Education Association, American Federation of Teachers—Pennsylvania and up to four additional members who are jointly selected by the Committee.

Tech-prep program
—a combined secondary and postsecondary program which leads to an associate degree or certificate and employment by providing technical preparation in engineering technology, applied science, mechanical, industrial or practical art or trade, agriculture, health or business, including development of competence in mathematics, science and communications through a sequential course of study.

Vocational-technical education
—programs under public supervision and control which provide an organized process of learning experiences designed to develop integrated academic and occupational skills, knowledge, attitudes, work habits and leadership abilities for entry into and advancement within various levels of employment in occupational areas of agriculture, business, marketing and distribution, health, home economics and trade and industry and for participation in postsecondary education.

The provisions of this § 4.3 amended under the Public School Code of 1949 (24 P. S. §§ 1-101).

Source

Authority

School entity
—A local public education provider (for example, public school district, charter school, cyber charter school, A VTS or intermediate unit).

School organization
—the organization of a school district’s programs into kindergarten, primary, intermediate level, middle level and high school programs, including programs operated at A VTSs.

Secretary
—the Secretary of Education of the Commonwealth.

State assessment
—a valid and reliable measurement of student performance on a set of academic standards as measured by the Pennsylvania System of School Assessment or the Keystone Exams.

State Assessment Validation Advisory Committee
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Vocational-technical education
—programs under public supervision and control which provide an organized process of learning experiences designed to develop integrated academic and occupational skills, knowledge, attitudes, work habits and leadership abilities for entry into and advancement within various levels of employment in occupational areas of agriculture, business, marketing and distribution, health, home economics and trade and industry and for participation in postsecondary education.

The provisions of this § 4.3 amended under the Public School Code of 1949 (24 P. S. §§ 1-101).
§ 4.4. General policies.

(a) It is the policy of the Board that the local curriculum be designed by school entities to achieve the academic standards under § 4.12 (relating to academic standards) and any additional academic standards as determined by the Board.

(b) It is the policy of the Board that local school entities have the greatest possible flexibility in curriculum planning consistent with providing quality education and in compliance with the School Code, including requirements for courses to be taught (24 P. S. §§ 15-1501 and 16-1605); subjects to be taught in the English language (24 P. S. § 15-1511); and the minimum school year of 180 days and minimum of 900 hours of instruction at the elementary level and 990 hours of instruction at the secondary level (24 P. S. §§ 15-1501 and 15-1504); employment of sufficient numbers of qualified professional employees (24 P. S. § 11-1106) and superintendents to enforce the curriculum requirements of State law (24 P. S. § 10-1005); and this part.

(c) Access to educational programs shall be provided without discrimination on the basis of a student’s race, color, religion, disability, sexual orientation or national origin.

(d) School entities shall adopt policies to assure that parents of students on the basis of a student’s race, color, religion, disability, sexual orientation or national origin.

(e) Access to educational programs shall be provided without discrimination on the basis of a student’s race, color, religion, disability, sexual orientation or national origin.

(f) If the policy of the Board that the local curriculum be designed by school entities is not followed by the Board, the Department will provide support to correct the deficiency in the local curriculum program.
(a) The academic standards describe the knowledge and skills that students will be expected to demonstrate before graduating from a public school.

(b) The academic standards describe the knowledge and skills that students will be expected to demonstrate before graduating from a public school.

(c) The academic standards describe the knowledge and skills that students will be expected to demonstrate before graduating from a public school.

(d) The academic standards describe the knowledge and skills that students will be expected to demonstrate before graduating from a public school.

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(x) The academic standards describe the knowledge and skills that students will be expected to demonstrate before graduating from a public school.

(y) The academic standards describe the knowledge and skills that students will be expected to demonstrate before graduating from a public school.

(z) The academic standards describe the knowledge and skills that students will be expected to demonstrate before graduating from a public school.
Achievement of high academic standards in public education is dependent upon the quality of instruction in schools and student effort supported by the involvement of family and community. Assessment in public education is designed to determine student achievement and to promote student growth. Science and technology, the application of science to enable societal development, is the application of science to enable societal development. Technology is the application of science to enable societal development. Student achievement in schools and support for student growth are dependent upon the quality of instruction in schools and support for student growth. Science and technology, the application of science to enable societal development, is the application of science to enable societal development. Assessment in public education is designed to determine student achievement and to promote student growth. Science and technology, the application of science to enable societal development, is the application of science to enable societal development. Assessment in public education is designed to determine student achievement and to promote student growth. Science and technology, the application of science to enable societal development, is the application of science to enable societal development. Assessment in public education is designed to determine student achievement and to promote student growth. Science and technology, the application of science to enable societal development, is the application of science to enable societal development. Assessment in public education is designed to determine student achievement and to promote student growth. Science and technology, the application of science to enable societal development, is the application of science to enable societal development. Assessment in public education is designed to determine student achievement and to promote student growth. Science and technology, the application of science to enable societal development, is the application of science to enable societal development. Assessment in public education is designed to determine student achievement and to promote student growth. Science and technology, the application of science to enable societal development, is the application of science to enable societal development. Assessment in public education is designed to determine student achievement and to promote student growth. Science and technology, the application of science to enable societal development, is the application of science to enable societal development. Assessment in public education is designed to determine student achievement and to promote student growth.


(a) School entities may develop, expand or improve existing academic standards to better meet the following common areas:

(1) Science and technology.

(2) English language arts.

(3) Mathematics.

(4) Science and technology.

(5) Social studies (civics and government, geography, economics and history).

(6) Health, safety and physical education.

(7) Visual and performing arts.

(8) Career education and work.

(9) Family and consumer science.

(10) Mathematics.

(b) The provisions of this § 4.11 amended under the Public School Code of 1949 (24 P. S. §§ 1-101—27-2702).

Authority


(a) School entities may develop, expand or improve existing academic standards to better meet the following common areas:

(1) Science and technology.

(2) English language arts.

(3) Mathematics.

(4) Science and technology.

(5) Social studies (civics and government, geography, economics and history).

(6) Health, safety and physical education.

(7) Visual and performing arts.

(8) Career education and work.

(9) Family and consumer science.

(10) Mathematics.

(b) The provisions of this § 4.11 amended under the Public School Code of 1949 (24 P. S. §§ 1-101—27-2702).

(c) Authority


(a) School entities may develop, expand or improve existing academic standards to better meet the following common areas:

(1) Science and technology.

(2) English language arts.

(3) Mathematics.

(4) Science and technology.

(5) Social studies (civics and government, geography, economics and history).

(6) Health, safety and physical education.

(7) Visual and performing arts.

(8) Career education and work.

(9) Family and consumer science.

(10) Mathematics.

(b) The provisions of this § 4.11 amended under the Public School Code of 1949 (24 P. S. §§ 1-101—27-2702).

(c) Authority


(a) School entities may develop, expand or improve existing academic standards to better meet the following common areas:

(1) Science and technology.

(2) English language arts.

(3) Mathematics.

(4) Science and technology.

(5) Social studies (civics and government, geography, economics and history).

(6) Health, safety and physical education.

(7) Visual and performing arts.

(8) Career education and work.

(9) Family and consumer science.

(10) Mathematics.


(a) School entities may develop, expand or improve existing academic standards to better meet the following common areas:

(1) Science and technology.

(2) English language arts.

(3) Mathematics.

(4) Science and technology.

(5) Social studies (civics and government, geography, economics and history).

(6) Health, safety and physical education.

(7) Visual and performing arts.

(8) Career education and work.

(9) Family and consumer science.

(10) Mathematics.
gies. The Pennsylvania Core Standards for Reading in Science and Technology and the Pennsylvania Core Standards for Writing in Science and Technology will be an appendix to the Commonwealth's academic standards for Science and Technology upon publication in the Pennsylvania Bulletin.

(2) Environment and ecology. Understanding the components of ecological systems and their interrelationships with social systems and technologies. These components incorporate the disciplines of resource management, agricultural diversity, government and the impact of human actions on natural systems. This interaction leads to the study of watersheds, threatened and endangered species, pest management and the development of laws and regulations.

(3) Social studies.

(i) History. Study of the record of human experience including important events; interactions of culture, race and ideas; the nature of prejudice; change and continuity in political systems; effects of technology; importance of global-international perspectives; and the integration of geography, economics and civics studies on major developments in the history of the Commonwealth, the United States and the world.

(ii) Geography. Study of relationships among people, places and environments, of geographic tools and methods, characteristics of place, concept of region and physical processes.

(iii) Civics and government. Study of United States constitutional democracy, its values and principles, study of the Commonwealth and government including the study of principles, operations and documents of government, the rights and responsibilities of citizens, how governments work and international relations.

(iv) Economics. Study of how individuals and societies choose to use resources to produce, distribute and consume goods and services. Knowledge of how economies work, economic reasoning and basic economic concepts, economic decision making, economic systems, the Commonwealth and the United States economy and international trade.

(v) Appendix. The Pennsylvania Core Standards for Reading in History and Social Studies and the Pennsylvania Core Standards for Writing in History and Social Studies will be an appendix to the Commonwealth's academic standards for History upon publication in the Pennsylvania Bulletin.

(4) Arts and humanities. Study of dance, theatre, music, visual arts, language and literature including forms of expression, historical and cultural context, critical and aesthetic judgment and production or exhibition of work.

(5) Career education and work. Understanding career options in relation to individual interests, abilities and skills, including the exploration of individual interests, abilities and skills in job-related courses, career options and job-related skills.

(6) Health, safety and physical education. Study of concepts and skills.

(7) Academic standards and assessments.
need to assist students having difficulty meeting the academic standards.

describes the importance of understanding consumer behaviors and the factors that influence consumer decisions.

In order to assess student performance, the Pennsylvania Core Standards for English and Language Arts are designed to be implemented in all grades and provide a framework for evaluating student progress.

mathematics. The understanding of fundamental ideas and the development of proficient mathematical skills in numbers, computation, measurement, statistics and data analysis, probability and predictions, algebra and functions, geometry, trigonometry and concepts of calculus. Using this content, students will learn to think, reason and communicate mathematically. Students will learn to model real-world situations by creating appropriate representations of numerical quantities and plan and implement problem-solving strategies to answer the question in the context of the situation. The Pennsylvania Core Standards for Mathematics will be developed by the Department in collaboration with education stakeholders, and upon publication in the Pennsylvania Bulletin, following implementation of a transition plan to be developed by the Department in collaboration with education stakeholders, academic standards will be based on the Pennsylvania Core Standards for Mathematics.

(c) School entities shall prepare students to attain academic standards in Appendix A-2 and incorporated here by reference and any additional standards as may be adopted by the Board and approved by the appropriate legislative and executive bodies.

(d) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for English and Language Arts.

(e) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Mathematics.

(f) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Reading, Writing, Speaking and Listening.

(g) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Mathematics.

(h) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for English and Language Arts.

(i) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Mathematics.

(j) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for English and Language Arts.

(k) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Mathematics.

(l) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Reading, Writing, Speaking and Listening.

(m) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Mathematics.

(n) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Reading, Writing, Speaking and Listening.

(o) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Mathematics.

(p) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Reading, Writing, Speaking and Listening.

(q) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Mathematics.

(r) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Reading, Writing, Speaking and Listening.

(s) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Mathematics.

(t) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Reading, Writing, Speaking and Listening.

(u) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Mathematics.

(v) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Reading, Writing, Speaking and Listening.

(w) School entities shall prepare students to attain academic standards in accordance with the Pennsylvania Core Standards for Mathematics.
§ 4.12 School entities shall assess the attainment of academic standards developed under subsections (a) and (c) and any other academic standards that they develop under § 4.52(c) for purposes of high school graduation and strategies for assisting students to attain them. Plans for assessment developed by school entities must take into account that academic standards in subsections (a) and (c) may be attained by students in various ways and shall be assessed in various ways. Children with disabilities may attain the academic standards by completion of their individualized education programs under the Individuals with Disabilities Education Act and this part.

§ 4.13 Strategic plans.

(a) Upon expiration of its current strategic planning phase, each school entity shall submit to the Secretary for approval a professional education plan every 3 years as required under § 49.17(a) (relating to continuing professional education plan). The plan shall submit to the Secretary for approval a strategic education plan every 3 years as required under § 49.17(a) (relating to continuing professional education plan). The plan shall submit to the Secretary for approval a strategic education plan every 3 years as required under § 49.17(a) (relating to continuing professional education plan).

Upon expiration of its current strategic planning phase, each school entity shall submit to the Department for approval an induction plan every 6 years as required under § 49.16(a) (relating to approval of induction plans). A school entity shall make its induction plan available for public inspection and comment for a minimum of 28 days prior to approval of the plan by the school entity’s governing board and submission of the plan to the Department.

Upon expiration of its current strategic planning phase, each school entity shall develop and implement a comprehensive and integrated K-12 program of student services based on the needs of its students every 6 years as provided in § 12.41(a) (relating to student services). A school district shall make its student services plan available for public inspection and comment for a minimum of 28 days prior to approval of the plan by the school district’s board of directors and submission of the plan to the Department.

Upon expiration of its current strategic planning phase, each school district shall develop, submit to the Department for approval and implement a special education plan every 3 years as required under § 14.104 (relating to special education plans). A school district shall make its special education plan available for public inspection and comment for a minimum of 28 days prior to approval of the plan by the school district’s board of directors and submission of the plan to the Department.

Upon expiration of its current strategic planning phase, each school district shall develop and implement a gifted education plan every 6 years as required under § 16.4 (relating to gifted education plans). A school district shall make its gifted education plan available for public inspection and comment for a minimum of 28 days prior to approval of the plan by the school district’s board of directors.

Authority


Cross References

This section is cited in 22 Pa. Code § 12.41 (relating to student services); 22 Pa. Code § 14.104 (relating to special education plans); 22 Pa. Code § 16.4 (relating to gifted education plans); 22 Pa. Code § 49.16 (relating to approval of induction plans); and 22 Pa. Code § 49.17 (relating to continuing professional education).

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The Secretary may approve a nutritionally balanced prekindergarten program that does not meet all regulation requirements if the program provides high-quality learning opportunities for any student. The program provides high-quality learning opportunities for students and meets the following conditions:

1. Curriculum and instruction in the prekindergarten program must be varied development levels of the students; be based on how young children develop and learn; include instruction to support each child’s development in the areas of approaches to learning—creative expression, language and literacy, math, logic and science, social-personal development and physical development and health—and must be open to children with disabilities.

2. The Secretary will provide academic standards, appropriate for early learning at the prekindergarten level, as guidance for the use of school districts that offer prekindergarten programs.

3. Curriculum and instruction in the prekindergarten program must be standards-based.

4. Prekindergarten programs may be offered to all 3 and 4 year olds or may be targeted to children who are most in need of prekindergarten services who reside in the district. Targeted programs may serve children who are at risk of school failure because of limited English proficiency, community factors, economic disadvantage, but may not exclude or be limited exclusively to children with disabilities. If a program is limited to an attendance area, children with disabilities must live in that attendance area to participate in the program. An attendance area is the geographic area within a school district designated by the school board for the purpose of assigning students to a school.

5. The Secretary will issue guidance to school districts on developmentally appropriate curriculum, instruction and assessments for prekindergarten.

6. Each school district that provides prekindergarten shall design an assessment system that includes prekindergarten and may use a variety of assessments, including but not limited to, the following:

   - Other assessments, which may include those listed in § 4.24.
   - A teacher aide in a prekindergarten program shall meet one of the following criteria:
     1. Completion of at least 2 years of postsecondary study.
     2. Possession of an associate's degree or equivalent.
     3. Ability to meet a rigorous standard of knowledge and demonstration of such knowledge and skills by meeting one of the following:
        1. Completion of at least 2 years of postsecondary study.
        2. Possession of an associate's degree or equivalent.
        3. Ability to meet a rigorous standard of knowledge and demonstration of such knowledge and skills by meeting one of the following:

7. Prekindergarten programs may be offered to all 3 and 4 year olds or may be targeted to children who are most in need of prekindergarten services who reside in the district. Targeted programs may serve children who are at risk of school failure because of limited English proficiency, community factors, economic disadvantage, but may not exclude or be limited exclusively to children with disabilities. If a program is limited to an attendance area, children with disabilities must live in that attendance area to participate in the program. An attendance area is the geographic area within a school district designated by the school board for the purpose of assigning students to a school.

8. The Secretary may approve a meritorious prekindergarten program that does not meet all regulatory requirements if, in the Secretary’s judgment, the program provides high-quality learning opportunities for any student.
The school district has submitted to the Secretary a written request that provides justification for the waiver and includes a description of how the meritorious program will provide high quality learning opportunities for students.

The approval of the meritorious prekindergarten program is valid only for 1 school year.

Requests for renewals include evidence of positive student outcomes.

A school district may make individual exceptions to the age of prekindergarten students based upon local policy to permit the enrollment of children under 3 years of age and 5 years of age or older.

An associate's degree or greater in early childhood education or child development is required for classroom teachers.

School districts contracted with community providers to offer prekindergarten programs shall provide a lead teacher for each classroom who meets the following minimum qualifications:

(i) An associate's degree or greater in early childhood education or child development.

(ii) For programs contracted before December 16, 2006, lead teachers shall possess a bachelor's degree and early childhood certificate as provided in § 49.85(a) on or before December 16, 2011.

(iii) For programs contracted after December 16, 2006, lead teachers shall possess a bachelor's degree and early childhood certificate as provided in § 49.85.

The provisions of this § 4.20 issued under section 2603-B of the Public School Code of 1949 (24 P. S. § 2603-B) and 2604-B.1 of the Public School Code of 1949 (24 P. S. § 2604-B.1) are amended under sections 117, 2603-B and 2604-B of the Public School Code of 1949 (24 P. S. §§ 117, 2603-B and 2604-B).

Authority

The provisions of this § 4.20 issued under section 2603-B of the Public School Code of 1949 (24 P. S. § 2603-B) are amended under sections 117, 2603-B and 2604-B of the Public School Code of 1949 (24 P. S. §§ 117, 2603-B and 2604-B).

(a) The primary program shall ordinarily be completed by children who are approximately 8 years of age. School districts, including charter schools, shall provide opportunities for individualized rates of learning and social and emotional development that reflect differing rates of development and learning styles of young children.

(b) Curriculum and instruction in the primary program must be standards-based and focus on introducing young children to formal education, developing an awareness of self in relation to others and the environment, and developing skills of communication, thinking and learning. Literacy skills, including phonemic awareness, phonological awareness, fluency, vocabulary and comprehension, will begin in prekindergarten and kindergarten, if offered, and developed appropriately for the primary grade level.

(c) The intermediate level program shall ordinarily be completed by children who are approximately 11 years of age.

(d) Standards-based curriculum and instruction in the intermediate level must enable all students to reach the proficient level on the local assessment system and the Statewide assessment system. Academic standards will guide the focus on planned instruction aligned with academic standards in the following areas:

1. Language arts, integrating reading, writing, phonics, spelling, listening, speaking, literature and grammar, and information management, including library skills.

2. Mathematics, including problem-solving and computation skills.

3. Science and technology education, involving active learning experiences for students.

4. Environment and ecology education, involving active learning experiences.

5. Social studies (civics and government, economics, geography and history), including problem-solving and comprehension skills.

6. Health, safety and physical education, including instruction in health, personal, family and community health and safety, nutrition, the prevention of alcohol, chemical and tobacco abuse, knowledge and practice of lifetime physical activity, and the development of physical fitness.

(e) Planned instruction may be provided as a separate course or as an instructional unit within another course or in physical activity settings.

(f) Planned instruction in the following areas shall be provided to every student every year in the primary program:

1. Language arts, including reading, writing, phonics, spelling, listening, speaking, literature and grammar, and information management, including library skills.

2. Mathematics, including problem-solving and computation skills.
(1) Language arts, integrating reading, writing, spelling, listening, speaking, literature and grammar.

(2) Mathematics, including problem-solving and computation skills.

(3) Science and technology, including instruction about agriculture and agricultural science.

(4) Environment and ecology, including instruction about agriculture and agricultural science.

(5) Social studies (civics and government, economics, geography and history).

(6) The arts, including art, music, dance and theatre.

(7) Understanding and use of library and other information sources.

(8) Health, safety and physical education, including instruction in health and safety, physical fitness and personal wellness, as well as instruction in concepts and skills which address personal, family and community health and safety, nutrition, and mental and emotional health.

(9) Planned instruction aligned with academic standards in the following areas shall be provided to every student at least once by the end of elementary school. Planned instruction may be provided as a separate course or as an instructional unit within another course or other interdisciplinary instructional activity.

(a) History of the United States.

(b) History of the Commonwealth.

(c) Geography.

(d) Civics.

(e) This section does not preclude the teaching of other planned instruction as required by the school entity.

(f) School districts, including charter schools, shall determine the most appropriate way to provide health and safety, core subject, and academic instruction.

(g) Students who have not achieved proficiency in reading and mathematics during their primary grades (K-3) as determined by the school entity shall be afforded additional instruction opportunities through a grade-level learning plan.

(h) Planned instruction aligned with academic standards in the following areas shall be provided to every student at least once by the end of elementary school. Planned instruction may be provided as a separate course or as an instructional unit within another course or other interdisciplinary instructional activity.

(i) History of the United States.

(j) History of the Commonwealth.

(k) Geography.

(l) Civics.

(m) This section does not preclude the teaching of other planned instruction as required by the school entity.

(n) School districts, including charter schools, shall determine the most appropriate way to provide health and safety, core subject, and academic instruction.

(o) Students who have not achieved proficiency in reading and mathematics during their primary grades (K-3) as determined by the school entity shall be afforded additional instruction opportunities through a grade-level learning plan.

(p) Planned instruction aligned with academic standards in the following areas shall be provided to every student at least once by the end of elementary school. Planned instruction may be provided as a separate course or as an instructional unit within another course or other interdisciplinary instructional activity.

(q) History of the United States.

(r) History of the Commonwealth.

(s) Geography.

(t) Civics.
§ 4.22. Middle level education.

(a) The middle level planned instruction aligned with academic standards serves children who are approximately 11—14 years of age. School entities may modify the grouping of students based upon student needs identified by the school entity.

(b) Curriculum and instruction in the middle level program must be standards-based and focus on mastery of academic subjects, the development of critical and creative thinking, information literacy, good health and encourage active participation in the school and community.

(c) Planned instruction aligned with academic standards in the following areas shall be provided to every student in the middle level program. Planned instruction may be provided as a separate course or as an instructional unit within a course or other interdisciplinary instructional activity:

(1) Language arts, integrating reading, writing, listening, speaking, literature and grammar.

(2) Mathematics, including mathematical reasoning, algebra and problem-solving.

(3) Science and technology, which involves active learning experiences and which may include laboratory experiments and instruction in agriculture and which may involve active learning experiences and instruction in agriculture and which may involve the use of technology.

(4) Social studies (civics and government, economics, geography and history).

(5) Environment and ecology, including social, political and economic aspects of ecology and instruction in agriculture and environmental science.

(6) Health and safety, including instruction in nutrition, health, family life and safety.

(7) Physical education, which involves active learning experiences.

(8) Arts, including music, dance and theatre.

Cross References

This section cited in 22 Pa. Code § 4.27 (relating to physical education and athletics).

Source

The provisions of this § 4.22 amended under sections 121, 2603-B and 2604-B of the Public School Code of 1949 (24 P. S. §§ 1-121, 26-2603-B and 26-2604-B).
Career education, including exposure to various career options and the educational preparation necessary to achieve those options.

Technology education, emphasizing practical application of academic skills and problem-solving experiences facilitated by technology.

Family and consumer science, including principles of consumer behavior and basic knowledge of child health and child care skills.

This section does not preclude the teaching of other planned instruction designed to achieve a school entity’s academic standards.

School entities shall determine the most appropriate way to achieve those purposes under subsection (b) and any additional academic standards as determined by the school entity.

The provisions of this § 4.22 amend the Act of April 7, 1972, P.L. 212, No. 122, 24 P.S. § 2603-B and 2604-B of the Public School Code.

Authority

The provisions of this § 4.23 amended under sections 121, 2603-B and 2604-B of the Public School Code of 1949 (24 P. S. §§ 1-121, 2603-B and 2604-B).

Cross References

This section cited in 22 Pa. Code § 4.27 (relating to physical education and athletics).
§ 4.24. High school graduation requirements.

(a) Approval. High school graduation requirements and revisions to them shall be approved by a school entity's governing board by September 2, 2014, and a copy of the requirements shall be published and distributed to students, parents and guardians. Copies of the requirements also shall be available in each school building or on each school entity's publicly accessible web site. Changes to high school graduation requirements shall be published and distributed to students, parents and guardians and made available in each school building or on each school entity's publicly accessible web site immediately following approval by the governing board.

(b) Requirements through the 2015-2016 school year. Each school district, charter school (including a cyber charter school) and A VTS, if applicable, shall specify graduation requirements for high school graduation that all high school, charter school (including a cyber charter school) and A VTS, if applicable, shall include in their graduation requirements for high school graduation that are aligned to the State assessment system.

(c) Requirements beginning in the 2016-2017 school year.

(1) General. Beginning in the 2016-2017 school year, each school district, charter school (including a cyber charter school) and A VTS, if applicable, shall include in its graduation requirements for high school graduation:

(i) Course completion and grades.

(ii) Course completion, including a culminating project, for graduation.

(iii) Assessment, as determined through any one of a combination of the following:

(A) State assessments.

(B) Local assessments.

(C) Secondary level coursework in English Language Arts, Algebra I and Biology in which a student demonstrates proficiency on the associated Keystone Exam or related project-based assessment.

The purpose of the culminating project is to assure that students are able to apply, analyze, synthesize and evaluate information and communicate significant understanding.

(d) Requirements through the 2015-2016 school year. Each school district, charter school (including a cyber charter school) and A VTS, if applicable, shall include in its graduation requirements for high school graduation:

(i) Course completion and grades.

(ii) Assessment, as determined through any one of a combination of the following:

(A) State assessments.

(B) Local assessments.

(C) Secondary level coursework in English Language Arts, Algebra I and Biology in which a student demonstrates proficiency on the associated Keystone Exam or related project-based assessment.

The purpose of the culminating project is to assure that students are able to apply, analyze, synthesize and evaluate information and communicate significant understanding.

(e) Requirements beginning in the 2016-2017 school year. Each school district, charter school (including a cyber charter school) and A VTS, if applicable, shall include in its graduation requirements for high school graduation:

(i) Course completion and grades.

(ii) Assessment, as determined through any one of a combination of the following:

(A) State assessments.

(B) Local assessments.

(C) Secondary level coursework in English Language Arts, Algebra I and Biology in which a student demonstrates proficiency on the associated Keystone Exam or related project-based assessment.

The purpose of the culminating project is to assure that students are able to apply, analyze, synthesize and evaluate information and communicate significant understanding.

(f) Requirements through the 2016-2017 school year. Each school district, charter school (including a cyber charter school) and A VTS, if applicable, shall include in its graduation requirements for high school graduation:

(i) Course completion and grades.

(ii) Assessment, as determined through any one of a combination of the following:

(A) State assessments.

(B) Local assessments.

(C) Secondary level coursework in English Language Arts, Algebra I and Biology in which a student demonstrates proficiency on the associated Keystone Exam or related project-based assessment.

The purpose of the culminating project is to assure that students are able to apply, analyze, synthesize and evaluate information and communicate significant understanding.
A school district, A VTS or charter school, including a cyber charter school, shall allow a student to take a Keystone Exam prior to taking the course associated with the exam's content provided that the student achieved a score of advanced on the most recent associated PSSA assessment administered to the student.

A school district, A VTS or charter school, including a cyber charter school, shall allow a student who transfers from another state to take a Keystone Exam prior to taking the course associated with the exam's content, provided that the student achieved a score comparable to the PSSA's advanced performance level on a comparable assessment.

A school district, A VTS or charter school, including a cyber charter school, may allow a student who scores at the advanced level on a Keystone Exam prior to taking the course to be granted course credit for the course without having to complete the course. Valid assessments must meet the following:

- Alignment with the following State academic standards: English Language Arts (Literature and Composition); Mathematics (Algebra I), Science and Technology, Environment and Ecology (Biology), and Civics and Government.
- Performance level expectations and descriptors that describe the level of performance required to achieve proficiency comparable to that used for the Keystone Exams.
- Administration of the local assessment to all students, as a requirement for graduation, except for those exempted by their individualized education program under subsection (g) regarding special education or gifted individualized education plan as provided in §16.32 (relating to GIEP).

Locally approved and administered assessments, which shall be:

- Validated every 6 years. Validation shall be evenly divided between the school district and the Department. If the Department does not provide sufficient funding to validate local assessments, the local assessments shall be evenly divided between the school district, A VTS or charter school, including a cyber charter school, and the Department.
- Locally approved and administered assessments, which shall be:

  (I) Performance level expectations and descriptors that describe the level of performance required to achieve proficiency comparable to that used for the Keystone Exams.
  (II) Administration of the local assessment to all students, as a requirement for graduation, except for those exempted by their individualized education program under subsection (g) regarding special education or gifted individualized education plan as provided in §16.32 (relating to GIEP).

Except for replacement of individual test items that have a similar level of difficulty, a new validation is required for any material changes to the exam. Except for replacement of individual test items that have a similar level of difficulty, new validation is required for any material changes to the exam.

Alternative assessment options, including a Keystone Exam, may be designed to include a variety of assessment strategies listed in §4.52(c) and may include the use of one or more Keystone Exams.
The Department will establish a list of entities approved to perform independent validations of local assessments in consultation with the Local Assessment Validation Advisory Committee as provided in § 4.52(f).

School boards shall only approve assessments that have been determined to meet the requirements of this subsection by an approved entity performing the independent validation. If a school district, A VTS, charter school, including a cyber charter school, uses a local assessment that has not been independently validated, the Secretary will direct the school entity to discontinue its use until the local assessment is approved through independent validation by an approved entity.

Completion of an Advanced Placement exam or International Baccalaureate exam that includes academic content comparable to the appropriate Keystone Exam at a score established by the Secretary to be comparable to the proficient level on the appropriate Keystone Exam.

Requirements beginning in the 2018-2019 school year. Effective with the 2018-2019 school year, subsection (c)(1)(iii) must include a determination of proficiency in English Language Arts (Composition) (Appendix A-2).

Requirements beginning in the 2019-2020 school year. Effective with the 2019-2020 school year, Civics and Government (Appendix C) is added to the academic standards in subsection (c)(1)(iii). The requirements in subsection (c)(1)(iii) must include a determination of proficiency in Civics and Government.

Career and technical education program students. A student enrolled in a Department-approved career and technical education program may satisfy the requirements of subsections (d) and (e) upon completion of secondary level coursework in English Language Arts (Literature), Algebra I and Biology, in which a student demonstrates proficiency on the associated Keystone Exam, validated local assessment or project-based assessment, and achieves a score of competent or advanced on a Pennsylvania State Skills Assessment required under § 4.31(a) (relating to vocational-technical education). A student enrolled in a career and technical education program must include a determination of proficiency in English Language Arts (Composition) (Appendix A-2), which must include a determination of proficiency in Civics and Government (Appendix C) in subsection (c)(1)(iii).

Demonstration of proficiency in English Language Arts (Composition) (Appendix A-2) or other comparable exam is required in subsections (d) and (e) of the statute. Effective with the 2011-2012 school year, students shall meet the requirements in subsection (d) of the statute. Effective with the 2009-2010 school year, students shall meet the requirements in subsection (e) of the statute.

School boards shall only approve assessments that have been approved through independent validation by an approved entity.

Demonstration of proficiency in English Language Arts (Composition) (Appendix A-2) is required in subsections (d) and (e) of the statute. Effective with the 2011-2012 school year, students shall meet the requirements in subsection (d) of the statute. Effective with the 2009-2010 school year, students shall meet the requirements in subsection (e) of the statute.

School boards shall only approve assessments that have been approved through independent validation by an approved entity.

The Department will establish a list of entities approved to perform independent validation of local assessments in consultation with the Local Assessment Validation Advisory Committee as provided in § 4.52(f).

Demonstration of proficiency in English Language Arts (Composition) (Appendix A-2) is required in subsections (d) and (e) of the statute. Effective with the 2011-2012 school year, students shall meet the requirements in subsection (d) of the statute. Effective with the 2009-2010 school year, students shall meet the requirements in subsection (e) of the statute.

School boards shall only approve assessments that have been approved through independent validation by an approved entity.

Demonstration of proficiency in English Language Arts (Composition) (Appendix A-2) is required in subsections (d) and (e) of the statute. Effective with the 2011-2012 school year, students shall meet the requirements in subsection (d) of the statute. Effective with the 2009-2010 school year, students shall meet the requirements in subsection (e) of the statute.

School boards shall only approve assessments that have been approved through independent validation by an approved entity.
Transcripts.

Beginning in the 2003-2004 school year, and through the 2012-2013 school year, PSSA scores in each assessed discipline shall be included on student transcripts. Beginning in the 2016-2017 school year, the performance level demonstrated in each of the academic standards in subsections (c)—(e) shall be included on student transcripts. The information presented on a transcript must include the highest performance level demonstrated by a student on the associated Keystone Exam, validated local assessment or project-based assessment at the time the transcript is produced.

Release of scores.

This section does not allow for the release of individual Keystone Exam scores or Keystone Exam scores on or before the 2011-2012 school year.

Supplemental instruction.

Beginning in the 2011-2012 school year, a student who does not demonstrate proficiency on a Keystone Exam or a locally validated assessment shall be offered supplemental instructional support by the student’s school district, A VTS or charter school, including a cyber charter school. The supplemental instructional support must be consistent with the student’s educational program and assist the student to attain proficiency in the State academic standards.

Out-of-state transfers.

A school district, A VTS or charter school, including a cyber charter school, shall determine whether a student who transfers from an out-of-State school having demonstrated proficiency in coursework and assessments aligned with the academic standards assessed by each Keystone Exam may satisfy the requirements of subsections (c)—(e) subject to guidance developed by the Secretary to maintain consistency in the State’s educational standards.

Transition.

To effect successful transition between requirements outlined in subsections (b) and (c) regarding requirements through the 2015-2016 school year and requirements beginning in the 2016-2017 school year, subsection (d) regarding requirements beginning in the 2018-2019 school year and subsection (e) regarding requirements through the 2019-2020 school year, a student who will graduate in the 2016-2017 school year or the 2018-2019 school year and subsection (d) regarding requirements beginning in the 2019-2020 school year for courses completed in the 2011-2012 school year or the 2012-2013 school year for courses completed in the 2013-2014 school year shall be deemed proficient for purposes of this section.
§ 4.26. ESOL.

Every school district shall provide a program for each student whose dominant

language is not English for the purpose of facilitating the student's achievement of English proficiency and the academic standards under § 4.12.

Cross References

This section cited in 22 Pa. Code § 4.23 (relating to high school education).

Authority

The provisions of this § 4.26 amended under section 2603-B of the Public School Code of 1949.

§ 4.25. Languages.

Languages

World language programs must prepare students to be proficient in meeting the World Language Standards issued by the Department and available on its web site. Every school district shall offer a program in at least two languages in addition to English, at least one of which shall be a modern language, and at least one of which shall be a modern language offering a minimum 4-year sequence in the secondary program (middle level and high school).

(a) World language programs shall include planning, instruction, and development of language proficiency in the language(s) offered in the secondary program.

(b) World language programs shall be offered at all grade levels, including the elementary grades.

(c) World Language Standards issued by the Department will address the ability of students to communicate in a language other than English, including the ability to understand and interpret spoken and written language on a variety of topics and to develop knowledge and understanding of other cultures.

(d) As used in this section, the term "world language" means the study of a language or languages that are not related to English and that are studied in a language other than English, including the study of a language other than English that is a language of American Sign Language.

Authority

The provisions of this § 4.25 amended under section 2603-B of the Public School Code of 1949.

Cross References

This section cited in 22 Pa. Code § 4.23 (relating to high school education).
§ 4.27. Physical education and athletics.

(a) Physical education shall be taught as required under §§ 4.21(e)(6) and (f)(8), 4.22(c)(7) and 4.23(c)(8) (relating to elementary education: primary and intermediate levels; middle level education; and high school education).

(b) The physical education program must be adapted for students who are medically unable to participate in the regular physical education program.

(c) The physical education program shall provide coeducational instruction, except that separation by sex may be permitted in courses involving contact sports. Separation by sex may not be used to exclude students of either sex from participating in any physical education instruction.

(d) In addition to physical education instruction under subsections (a)–(c), students of both sexes shall have equal access in interscholastic and intramural athletic programs to all of the following:

(1) School facilities.
(2) Coaching and instruction.
(3) Number of activities at each level of competition.
(4) Equipment, supplies and services.
(5) Funding appropriate to the sport.
(6) School districts may sponsor coeducational teams in interscholastic and intramural sports programs.

(e) Interscholastic and intramural teams playing contact sports may be separated by sex, but this subsection may not be used to exclude students of either sex from participating in a sport.

§ 4.28. Special education.

(a) Under the Individuals with Disabilities Education Act and this part, children with disabilities shall be provided an education which enables them to be involved in and progress in the general curriculum under this chapter.

(b) Students who are gifted as defined in this part shall be provided an education that enables them to participate in acceleration or enrichment, or both, as appropriate.

(c) The educational program provided to children with disabilities shall be in accordance with their Individualized Education Programs under the Individuals with Disabilities Education Act and this part.

Authority

The provisions of this § 4.27 amended under section 2603-B of the Public School Code of 1949 (24 P.S. § 26-2603-B).

Source

§ 4.29. HIV/AIDS and other life-threatening and communicable diseases.

(a) Instruction regarding prevention of human immunodeficiency virus (HIV) infection/acquired immunodeficiency syndrome (AIDS) and other life-threatening and communicable diseases shall be given for primary, intermediate, middle school and high school education and shall follow the requirements of subsections (b) and (c).

(b) Educational materials and instruction shall be determined by the local school district and be appropriate to the age group being taught. The program of instruction must include information about the nature of the diseases, treatments and cures, methods of transmission and how infection can be prevented. The school district may omit instruction in the elementary grades on transmission of disease through sexual activity. Programs discussing transmission through sexual activity must stress that abstinence from sexual activity is the only completely reliable means of preventing sexual transmission. Programs must stress that avoidance of illegal drug use is the only completely reliable means of preventing transmission of disease through shared drug paraphernalia.

(c) A school entity shall excuse a pupil from HIV/AIDS instruction when the instruction conflicts with the religious beliefs or principles of the pupil or parent or guardian of the pupil and when excusal is requested in writing. Prior to the commencement of instruction, a school district shall publicize that detailed curriculum outlines and curricular materials used in conjunction with the instruction are available to parents and guardians during normal school hours or at teacher-parent conferences. Curricular materials, if practical, shall be made available by the school entity for home instructional use by a parent or guardian if the student has been excused from the school entity's HIV/AIDS instruction.

Authority

§ 4.29. HIV/AIDS and other life-threatening and communicable diseases.

The provisions of this § 4.29 amended under section 2603-B of the Public School Code of 1949 (24 P. S. § 26-2603-B).

Source

competency assessed by completion of the appropriate assessment under the Pennsylvania Skills Certificate Program or by completion of another occupational competency assessment approved by the Department. A student with a disability shall be provided appropriate accommodations when provided for in the student's individualized education program. Students shall also demonstrate proficiency in meeting academic standards as required under § 4.24 (relating to high school graduation requirements), including § 4.12(f) (relating to academic standards) and § 4.24(g) for students with disabilities with an individualized education program.

(b) Vocational-technical education courses may be taught at AVTSs or other high schools.

(c) Vocational-technical education programs must consist of a series of planned academic and vocational-technical education courses that are articulated with one another so that knowledge and skills are taught in a systematic manner. When appropriate, vocational-technical education programs must include industry-recognized standards and cooperative vocational-technical education and may also include cooperative educational-technical education programs.

(d) Vocational-technical education courses must include content based upon occupational analysis, clearly stated performance objectives deemed critical to successful employment and assessment of student competencies based upon performance standards.

(e) The record of a student enrolled in a vocational-technical education program must include the student's educational and occupational objectives and the results of the assessment of student competencies under subsection (d).

(f) Safety education, consisting of safety practices, accident prevention, occupational health habits and environmental concerns, shall be integrated into the instruction and practices of vocational-technical education programs.

(g) School districts and AVTSs administering vocational-technical education programs shall develop written policies regarding admissions. Course announcements, guidance materials and other communications must convey the philosophy of equal access to students considering enrollment and the procedures for admission. The policies must assure that when admissions to AVTSs must be limited, the admissions shall be on a nondiscriminatory basis.

Authority

The provisions of this § 4.31 amended under sections 121, 2603-B and 2604-B of the Public School Code of 1949 (24 P. S. § 1-121, 26-2603-B and 26-2604-B).
§ 4.32. Standards and reports.

(a) The Secretary is responsible for the promulgation of standards appropriate for implementing § 4.31 (relating to vocational-technical education). Present standards, to the extent that they are inconsistent, are superseded by this chapter.

(b) The Secretary will report annually to the Board on the status of vocational-technical education programs, including tech-prep and apprenticeship programs. Reports will include numbers and types of programs, numbers of students, post-program status of students, Statewide competency standards and assessment information.

§ 4.33. Advisory committees.

(a) A school district, or A VTS, administering or planning to administer vocational-technical education programs shall appoint a local advisory committee. Membership on the committee shall consist of business and industry representatives, public sector employees, agriculture, labor organizations, community organizations, postsecondary education institutions, and the general public. The appointed advisory committee shall meet at least twice each year to advise the board, administration and staff on curriculum, equipment, instructional materials, safety requirements, program evaluation and other related matters.

(b) An administrative committee, composed of chief school administrators representing participating school districts, shall be included in the organization of each A VTS. The committee shall advise the A VTS board and the administration concerning the educational program and policies of the school.

(c) An occupational advisory committee shall be established for each vocational-technical education program or cluster of related programs offered by a school district or A VTS. The committee shall be appointed by the board of directors, and a majority of the members of the committee shall be employees in the occupation for which training is provided. The committee shall meet at least twice each year to advise the board, administration and staff on curriculum, equipment, instructional materials, safety requirements, program evaluation and other related matters.

Authority
The provisions of this § 4.33 amended under sections 121, 2603-B and 2604-B of the Public School Code of 1949 (24 P. S. §§ 1-121, 26-2603-B and 26-2604-B).
§ 4.34. Programs and equipment.

(a) A satellite vocational-technical education program may be operated by an A VTS board in conformity with a memorandum of understanding adopted with the participating school district's board of school directors.

(b) Certified guidance personnel in each secondary school and A VTS shall be assigned responsibility to provide pupils with vocational-technical guidance services.

(c) Equipment will be deemed appropriate if it is compatible, insofar as practical, to that used in occupations or households for which vocational-technical education is provided.

(d) Equipment will be deemed appropriate if it is compatible, insofar as practical, to that used in occupations or households for which vocational-technical education is provided.

(e) Equipment will be deemed appropriate if it is compatible, insofar as practical, to that used in occupations or households for which vocational-technical education is provided.

(f) Equipment will be deemed appropriate if it is compatible, insofar as practical, to that used in occupations or households for which vocational-technical education is provided.
§ 4.41. Scheduling.

(a) Kindergarten programs shall provide each kindergarten student with at least 2 1/2 hours of instruction each day for the full school term unless the school district, including charter schools, obtains prior Department approval for an alternative kindergarten program.

(b) A school district, including charter schools, shall obtain approval of the Department prior to scheduling 1/2-day sessions other than in kindergarten under subsection (a). A school district is not required to obtain approval prior to scheduling 1/2 day sessions for prekindergarten under subsection (e).

(c) A school district shall obtain approval of the Department prior to establishing a new school or changing school organization.

(d) Planned instruction offered in summer school may be conducted as credit or noncredit offerings.

(e) School districts with prekindergarten programs shall provide prekindergarten students with at least 2 1/2 hours of instruction each day for the full school term unless the school district obtains prior Department approval for an alternative prekindergarten program.

Authority

The provisions of this § 4.41 amend § 2603-B of the Public School Code of 1949 (24 P. S. § 26-2603-B).

Source


§ 4.42. Grade structure.

This chapter does not require educational programs to be organized in traditional grades according to students' chronological ages or academic achievement.

Authority

(5) Provide results to school entities based upon the aggregate performance of all students, for students with an Individualized Education Program (IEP) and for those without an IEP.

(6) Assess student proficiency in the Academic Standards for English Language Arts (Appendix A-2), Mathematics (Appendix A-2), Science and Technology and Environment and Ecology (Appendix B) and Civics and Government (Appendix C) for the purpose of determining, in part, a student's eligibility for high school graduation.

(b) The State assessment system must include PSSA assessments and Keystone Exams.

(c) Neither State assessments nor academic standards under § 4.12 may require students to hold or express particular attitudes, values or beliefs.

(d) The Department will make samples of State assessment questions, assessment formats and scoring guides available to the public after each administration of State assessments.

(e) To ensure that information regarding student performance is available to parents and teachers, State assessments developed under this section must include student names.

(f) Individual assessment results shall be used in planning instruction only by parents, teachers, administrators and guidance counselors with a need to know based upon local board policy on testing and in reporting academic progress.

(g) The Department and other Commonwealth entities are prohibited from collecting individual student test scores and may collect only aggregate test scores by school and district.

(h) The Board will authorize the expansion of the State assessment system through a revision of this chapter.

(i) The Board will not include National assessments as part of the State assessment system, except upon consultation with teachers, counselors and parents representing students who have been identified under Chapter 14 (relating to special education services and programs) the Board determines the assessment is an appropriate means of assessing the academic progress of students identified under Chapter 14, or unless the General Assembly authorizes the use of a National assessment.

(j) Subject to paragraph (3), the Board will not, and the Department may not be a governing state in any consortium for the development of a National assessment for the purpose of utilization as part of the State assessment system.

(k) The Department may continue to participate in a consortium to develop an alternate assessment to measure the academic progress of students identified under Chapter 14.

(l) The Department will implement provisions for security of the State assessment system, including the following:

(1) Action by a professional employee or a commissioned officer that is willfully designed to divulge test questions, falsify student scores or in some other fashion compromise the integrity of the State assessment system, shall be a violation of the Educator Discipline Act (24 P. S. §§ 2070.1a—2070.18c).

(2) Cheating by students or employees other than those covered in paragraph (1) shall be subject to disciplinary action by the school district, A VTS or charter school, including a cyber charter school.
Cheating or breaches of assessment security shall be reported to the Secretary as soon as detected.

The Secretary is authorized to establish guidelines for the administration of the State assessment system.

The Secretary will report each September to the Board and the General Assembly information and pertinent data regarding the State assessment system. The Secretary also will provide each school entity information and pertinent data for the school entity and its students.

Children with disabilities and children with limited English proficiency shall be included in the State assessment system as required by Federal law, with appropriate accommodations when necessary. As appropriate, the Commonwealth will develop guidelines for the participation of children with disabilities in alternative assessments for those children who cannot participate in the PSSA or Keystone Exams as determined by each child's individualized education program under the Individuals with Disabilities Education Act and this part.

Authority

The provisions of this § 4.51 amended under sections 121, 2603-B and 2604-B of the Public School Code of 1949 (24 P. S. §§ 1-121, 26-2603-B and 26-2604-B).


(a) All PSSA assessments administered in English Language Arts, Mathematics, and Science and Technology and Environment and Ecology will include essay or open-ended response items in addition to other item formats. The proportion of type of items will vary by grade level. The criteria for judging performance on PSSA assessments are as follows:

1. Performance on PSSA English Language Arts assessments shall be determined by (i) children with disabilities and children with limited English proficiency.

2. Performance on PSSA English Language Arts assessments shall be determined by students' responses to grade-appropriate content and by the quality of their responses to questions about age-appropriate reading passages, by their ability to write within response to comprehension questions about the passages, by their ability to write within response to essay or open-ended response items, and by the quality of their compositions on a variety of topics and modes of writing.

3. Performance on PSSA Mathematics assessments shall be determined by students' responses to grade-appropriate content and by the quality of their responses to questions about grade-appropriate content, by their ability to write within response to questions about grade-appropriate content and by the quality of their responses to alternative questions that require a written solution to a problem.

4. Performance on PSSA Science assessments shall be determined by students' responses to grade-appropriate content and by the quality of their responses to alternative questions that require a written solution to a problem.

Cross References

responses to questions that demonstrate knowledge of each category of the
standards for science and technology and environment and ecology.
(4) Performance levels shall be advanced, proficient, basic and below
basic. In consultation with educators, students, parents and citizens, the Depart-
ment shall develop and recommend to the Board for approval specific crite-
ria for advanced, proficient, basic and below basic levels of performance.

(b) The Department will develop or cause to be developed Keystone Exams
as provided in this subsection. This subsection is intended by the Board to con-
continue the requirements set forth in § 4.51(f) (relating to State assessment system) as published at 40
Pa.B. 240 (January 9, 2010) and referenced in section 102 of the School Code (24
P.S. § 1-102).

(1) Three assessments aligned with the Mathematics standards, contained
in Appendix A-2, that assess content traditionally included in
Algebra I, Algebra II and Geometry courses.

(2) Two assessments aligned with select English Language Arts standards,
contained in Appendix A-2 that assess content traditionally included
in high school literature and composition courses.

(3) Three assessments aligned with select History and Civics and Govern-
ment standards, contained in Appendix C, that assess content traditionally
included in high school level American History, World History and Civics and
Government courses.

(4) Two assessments aligned with select standards for Science and Tech-
nology and Environment and Ecology, contained in Appendix B, that assess
academic content traditionally included in high school level Biology and
Chemistry courses.

Cross References
This section cited in 22 Pa. Code § 4.21 (relating to elementary education: primary and interme-
diate levels and 22 Pa. Code § 4.24 (relating to high school graduation requirements).

§ 4.51b Keystone Exams.

Authority

Source
The provisions of this § 4.51b adopted under sections 121, 2603-B and 2604-B of the Public School

Cross References
This section cited in 22 Pa. Code § 4.21 (relating to elementary education: primary and interme-
diate levels and 22 Pa. Code § 4.24 (relating to high school graduation requirements).
(c) Keystone Exams shall be administered, reviewed and scored so that scores for candidates for graduation are provided to schools no later than 10 calendar days prior to graduation. A school district, AVTS or charter school, including a cyber charter school, may request the Department to approve alternative test administration and scoring time frames. The Department will publish guidelines and procedures for approving alternative test administration and scoring time frames on its website. The guidelines will provide for approval of all requests unless the approval is contrary to standards of test validity and scoring.

(d) A student shall be permitted to retake any Keystone Exam, or Keystone Exam module, in which the student did not score proficient or above at the next available testing date, so long as the student has participated in a satisfactory manner in supplemental instruction as provided under § 4.24(k) (relating to high school graduation requirements) and subsection (f). There is not a limit on the number of times a student who did not score proficient on a Keystone Exam is permitted to retake the Keystone Exam or Keystone Exam module. A student who has achieved a score of proficient or advanced on a Keystone Exam is not permitted to retake the exam.

(e) Each Keystone Exam will be designed in modules that reflect distinct, related academic content that is common to the traditional progression of coursework to allow students who do not score proficient or above to retake those portions of the test in which they did not score proficient or above.

(f) A student taking Keystone Exams, or Keystone Exam modules, who did not score proficient on a Keystone Exam, or Keystone Exam modules, shall be provided supplemental instruction consistent with the student's educational program by the student's school district, AVTS, or charter school, including a cyber charter school, until the student can demonstrate proficiency in the subject area or the student begins a project-based assessment provided in § 4.51c (relating to project-based assessment).

(g) Performance levels for Keystone Exams shall be set at the advanced, proficient, basic, and below basic levels. In consultation with the Performance Level Advisory Committee, the Department will develop and recommend to the Board performance level descriptors and performance level cut scores for the Keystone Exams and any alternative assessments developed to assess students with disabilities as permitted by the No Child Left Behind Act of 2001 (Pub. L. No. 107-110, 115 Stat. 1425). The Department will use widely-accepted psychometric procedures to establish the cut scores. Cut scores shall be presented at a public meeting of the Board for its review at least 2 weeks prior to scheduled Board action on the cut scores.

(h) The Department will provide guidance to school districts, AVTS and charter schools on the appropriate accommodations, including the provision of aids and services, that are necessary for students with disabilities, students who are gifted and English language learners, when appropriate, to participate in the Keystone Exams.

(i) Beginning in the 2012-2013 school year, Keystone Exams in the following subjects will be developed by the Department and made available for use by school districts, AVTS and charter schools for the purpose of assessing high school graduation requirements in § 4.24(c)(1)(iv):

- Algebra I
- Literature
- Biology

22 § 4.51b

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Subject to funding appropriated by the General Assembly for development of the exams and related project-based assessments and validation of related local assessments, Keystone Exams in the following subjects will be developed by the Department and made available for use by school districts, A VTSs and charter schools, including cyber charter schools, for the purpose of assessing high school graduation requirements in § 4.24(c)(1)(iii) in accordance with the following schedule:

School Year 2015-2016 English Composition
School Year 2016-2017 Civics and Government

During the 2014-2015 school year, school districts, A VTSs and charter schools, including cyber charter schools, shall administer the Keystone Exam in English Composition for the purpose of gathering data to set performance level cut scores for the exam.

During the 2015-2016 school year, school districts, A VTSs and charter schools, including cyber charter schools, shall administer the Keystone Exam in Civics and Government for the purpose of gathering data to set performance level cut scores for the exam.

Subject to funding appropriated by the General Assembly for development of the exams, Keystone Exams in the following subjects will be developed by the Department and made available for voluntary use by school districts, A VTSs and charter schools, including cyber charter schools, in accordance with the following schedule:

School Year 2016-2017 Geometry
School Year 2017-2018 U.S. History
School Year 2018-2019 Algebra II
School Year 2019-2020 Chemistry
School Year 2020-2021 World History

The Department will seek to have the Keystone Exams approved as the high school level single accountability system under the No Child Left Behind Act of 2001. Upon approval by the United States Department of Education, the Algebra I and Literature exams will be used to determine adequate yearly progress. The Biology Keystone Exam will be used as the high school level science assessment, which is not a factor in determining high school level accountability. If the Keystone Exams receive approval as the high school level accountability system, the 11th grade PSSA exams in Reading, Writing, Math and Science shall be discontinued for the purpose of determining adequate yearly progress at the high school level.

School Year 2010-2011 Literature
School Year 2011-2012 Biology
School Year 2012-2013 World History
School Year 2013-2014 U.S. History
School Year 2014-2015 World History

The following schedule:

(1) Subject to funding appropriated by the General Assembly for development of the exams, Keystone Exams in the following subjects will be developed by the Department and made available for voluntary use by school districts, including cyber charter schools, for the purpose of assessing high school graduation requirements in § 4.24(c)(1)(iii) in accordance with the following schedule:

School Year 2010-2011 Literature
School Year 2011-2012 Biology
School Year 2012-2013 World History
School Year 2013-2014 U.S. History
School Year 2014-2015 World History

(2) During the 2014-2015 school year, school districts, A VTSs and charter schools, including cyber charter schools, shall administer the Keystone Exam in English Composition for the purpose of determining adequate yearly progress. If the Keystone Exams receive approval as the high school level accountability system, the 11th grade PSSA exams in Reading, Writing, Math and Science shall be discontinued for the purpose of determining adequate yearly progress.
§ 4.51b. Project-based assessment.

(a) The Department will develop a project-based assessment system that is aligned with the modules for the Keystone Exams in Literature, Algebra I, Biology, Composition, and Civics and Government for students who are unable to demonstrate proficiency on a Keystone Exam in grade 12, who have demonstrated proficiency on a Keystone Exam of the same subject, and score at or above Level 2 on the Keystone Exam for that subject.

(b) The project-based assessment system shall be administered by schools and scored by Statewide panels composed of teachers, principals, and curriculum specialists assembled by the Department. The Statewide panels shall score student projects according to scoring protocols and rubrics developed by the Department.

(c) A student in grade 12 who has demonstrated proficiency on a Keystone Exam of the same subject shall not be eligible for a project-based assessment unless the student is unable to demonstrate proficiency on the Keystone Exam for that subject.

(d) A student below grade 12 who has demonstrated proficiency on a Keystone Exam in grade 12, who has demonstrated proficiency on a Keystone Exam of the same subject, and scores at or above Level 2 on the Keystone Exam for that subject shall not be eligible for a project-based assessment unless the student is unable to demonstrate proficiency on the Keystone Exam for that subject.

(e) The Department will establish a State Assessment Validation Advisory Committee (Committee) to investigate the use of a certificate based on industry-approved standards and performance on an NOCTI exam as an alternative pathway to graduation.

Authority


Source

§ 4.51c  Project-Based Assessments

A student to whom § 4.4(d)(4) applies may qualify to participate in one or more project-based assessments if the student has met the following conditions:

1. Has taken the course.
2. Has met the attendance requirements of the school district, A VTS or charter school, including a cyber charter school.

A student enrolled in a Department-approved career and technical education program who has not demonstrated proficiency on a Keystone Exam or Keystone Exam module in Biology may qualify to participate in a project-based assessment in Biology if the student has met the following conditions:

1. Has taken the course.
2. Has met the attendance requirements of the school district, A VTS or charter school, including a cyber charter school.

Authority
The provisions of this § 4.51c issued under sections 121, 2603-B and 2604-B of the Public School Code of 1949 (24 P. S. §§ 1-121, 26-2603-B and 26-2604-B).

Source
The provisions of this § 4.51c appear at 44 Pa.B. 1131.

Cross References

§ 4.51d  Waivers

A chief school administrator, in his sole discretion, may waive the requirements in § 4.24 (relating to high school graduation requirements) on a case-by-case basis for good cause. Waivers may be granted for a student in grade 12 who was unable to complete a project-based assessment in § 4.51c if the student did not successfully complete the assessment in grade 12 or if the assessment was not offered for a student in grade 11.

Prior to granting a waiver, a chief school administrator shall certify that:

1. The student meets the local requirements of the school district, A VTS or charter school, including a cyber charter school.

A written waiver issued in accordance with this section shall satisfy the requirements the student achieved prior to the assessment.

(3) Has met the attendance requirements of the school district, A VTS or charter school.

(4) Has taken the course.

(5) Prior to granting a waiver, a chief school administrator shall certify that:

1. A student to whom § 4.4(d)(4) applies may qualify to participate in one or more project-based assessments if the student has met the following conditions:

2. Has met the local requirements of the school district, A VTS or charter school, including a cyber charter school.

(6) Provided under §§ 4.24(a) and 4.51(b).

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(ii) Has not demonstrated proficiency on a Keystone Exam or Keystone Exam module.

(iii) If the student is required to participate in supplemental instruction under § 4.24(k) and § 4.51b(f) (relating to Keystone Exams), has participated in a satisfactory manner in supplemental instructional services consistent with the student's educational program provided by the school district, A VTS or charter school, including a cyber charter school.

(iv) Has not successfully completed a project-based assessment aligned to the Keystone Exam or Keystone Exam module on which the student did not demonstrate proficiency.

(2) If a chief school administrator is considering granting waivers to more than 10% of students in the graduating class of a school district, A VTS or charter school, including a cyber charter school, because the students were not successful in completing a project-based assessment as provided in § 4.51c, the chief school administrator shall submit an action plan for approval by the Secretary no later than 10 calendar days prior to graduation. The action plan must identify improvements the school district, A VTS or charter school, including a cyber charter school, will implement to each course associated with the Keystone Exam or Keystone Exam module on which the student did not demonstrate proficiency.

(3) If a chief school administrator is considering granting waivers to more than 10% of students in the graduating class of a school district, A VTS or charter school, including a cyber charter school, because the students were not successful in completing a project-based assessment as provided in § 4.51c, the chief school administrator must submit an action plan for approval by the Secretary. The action plan must identify improvements the school district, A VTS or charter school, including a cyber charter school, will implement to each course associated with the Keystone Exam or Keystone Exam module on which the student did not demonstrate proficiency.

(4) Has not demonstrated proficiency on a Keystone Exam or Keystone Exam module.

§ 4.52. Local assessment system.

The provisions of this § 4.52 issued under sections 121, 2603-B and 2604-B of the Public School Code, 24 P. S. § 121, 2603-B and 2604-B, are effective March 1, 2014, 44 Pa.B. 1131.

Authority

Made by a chief school administrator.

(2) If a chief school administrator is considering granting waivers to more than 10% of students in the graduating class of a school district, A VTS or charter school, including a cyber charter school, because the students were not successful in completing a project-based assessment as provided in § 4.51c, the chief school administrator shall submit an action plan for approval by the Secretary. The action plan must identify improvements the school district, A VTS or charter school, including a cyber charter school, will implement to each course associated with the Keystone Exam or Keystone Exam module on which the student did not demonstrate proficiency.

(3) If a chief school administrator is considering granting waivers to more than 10% of students in the graduating class of a school district, A VTS or charter school, including a cyber charter school, because the students were not successful in completing a project-based assessment as provided in § 4.51c, the chief school administrator must submit an action plan for approval by the Secretary. The action plan must identify improvements the school district, A VTS or charter school, including a cyber charter school, will implement to each course associated with the Keystone Exam or Keystone Exam module on which the student did not demonstrate proficiency.

(4) Has not demonstrated proficiency on a Keystone Exam or Keystone Exam module.

§ 4.52. Local assessment system.

The provisions of this § 4.52 issued under sections 121, 2603-B and 2604-B of the Public School Code, 24 P. S. § 121, 2603-B and 2604-B, are effective March 1, 2014, 44 Pa.B. 1131.

Authority

Made by a chief school administrator.

(2) If a chief school administrator is considering granting waivers to more than 10% of students in the graduating class of a school district, A VTS or charter school, including a cyber charter school, because the students were not successful in completing a project-based assessment as provided in § 4.51c, the chief school administrator shall submit an action plan for approval by the Secretary. The action plan must identify improvements the school district, A VTS or charter school, including a cyber charter school, will implement to each course associated with the Keystone Exam or Keystone Exam module on which the student did not demonstrate proficiency.

(3) If a chief school administrator is considering granting waivers to more than 10% of students in the graduating class of a school district, A VTS or charter school, including a cyber charter school, because the students were not successful in completing a project-based assessment as provided in § 4.51c, the chief school administrator must submit an action plan for approval by the Secretary. The action plan must identify improvements the school district, A VTS or charter school, including a cyber charter school, will implement to each course associated with the Keystone Exam or Keystone Exam module on which the student did not demonstrate proficiency.

(4) Has not demonstrated proficiency on a Keystone Exam or Keystone Exam module.

§ 4.52. Local assessment system.

The provisions of this § 4.52 issued under sections 121, 2603-B and 2604-B of the Public School Code, 24 P. S. § 121, 2603-B and 2604-B, are effective March 1, 2014, 44 Pa.B. 1131.

Authority

Made by a chief school administrator.

(2) If a chief school administrator is considering granting waivers to more than 10% of students in the graduating class of a school district, A VTS or charter school, including a cyber charter school, because the students were not successful in completing a project-based assessment as provided in § 4.51c, the chief school administrator shall submit an action plan for approval by the Secretary. The action plan must identify improvements the school district, A VTS or charter school, including a cyber charter school, will implement to each course associated with the Keystone Exam or Keystone Exam module on which the student did not demonstrate proficiency.

(3) If a chief school administrator is considering granting waivers to more than 10% of students in the graduating class of a school district, A VTS or charter school, including a cyber charter school, because the students were not successful in completing a project-based assessment as provided in § 4.51c, the chief school administrator must submit an action plan for approval by the Secretary. The action plan must identify improvements the school district, A VTS or charter school, including a cyber charter school, will implement to each course associated with the Keystone Exam or Keystone Exam module on which the student did not demonstrate proficiency.
The Department will post the approved criteria, section criteria and list of
approved entities on its web site.

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The provisions of this § 4.52 amended under sections 121, 2603-B and 2604-B of the Public School Code of 1949 (24 P. S. §§ 1-121, 26-2603-B and 26-2604-B).

Source

Cross References

§ 4.61. School profiles.
(a) School profiles developed by the Secretary will include information as required under section 220 of the School Code (24 P. S. § 2-220).
(b) The Secretary will prescribe procedures for reporting State assessment data to schools and communities.
(c) The Secretary will make available to the public, and report to the public with the same frequency and in the same detail as for children who are nondisabled, all data as required under the Individuals with Disabilities Education Act.
(d) School profiles developed by the Secretary will include information as required under section 220 of the School Code (24 P. S. § 2-220).

Authority

§ 4.71. Certification by principal of nonpublic nonlicensed school.
Elementary or secondary nonpublic nonlicensed schools shall, within 30 days of beginning classes, file a notarized certificate with the Secretary as required by section 1327(b)(1) and (2) of the School Code (42 P. S. §§ 1-1327(b)(1) and (2)) in the form prescribed by the Secretary.

Authority
§ 4.72. Credit earned by a public school in the Commonwealth shall be accepted by all public schools and institutions in the Commonwealth upon the recommendation of the principal or his or her designee that the course or course of study meets the requirements for the credit as established by the Department. Credit earned by an institution of higher education shall be accepted by the Commonwealth upon the recommendation of the postsecondary education agency of the Commonwealth. The Department may approve the credit earned by an institution of higher education in accordance with its policies. Credit earned by an institution of higher education in accordance with its policies shall be accepted by all public schools and institutions in the Commonwealth upon the recommendation of the principal or his or her designee that the course or course of study meets the requirements for the credit as established by the Department.

§ 4.73. Cross References

This section cited in 22 Pa. Code § 4.7 (relating to students in special situations).

§ 4.74. Students in special situations

A student who is not enrolled in a Commonwealth secondary school may earn the Commonwealth secondary school diploma by meeting the requirements for the Commonwealth secondary school diploma under § 4.72. A student may also earn the Commonwealth secondary school diploma under § 4.72 by meeting the requirements for the Commonwealth secondary school diploma under § 4.72.

In addition to the provisions of paragraph (1), the Commonwealth secondary school diploma may be issued to an applicant who is a resident of the Commonwealth, does not possess a secondary school diploma, and is not enrolled in a secondary school in another state, which is not on an approved list of secondary schools. Any person who is a resident of the Commonwealth, does not possess a secondary school diploma, and is not enrolled in a secondary school in another state, which is not on an approved list of secondary schools, may earn the Commonwealth secondary school diploma by meeting the requirements for the Commonwealth secondary school diploma under § 4.72. 

An applicant 16 years of age or older will be issued a Commonwealth secondary school diploma upon request. An applicant 18 years of age or older will be issued a Certificate of Preliminary Education upon request.

An applicant 16 years of age or older who is unable to attend school and who is employed full-time shall present evidence of work experience demonstrating that the applicant has met the requirements for the Commonwealth secondary school diploma.

The Commonwealth secondary school diploma shall be accepted by all public schools and institutions in the Commonwealth upon the recommendation of the principal or his or her designee that the course or course of study meets the requirements for the credit as established by the Department. Credit earned by an institution of higher education shall be accepted by all public schools and institutions in the Commonwealth upon the recommendation of the principal or his or her designee that the course or course of study meets the requirements for the credit as established by the Department.
§ 4.81 Allegations of deficiencies.

(a) The Secretary will receive and investigate allegations of curriculum deficiencies from professional employees, commissioned officers, parents of students or other residents of a school entity.

(b) The Secretary will notify the school entity's superintendent or chief executive of allegations and may require the superintendent or chief executive to submit one or more of the following:

1. Relevant descriptions of planned instruction.
2. A series of written articulated courses of instructional units.
3. Relevant student assessment information.
4. Information on staff assignments.
5. Other information pertinent to investigating a specific allegation.

(c) If the Secretary determines that a curriculum deficiency exists, the school entity shall be required to submit to the Secretary for approval a plan to correct the deficiency.

(d) Within 1 year of the implementation of a corrective action plan under subsection (c), the Secretary will review the actions taken to correct the deficiency. If the deficiency remains uncorrected, the Secretary will send a formal notice of deficiency to the governing board of the school entity, and the notice shall be announced at the meeting of the school entity's governing board.

(e) If the school entity does not take appropriate action to correct the deficiency after the notice of deficiency is issued, the Secretary may take any action necessary to enforce compliance with the provisions of this chapter.

Authority

The provisions of this § 4.81 amended under the Public School Code of 1949 (24 P.S. 26-2603).

Notes of Decisions

Inapplicable Offense

Educator's argument that the offensive conduct of manufacturing grades was a curriculum deficiency that should be resolved under the Academic Standards and Assessment Chapter of the Administrative Code is misplaced. The conduct is properly prosecuted under the Teacher Certification Law.


§ 4.82 Exceptions.

(a) The Secretary may grant exceptions to specific provisions of this chapter when it is necessary to adapt them to the curriculum needs of individual school entities.

(b) Specific exceptions to this chapter may be made for school entities that develop or implement academic standards that exceed those found in § 4.12 (relating to academic standards), provided that the Secretary determines that the school entity has taken appropriate steps to ensure the correctness of the academic standards.

(c) A school entity that develops or implements academic standards may apply for an exception to a specific provision of this chapter.

(d) If the Secretary grants an exception, the school entity shall establish procedures for ensuring the correctness of the academic standards.

(e) The Secretary will notify the school entity of the exception and the conditions under which it is granted.

Authority

The provisions of this § 4.82 amended under the Public School Code of 1949 (24 P.S. 26-2603).
§ 4.82. Authority

The provisions of this § 4.82 amended February 1, 2008, effective February 16, 2008, 38 Pa.B.

Source

The provisions of this § 4.82 amended under the Public School Code of 1949 (24 P.S. 26-2603).

§ 4.83. [Reserved]

The provisions of this § 4.83 reserved February 1, 2008, effective February 16, 2008, 38 Pa.B.

Source

The provisions of this § 4.83 reserved under the Public School Code of 1949 (24 P.S. 26-2603).

(3) The request shall be made prior to initiating the action requiring approval and shall have the prior approval of the board of school directors.

(b) The Secretary will report annually to the Board on the nature and status of requests for exceptions under this section.

The request shall be made prior to initiating the action requiring approval and shall have the prior approval of the board of school directors.

The provisions of this § 4.83 amended February 1, 2008, effective February 16, 2008, 38 Pa.B.

Source

The provisions of this § 4.83 amended under the Public School Code of 1949 (24 P.S. 26-2603).
APPENDIX A

[Reserved]

Source

The provisions of this Appendix A adopted January 15, 1999, effective January 16, 1999, 29 Pa.B. 399; reserved by correction July 19, 2013, effective June 30, 2013, replaced by Appendix A-1, 43 Pa.B. 4079, unless otherwise noted. Immediately preceding text appears at serial pages (252345) to (252422) and (286561) to (286562).

APPENDIX A-1

[Reserved]

Source

The provisions of this Appendix A-1 renumbered from Appendix B adopted October 15, 2010, effective July 1, 2013, 40 Pa.B. 5903; correction published at 43 Pa.B. 4079; reserved February 28, 2014, effective March 1, 2014, 44 Pa.B. 1131, unless otherwise noted. Immediately preceding text appears at serial pages (367438) and (353099) to (353316).

APPENDIX A-2

Pennsylvania Core Standards for English Language Arts and Mathematics

APPENDIX A-2

Pennsylvania Core Standards for English Language Arts

Grades Pre K-5

Authority

The provisions of this Appendix A-2 issued under sections 121, 2603-B and 2604-B of the Public School Code of 1949 (24 P. S. §§ 1-121, 26-2603-B and 26-2604-B), unless otherwise noted.

Introduction

These standards describe what students should know and be able to do with the English language. Prekindergarten through Grade 12. The standards provide the English language proficiency through grade 12. These standards describe what students should know and be able to do with the

INTRODUCTION

The provisions of this Appendix A-2 adopted February 28, 2014, effective March 1, 2014, 44 Pa.B. 1131, unless otherwise noted.

Cross References


APPENDIX A-1

[Reserved]

APPENDIX A
Standard 1: Foundational Skills begin at prekindergarten and focus on early childhood, with some standards reflected through Grade 5. These foundational skills are a necessary and important component of an effective, comprehensive reading program designed to develop proficient readers with the capacity to comprehend text, both literary and informational, across disciplines.

Standard 2: Reading Informational Text enables students to read, understand, and respond to informational text.

Standard 3: Reading Literature enables students to read, understand, and respond to works of literature.

Standard 4: Writing develops the skills of informational, argumentative, and narrative writing, as well as the ability to engage in evidence-based analysis of text and research.

Standard 5: Speaking and Listening focuses students on communication skills that enable critical listening and effective presentation of ideas.

With a focus on college and career readiness, the PA Core Standards are evident in Common Core through:

- Balancing the reading of informational and literary texts so that students can access a staircase of complexity (i.e., each grade level requires a "step" of growth on the "staircase")
- Supporting writing from sources (e.g., "using evidence from text to inform or persuade")
- Building a staircase of complexity (i.e., each grade level requires a "step" of growth on the "staircase")
- Focusing on close and careful reading of text so that students are learning from the text
- Balancing the reading of informational and literary texts so that students can access more complex levels

Note: The Aligned Eligible Content is displayed with the standard statement. On the Standard Aligned System portal, it is a live link.
# TABLE OF CONTENTS

## Foundational Skills (Pre K-5)

- Students gain a working knowledge of concepts of print, alphabetic principle, and other basic conventions. These foundational skills are not an end in and of themselves; rather, students apply them as effective readers.

- **Book Handling**
- **Print Concepts**
- **Phonological Awareness**
- **Phonics and Word Recognition**
- **Fluency**

## Reading Informational Text

- Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

- **Key Ideas and Details**
- **Craft and Structure**
- **Integration of Knowledge and Ideas**
- **Vocabulary Acquisition and Use**
- **Range of Reading**

## Reading Literature

- Students read and respond to works of literature—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

- **Key Ideas and Details**
- **Craft and Structure**
- **Integration of Knowledge and Ideas**
- **Vocabulary Acquisition and Use**
- **Range of Reading**

## Writing

- Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

- **Informative/Explanatory**
- **Opinion/Argumentative**
- **Narrative**
- **Response to Literature**
- **Production and Distribution of Writing**
- **Technology and Publication**
- **Conducting Research**
- **Credibility, Reliability, and Validity of Sources**
- **Range of Writing**

## Speaking and Listening

- Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

- **Comprehension and Collaboration**
- **Presentation of Knowledge and Ideas**
- **Integration of Knowledge and Ideas**
- **Conventions of Standard English**
1.1 Foundational Skills
Students gain a working knowledge of concepts of print, alphabetic principle, and other basic conventions.

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### 1.1 Foundational Skills

Students gain a working knowledge of concepts of print, alphabetic principle, and other basic conventions.

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<td>• Follow words left to right, top to bottom, and page by page.</td>
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<td>• Understand that words are separated by spaces in print.</td>
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1.1 Foundational Skills  
Students gain a working knowledge of concepts of print, alphabetic principle, and other basic conventions.

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<td><strong>Phonological Awareness</strong></td>
<td><strong>CC.1.1.PK.C</strong></td>
<td>Demonstrate understanding of spoken words, syllables, and sounds (phonemes).</td>
<td><strong>CC.1.1.K.C</strong></td>
<td>Demonstrate understanding of spoken words, syllables, and sounds (phonemes).</td>
<td><strong>CC.1.1.1.C</strong></td>
<td>Demonstrate understanding of spoken words, syllables, and sounds (phonemes).</td>
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<td>• Recognize rhyming words and when two or more words begin with the same sound (alliteration).</td>
<td>• Recognize and produce rhyming words.</td>
<td>• Count, pronounce, blend, and segment syllables in spoken words.</td>
<td>• Blend and segment onsets and rimes of single-syllable spoken words.</td>
<td>• Distinguish long from short vowel sounds in spoken single-syllable words.</td>
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<td>• Count syllables in spoken words.</td>
<td>• Count, pronounce, blend, and segment syllables in spoken words.</td>
<td>• Isolate and pronounce the initial, medial vowel, and final sound (phonemes) in the three-phoneme (CVC) words.</td>
<td>• Orally produce single-syllable words, including consonant blends and digraphs.</td>
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1.1 Foundational Skills
Students gain a working knowledge of concepts of print, alphabetic principle, and other basic conventions.

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- Isolate and pronounce initial, medial vowel, and final sounds (phonemes) in spoken single-syllable words.
- Add or substitute individual sounds (phonemes) in one-syllable words to make new words.
### 1.1 Foundational Skills

Students gain a working knowledge of concepts of print, alphabetic principle, and other basic conventions.

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<td><strong>Phonics and Word Recognition</strong>&lt;br&gt;CC.1.1.PK.D</td>
<td>Develop beginning phonics and word skills.&lt;br&gt;• Associate some letters with their names and sounds.&lt;br&gt;• Identify familiar words and environmental print.</td>
<td>CC.1.1.K.D&lt;br&gt;Know and apply grade-level phonics and word analysis skills in decoding words.&lt;br&gt;• Demonstrate basic knowledge of one-to-one letter-sound correspondence.&lt;br&gt;• Associate the long and short sounds with common spellings for the five major vowels.&lt;br&gt;• Read grade-level high-frequency sight words with automaticity.&lt;br&gt;• Distinguish between similarly spelled words by identifying the sounds of the letters that differ.</td>
<td>CC.1.1.1.D&lt;br&gt;Know and apply grade-level phonics and word analysis skills in decoding words.&lt;br&gt;• Identify common consonant diagraphs, final-e, and common vowel teams.&lt;br&gt;• Decode one- and two-syllable words with common patterns.&lt;br&gt;• Read grade-level words with inflectional endings.&lt;br&gt;• Read grade-appropriate irregularly spelled words.</td>
<td>CC.1.1.2.D&lt;br&gt;Know and apply grade-level phonics and word analysis skills in decoding words.&lt;br&gt;• Distinguish long and short vowels when reading regularly spelled one-syllable words.&lt;br&gt;• Decode two-syllable words with long vowels and words with common prefixes and suffixes.&lt;br&gt;• Read grade-level high-frequency sight words and words with inconsistent but common spelling-sound correspondences.</td>
<td>CC.1.1.3.D&lt;br&gt;Know and apply grade-level phonics and word analysis skills in decoding words.&lt;br&gt;• Identify and know the meaning of the most common prefixes and derivational suffixes.&lt;br&gt;• Decode words with common Latin suffixes.&lt;br&gt;• Decode multisyllable words.&lt;br&gt;• Read grade-appropriate irregularly spelled words.</td>
<td>CC.1.1.4.D&lt;br&gt;Know and apply grade-level phonics and word analysis skills in decoding words.&lt;br&gt;• Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology to read accurately unfamiliar multisyllabic words.</td>
<td>CC.1.1.5.D&lt;br&gt;Know and apply grade-level phonics and word analysis skills in decoding words.&lt;br&gt;• Use combined knowledge of all letter-sound correspondences, syllabication patterns, and morphology to read accurately unfamiliar multisyllabic words.</td>
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### 1.1 Foundational Skills

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<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Read grade-appropriate irregularly spelled words.</td>
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</tr>
<tr>
<td>Intentionally Blank</td>
<td>CC.1.1.K.E</td>
<td>Read emergent-reader text with purpose and understanding.</td>
<td>CC.1.1.1.E</td>
<td>Read with accuracy and fluency to support comprehension.</td>
<td>CC.1.1.2.E</td>
<td>Read with accuracy and fluency to support comprehension.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• Read on-level text with purpose and understanding.</td>
<td>• Read on-level text with purpose and understanding.</td>
<td>• Read on-level text orally with accuracy, appropriate rate, and expression on successive readings.</td>
<td>• Use context to confirm or self-correct word recognition and understanding, rereading as necessary.</td>
</tr>
</tbody>
</table>

**Fluency**
### 1.2 Reading Informational Text

Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

<table>
<thead>
<tr>
<th>Key Ideas and Details</th>
<th>Pre K</th>
<th>K</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Text Analysis</td>
<td></td>
<td></td>
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<tr>
<td>CC.1.2.PK.A</td>
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<tr>
<td>With prompting and support, retell key details of text that support a provided main idea.</td>
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<tr>
<td>CC.1.2.K.A</td>
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<tr>
<td>With prompting and support, identify the main idea and retell key details of text.</td>
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<tr>
<td>CC.1.2.1.A</td>
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<tr>
<td>Identify the main idea and retell key details of text.</td>
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<td>CC.1.2.2.A</td>
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<tr>
<td>Identify the main idea of a multiparagraph text as well as the focus of specific paragraphs within the text.</td>
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<td>CC.1.2.3.A</td>
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<tr>
<td>Determine the main idea of a text; recount the key details and explain how they support the main idea.</td>
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<td>E03.B-K.1.1.2</td>
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<td>CC.1.2.4.A</td>
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<tr>
<td>Determine the main idea of a text and explain how it is supported by key details; summarize the text.</td>
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<tr>
<td>E04.B-K.1.1.2</td>
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<td>CC.1.2.5.A</td>
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<tr>
<td>Determine two or more main ideas in a text and explain how they are supported by key details; summarize the text.</td>
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<tr>
<td>E05.B-K.1.1.2</td>
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<tr>
<td>CC.1.2.K.B</td>
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<tr>
<td>With prompting and support, answer questions about key details in a text.</td>
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<td>CC.1.2.1.B</td>
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<tr>
<td>Ask and answer questions about key details in a text.</td>
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<td>CC.1.2.2.B</td>
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<tr>
<td>Ask and answer questions such as who, what, where, when, why, and how to demonstrate understanding of key details in a text.</td>
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<tr>
<td>CC.1.2.3.B</td>
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<tr>
<td>Ask and answer questions about the text and make inferences from text; refer to text to support responses.</td>
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<td>CC.1.2.4.B</td>
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<tr>
<td>Refer to details and examples in text to support what the text says explicitly and make inferences.</td>
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<tr>
<td>E04.B-K.1.1.1</td>
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<tr>
<td>Cite textual evidence by quoting accurately from the text to explain what the text says explicitly and make inferences.</td>
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<tr>
<td>E05.B-K.1.1.1</td>
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</tbody>
</table>
### 1.2 Reading Informational Text

Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Pre K</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Key Ideas and Details</strong></td>
<td><strong>Text Analysis</strong></td>
<td><strong>Craft and Structure</strong></td>
<td><strong>Point of View</strong></td>
<td><strong>Point of View</strong></td>
<td><strong>Point of View</strong></td>
<td><strong>Point of View</strong></td>
<td><strong>Point of View</strong></td>
</tr>
<tr>
<td><strong>CC.1.2.PK.C</strong></td>
<td>With prompting and support, make connections between information in a text and personal experiences.</td>
<td>Intentionally Blank</td>
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</tr>
<tr>
<td><strong>CC.1.2.K.C</strong></td>
<td>With prompting and support, make a connection between two individuals, events, ideas, or pieces of information in a text.</td>
<td>Intentionally Blank</td>
<td>Intentionally Blank</td>
<td>Intentionally Blank</td>
<td>Intentionally Blank</td>
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<tr>
<td><strong>CC.1.2.1.C</strong></td>
<td>Describe the connection between two individuals, events, ideas, or pieces of information in a text.</td>
<td>Intentionally Blank</td>
<td>Intentionally Blank</td>
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<tr>
<td><strong>CC.1.2.2.C</strong></td>
<td>Describe the connection between a series of events, concepts, or steps in a procedure within a text.</td>
<td>Intentionally Blank</td>
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<tr>
<td><strong>CC.1.2.3.C</strong></td>
<td>Explain how a series of events, concepts, or steps in a procedure is connected within a text, using language that pertains to time, sequence, and cause/effect.</td>
<td>Intentionally Blank</td>
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<td><strong>E03.B-K.1.1.3</strong></td>
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<tr>
<td><strong>CC.1.2.4.C</strong></td>
<td>Explain events, procedures, ideas, or concepts in a text, including what happened and why, based on specific information in the text.</td>
<td>Intentionally Blank</td>
<td>Intentionally Blank</td>
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<tr>
<td><strong>E04.B-K.1.1.3</strong></td>
<td>Intentionally Blank</td>
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<tr>
<td><strong>CC.1.2.5.C</strong></td>
<td>Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a text based on specific information in the text.</td>
<td>Intentionally Blank</td>
<td>Intentionally Blank</td>
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<tr>
<td><strong>E05.B-K.1.1.3</strong></td>
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</tbody>
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**E03.B-C.2.1.1**

**E04.B-C.2.1.1**

**E05.B-C.2.1.1**
1.2 Reading Informational Text
Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

<table>
<thead>
<tr>
<th>Grade Pre K</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Craft and Structure</strong></td>
<td><strong>Text Structure</strong></td>
<td></td>
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</tr>
<tr>
<td>CC.1.2.PK.E</td>
<td>Identify the front cover, back cover, and title page of a book.</td>
<td>CC.1.2.K.E</td>
<td>Identify parts of a book (title, author) and parts of a text (beginning, end, details).</td>
<td>CC.1.2.1.E</td>
<td>Use various text features and search tools to locate key facts or information in a text.</td>
<td>CC.1.2.2.E</td>
</tr>
<tr>
<td>CC.1.2.K.F</td>
<td>With prompting and support, answer questions about unfamiliar words read aloud from a text.</td>
<td>CC.1.2.1.F</td>
<td>Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.</td>
<td>CC.1.2.2.F</td>
<td>Determine the meaning of words and phrases as they are used in grade-level text, including multiple-meaning words. E03.B-V.4.1.1 E03.B-V.4.1.2</td>
<td>CC.1.2.3.F</td>
</tr>
<tr>
<td>CC.1.2.3.E</td>
<td>Use text features and search tools to locate and interpret information.</td>
<td>CC.1.2.4.E</td>
<td>Use text structure to interpret information (e.g., chronology, comparison, cause/effect, problem/solution). E04.B-C.2.1.2</td>
<td>CC.1.2.4.E</td>
<td>Use text structure to interpret information (e.g., chronology, comparison, cause/effect, problem/solution). E05.B-C.2.1.2</td>
<td>CC.1.2.5.E</td>
</tr>
</tbody>
</table>
1.2 Reading Informational Text

Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

<table>
<thead>
<tr>
<th>Integration of Knowledge and Ideas</th>
<th>Grade Pre K</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diverse Media</td>
<td>CC.1.2.PK.G</td>
<td>CC.1.2.K.G</td>
<td>CC.1.2.1.G</td>
<td>CC.1.2.2.G</td>
<td>CC.1.2.3.G</td>
<td>CC.1.2.4.G</td>
<td>CC.1.2.5.G</td>
</tr>
<tr>
<td></td>
<td>With prompting and support, answer questions to connect illustrations to the written word.</td>
<td>Answer questions to describe the relationship between illustrations and the text in which they appear.</td>
<td>Use the illustrations and details in a text to describe its key ideas.</td>
<td>Explain how graphic representations contribute to and clarify a text.</td>
<td>Use information gained from text features to demonstrate understanding of a text.</td>
<td>Interpret various presentations of information within a text or digital source and explain how the information contributes to an understanding of text in which it appears.</td>
<td>Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.</td>
</tr>
<tr>
<td></td>
<td>E03.B-C.3.1.3</td>
<td>E04.B-C.3.1.3</td>
<td>E05.B-C.3.1.3</td>
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</table>
## 1.2 Reading Informational Text

Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

<table>
<thead>
<tr>
<th>Grade Pre K</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
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</thead>
<tbody>
<tr>
<td>Integration of Knowledge and Ideas</td>
<td>Intentionally Blank</td>
<td><strong>CC.1.2.K.H</strong> With prompting and support, identify the reasons an author gives to support points in a text.</td>
<td><strong>CC.1.2.1.H</strong> Identify the reasons an author gives to support points in a text.</td>
<td><strong>CC.1.2.2.H</strong> Describe how reasons support specific points the author makes in a text.</td>
<td><strong>CC.1.2.3.H</strong> Describe how an author connects sentences and paragraphs in a text to support particular points.</td>
<td><strong>CC.1.2.4.H</strong> Explain how an author uses reasons and evidence to support particular points in a text.</td>
</tr>
<tr>
<td>Evaluating Arguments</td>
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<tr>
<td>Analysis Across Texts</td>
<td><strong>CC.1.2.PK.I</strong> With prompting and support, identify basic similarities and differences between two texts read aloud on the same topic.</td>
<td><strong>CC.1.2.K.I</strong> With prompting and support, identify basic similarities and differences between two texts (read or read aloud) on the same topic.</td>
<td><strong>CC.1.2.1.I</strong> Identify basic similarities in and differences between two texts on the same topic.</td>
<td><strong>CC.1.2.2.I</strong> Compare and contrast the most important points presented by two texts on the same topic.</td>
<td><strong>CC.1.2.3.I</strong> Compare and contrast the most important points and key details presented in two texts on the same topic.</td>
<td><strong>CC.1.2.4.I</strong> Integrate information from two texts on the same topic to demonstrate understanding of that topic.</td>
</tr>
</tbody>
</table>
### 1.2 Reading Informational Text

Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

<table>
<thead>
<tr>
<th>Grade Pre K</th>
<th>Grade K</th>
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<tbody>
<tr>
<td><strong>Vocabulary Acquisition and Use</strong></td>
<td><strong>CC.1.2.PK.J</strong> Use new vocabulary and phrases acquired in conversations and being read to.</td>
<td><strong>CC.1.2.K.J</strong> Use words and phrases acquired through conversations, reading, and being read to, and responding to texts.</td>
<td><strong>CC.1.2.1.J</strong> Use words and phrases acquired through conversations, reading, and being read to, and responding to texts, including words that signal connections and relationships between the words and phrases.</td>
<td><strong>CC.1.2.2.J</strong> Acquire and use grade-appropriate conversational, general academic, and domain-specific words and phrases.</td>
<td><strong>CC.1.2.3.J</strong> Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships.</td>
<td><strong>E03.B-V.4.1.1</strong> E03.B-V.4.1.2</td>
</tr>
</tbody>
</table>
### 1.2 Reading Informational Text

Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

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</thead>
<tbody>
<tr>
<td><strong>Vocabulary Acquisition and Use</strong></td>
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</tr>
<tr>
<td>CC.1.2.PK.K</td>
<td>Determine or clarify the meaning of unknown or multiple-meaning words and phrases based on grade-level reading and content.</td>
<td>CC.1.2.K.K</td>
<td>Determine or clarify the meaning of unknown or multiple-meaning words and phrases based on grade-level reading and content.</td>
<td>CC.1.2.1.K</td>
<td>Determine or clarify the meaning of unknown or multiple-meaning words and phrases based on grade-level reading and content, choosing from a range of strategies and tools.</td>
<td>CC.1.2.2.K</td>
</tr>
<tr>
<td>CC.1.2.PK.K</td>
<td>With prompting and support, clarify unknown words or phrases read aloud.</td>
<td>CC.1.2.K.K</td>
<td>With prompting and support, clarify unknown words or phrases read aloud.</td>
<td>CC.1.2.1.K</td>
<td>With prompting and support, clarify unknown words or phrases read aloud.</td>
<td>CC.1.2.2.K</td>
</tr>
<tr>
<td><strong>Range of Reading</strong></td>
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<tr>
<td>CC.1.2.PK.L</td>
<td>Actively engage in group reading activities with purpose and understanding.</td>
<td>CC.1.2.K.L</td>
<td>Actively engage in group reading activities with purpose and understanding.</td>
<td>CC.1.2.1.L</td>
<td>Read and comprehend literary nonfiction and informational text on grade level, reading independently and proficiently.</td>
<td>CC.1.2.2.L</td>
</tr>
<tr>
<td>CC.1.2.PK.L</td>
<td>With prompting and support, actively engage in group reading activities with purpose and understanding.</td>
<td>CC.1.2.K.L</td>
<td>With prompting and support, actively engage in group reading activities with purpose and understanding.</td>
<td>CC.1.2.1.L</td>
<td>With prompting and support, actively engage in group reading activities with purpose and understanding.</td>
<td>CC.1.2.2.L</td>
</tr>
<tr>
<td>CC.1.2.PK.L</td>
<td>With prompting and support, actively engage in group reading activities with purpose and understanding.</td>
<td>CC.1.2.K.L</td>
<td>With prompting and support, actively engage in group reading activities with purpose and understanding.</td>
<td>CC.1.2.1.L</td>
<td>With prompting and support, actively engage in group reading activities with purpose and understanding.</td>
<td>CC.1.2.2.L</td>
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</tbody>
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**Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS**

(371127) No. 474 May 14

4-59
1.3  Reading Literature  
Students read and respond to works of literature— with emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>Grade Pre K</th>
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<tbody>
<tr>
<td><strong>Key Ideas and Details</strong></td>
<td><strong>Theme</strong></td>
<td><strong>Key Ideas and Details</strong></td>
<td><strong>Text Analysis</strong></td>
<td><strong>Key Ideas and Details</strong></td>
<td><strong>Text Analysis</strong></td>
<td><strong>Key Ideas and Details</strong></td>
</tr>
<tr>
<td>CC.1.3.PK.A</td>
<td>With prompting and support, retell a familiar story in sequence with picture support.</td>
<td>CC.1.3.K.A</td>
<td>With prompting and support, retell familiar stories including key details.</td>
<td>CC.1.3.1.A</td>
<td>Retell stories, including key details, and demonstrate understanding of their central message or lesson.</td>
<td>CC.1.3.2.A</td>
</tr>
<tr>
<td>E03.A-K.1.1.2</td>
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<td>E04.A-K.1.1.2</td>
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<tr>
<td>CC.1.3.K.B</td>
<td>Answer questions about a particular story (who, what, how, when, and where).</td>
<td>CC.1.3.1.B</td>
<td>Ask and answer questions about key details in a text.</td>
<td>CC.1.3.2.B</td>
<td>Ask and answer questions such as who, what, where, when, why, and how to demonstrate understanding of key details in a text.</td>
<td>CC.1.3.3.B</td>
</tr>
<tr>
<td>E03.A-K.1.1.1</td>
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<tr>
<td>CC.1.3.K.C</td>
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<td>CC.1.3.1.C</td>
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<td>CC.1.3.2.C</td>
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### 1.3 Reading Literature

Students read and respond to works of literature—with emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.

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<tbody>
<tr>
<td>Key Ideas and Details</td>
<td>Literary Elements</td>
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</tr>
<tr>
<td><strong>CC.1.3.PK.C</strong> With prompting and support, answer questions to identify characters, settings, and major events in a story.</td>
<td><strong>CC.1.3.K.C</strong> With prompting and support, identify characters, settings, and major events in a story.</td>
<td><strong>CC.1.3.1.C</strong> Describe characters, settings, and major events in a story, using key details.</td>
<td><strong>CC.1.3.2.C</strong> Describe how characters in a story respond to major events and challenges.</td>
<td><strong>CC.1.3.3.C</strong> Describe characters in a story and explain how their actions contribute to the sequence of events.</td>
<td><strong>CC.1.3.4.C</strong> Describe in depth a character, setting, or event in a story or drama, drawing on specific details in the text.</td>
<td><strong>CC.1.3.5.C</strong> Compare and contrast two or more characters, settings, or events in a story or drama, drawing on specific details in the text.</td>
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<td><strong>E03.A-K.1.1.3</strong></td>
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<tr>
<td><strong>CC.1.3.K.D</strong> Name the author and illustrator of a story and define the role of each in telling the story.</td>
<td><strong>CC.1.3.1.D</strong> Identify who is telling the story at various points in a text.</td>
<td><strong>CC.1.3.2.D</strong> Acknowledge differences in the points of views of characters, including by speaking in a different voice for each character when reading dialogue aloud.</td>
<td><strong>CC.1.3.3.D</strong> Explain the point of view of the author.</td>
<td><strong>CC.1.3.4.D</strong> Compare and contrast an event or topic told from two different points of view.</td>
<td><strong>CC.1.3.5.D</strong> Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.</td>
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<tr>
<td><strong>E03.A-C.2.1.1</strong></td>
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### 1.3 Reading Literature

Students read and respond to works of literature—with emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.

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<tr>
<td><strong>Craft and Structure</strong></td>
<td><strong>Text Structure</strong></td>
<td><strong>Text Structure</strong></td>
<td><strong>Vocabulary</strong></td>
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</tr>
<tr>
<td>CC.1.3.PK.E</td>
<td>With prompting and support, recognize common types of text.</td>
<td>CC.1.3.K.E</td>
<td>Recognize common types of text.</td>
<td>CC.1.3.1.E</td>
<td>Explain major differences between books that tell stories and books that give information, drawing on a wide reading or range of text types.</td>
<td>CC.1.3.2.E</td>
</tr>
<tr>
<td>CC.1.3.1.F</td>
<td>Identify words and phrases in stories or poems that suggest feelings or appeal to the senses.</td>
<td>CC.1.3.2.F</td>
<td>Describe how words and phrases supply rhythm and meaning in a story, poem, or song.</td>
<td>CC.1.3.3.F</td>
<td>Determine the meaning of words and phrases as they are used in grade-level text, distinguishing literal from nonliteral meaning as well as shades of meaning among related words.</td>
<td>CC.1.3.4.F</td>
</tr>
<tr>
<td>CC.1.3.3.E</td>
<td>Refer to parts of texts when writing or speaking about a text using such terms as chapter, scene, and stanza and describe how each successive part builds upon earlier sections.</td>
<td>CC.1.3.4.E</td>
<td>Explain major differences between poems, drama, and prose and refer to the structural elements of each when writing or speaking about a text.</td>
<td>E04.A-V.4.1.1</td>
<td>E04.A-V.4.1.2</td>
<td>E05.A-V.4.1.1</td>
</tr>
<tr>
<td>CC.1.3.5.E</td>
<td>Explain how a series of chapters, scenes, or stanzas fits together to provide the overall structure of a particular story, drama, or poem.</td>
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### 1.3 Reading Literature
Students read and respond to works of literature—with emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.

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<td>CC.1.3.PK.G</td>
<td>CC.1.3.K.G</td>
<td>CC.1.3.1.G</td>
<td>CC.1.3.2.G</td>
<td>CC.1.3.3.G</td>
<td>CC.1.3.4.G</td>
<td>CC.1.3.5.G</td>
</tr>
<tr>
<td>Describe pictures in books using details.</td>
<td>Make connections between the illustrations and the text in a story (read or read aloud).</td>
<td>Use illustrations and details in a story to describe characters, setting, or events.</td>
<td>Use information from illustrations and words, in print or digital text, to demonstrate understanding of characters, setting, or plot.</td>
<td>Explain how specific aspects of a text’s illustrations contribute to what is conveyed by the words in a story (e.g., create mood, emphasize aspects of a character or setting).</td>
<td>Make connections between the text of a story or drama and a visual or oral presentation of the text, identifying where each version reflects specific descriptions and directions in the text.</td>
<td>Analyze how visual and multimedia elements contribute to the meaning, tone, or beauty of a text (e.g., graphic novel, multimedia presentation of fiction, folktale, myth, poem).</td>
</tr>
<tr>
<td>Integration of Knowledge and Ideas: Sources of Information</td>
<td>Integration of Knowledge and Ideas: Text Analysis</td>
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<tr>
<td>CC.1.3.PK.H</td>
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<td>CC.1.3.3.H</td>
<td>CC.1.3.4.H</td>
<td>CC.1.3.5.H</td>
</tr>
<tr>
<td>Answer questions to compare and contrast the adventures and experiences of characters in familiar stories.</td>
<td>Compare and contrast the adventures and experiences of characters in stories.</td>
<td>Compare and contrast two or more versions of the same story by different authors or from different cultures.</td>
<td>Compare and contrast the themes, settings, and plots of stories written by the same author about the same or similar characters.</td>
<td>CC.1.3.3.H</td>
<td>Compare and contrast similar themes, topics, and patterns of events in literature, including texts from different cultures.</td>
<td>CC.1.3.5.H</td>
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<td>Compare and contrast texts in the same genre on their approaches to similar themes and topics as well as additional literary elements.</td>
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### 1.3 Reading Literature
Students read and respond to works of literature—with emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.

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<tr>
<td><strong>Vocabulary Acquisition and Use Strategies</strong></td>
<td>CC.1.3.PK.1 With prompting and support, clarify unknown words or phrases read aloud.</td>
<td>CC.1.3.K.1 Determine or clarify the meaning of unknown or multiple-meaning words and phrases based on grade-level reading and content.</td>
<td>CC.1.3.1.I Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content, choosing from a range of strategies and tools.</td>
<td>CC.1.3.2.I Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content, choosing flexibly from a range of strategies and tools.</td>
<td>CC.1.3.3.I Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content, choosing flexibly from a range of strategies and tools.</td>
<td>CC.1.3.4.I Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content, choosing flexibly from a range of strategies and tools.</td>
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<tr>
<td><strong>Vocabulary Acquisition and Use</strong></td>
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<td>CC.1.3.PK.J</td>
<td>CC.1.3.K.J</td>
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<td>CC.1.3.3.J</td>
<td>CC.1.3.4.J</td>
<td>CC.1.3.5.J</td>
</tr>
<tr>
<td>Use new vocabulary and phrases acquired in conversations and being read to.</td>
<td>Use words and phrases acquired through conversations, reading, and being read to, and responding to texts.</td>
<td>Use words and phrases acquired through conversations, reading, and being read to, and responding to texts, including words that signal connections and relationships between the words and phrases.</td>
<td>Acquire and use grade-appropriate conversational, general academic, and domain-specific words and phrases.</td>
<td>Acquire and use accurately grade-appropriate conversational, general academic, and domain-specific words and phrases, including those that signal spatial and temporal relationships.</td>
<td>E03.A-V.4.1.1 E03.A-V.4.1.2</td>
<td>E05.A-V.4.1.1 E05.A-V.4.1.2</td>
</tr>
</tbody>
</table>

| **Range of Reading** | | | | | | |
| CC.1.3.PK.K | CC.1.3.K.K | CC.1.3.1.K | CC.1.3.2.K | CC.1.3.3.K | CC.1.3.4.K | CC.1.3.5.K |
| With prompting and support, actively engage in group reading activities with purpose and understanding. | Actively engage in group reading activities with purpose and understanding. | Read and comprehend literature on grade level, reading independently and proficiently. | Read and comprehend literature on grade level, reading independently and proficiently. | Read and comprehend literary fiction on grade level, reading independently and proficiently. | Read and comprehend literary fiction on grade level, reading independently and proficiently. | Read and comprehend literary fiction on grade level, reading independently and proficiently. |
1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

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<tbody>
<tr>
<td>Informative/Explanatory</td>
<td>CC.1.4.PK.A</td>
<td>CC.1.4.K.A</td>
<td>CC.1.4.1.A</td>
<td>CC.1.4.2.A</td>
<td>CC.1.4.3.A</td>
<td>CC.1.4.4.A</td>
</tr>
<tr>
<td>Draw/dictate to compose informative/explanatory texts examining a topic.</td>
<td>Use a combination of drawing, dictating, and writing to compose informative/explanatory texts.</td>
<td>Write informative/explanatory texts to examine a topic and convey ideas and information.</td>
<td>Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</td>
<td>Write informative/explanatory texts to examine a topic and convey ideas and information clearly.</td>
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</tr>
<tr>
<td>With prompting and support, draw/dictate about one specific topic.</td>
<td>Use a combination of drawing, dictating, and writing to focus on one specific topic.</td>
<td>Identify and write about one specific topic.</td>
<td>Identify and introduce the topic.</td>
<td>Identify and introduce the topic clearly.</td>
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<tr>
<td><strong>Informative/Explanatory Content</strong></td>
<td>CC.1.4.PK.C With prompting and support, generate ideas to convey information.</td>
<td>CC.1.4.K.C With prompting and support, generate ideas and details to convey information that relates to the chosen topic.</td>
<td>CC.1.4.1.C Develop the topic with two or more facts.</td>
<td>CC.1.4.2.C Develop the topic with facts and/or definitions.</td>
<td>CC.1.4.3.C Develop the topic with facts, definitions, details, and illustrations, as appropriate.</td>
<td>CC.1.4.4.C Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic; include illustrations and multimedia when useful to aiding comprehension.</td>
<td>CC.1.4.5.C Develop the topic with facts, definitions, concrete details, quotations, or other information and examples related to the topic; include illustrations and multimedia when useful to aiding comprehension.</td>
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## 1.4 Writing

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<tr>
<td><strong>Informative/Explanatory Organization</strong></td>
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<td><strong>Informative/Explanatory Organization</strong></td>
</tr>
<tr>
<td>CC.1.4.PK.D</td>
<td>CC.1.4.K.D</td>
<td>CC.1.4.1.D</td>
<td>CC.1.4.2.D</td>
<td>CC.1.4.3.D</td>
<td>CC.1.4.4.D</td>
<td>CC.1.4.5.D</td>
</tr>
<tr>
<td>With prompting and support, make logical connections between drawing and dictation.</td>
<td>Make logical connections between drawing and dictation/writing.</td>
<td>Group information and provide some sense of closure.</td>
<td>Group information and provide a concluding statement or section.</td>
<td>Create an organizational structure that includes information grouped and connected logically with a concluding statement or section.</td>
<td>Group related information in paragraphs and sections, linking ideas within categories of information using words and phrases; provide a concluding statement or section; include formatting when useful to aiding comprehension.</td>
<td>Group related information logically linking ideas within and across categories of information using words, phrases, and clauses; provide a concluding statement or section; include formatting when useful to aiding comprehension.</td>
</tr>
<tr>
<td>E03.C.1.2.1</td>
<td>E03.C.1.2.3</td>
<td>E03.C.1.2.4</td>
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<td>E05.C.1.2.1</td>
<td>E05.C.1.2.3</td>
<td>E05.C.1.2.6</td>
<td>E05.E.1.1.1</td>
<td>E05.E.1.1.3</td>
<td>E05.E.1.1.6</td>
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### 1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

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<tr>
<td>Intentionally Blank</td>
<td>CC.1.4.K.E With prompting and support, illustrate using details and dictate/write using descriptive words.</td>
<td>CC.1.4.1.E Choose words and phrases for effect.</td>
<td>CC.1.4.2.E Choose words and phrases for effect.</td>
<td>CC.1.4.3.E Choose words and phrases for effect.</td>
<td>CC.1.4.4.E Use precise language and domain-specific vocabulary to inform about or explain the topic.</td>
<td>CC.1.4.5.E Write with an awareness of style.</td>
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- Use sentences of varying length.
- Use precise language and domain-specific vocabulary to inform about or explain the topic.
-· Use sentences of varying length.
## 1.4 Writing

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| Intentionally Blank | CC.1.4.K.F Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.  
- Capitalize the first word in a sentence and the pronoun I.  
- Recognize and use end punctuation.  
- Spell simple words phonetically. | CC.1.4.1.F Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.  
- Capitalize dates and names of people.  
- Use end punctuation; use commas in dates and words in series.  
- Spell words drawing on common spelling patterns, phonemic awareness, and spelling conventions. | CC.1.4.2.F Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.  
- Capitalize proper nouns.  
- Use commas and apostrophes appropriately.  
- Spell words drawing on common spelling patterns.  
- Consult reference material as needed. | CC.1.4.3.F Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling. | CC.1.4.4.F Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling. | CC.1.4.5.F Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling. |

- **E03.D.1.1.1**
- **E03.D.1.1.2**
- **E03.D.1.1.3**
- **E03.D.1.1.4**
- **E03.D.1.1.5**
- **E03.D.1.1.6**
- **E03.D.1.1.7**
- **E03.D.1.1.8**
- **E03.D.1.1.9**
- **E03.D.1.1.10**
- **E03.D.1.1.11**
- **E03.D.1.1.12**
- **E03.D.1.1.13**
- **E03.D.1.1.14**
- **E03.D.1.1.15**
- **E03.D.1.1.16**
- **E03.D.1.1.17**
- **E03.D.1.1.18**
- **E03.D.1.1.19**
- **E03.D.1.1.20**
- **E03.D.1.1.21**
- **E03.D.1.1.22**
- **E03.D.1.1.23**
- **E03.D.1.1.24**
- **E03.D.1.1.25**
- **E03.D.1.1.26**
- **E04.D.1.1.1**
- **E04.D.1.1.2**
- **E04.D.1.1.3**
- **E04.D.1.1.4**
- **E04.D.1.1.5**
- **E04.D.1.1.6**
- **E04.D.1.1.7**
- **E04.D.1.1.8**
- **E04.D.1.1.9**
- **E04.D.1.1.10**
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- **E04.D.1.1.12**
- **E04.D.1.1.13**
- **E04.D.1.1.14**
- **E04.D.1.1.15**
- **E04.D.1.1.16**
- **E04.D.1.1.17**
- **E04.D.1.1.18**
- **E04.D.1.1.19**
- **E04.D.1.1.20**
- **E04.D.1.1.21**
- **E04.D.1.1.22**
- **E04.D.1.1.23**
- **E04.D.1.1.24**
- **E04.D.1.1.25**
- **E05.D.1.1.1**
- **E05.D.1.1.2**
- **E05.D.1.1.3**
- **E05.D.1.1.4**
- **E05.D.1.1.5**
- **E05.D.1.1.6**
- **E05.D.1.1.7**
- **E05.D.1.1.8**
- **E05.D.1.1.9**
- **E05.D.1.1.10**
- **E05.D.1.1.11**
- **E05.D.1.1.12**
- **E05.D.1.1.13**
- **E05.D.1.1.14**
- **E05.D.1.1.15**
- **E05.D.1.1.16**
- **E05.D.1.1.17**
- **E05.D.1.1.18**
- **E05.D.1.1.19**
- **E05.D.1.1.20**
- **E05.D.1.1.21**
- **E05.D.1.1.22**
- **E05.D.1.1.23**
- **E05.D.1.1.24**
- **E05.D.1.1.25**
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<tr>
<th>Grade Pre K</th>
<th>Grade K</th>
<th>Grade 1</th>
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<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opinion/Argumentative Focus</strong></td>
<td>Intentionally Blank</td>
<td>CC.1.4.K.H Form an opinion by choosing between two given topics.</td>
<td>CC.1.4.1.H Form an opinion by choosing among given topics.</td>
<td>CC.1.4.2.H Identify the topic and state an opinion.</td>
<td>CC.1.4.3.H Introduce the topic and state an opinion on the topic.</td>
<td>E03.C.1.1.1</td>
</tr>
<tr>
<td><strong>Opinion/Argumentative Content</strong></td>
<td>Intentionally Blank</td>
<td>CC.1.4.K.I Support the opinion with reasons.</td>
<td>CC.1.4.1.I Support the opinion with reasons related to the opinion.</td>
<td>CC.1.4.2.I Support the opinion with reasons that include details connected to the opinion.</td>
<td>CC.1.4.3.I Support an opinion with reasons.</td>
<td>E03.C.1.1.2</td>
</tr>
</tbody>
</table>

**Writing**

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

CC.1.4.1.K.G Use a combination of drawing, dictating, and writing to compose opinion pieces on familiar topics.

CC.1.4.1.G Write opinion pieces on familiar topics.

CC.1.4.2.G Write opinion pieces on familiar topics or texts.

CC.1.4.3.G Write opinion pieces on familiar topics or texts.

CC.1.4.4.G Write opinion pieces on topics or texts.

CC.1.4.5.G Write opinion pieces on topics or texts.
### 1.4 Writing

<table>
<thead>
<tr>
<th>Grade Pre K</th>
<th>Grade K</th>
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<th>Grade 3</th>
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<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intentionally Blank</td>
<td>CC.1.4.K.J Make logical connections between drawing and writing.</td>
<td>CC.1.4.1.J Create an organizational structure that includes reasons and provides some sense of closure.</td>
<td>CC.1.4.2.J Create an organizational structure that includes reasons and includes a concluding statement.</td>
<td>CC.1.4.3.J Create an organizational structure that includes reasons linked in a logical order with a concluding statement or section. E03.C.1.1.1 E03.C.1.1.3 E03.C.1.1.4</td>
<td>CC.1.4.4.J Create an organizational structure that includes related ideas grouped to support the writer’s purpose and linked in a logical order with a concluding statement or section related to the opinion. E04.C.1.1.1 E04.C.1.1.3 E04.C.1.1.4 E04.E.1.1.1 E04.E.1.1.3 E04.E.1.1.5</td>
<td>CC.1.4.5.J Create an organizational structure that includes related ideas grouped to support the writer’s purpose; link opinion and reasons using words, phrases, and clauses; provide a concluding statement or section related to the opinion. E05.C.1.1.1 E05.C.1.1.3 E05.C.1.1.5 E05.E.1.1.1 E05.E.1.1.3 E05.E.1.1.6</td>
</tr>
</tbody>
</table>
### Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Opinion/Argumentative Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre K</td>
<td>Intentionally Blank</td>
</tr>
<tr>
<td>K</td>
<td>Intentionally Blank</td>
</tr>
<tr>
<td>1</td>
<td>CC.1.4.1.K Use a variety of words and phrases.</td>
</tr>
<tr>
<td>2</td>
<td>CC.1.4.2.K Use a variety of words and phrases to appeal to the audience.</td>
</tr>
<tr>
<td>3</td>
<td>CC.1.4.3.K Use a variety of words and sentence types to appeal to the audience.</td>
</tr>
<tr>
<td>4</td>
<td>CC.1.4.4.K Choose words and phrases to convey ideas precisely.</td>
</tr>
<tr>
<td>5</td>
<td>CC.1.4.5.K Write with an awareness of style. Use sentences of varying length. Expand, combine, and reduce sentences for meaning, reader/listener interest, and style.</td>
</tr>
</tbody>
</table>

- Grade Pre K: Intentionally Blank
- Grade K: Intentionally Blank
- Grade 1: CC.1.4.1.K Use a variety of words and phrases.
- Grade 2: CC.1.4.2.K Use a variety of words and phrases to appeal to the audience.
- Grade 3: CC.1.4.3.K Use a variety of words and sentence types to appeal to the audience.
- Grade 4: CC.1.4.4.K Choose words and phrases to convey ideas precisely.
### Writing
Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

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<thead>
<tr>
<th>Grade Pre K</th>
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<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intentionally Blank</td>
<td>CC.1.4.K.L. Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
<td>CC.1.4.1.L. Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
<td>CC.1.4.2.L. Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
<td>CC.1.4.3.L. Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
<td>CC.1.4.4.L. Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
<td>CC.1.4.5.L. Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
</tr>
</tbody>
</table>

- **Opinion/Argumentative Conventions of Language**
  - CC.1.4.K.L.
    - Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.
    - Capitalize the first word in a sentence and the pronoun I.
    - Recognize and use end punctuation.
    - Spell simple words phonetically.
  - CC.1.4.1.L.
    - Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.
    - Capitalize dates and names of people.
    - Use end punctuation; use commas in dates and words in series.
    - Spell words drawing on common spelling patterns, phonemic awareness, and spelling conventions.
  - CC.1.4.2.L.
    - Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.
    - Capitalize proper nouns.
    - Use commas and apostrophes appropriately.
    - Spell words drawing on common spelling patterns.
    - Consult reference material as needed.
  - CC.1.4.3.L.
    - Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.
    - Capitalize proper nouns.
    - Use commas and apostrophes appropriately.
    - Spell words drawing on common spelling patterns.
    - Consult reference material as needed.
  - CC.1.4.4.L.
    - Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.
    - Capitalize proper nouns.
    - Use commas and apostrophes appropriately.
    - Spell words drawing on common spelling patterns.
    - Consult reference material as needed.
  - CC.1.4.5.L.
    - Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.
    - Capitalize proper nouns.
    - Use commas and apostrophes appropriately.
    - Spell words drawing on common spelling patterns.
    - Consult reference material as needed.
## Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Pre K</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Narrative</strong></td>
<td></td>
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</tr>
<tr>
<td>Grade Pre K</td>
<td>CC.1.4.PK.M</td>
<td>Dictate narratives to describe real or imagined experiences or events.</td>
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</tr>
<tr>
<td>Grade K</td>
<td>CC.1.4.K.M</td>
<td>Use a combination of drawing, dictating, and writing to compose narratives that describe real or imagined experiences or events.</td>
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</tr>
<tr>
<td>Grade 1</td>
<td>CC.1.4.1.M</td>
<td>Write narratives to develop real or imagined experiences or events.</td>
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<tr>
<td>Grade 2</td>
<td>CC.1.4.2.M</td>
<td>Write narratives to develop real or imagined experiences or events.</td>
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<tr>
<td>Grade 3</td>
<td>CC.1.4.3.M</td>
<td>Write narratives to develop real or imagined experiences or events.</td>
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<tr>
<td>Grade 4</td>
<td>CC.1.4.4.M</td>
<td>Write narratives to develop real or imagined experiences or events.</td>
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</tr>
<tr>
<td>Grade 5</td>
<td>CC.1.4.5.M</td>
<td>Write narratives to develop real or imagined experiences or events.</td>
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</tr>
<tr>
<td><strong>Narrative Focus</strong></td>
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</tr>
<tr>
<td>Grade Pre K</td>
<td>CC.1.4.PK.N</td>
<td>Establish who and what the narrative will be about.</td>
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<tr>
<td>Grade K</td>
<td>CC.1.4.K.N</td>
<td>Establish who and what the narrative will be about.</td>
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</tr>
<tr>
<td>Grade 1</td>
<td>CC.1.4.1.N</td>
<td>Establish a situation and introduce a narrator and/or characters.</td>
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<tr>
<td>Grade 2</td>
<td>CC.1.4.2.N</td>
<td>Establish a situation and introduce a narrator and/or characters.</td>
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</tr>
<tr>
<td>Grade 3</td>
<td>CC.1.4.3.N</td>
<td>Establish the reader by establishing a situation and introducing a narrator and/or characters.</td>
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</tr>
<tr>
<td>Grade 4</td>
<td>CC.1.4.4.N</td>
<td>Orient the reader by establishing a situation and introducing a narrator and/or characters.</td>
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<tr>
<td>Grade 5</td>
<td>CC.1.4.5.N</td>
<td>Orient the reader by establishing a situation and introducing a narrator and/or characters.</td>
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</tr>
</tbody>
</table>
### 1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

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<tr>
<th></th>
<th>Grade Pre K</th>
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<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Narrative Content</strong></td>
<td><strong>CC.1.4.PK.O</strong> With prompting and support describe experiences and events.</td>
<td><strong>CC.1.4.K.O</strong> Describe experiences and events.</td>
<td><strong>CC.1.4.1.O</strong> Include thoughts and feelings to describe experiences and events to show the response of characters to situations.</td>
<td><strong>CC.1.4.2.O</strong> Include thoughts and feelings to describe experiences and events to show the response of characters to situations.</td>
<td><strong>CC.1.4.3.O</strong> Use dialogue and descriptions of actions, thoughts, and feelings to develop experiences and events or show the response of characters to situations; use concrete words and phrases and sensory details to convey experiences and events precisely.</td>
<td><strong>CC.1.4.4.O</strong> Use narrative techniques such as dialogue, description, and pacing, to develop experiences and events or show the response of characters to situations; use concrete words and phrases and sensory details to convey experiences and events precisely.</td>
<td><strong>CC.1.4.5.O</strong> Use narrative techniques such as dialogue, description, and pacing, to develop experiences and events or show the response of characters to situations; use concrete words and phrases and sensory details to convey experiences and events precisely.</td>
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1.4 Writing

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>CC.1.4.PK.P</td>
<td>CC.1.4.K.P</td>
<td>CC.1.4.1.P</td>
<td>CC.1.4.2.P</td>
<td>CC.1.4.3.P</td>
<td>CC.1.4.4.P</td>
<td>CC.1.4.5.P</td>
</tr>
<tr>
<td>Recount a single event or several loosely linked events, using temporal words to signal order, and provide a reaction to what happened.</td>
<td>Recount a single event or several loosely linked events, using temporal words to signal order, and provide a reaction to what happened.</td>
<td>Recount two or more appropriately sequenced events using temporal words to signal order and provide some sense of closure.</td>
<td>Organize the event sequence that unfolds naturally, using temporal words and phrases to signal event order; provide a sense of closure.</td>
<td>Organize an event sequence that unfolds naturally, using a variety of transitional words and phrases to manage the sequence of events; provide a conclusion that follows from the narratives and experiences and events.</td>
<td>Organize an event sequence that unfolds naturally, using a variety of transitional words and phrases to manage the sequence of events; provide a conclusion that follows from the narratives and experiences and events.</td>
<td>Organize an event sequence that unfolds naturally, using a variety of transitional words and phrases to manage the sequence of events; provide a conclusion that follows from the narratives and experiences and events.</td>
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Narrative Organization

Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS
### 1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Narrative Style</th>
</tr>
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<tbody>
<tr>
<td>Pre K</td>
<td>Intentionally Blank</td>
</tr>
<tr>
<td>Grade K</td>
<td>Intentionally Blank</td>
</tr>
<tr>
<td>Grade 1</td>
<td>CC.1.4.1.Q Use a variety of words and phrases.</td>
</tr>
<tr>
<td>Grade 2</td>
<td>CC.1.4.2.Q Choose words and phrases for effect</td>
</tr>
<tr>
<td>Grade 3</td>
<td>CC.1.4.3.Q Choose words and phrases for effect E03.D.2.1.1</td>
</tr>
<tr>
<td>Grade 4</td>
<td>CC.1.4.4.Q Choose words and phrases to convey ideas precisely E04.C.1.3.4 E04.D.2.1.1 E04.D.2.1.3 E04.E.1.1.4</td>
</tr>
<tr>
<td>Grade 5</td>
<td>CC.1.4.5.Q Write with an awareness of style. Use sentences of varying length. Expand, combine, and reduce sentences for meaning, reader/listener interest, and style. E05.C.1.3.4 E05.D.2.1.1 E05.D.2.1.2 E05.D.2.1.3 E05.D.2.1.4</td>
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## 1.4 Writing

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</thead>
<tbody>
<tr>
<td>Intentionally Blank</td>
<td>CC.1.4.K.R</td>
<td>Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
<td>CC.1.4.1.R</td>
<td>Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
<td>CC.1.4.2.R</td>
<td>Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Capitalize first word in sentence and pronoun I.</td>
<td>• Use commas and apostrophes appropriately.</td>
<td>• Capitalize proper nouns.</td>
<td>• Use commas and apostrophes appropriately.</td>
<td>• Consult reference material as needed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Recognize and use end punctuation.</td>
<td>• Spell words drawing on common spelling patterns, phonemic awareness, and spelling conventions.</td>
<td>• Spell words drawing on common spelling patterns.</td>
<td>• Consult reference material as needed.</td>
<td>• Consult reference material as needed.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Spell simple words phonetically.</td>
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</table>
1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

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<tbody>
<tr>
<td></td>
<td>Intentionally Blank</td>
<td>Intentionally Blank</td>
<td>Intentionally Blank</td>
<td>Intentionally Blank</td>
<td><strong>CC.1.4.3.S</strong> Draw evidence from literary or informational texts to support analysis, reflection, and research, applying grade-level reading standards for literature and informational texts.</td>
<td><strong>CC.1.4.4.S</strong> Draw evidence from literary or informational texts to support analysis, reflection, and research, applying grade-level reading standards for literature and informational texts.</td>
<td><strong>CC.1.4.5.S</strong> Draw evidence from literary or informational texts to support analysis, reflection, and research, applying grade-level reading standards for literature and informational texts.</td>
</tr>
</tbody>
</table>

CC.1.4.3.S

E04.E.1.1.1

E04.E.1.1.2

E04.E.1.1.3

E04.E.1.1.4

E04.E.1.1.5

E05.E.1.1.1

E05.E.1.1.2

E05.E.1.1.3

E05.E.1.1.4

E05.E.1.1.5

E05.E.1.1.6
## Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Production and Distribution of Writing</th>
<th>Writing Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre K</td>
<td>CC.1.4.P.K.T</td>
<td>With guidance and support from adults and peers, respond to questions and suggestions, add details as needed.</td>
</tr>
<tr>
<td>Grade K</td>
<td>CC.1.4.K.T</td>
<td>With guidance and support from adults and peers, focus on a topic, respond to questions and suggestions from peers and add details to strengthen writing as needed.</td>
</tr>
<tr>
<td>Grade 1</td>
<td>CC.1.4.1.T</td>
<td>With guidance and support from adults and peers, focus on a topic and strengthen writing as needed by revising and editing.</td>
</tr>
<tr>
<td>Grade 2</td>
<td>CC.1.4.2.T</td>
<td>With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.</td>
</tr>
<tr>
<td>Grade 3</td>
<td>CC.1.4.3.T</td>
<td>With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.</td>
</tr>
<tr>
<td>Grade 4</td>
<td>CC.1.4.4.T</td>
<td>With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, and editing.</td>
</tr>
<tr>
<td>Grade 5</td>
<td>CC.1.4.5.T</td>
<td>With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.</td>
</tr>
</tbody>
</table>
### 1.4 Writing
Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Technology and Publication</th>
<th>Grade Pre K</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Intentionally Blank</td>
<td><strong>CC.1.4.K.U</strong></td>
<td>With guidance and support, explore a variety of digital tools to produce and publish writing or in collaboration with peers.</td>
<td><strong>CC.1.4.1.U</strong></td>
<td>With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers.</td>
<td><strong>CC.1.4.2.U</strong></td>
<td>With guidance and support, use a variety of digital tools to produce and publish writing including in collaboration with peers.</td>
</tr>
</tbody>
</table>
### 1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Conducting Research</th>
<th>Pre K</th>
<th>Kindergarten</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.1.4.PK.W</td>
<td>Ask questions about topics of personal interest to gain information; with teacher guidance and support, locate information on the chosen topic.</td>
<td>CC.1.4.K.V</td>
<td>Participate in individual or shared research projects on a topic of interest.</td>
<td>CC.1.4.1.V</td>
<td>Participate in individual or shared research and writing projects.</td>
<td>CC.1.4.2.V</td>
<td>Participate in individual or shared research and writing projects.</td>
</tr>
<tr>
<td>CC.1.4.1.W</td>
<td>With guidance and support, recall information from experiences or gather information from provided sources to answer a question.</td>
<td>CC.1.4.1.W</td>
<td>With guidance and support, recall information from experiences or gather information from provided sources to answer a question.</td>
<td>CC.1.4.2.W</td>
<td>Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories.</td>
<td>CC.1.4.3.W</td>
<td>Recall information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.</td>
</tr>
<tr>
<td>CC.1.4.2.W</td>
<td>Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.</td>
<td>CC.1.4.3.W</td>
<td>Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.</td>
<td>CC.1.4.4.W</td>
<td>Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.</td>
<td>CC.1.4.5.W</td>
<td>Conduct short research projects that use several sources to build knowledge through investigation of different aspects of a topic.</td>
</tr>
</tbody>
</table>
1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Grade Pre K</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intentionally Blank</td>
<td><strong>CC.1.4.K.X</strong> Write routinely over short time frames.</td>
<td><strong>CC.1.4.1.X</strong> Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
<td><strong>CC.1.4.2.X</strong> Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
<td><strong>CC.1.4.3.X</strong> Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
<td><strong>CC.1.4.4.X</strong> Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
<td><strong>CC.1.4.5.X</strong> Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
</tr>
</tbody>
</table>
### 1.5 Speaking and Listening

Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

<table>
<thead>
<tr>
<th>Grade Pre K</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comprehension and Collaboration</strong></td>
<td><strong>Collaborative Discussion</strong></td>
<td><strong>Participate in collaborative conversations with peers and adults in small and larger groups.</strong></td>
<td><strong>Participate in collaborative conversations with peers and adults in small and larger groups.</strong></td>
<td><strong>Participate in collaborative conversations with peers and adults in small and larger groups.</strong></td>
<td><strong>Engage effectively in a range of collaborative discussions on grade-level topics and texts, building on others’ ideas and expressing their own clearly.</strong></td>
<td><strong>Engage effectively in a range of collaborative discussions on grade-level topics and texts, building on others’ ideas and expressing their own clearly.</strong></td>
</tr>
</tbody>
</table>
## 1.5 Speaking and Listening

Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Comprehension and Collaboration</th>
<th>Critical Listening</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre K</td>
<td>CC.1.5.PK.B Answer questions about key details in a text read aloud or information presented orally or through other media.</td>
<td></td>
</tr>
<tr>
<td>K</td>
<td>CC.1.5.K.B Ask and answer questions about key details in a text read aloud or information presented orally or through other media.</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>CC.1.5.1.B Confirm understanding of a text read aloud or information presented orally or through other media by asking and answering questions about key details and requesting clarification if something is not understood.</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>CC.1.5.2.B Recount or describe key ideas or details from a text read aloud or information presented orally or through other media.</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>CC.1.5.3.B Determine the main ideas and supporting details of a text read aloud or information presented in diverse media formats, including visually, quantitatively, and orally.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>CC.1.5.4.B Paraphrase portions of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>CC.1.5.5.B Summarize the main points of written text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally.</td>
<td></td>
</tr>
<tr>
<td>1.5 Speaking and Listening</td>
<td>Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.</td>
<td></td>
</tr>
<tr>
<td>----------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Grade Pre K</strong></td>
<td><strong>Grade K</strong></td>
</tr>
<tr>
<td></td>
<td>Eval</td>
<td>Evaluating Information</td>
</tr>
</tbody>
</table>
## 1.5 Speaking and Listening

Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

<table>
<thead>
<tr>
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<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Presentation of Knowledge and Ideas</strong></td>
<td><strong>Purpose, Audience, and Task</strong></td>
<td><strong>Context and Audience</strong></td>
<td><strong>Organizing Information</strong></td>
<td><strong>Using Language</strong></td>
<td><strong>Communicating Concretely</strong></td>
<td><strong>Building and Responding to Questions</strong></td>
</tr>
<tr>
<td>CC.1.5.PK.D Using simple sentences, share stories, familiar experiences, and interests, speaking clearly enough to be understood by most audiences.</td>
<td>CC.1.5.K.D Share stories, familiar experiences, and interests, speaking clearly enough to be understood by all audiences using appropriate volume.</td>
<td>CC.1.5.1.D Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.</td>
<td>CC.1.5.2.D Tell a story or recount an experience with appropriate facts and relevant, descriptive details, speaking audibly in coherent sentences.</td>
<td>CC.1.5.3.D Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details; speak clearly with adequate volume, appropriate pacing, and clear pronunciation.</td>
<td>CC.1.5.4.D Report on a topic or text, tell a story, or recount an experience in an organized manner, using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly with adequate volume, appropriate pacing, and clear pronunciation.</td>
<td>CC.1.5.5.D Report on a topic or present an opinion, sequencing ideas logically and using appropriate facts and relevant, descriptive details to support main ideas or themes; speak clearly with adequate volume, appropriate pacing, and clear pronunciation.</td>
</tr>
</tbody>
</table>
## 1.5 Speaking and Listening

Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

<table>
<thead>
<tr>
<th>Grade Pre K</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Presentation of Knowledge and Ideas</strong></td>
<td><strong>Context</strong></td>
<td>CC.1.5.PK.E Using simple sentences, express thoughts, feelings, and ideas, speaking clearly enough to be understood by most audiences.</td>
<td>CC.1.5.K.E Speak audibly and express thoughts, feelings, and ideas clearly.</td>
<td>CC.1.5.1.E Produce complete sentences when appropriate to task and situation.</td>
<td>CC.1.5.2.E Produce complete sentences when appropriate to task and situation in order to provide requested detail or clarification.</td>
<td>CC.1.5.3.E Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification.</td>
</tr>
<tr>
<td><strong>Integration of Knowledge and Ideas</strong></td>
<td><strong>Multimedia</strong></td>
<td>Intentionally Blank</td>
<td>Intentionally Blank</td>
<td>CC.1.5.1.F Add drawings or other visual displays when sharing aloud to clarify ideas, thoughts, and feelings.</td>
<td>CC.1.5.2.F Add drawings or other visual displays to presentations when appropriate to clarify ideas, thoughts, and feelings.</td>
<td>CC.1.5.3.F Create engaging audio recordings of stories or poems that demonstrate fluid reading at an understandable pace; add visual displays when appropriate to emphasize or enhance certain facts or details.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CC.1.5.5.F Include multimedia components and visual displays in presentations when appropriate to enhance the development of main ideas or themes.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 1.5 Speaking and Listening
Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

<table>
<thead>
<tr>
<th>Conventions of Standard English</th>
<th>Grade Pre K</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.1.5.PK.G</td>
<td>Demonstrate command of the conventions of standard English when speaking, based on prekindergarten level and content.</td>
<td>CC.1.5.K.G</td>
<td>Demonstrate command of the conventions of standard English when speaking, based on kindergarten level and content.</td>
<td>CC.1.5.1.G</td>
<td>Demonstrate command of the conventions of standard English when speaking, based on Grade 1 level and content.</td>
<td>CC.1.5.2.G</td>
<td>Demonstrate command of the conventions of standard English when speaking, based on Grade 2 level and content.</td>
</tr>
</tbody>
</table>
Pennsylvania Core Standards for English Language Arts

Grades 6-12

INTRODUCTION

These standards describe what students should know and be able to do as members with information about what students should know and be able to do as

The English Language Arts Standards also provide parents and community

more complex texts.

• Stressing the development of vocabulary so that students can access

books and materials presented in the library and classroom

under an advanced topic or scientific text and respond to the ideas, events,

Supporting writing from sources (e.g., using evidence from text to inform

growth on the "staircase" so that students graduate college or career ready

Building a staircase of complexity (e.g., each grade level requires a "step" of

from the text

Focusing on close and careful reading of text so that students are learning

access to information and scientific text so they can think

Balancing the reading of informational and literary texts so that students can

Critical listening and effective presentation of ideas

With a focus on college and career readiness, the instructional shifts are

focusing on the "staircase" so that students graduate college or career ready

The English Language Arts Standards also provide parents and community

stress the development of vocabulary so that students can access

books and materials presented in the library and classroom

under an advanced topic or scientific text and respond to the ideas, events,

Supporting writing from sources (e.g., using evidence from text to inform

growth on the "staircase" so that students graduate college or career ready

after high school

These standards describe what students should know and be able to do with the

ACADEMIC STANDARDS AND ASSESSMENTS

INTRODUCTION

Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS

22
with the standards. The standards provide a clear and consistent framework for designing mutual programs, and they guide instruction, assessment, and evaluation. The standards are also designed to be flexible, allowing teachers to adapt them to meet the needs of their students. Each standard includes a description of the knowledge and skills that students should acquire. The standards are supported by illustrations that provide visual representations of the concepts and ideas presented in the text. The standards are designed to be accessible to all students, regardless of their background or abilities. They are also designed to be inclusive, ensuring that all students have the opportunity to learn and succeed. The standards are regularly reviewed and updated to reflect new research and best practices in education.
Speaking and Listening ........................................... 1.5

Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

- Comprehension and Collaboration
- Integration of Knowledge and Ideas
- Presentation of Knowledge and Ideas
- Integration of Knowledge and Ideas
- Conventions of Standard English

Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS
1.2 Reading Informational Text

Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>Key Ideas and Details</th>
<th>Main Idea</th>
<th>Text Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 6</td>
<td>CC.1.2.6.A</td>
<td>Cite textual evidence to support analysis of what the text says explicitly, as well as inferences and/or generalizations drawn from the text. E06.B-K.1.1.1</td>
</tr>
<tr>
<td>Grade 7</td>
<td>CC.1.2.7.A</td>
<td>Determine two or more central ideas in a text and analyze their development over the course of the text; provide a summary of the text distinct from personal opinions or judgments. E07.B-K.1.1.2</td>
</tr>
<tr>
<td>Grade 8</td>
<td>CC.1.2.8.A</td>
<td>Cite several pieces of textual evidence to support analysis of what the text says explicitly, as well as inferences, conclusions, and/or generalizations drawn from the text. E08.B-K.1.1.1</td>
</tr>
<tr>
<td>Grades 9-10</td>
<td>CC.1.2.9-10.A</td>
<td>Cite the textual evidence that most strongly supports an analysis of what the text says explicitly, as well as inferences, conclusions, and/or generalizations drawn from the text. E08.B-K.1.1.1</td>
</tr>
<tr>
<td>Grades 11-12</td>
<td>CC.1.2.9-10.A</td>
<td>Cite strong and thorough textual evidence to support analysis of what the text says explicitly, as well as inferences and conclusions based on an author’s explicit assumptions and beliefs about a subject. L.N.1.3.1 L.N.2.1.1 L.N.2.1.2</td>
</tr>
</tbody>
</table>

CC.1.2.11-12.A Determine and analyze the relationship between two or more central ideas of a text, including the development and interaction of the central ideas; provide an objective summary of the text.
## 1.2 Reading Informational Text

Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>Key Ideas and Details</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CC.1.2.6.C</td>
<td>An analyze in detail how a key individual, event, or idea is introduced, illustrated, and elaborated in a text.</td>
<td>E06.B-K.1.1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CC.1.2.7.C</td>
<td>Analyze the interactions between individuals, events, and ideas in a text.</td>
<td>E07.B-K.1.1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CC.1.2.8.C</td>
<td>Analyze how a text makes connections among and distinctions between individuals, ideas, or events.</td>
<td>E08.B-K.1.1.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CC.1.2.9-10.C</td>
<td>Apply appropriate strategies to analyze, interpret, and evaluate how an author unfolds an analysis or series of ideas or events, including the order in which the points are made, how they are introduced and developed, and the connections that are drawn between them.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CC.1.2.11-12.C</td>
<td>Analyze the interaction and development of a complex set of ideas, sequence of events, or specific individuals over the course of the text.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

L.N.1.1.3  
L.N.1.3.3  
L.N.2.3.3  
L.N.2.3.5  
L.N.2.4.1  
L.N.2.4.3
### 1.2 Reading Informational Text

Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>Grade 6</th>
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<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Craft and Structure</strong></td>
<td><strong>Point of View</strong></td>
<td><strong>Craft and Structure</strong></td>
<td><strong>Text Structure</strong></td>
<td><strong>Craft and Structure</strong></td>
</tr>
<tr>
<td>CC.1.2.6.D</td>
<td>Determine an author’s point of view or purpose in a text and explain how it is conveyed in the text. E06.B-C.2.1.1</td>
<td>CC.1.2.7.D</td>
<td>Determine an author’s point of view or purpose in a text and analyze how the author distinguishes his or her position from that of others. E07.B-C.2.1.1</td>
<td>CC.1.2.8.D</td>
</tr>
<tr>
<td>CC.1.2.6.E</td>
<td>Analyze the author’s structure through the use of paragraphs, chapters, or sections. E06.B-C.2.1.2</td>
<td>CC.1.2.7.E</td>
<td>Analyze the structure of the text through evaluation of the author’s use of graphics, charts, and the major sections of the text. E07.B-C.2.1.2</td>
<td>CC.1.2.8.E</td>
</tr>
</tbody>
</table>
### 1.2 Reading Informational Text

Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.

<table>
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<tr>
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<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Craft and Structure Vocabulary</strong></td>
<td><strong>Craft and Structure Vocabulary</strong></td>
<td><strong>Craft and Structure Vocabulary</strong></td>
<td><strong>Craft and Structure Vocabulary</strong></td>
<td><strong>Craft and Structure Vocabulary</strong></td>
</tr>
<tr>
<td>CC.1.2.6.F</td>
<td>CC.1.2.7.F</td>
<td>CC.1.2.8.F</td>
<td>CC.1.2.9-10.F</td>
<td>CC.1.2.11-12.F</td>
</tr>
<tr>
<td>Determine the meaning of words and phrases as they are used in grade-level reading and content, including interpretation of figurative language in context.</td>
<td>Determine the meaning of words and phrases as they are used in grade-level reading and content, including interpretation of figurative, connotative, and technical meanings.</td>
<td>Analyze the influence of the words and phrases in a text including figurative, connotative, and technical meanings, and how they shape meaning and tone.</td>
<td>Analyze how words and phrases shape meaning and tone in texts.</td>
<td>Evaluate how words and phrases shape meaning and tone in texts.</td>
</tr>
<tr>
<td>E06.B-V.4.1.1</td>
<td>E07.B-V.4.1.1</td>
<td>E08.B-V.4.1.1</td>
<td>L.N.1.1.4</td>
<td>CC.1.2.11-12.F</td>
</tr>
<tr>
<td>E06.B-V.4.1.2</td>
<td>E07.B-V.4.1.2</td>
<td>E08.B-V.4.1.2</td>
<td>E08.B-C.2.1.3</td>
<td></td>
</tr>
<tr>
<td><strong>Integration of Knowledge and Ideas</strong></td>
<td><strong>Integration of Knowledge and Ideas</strong></td>
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<td><strong>Integration of Knowledge and Ideas</strong></td>
<td><strong>Integration of Knowledge and Ideas</strong></td>
</tr>
<tr>
<td>Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.</td>
<td>Compare and contrast a text to an audio, video, or multimedia version of the text, analyzing each medium’s portrayal of the subject (e.g., how the delivery of a speech affects the impact of the words).</td>
<td>Evaluate the advantages and disadvantages of using different mediums (e.g., print or digital text, video, multimedia) to present a particular topic or idea.</td>
<td>Analyze various accounts of a subject told in different mediums (e.g., a person’s life story in both print and multimedia), determining which details are emphasized in each account.</td>
<td>Integrate and evaluate multiple sources of information presented in different media or formats (e.g., visually, quantitatively) as well as in words in order to address a question or solve a problem.</td>
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</table>
### 1.2 Reading Informational Text

**Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Integration of Knowledge and Ideas</strong></td>
<td></td>
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<tr>
<td></td>
<td>Evaluate an author’s argument by examining claims and determining if they are supported by evidence.</td>
<td>E06.B-C.3.1.1</td>
<td>Evaluate an author’s argument, reasoning, and specific claims for the soundness of the argument and the relevance of the evidence.</td>
<td>E07.B-C.3.1.1</td>
<td>Delineate and evaluate the argument and specific claims in a text, assessing the validity of reasoning and relevance of evidence.</td>
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<td>L.N.2.5.4</td>
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<td>L.N.2.5.5</td>
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<td>L.N.2.5.6</td>
</tr>
<tr>
<td><strong>Analysis Across Texts</strong></td>
<td>CC.1.2.6.I</td>
<td></td>
<td>CC.1.2.7.I</td>
<td>CC.1.2.8.I</td>
<td>CC.1.2.9-10.I</td>
</tr>
<tr>
<td></td>
<td>Examine how two authors present similar information in different types of text.</td>
<td>E06.B-C.3.1.2</td>
<td>Analyze how two or more authors present and interpret facts on the same topic.</td>
<td>E07.B-C.3.1.2</td>
<td>Analyze seminal U.S. documents of historical and literary significance, including how they address related themes and concepts.</td>
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<td>E08.B-C.3.1.2</td>
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</tbody>
</table>

**Integration of Knowledge and Ideas**

**Evaluation of Arguments**

CC.1.2.6.H
Evaluate an author’s argument by examining claims and determining if they are supported by evidence.

E06.B-C.3.1.1

CC.1.2.7.H
Evaluate an author’s argument, reasoning, and specific claims for the soundness of the argument and the relevance of the evidence.

E07.B-C.3.1.1

CC.1.2.8.H
Evaluate an author’s argument, reasoning, and specific claims for the soundness of the arguments and the relevance of the evidence.

E08.B-C.3.1.1

CC.1.2.9-10.H
Delineate and evaluate the argument and specific claims in a text, assessing the validity of reasoning and relevance of evidence.

L.N.2.5.4

L.N.2.5.5

L.N.2.5.6

**Analysis Across Texts**

CC.1.2.6.I
Examine how two authors present similar information in different types of text.

E06.B-C.3.1.2

CC.1.2.7.I
Analyze how two or more authors present and interpret facts on the same topic.

E07.B-C.3.1.2

CC.1.2.8.I
Analyze two or more texts that provide conflicting information on the same topic and identify where the texts disagree on matters of fact or interpretation.

E08.B-C.3.1.2

CC.1.2.9-10.I
Analyze seminal U.S. documents of historical and literary significance, including how they address related themes and concepts.

CC.1.2.11-12.H
Analyze foundational U.S. and world documents of historical, political, and literary significance for their themes, purposes, and rhetorical features.
## 1.2 Reading Informational Text
Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>Grade 6</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</td>
<td>E06.B-V.4.1.2</td>
<td>Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</td>
<td>E07.B-V.4.1.2</td>
<td>Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college- and career-readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.</td>
</tr>
<tr>
<td>CC.1.2.9-10.J</td>
<td>E08.B-V.4.1.1</td>
<td>CC.1.2.11-12.J</td>
<td>E08.B-V.4.1.2</td>
<td>L.N.1.2.4</td>
</tr>
<tr>
<td>Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college- and career-readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.</td>
<td>L.N.1.2.1</td>
<td>L.N.1.2.2</td>
<td>L.N.1.2.3</td>
<td>L.N.1.2.4</td>
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</thead>
<tbody>
<tr>
<td>Grade 6</td>
<td>determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content, choosing flexibly from a range of strategies and tools.</td>
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</tr>
<tr>
<td>Grade 7</td>
<td>E06.B-V.4.1.1</td>
<td>E07.B-V.4.1.1</td>
<td>E08.B-V.4.1.1</td>
<td>L.N.1.2.1</td>
<td>L.N.1.2.2</td>
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<td>Grade 8</td>
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<td>L.N.1.2.3</td>
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</table>

### Range of Reading

<table>
<thead>
<tr>
<th>Grade</th>
<th>CC.1.2.6.L</th>
<th>CC.1.2.7.L</th>
<th>CC.1.2.8.L</th>
<th>CC.1.2.9-10.L</th>
<th>CC.1.2.11-12.L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 6</td>
<td>read and comprehend literary nonfiction and informational text on grade level, reading independently and proficiently.</td>
<td>read and comprehend literary nonfiction and informational text on grade level, reading independently and proficiently.</td>
<td>read and comprehend literary nonfiction and informational text on grade level, reading independently and proficiently.</td>
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</table>
### 1.3 Reading Literature
Students read and respond to works of literature—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

<table>
<thead>
<tr>
<th>Key Ideas and Details</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
</table>
| Theme                 | CC.1.3.6.A  
Determine a theme or central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.  
E06.A-K.1.1.2 | CC.1.3.7.A  
Determine a theme or central idea of a text and analyze its development over the course of the text; provide an objective summary of the text.  
E07.A-K.1.1.2 | CC.1.3.8.A  
Determine a theme or central idea of a text and analyze its development over the course of the text, including its relationship to the characters, setting, and plot; provide an objective summary of the text.  
E08.A-K.1.1.2 | CC.1.3.9-10.A  
Determine a theme or central idea of a text and analyze in detail its development over the course of the text, including how it emerges and is shaped and refined by specific details; provide an objective summary of the text.  
L.F.1.1.2  
L.F.1.3.1  
L.F.1.3.2  
L.F.2.3.4 | CC.1.3.11-12.A  
Determine and analyze the relationship between two or more themes or central ideas of a text, including the development and interaction of the themes; provide an objective summary of the text.  |
# 1.3 Reading Literature

Students read and respond to works of literature—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

<table>
<thead>
<tr>
<th>Key Ideas and Details</th>
<th>Text Analysis</th>
<th>Literary Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Grade 6</strong></td>
<td><strong>Grade 7</strong></td>
<td><strong>Grade 8</strong></td>
</tr>
<tr>
<td><strong>CC.1.3.6.B</strong> Cite textual evidence to support analysis of what the text says explicitly, as well as inferences and/or generalizations drawn from the text.</td>
<td><strong>CC.1.3.7.B</strong> Cite several pieces of textual evidence to support analysis of what the text says explicitly, as well as inferences, conclusions, and/or generalizations drawn from the text.</td>
<td><strong>CC.1.3.8.B</strong> Cite the textual evidence that most strongly supports an analysis of what the text says explicitly, as well as inferences, conclusions, and/or generalizations drawn from the text.</td>
</tr>
<tr>
<td><strong>CC.1.3.6.C</strong> Describe how a particular story or drama’s plot unfolds in a series of episodes, as well as how the characters respond or change as the plot moves toward a resolution.</td>
<td><strong>CC.1.3.7.C</strong> Analyze how particular elements of a story or drama interact and how setting shapes the characters or plot.</td>
<td><strong>CC.1.3.8.C</strong> Analyze how particular lines of dialogue or incidents in a story or drama propel the action, reveal aspects of a character, or provoke a decision.</td>
</tr>
<tr>
<td>E06.A-K.1.1.3</td>
<td>E07.A-K.1.1.3</td>
<td>E08.A-K.1.1.3</td>
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<td><strong>Point of View</strong></td>
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<tr>
<td>CC.1.3.6.D</td>
<td>Determine an author’s purpose in a text and explain how it is conveyed in a text.</td>
<td>CC.1.3.7.D</td>
<td>Analyze how an author develops and contrasts the points of view of different characters or narrators in a text.</td>
<td>CC.1.3.8.D</td>
</tr>
<tr>
<td>E06.A-C.2.1.1</td>
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<td>E07.A-C.2.1.1</td>
<td></td>
<td>E08.A-C.2.1.1</td>
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<tr>
<td>CC.1.3.6.E</td>
<td>Analyze how the structure of a text contributes to the development of theme, setting, and plot.</td>
<td>CC.1.3.7.E</td>
<td>Analyze how the structure of a text contributes to its meaning.</td>
<td>CC.1.3.8.E</td>
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<tr>
<td>E06.A-C.2.1.2</td>
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<td>E07.A-C.2.1.2</td>
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<td>E08.A-C.2.1.2</td>
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<tr>
<td>CC.1.3.9-10.D</td>
<td>Evaluate the structure of texts including how specific sentences, paragraphs, and larger portions of the texts relate to each other and the whole.</td>
<td>CC.1.3.11-12.D</td>
<td>Evaluate how an author’s point of view or purpose shapes the content and style of a text.</td>
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# Reading Literature

Students read and respond to works of literature—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

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<tr>
<td><strong>Craft and Structure</strong></td>
<td><strong>Vocabulary</strong></td>
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<td><strong>Craft and Structure</strong></td>
</tr>
<tr>
<td>CC.1.3.6.F</td>
<td>Determine the meaning of words and phrases as they are used in grade-level reading and content, including interpretation of figurative language in context.</td>
<td>CC.1.3.7.F</td>
<td>Determine the meaning of words and phrases as they are used in grade-level reading and content, including interpretation of figurative and connotative meanings.</td>
<td>CC.1.3.8.F</td>
</tr>
<tr>
<td><strong>Integration of Knowledge and Ideas</strong></td>
<td><strong>Sources of Information</strong></td>
<td><strong>Integration of Knowledge and Ideas</strong></td>
<td><strong>Sources of Information</strong></td>
<td><strong>Integration of Knowledge and Ideas</strong></td>
</tr>
<tr>
<td>CC.1.3.6.G</td>
<td>Compare and contrast the experiences of reading a story, drama, or poem to listening to or viewing an audio, video, or live version of the text, including contrasting what is “seen” and “heard” when reading the text to what is perceived when listening or watching.</td>
<td>CC.1.3.7.G</td>
<td>Compare and contrast a written story, drama, or poem to its audio, filmed, staged, or multimedia version, analyzing the effects of techniques unique to each medium (e.g., lighting, sound, color, or camera focus and angles in a film).</td>
<td>CC.1.3.8.G</td>
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Students read and respond to works of literature—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

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<tr>
<td>Compare and contrast texts in different forms or genres in terms of their approaches to similar themes and topics as well as their use of additional literary elements. (E06.A-C.3.1.1)</td>
<td>Compare and contrast a fictional portrayal of a time, place, or character and a historical account of the same period as a means of understanding how authors of fiction use or alter history. (E07.A-C.3.1.1)</td>
<td>Analyze how a modern work of fiction draws on themes, patterns of events, or character types from traditional works, including describing how the material is rendered new. (E08.A-C.3.1.1)</td>
<td>Analyze how an author draws on and transforms themes, topics, character types, and/or other text elements from source material in a specific work. (L.F.2.2.2, L.F.2.4.1)</td>
<td>Demonstrate knowledge of foundational works of literature that reflect a variety of genres in the respective major periods of literature, including how two or more texts from the same period treat similar themes or topics. (L.F.1.2.1, L.F.1.2.2, L.F.1.2.3, L.F.1.2.4)</td>
</tr>
<tr>
<td><strong>Vocabulary Acquisition and Use</strong></td>
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<tr>
<td>CC.1.3.6.I</td>
<td>CC.1.3.7.I</td>
<td>CC.1.3.8.I</td>
<td>CC.1.3.9-10.I</td>
<td>CC.1.3.11-12.I</td>
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<tr>
<td>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content, choosing flexibly from a range of strategies and tools. (E06.A-V.4.1.1)</td>
<td>Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grade-level reading and content, choosing flexibly from a range of strategies and tools. (E07.A-V.4.1.1)</td>
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1.3 Reading Literature

Students read and respond to works of literature—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

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<tr>
<th>Vocabulary Acquisition and Use</th>
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<tbody>
<tr>
<td>CC.1.3.6.J</td>
<td>Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</td>
<td>E06.A-V.4.1.1</td>
<td>E06.A-V.4.1.2</td>
<td>E07.A-V.4.1.1</td>
<td>E07.A-V.4.1.2</td>
</tr>
<tr>
<td>CC.1.3.7.J</td>
<td>Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</td>
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<tr>
<td>CC.1.3.8.J</td>
<td>Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</td>
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<tr>
<td>CC.1.3.9-10.J</td>
<td>Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.</td>
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<td>L.F.1.2.2</td>
<td>L.F.1.2.3</td>
<td>L.F.1.2.4</td>
</tr>
<tr>
<td>CC.1.3.11-12.J</td>
<td>Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college- and career-readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression.</td>
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Range of Reading

| CC.1.3.6.K | Read and comprehend literary fiction on grade level, reading independently and proficiently. | | | | |
| CC.1.3.7.K | Read and comprehend literary fiction on grade level, reading independently and proficiently. | | | | |
| CC.1.3.8.K | Read and comprehend literary fiction on grade level, reading independently and proficiently. | | | | |
| CC.1.3.9-10.K | Read and comprehend literary fiction on grade level, reading independently and proficiently. | | | | |
| CC.1.3.11-12.K | Read and comprehend literary fiction on grade level, reading independently and proficiently. | | | | |
1.4 Writing
Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Informativ/Explansory</th>
<th>Grade 6</th>
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</thead>
<tbody>
<tr>
<td>Focus</td>
<td>CC.1.4.6.A</td>
<td>Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information clearly. E06.C.1.2.1 E06.E.1.1.1</td>
<td>CC.1.4.7.A</td>
<td>Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information clearly. E07.C.1.2.1 E07.E.1.1.1</td>
<td>CC.1.4.8.A</td>
</tr>
</tbody>
</table>

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1.4 Writing
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<table>
<thead>
<tr>
<th>Grade</th>
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<th>9-10</th>
<th>11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Informative/Explanatory Content</strong></td>
<td><strong>CC.1.4.6.C</strong> Develop and analyze the topic with relevant facts, definitions, concrete details, quotations, or other information and examples; include graphics and multimedia when useful to aiding comprehension. E06.C.1.2.2 E06.E.1.1.2</td>
<td><strong>CC.1.4.7.C</strong> Develop and analyze the topic with relevant facts, definitions, concrete details, quotations, or other information and examples; include graphics and multimedia when useful to aiding comprehension. E07.C.1.2.2 E07.E.1.1.2</td>
<td><strong>CC.1.4.8.C</strong> Develop and analyze the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples; include graphics and multimedia when useful to aiding comprehension. E08.C.1.2.2 E08.E.1.1.2</td>
<td><strong>CC.1.4.9-10.C</strong> Develop and analyze the topic with relevant, well-chosen, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic; include graphics and multimedia when useful to aiding comprehension. C.E.1.1.2</td>
<td><strong>CC.1.4.11-12.C</strong> Develop and analyze the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic; include graphics and multimedia when useful to aiding comprehension.</td>
</tr>
</tbody>
</table>
### Grade 6
- **Informative/Explanatory Organization**
  - CC.1.4.6.D: Organize ideas, concepts, and information using strategies such as definition, classification, comparison/contrast, and cause/effect; use appropriate transitions to clarify the relationships among ideas and concepts; provide a concluding statement or section; include formatting when useful to aiding comprehension.
  - E06.C.1.2.1
  - E06.C.1.2.3
  - E06.C.1.2.6
  - E06.E.1.1.1
  - E06.E.1.1.3
  - E06.E.1.1.6

### Grade 7
- **Informative/Explanatory Organization**
  - CC.1.4.7.D: Organize ideas, concepts, and information using strategies such as definition, classification, comparison/contrast, and cause/effect; use appropriate transitions to create cohesion and clarify the relationships among ideas and concepts; provide a concluding statement or section; include formatting when useful to aiding comprehension.
  - E07.C.1.2.1
  - E07.C.1.2.3
  - E07.C.1.2.6
  - E07.E.1.1.1
  - E07.E.1.1.3
  - E07.E.1.1.6

### Grade 8
- **Informative/Explanatory Organization**
  - CC.1.4.8.D: Organize ideas, concepts, and information into broader categories; use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts; provide a concluding statement or section; include formatting when useful to aiding comprehension.
  - E08.C.1.2.1
  - E08.C.1.2.3
  - E08.C.1.2.6
  - E08.E.1.1.1
  - E08.E.1.1.3
  - E08.E.1.1.6

### Grades 9-10
- **Informative/Explanatory Organization**
  - CC.1.4.9-10.D: Organize ideas, concepts, and information to make important connections and distinctions; use appropriate and varied transitions to link the major sections of the text; include formatting when useful to aiding comprehension; provide a concluding statement or section.
  - C.E.1.1.3
  - C.E.1.1.5

### Grades 11-12
- **Informative/Explanatory Organization**
  - CC.1.4.11-12.D: Organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a whole; use appropriate and varied transitions and syntax to link the major sections of the text; provide a concluding statement or section that supports the information presented; include formatting when useful to aiding comprehension.
## 1.4 Writing
Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Grade 6</th>
<th>Grade 7</th>
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</table>
| CC.1.4.6.E | Write with an awareness of the stylistic aspects of composition.  
- Use precise language and domain-specific vocabulary to inform about or explain the topic.  
- Use sentences of varying lengths and complexities.  
- Develop and maintain a consistent voice.  
- Establish and maintain a formal style. | CC.1.4.7.E | Write with an awareness of the stylistic aspects of composition.  
- Use precise language and domain-specific vocabulary to inform about or explain the topic.  
- Use sentences of varying lengths and complexities.  
- Develop and maintain a consistent voice.  
- Establish and maintain a formal style. | CC.1.4.8.E | Write with an awareness of the stylistic aspects of composition.  
- Use precise language and domain-specific vocabulary to inform about or explain the topic.  
- Use sentences of varying lengths and complexities.  
- Create tone and voice through precise language.  
- Establish and maintain a formal style. | CC.1.4.9-10.E | Write with an awareness of the stylistic aspects of composition.  
- Use precise language and domain-specific vocabulary to inform about or explain the topic.  
- Use sentences of varying lengths and complexities.  
- Establish and maintain a formal style and objective tone while attending to the norms of the discipline in which they are writing. | CC.1.4.11-12.E | Write with an awareness of the stylistic aspects of composition.  
- Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.  
- Establish and maintain a formal style and objective tone while attending to the norms of the discipline in which they are writing. |
| E06.C.1.2.4 | E07.C.1.2.4 | E08.C.1.2.4 | E09.C.1.2.4 | E10.C.1.2.4 |
| E06.C.1.2.5 | E07.C.1.2.5 | E08.C.1.2.5 | E09.C.1.2.5 | E10.C.1.2.5 |
| E06.D.2.1.5 | E07.D.2.1.5 | E08.D.2.1.5 | E09.D.2.1.5 | E10.D.2.1.5 |
| E06.E.1.1.4 | E07.E.1.1.4 | E08.E.1.1.4 | E09.E.1.1.4 | E10.E.1.1.4 |
| E06.E.1.1.5 | E07.E.1.1.5 | E08.E.1.1.5 | E09.E.1.1.5 | E10.E.1.1.5 |
| E06.E.1.1.6 | E07.E.1.1.6 | E08.E.1.1.6 | E09.E.1.1.6 | E10.E.1.1.6 |
| E06.E.1.1.7 | E07.E.1.1.7 | E08.E.1.1.7 | E09.E.1.1.7 | E10.E.1.1.7 |
| E06.E.1.1.8 | E07.E.1.1.8 | E08.E.1.1.8 | E09.E.1.1.8 | E10.E.1.1.8 |
| E06.E.1.1.9 | E07.E.1.1.9 | E08.E.1.1.9 | E09.E.1.1.9 | E10.E.1.1.9 |
| E06.E.1.1.10 | E07.E.1.1.10 | E08.E.1.1.10 | E09.E.1.1.10 | E10.E.1.1.10 |
| E06.E.1.1.11 | E07.E.1.1.11 | E08.E.1.1.11 | E09.E.1.1.11 | E10.E.1.1.11 |
### 1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

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<thead>
<tr>
<th>Informative/Explanatory</th>
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<th>Grades 11-12</th>
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<tbody>
<tr>
<td>Conventions of Language</td>
<td>E06.D.1.1.1</td>
<td>E07.D.1.1.1</td>
<td>E08.D.1.1.1</td>
<td>C.E.1.1.5</td>
<td>CC.1.4.6.F</td>
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<tr>
<td></td>
<td>E06.D.1.1.2</td>
<td>E07.D.1.1.2</td>
<td>E08.D.1.1.2</td>
<td>C.E.3.1.1</td>
<td>Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
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<tr>
<td></td>
<td>E06.D.1.1.3</td>
<td>E07.D.1.1.3</td>
<td>E08.D.1.1.3</td>
<td>C.E.3.1.2</td>
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<td>E06.D.1.1.4</td>
<td>E07.D.1.1.4</td>
<td>E08.D.1.1.4</td>
<td>C.E.3.1.3</td>
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<td>E06.D.1.1.5</td>
<td>E07.D.1.1.5</td>
<td>E08.D.1.1.5</td>
<td>C.E.3.1.4</td>
<td>CC.1.4.7.F</td>
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<td></td>
<td>E06.D.1.1.6</td>
<td>E07.D.1.1.6</td>
<td>E08.D.1.1.6</td>
<td>C.E.3.1.5</td>
<td>Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
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<tr>
<td></td>
<td>E06.D.1.1.7</td>
<td>E07.D.1.1.7</td>
<td>E08.D.1.1.7</td>
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<td>E06.D.1.1.8</td>
<td>E07.D.1.1.8</td>
<td>E08.D.1.1.8</td>
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<td></td>
<td>E06.D.1.2.1</td>
<td>E07.D.1.2.1</td>
<td>E08.D.1.1.9</td>
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<tr>
<td></td>
<td>E06.D.1.2.2</td>
<td>E07.D.1.2.2</td>
<td>E08.D.1.1.10</td>
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<tr>
<td></td>
<td>E06.D.1.2.3</td>
<td>E07.D.1.2.3</td>
<td>E08.D.1.1.11</td>
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<td>E06.D.1.2.4</td>
<td>E07.D.1.2.4</td>
<td>E08.D.1.2.1</td>
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</tbody>
</table>

**CC.1.4.6.F**: Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.

**CC.1.4.7.F**: Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.

**CC.1.4.8.F**: Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.

**CC.1.4.9-10.F**: Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.

**CC.1.4.11-12.F**: Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.
### 1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

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<tbody>
<tr>
<td>Opinion/Argumentative</td>
<td>CC.1.4.6.G Write arguments to support claims.</td>
<td>CC.1.4.7.G Write arguments to support claims.</td>
<td>CC.1.4.8.G Write arguments to support claims.</td>
<td>CC.1.4.9-10.G Write arguments to support claims in an analysis of substantive topics.</td>
<td>CC.1.4.11-12.G Write arguments to support claims in an analysis of substantive topics.</td>
</tr>
<tr>
<td>Focus</td>
<td>CC.1.4.6.H Introduce and state an opinion on a topic. E06.C.1.1.1 E06.E.1.1.1</td>
<td>CC.1.4.7.H Introduce and state an opinion on a topic. E07.C.1.1.1 E07.E.1.1.1</td>
<td>CC.1.4.8.H Introduce and state an opinion on a topic. E08.C.1.1.1 E08.E.1.1.1</td>
<td>CC.1.4.9-10.H Write with a sharp, distinct focus identifying topic, task, and audience. • Introduce the precise claim. C.P.1.1.1</td>
<td>CC.1.4.11-12.H Write with a sharp, distinct focus identifying topic, task, and audience. • Introduce the precise, knowledgeable claim.</td>
</tr>
</tbody>
</table>
### Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Opinion/Argumentative Content</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CC.1.4.6.I</td>
<td>Use clear reasons and relevant evidence to support claims, using credible sources and demonstrating an understanding of the topic.</td>
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</tr>
<tr>
<td>E06.C.1.1.2 E06.E.1.1.2</td>
<td>CC.1.4.7.I</td>
<td>Acknowledge alternate or opposing claims and support claim with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic.</td>
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</tr>
<tr>
<td>E07.C.1.1.2 E07.E.1.1.2</td>
<td>CC.1.4.8.I</td>
<td>Acknowledge and distinguish the claim(s) from alternate or opposing claims and support claim with logical reasoning and relevant evidence, using accurate, credible sources and demonstrating an understanding of the topic.</td>
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<tr>
<td>E08.C.1.1.2 E08.E.1.1.2</td>
<td>CC.1.4.9-10.I</td>
<td>Distinguish the claim(s) from alternate or opposing claims; develop claim(s) fairly, supplying evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience’s knowledge level and concerns.</td>
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<tr>
<td>C.P.1.1.2 C.P.1.1.3</td>
<td>CC.1.4.11-12.I</td>
<td>Distinguish the claim(s) from alternate or opposing claims; develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both in a manner that anticipates the audience’s knowledge level, concerns, values, and possible biases.</td>
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</tbody>
</table>
### Writing
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</thead>
</table>
| **Opinion/Argumentative Organization** | **CC.1.4.6.J** Organize the claim(s) with clear reasons and evidence clearly; clarify relationships among claim(s) and reasons by using words, phrases, and clauses; provide a concluding statement or section that follows from the argument presented.  
E06.C.1.1.1  
E06.C.1.1.3  
E06.C.1.1.5  
E06.E.1.1.1  
E06.E.1.1.3  
E06.E.1.1.6 | **CC.1.4.7.J** Organize the claim(s) with clear reasons and evidence clearly; clarify relationships among claim(s) and reasons by using words, phrases, and clauses to create cohesion; provide a concluding statement or section that follows from and supports the argument presented.  
E07.C.1.1.1  
E07.C.1.1.3  
E07.C.1.1.5  
E07.E.1.1.1  
E07.E.1.1.3  
E07.E.1.1.6 | **CC.1.4.8.J** Organize the claim(s) with clear reasons and evidence clearly; clarify relationships among claim(s), counterclaims, reasons, and evidence by using words, phrases, and clauses to create cohesion; provide a concluding statement or section that follows from and supports the argument presented.  
E08.C.1.1.1  
E08.C.1.1.3  
E08.C.1.1.5  
E08.E.1.1.1  
E08.E.1.1.3  
E08.E.1.1.6 | **CC.1.4.9-10.J** Create organization that establishes clear relationships among claim(s), counterclaims, reasons, and evidence; use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims; provide a concluding statement or section that follows from and supports the argument presented.  
C.P.1.1.2  
C.P.1.1.3  
C.P.2.1.5  
C.P.2.1.6 | **CC.1.4.11-12.J** Create organization that logically sequences claim(s), counterclaims, reasons, and evidence; use words, phrases, and clauses to create cohesion and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims; provide a concluding statement or section that follows from and supports the argument presented. |
<table>
<thead>
<tr>
<th>Opinion/Argumentative Style</th>
<th>Grade 6</th>
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<th>Grade 8</th>
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</table>
| **CC.1.4.6.K** | Write with an awareness of the stylistic aspects of composition.  
- Use precise language and domain-specific vocabulary to inform about or explain the topic.  
- Use sentences of varying lengths and complexities.  
- Develop and maintain a consistent voice.  
- Establish and maintain a formal style.  
E06.C.1.1.4  
E06.D.2.1.1  
E06.D.2.1.2  
E06.D.2.1.3  
E06.D.2.1.4  
E06.D.2.1.5  
E06.E.1.1.4  
E06.E.1.1.5 | **CC.1.4.7.K** | Write with an awareness of the stylistic aspects of composition.  
- Use precise language and domain-specific vocabulary to inform about or explain the topic.  
- Use sentences of varying lengths and complexities.  
- Develop and maintain a consistent voice.  
- Establish and maintain a formal style.  
E07.C.1.1.4  
E07.D.2.1.1  
E07.D.2.1.2  
E07.D.2.1.3  
E07.D.2.1.4  
E07.D.2.1.5  
E07.E.1.1.4  
E07.E.1.1.5 | **CC.1.4.8.K** | Write with an awareness of the stylistic aspects of composition.  
- Use precise language and domain-specific vocabulary to inform about or explain the topic.  
- Use sentences of varying lengths and complexities.  
- Develop and maintain a consistent voice.  
- Establish and maintain a formal style.  
E08.C.1.1.4  
E08.D.2.1.1  
E08.D.2.1.2  
E08.D.2.1.3  
E08.D.2.1.4  
E08.D.2.1.5  
E08.D.2.1.6  
E08.E.1.1.4  
E08.E.1.1.5 | **CC.1.4.9-10.K** | Write with an awareness of the stylistic aspects of composition.  
- Use precise language and domain-specific vocabulary to manage the complexity of the topic.  
- Establish and maintain a formal style and objective tone while attending to the norms of the discipline in which they are writing.  
C.P.1.1.4  
C.P.2.1.1  
C.P.2.1.2  
C.P.2.1.3  
C.P.2.1.4  
C.P.2.1.5  
C.P.2.1.6  
C.P.2.1.7 | **CC.1.4.11-12.K** | Write with an awareness of the stylistic aspects of composition.  
- Use precise language and domain-specific vocabulary to manage the complexity of the topic.  
- Establish and maintain a formal style and objective tone while attending to the norms of the discipline in which they are writing.  
C.P.1.1.4  
C.P.2.1.1  
C.P.2.1.2  
C.P.2.1.3  
C.P.2.1.4  
C.P.2.1.5  
C.P.2.1.6  
C.P.2.1.7 |
### 1.4 Writing

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<tbody>
<tr>
<td>CC.1.4.6.L</td>
<td>CC.1.4.7.L</td>
<td>CC.1.4.8.L</td>
<td>CC.1.4.9-10.L</td>
<td>CC.1.4.11-12.L</td>
</tr>
<tr>
<td>Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
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<tr>
<td>E06.D.1.1.1</td>
<td>E07.D.1.1.1</td>
<td>E08.D.1.1.1</td>
<td>C.P.1.1.5</td>
<td>C.P.1.1.5</td>
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<td>E06.D.1.1.2</td>
<td>E07.D.1.1.2</td>
<td>E08.D.1.1.2</td>
<td>C.P.3.1.1</td>
<td>C.P.3.1.1</td>
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<tr>
<td>E06.D.1.1.3</td>
<td>E07.D.1.1.3</td>
<td>E08.D.1.1.3</td>
<td>C.P.3.1.2</td>
<td>C.P.3.1.2</td>
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<tr>
<td>E06.D.1.1.4</td>
<td>E07.D.1.1.4</td>
<td>E08.D.1.1.4</td>
<td>C.P.3.1.3</td>
<td>C.P.3.1.3</td>
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<td>E06.D.1.1.5</td>
<td>E07.D.1.1.5</td>
<td>E08.D.1.1.5</td>
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<td>E06.D.1.1.6</td>
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<td>E08.D.1.1.6</td>
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<td>E08.D.1.1.10</td>
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<td>E08.D.1.2.5</td>
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</tbody>
</table>
## 1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Narrative</strong></td>
<td><strong>Narrative</strong></td>
<td><strong>Narrative</strong></td>
<td><strong>Narrative</strong></td>
<td><strong>Narrative</strong></td>
</tr>
<tr>
<td>Write narratives to develop real or imagined experiences or events.</td>
<td>Write narratives to develop real or imagined experiences or events.</td>
<td>Write narratives to develop real or imagined experiences or events.</td>
<td>Write narratives to develop real or imagined experiences or events.</td>
<td>Write narratives to develop real or imagined experiences or events.</td>
</tr>
</tbody>
</table>

**Narrative Focus**

<table>
<thead>
<tr>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engage and orient the reader by establishing a context and introducing a narrator and/or characters.</td>
<td>Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters.</td>
<td>Engage and orient the reader by establishing a context and point of view and introducing a narrator and/or characters.</td>
<td>Engage and orient the reader by setting out a problem, situation, or observation, establishing one or multiple points of view, and introducing a narrator and/or characters.</td>
<td>Engage and orient the reader by setting out a problem, situation, or observation and its significance, establishing one or multiple points of view, and introducing a narrator and/or characters.</td>
</tr>
</tbody>
</table>
## 1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Narrative Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>CC.1.4.6.O Use narrative techniques such as dialogue, description, and pacing to develop experiences, events, and/or characters; use precise words and phrases, relevant descriptive details, and sensory language to convey experiences and events. E06.C.1.3.2 E06.C.1.3.4</td>
</tr>
<tr>
<td>7</td>
<td>CC.1.4.7.O Use narrative techniques such as dialogue, description, and pacing to develop experiences, events, and/or characters; use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events. E07.C.1.3.2 E07.C.1.3.4</td>
</tr>
<tr>
<td>8</td>
<td>CC.1.4.8.O Use narrative techniques such as dialogue, description, reflection, and pacing to develop experiences, events, and/or characters; use precise words and phrases, relevant descriptive details, and sensory language to capture the action and convey experiences and events. E08.C.1.3.2 E08.C.1.3.4</td>
</tr>
<tr>
<td>9-10</td>
<td>CC.1.4.9-10.O Use narrative techniques such as dialogue, description, reflection, multiple plotlines, and pacing to develop experiences, events, and/or characters; use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, settings, and/or characters. E09.C.1.3.2 E09.C.1.3.4</td>
</tr>
<tr>
<td>11-12</td>
<td>CC.1.4.11-12.O Use narrative techniques such as dialogue, description, reflection, multiple plotlines, and pacing to develop experiences, events, and/or characters; use precise words and phrases, telling details, and sensory language to convey a vivid picture of the experiences, events, settings, and/or characters. E10.C.1.3.2 E10.C.1.3.4</td>
</tr>
</tbody>
</table>
### Narrative Organization

<table>
<thead>
<tr>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CC.1.4.6.P</strong></td>
<td><strong>CC.1.4.7.P</strong></td>
<td><strong>CC.1.4.8.P</strong></td>
<td><strong>CC.1.4.9-10.P</strong></td>
<td><strong>CC.1.4.11-12.P</strong></td>
</tr>
<tr>
<td>Organize an event sequence that unfolds naturally and logically, using a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another; provide a conclusion that follows from and reflects on the narrated experiences and events.</td>
<td>Organize an event sequence that unfolds naturally and logically, using a variety of transition words, phrases, and clauses to convey sequence and signal shifts from one time frame or setting to another; provide a conclusion that follows from and reflects on the narrated experiences and events.</td>
<td>Organize an event sequence that unfolds naturally and logically using a variety of techniques to sequence events so that they build on one another to create a coherent whole; provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.</td>
<td>Create a smooth progression of experiences or events using a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome; provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.</td>
<td>Create a smooth progression of experiences or events using a variety of techniques to sequence events so that they build on one another to create a coherent whole and build toward a particular tone and outcome; provide a conclusion that follows from and reflects on what is experienced, observed, or resolved over the course of the narrative.</td>
</tr>
<tr>
<td>E06.C.1.3.1</td>
<td>E07.C.1.3.1</td>
<td>E08.C.1.3.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E06.C.1.3.3</td>
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<td>E08.C.1.3.3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E06.C.1.3.5</td>
<td>E07.C.1.3.5</td>
<td>E08.C.1.3.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Writing**

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.
### 1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
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<tr>
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<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrative Style</td>
<td>Narrative Style</td>
<td>Narrative Style</td>
<td>Narrative Style</td>
<td>Narrative Style</td>
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<tr>
<td>CC.1.4.6.Q</td>
<td>CC.1.4.7.Q</td>
<td>CC.1.4.8.Q</td>
<td>CC.1.4.9-10.Q</td>
<td>CC.1.4.11-12.Q</td>
</tr>
<tr>
<td>Write with an awareness of the stylistic aspects of writing.</td>
<td>Write with an awareness of the stylistic aspects of writing.</td>
<td>Write with an awareness of the stylistic aspects of writing.</td>
<td>Write with an awareness of the stylistic aspects of writing.</td>
<td>Write with an awareness of the stylistic aspects of writing.</td>
</tr>
<tr>
<td>• Vary sentence patterns for meaning, reader/listener interest, and style.</td>
<td>• Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.</td>
<td>• Use verbs in the active and passive voice and in the conditional and subjunctive mood to achieve particular effects.</td>
<td>• Use parallel structure.</td>
<td>• Use parallel structure.</td>
</tr>
<tr>
<td>• Use precise language.</td>
<td>• Use sentences of varying lengths and complexities.</td>
<td>• Use precise language.</td>
<td>• Use various types of phrases and clauses to convey meaning and add variety and interest.</td>
<td>• Use various types of phrases and clauses to convey meaning and add variety and interest.</td>
</tr>
<tr>
<td>• Develop and maintain a consistent voice.</td>
<td>• Use sentences of varying lengths and complexities.</td>
<td>• Develop and maintain a consistent voice.</td>
<td>• Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.</td>
<td>• Use precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>E06.C.1.3.4</th>
<th>E06.D.2.1.1</th>
<th>E06.D.2.1.2</th>
<th>E06.D.2.1.3</th>
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<tr>
<td>E08.C.1.3.4</td>
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</table>
## Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demonstrate a grade-appropriate command of the conventions of standard English grammar, usage, capitalization, punctuation, and spelling.</td>
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<td>E08.D.1.1.10</td>
<td>E08.D.1.1.10</td>
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<td>E08.D.1.1.11</td>
<td>E08.D.1.1.11</td>
<td>E08.D.1.1.11</td>
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<td>E08.D.1.2.1</td>
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<td>E08.D.1.2.3</td>
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<td>E08.D.1.2.4</td>
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</table>
## 1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Response to Literature</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CC.1.4.6.S: Draw evidence from literary or informational texts to support analysis, reflection, and research, applying grade-level reading standards for literature and literary nonfiction.</td>
<td>CC.1.4.7.S: Draw evidence from literary or informational texts to support analysis, reflection, and research, applying grade-level reading standards for literature and literary nonfiction.</td>
<td>CC.1.4.8.S: Draw evidence from literary or informational texts to support analysis, reflection, and research, applying grade-level reading standards for literature and literary nonfiction.</td>
<td>CC.1.4.9-10.S: Draw evidence from literary or informational texts to support analysis, reflection, and research, applying grade-level reading standards for literature and literary nonfiction.</td>
<td>CC.1.4.11-12.S: Draw evidence from literary or informational texts to support analysis, reflection, and research, applying grade-level reading standards for literature and literary nonfiction.</td>
</tr>
<tr>
<td></td>
<td>E06.E.1.1.1</td>
<td>E07.E.1.1.1</td>
<td>E08.E.1.1.1</td>
<td>E08.E.1.1.2</td>
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<td>E06.E.1.1.2</td>
<td>E07.E.1.1.2</td>
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<td>E07.E.1.1.5</td>
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<tr>
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<td>E06.E.1.1.6</td>
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</tbody>
</table>
### Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Production and Distribution of Writing</strong></td>
<td><strong>Writing Process</strong></td>
<td><strong>Technology and Publication</strong></td>
<td><strong>Technology and Publication</strong></td>
<td><strong>Technology and Publication</strong></td>
</tr>
<tr>
<td>CC.1.4.6.T</td>
<td>With guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach.</td>
<td>CC.1.4.6.U</td>
<td>Use technology, including the Internet, to produce and publish writing as well as to interact and collaborate with others; demonstrate sufficient command of keyboarding skills to type a minimum of three pages in a single sitting.</td>
<td>CC.1.4.11-12.T</td>
</tr>
<tr>
<td>CC.1.4.7.T</td>
<td>With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.</td>
<td>CC.1.4.7.U</td>
<td>Use technology, including the Internet, to produce and publish writing and link to and cite sources as well as to interact and collaborate with others, including linking to and citing sources.</td>
<td>CC.1.4.9-10.T</td>
</tr>
<tr>
<td>CC.1.4.8.T</td>
<td>With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.</td>
<td>CC.1.4.8.U</td>
<td>Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas efficiently as well as to interact and collaborate with others.</td>
<td>CC.1.4.9-10.U</td>
</tr>
<tr>
<td>CC.1.4.9-10.T</td>
<td>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</td>
<td>CC.1.4.10.U</td>
<td>Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments and information.</td>
<td><strong>Technology and Publication</strong></td>
</tr>
</tbody>
</table>
### Writing
Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Conducting Research</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.1.4.6.V</td>
<td>Conduct short research projects to answer a question, drawing on several sources and refocusing the inquiry when appropriate.</td>
<td>CC.1.4.7.V</td>
<td>Conduct short research projects to answer a question, drawing on several sources and generating additional related, focused questions for further research and investigation.</td>
<td>CC.1.4.8.V</td>
<td>Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</td>
</tr>
<tr>
<td>CC.1.4.9-10.V</td>
<td>Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</td>
<td>CC.1.4.11-12.V</td>
<td>Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## 1.4 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Credibility, Reliability, and Validity of Sources</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.1.4.6.W</td>
<td>Gather relevant information from multiple print and digital sources; assess the credibility of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and providing basic bibliographic information for sources.</td>
<td>CC.1.4.7.W</td>
<td>Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.</td>
<td>CC.1.4.8.W</td>
<td>Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.</td>
</tr>
</tbody>
</table>

| Range of Writing | CC.1.4.6.X | Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. | CC.1.4.7.X | Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. | CC.1.4.8.X | Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. | CC.1.4.9-10.X | Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. | CC.1.4.11-12.X | Write routinely over extended time frames (time for research, reflection, and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. |
### 1.5 Speaking and Listening

Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

<table>
<thead>
<tr>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comprehension and Collaboration</strong></td>
<td><strong>Critical Listening</strong></td>
<td><strong>Comprehension and Collaboration</strong></td>
<td><strong>Critical Listening</strong></td>
<td><strong>Comprehension and Collaboration</strong></td>
</tr>
<tr>
<td>CC.1.5.6.A</td>
<td>Engage effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others’ ideas and expressing their own clearly.</td>
<td>CC.1.5.7.A</td>
<td>Engage effectively in a range of collaborative discussions, on grade-level topics, texts, and issues, building on others’ ideas and expressing their own clearly.</td>
<td>CC.1.5.8.A</td>
</tr>
<tr>
<td>CC.1.5.6.B</td>
<td>Delineate a speaker’s argument and specific claims by identifying specific reasons and evidence and recognize arguments or claims not supported by factual evidence.</td>
<td>CC.1.5.7.B</td>
<td>Delineate a speaker’s argument and specific claims, evaluating the soundness of the reasoning and the relevance and sufficiency of the evidence.</td>
<td>CC.1.5.8.B</td>
</tr>
</tbody>
</table>
### 1.5 Speaking and Listening

Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

<table>
<thead>
<tr>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Comprehension and Collaboration</strong></td>
<td><strong>Evaluating Information</strong></td>
<td><strong>Evaluating Information</strong></td>
<td><strong>Evaluating Information</strong></td>
<td><strong>Evaluating Information</strong></td>
</tr>
<tr>
<td><strong>CC.1.5.6.C</strong> Interpret information presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how it contributes to a topic, text, or issue under study.</td>
<td><strong>CC.1.5.7.C</strong> Analyze the main ideas and supporting details presented in diverse media formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.</td>
<td><strong>CC.1.5.8.C</strong> Analyze the purpose of information presented in diverse media formats (e.g., visually, quantitatively, orally) and evaluate the motives (e.g., social, commercial, political) behind its presentation.</td>
<td><strong>CC.1.5.9-10.C</strong> Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.</td>
<td><strong>CC.1.5.11-12.C</strong> Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data.</td>
</tr>
<tr>
<td><strong>CC.1.5.6.D</strong> Present claims and findings, sequencing ideas logically and using pertinent descriptions, facts, and details to accentuate main ideas or themes; use appropriate eye contact, adequate volume, and clear pronunciation.</td>
<td><strong>CC.1.5.7.D</strong> Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.</td>
<td><strong>CC.1.5.8.D</strong> Present claims and findings, emphasizing salient points in a focused, coherent manner with relevant evidence, sound, valid reasoning, and well-chosen details; use appropriate eye contact, adequate volume and clear pronunciation.</td>
<td><strong>CC.1.5.9-10.D</strong> Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning; ensure that the presentation is appropriate to purpose, audience, and task.</td>
<td><strong>CC.1.5.11-12.D</strong> Present information, findings, and supporting evidence, conveying a clear and distinct perspective; organization, development, substance, and style are appropriate to purpose, audience, and task.</td>
</tr>
</tbody>
</table>
### 1.5 Speaking and Listening

Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

<table>
<thead>
<tr>
<th>Presentation of Knowledge and Ideas</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Context</td>
<td>CC.1.5.6.E</td>
<td>Adapt speech to a variety of contexts and tasks.</td>
<td>CC.1.5.7.E</td>
<td>Adapt speech to a variety of contexts and tasks.</td>
<td>CC.1.5.8.E</td>
</tr>
<tr>
<td>Multimedia</td>
<td>CC.1.5.6.F</td>
<td>Include multimedia components and visual displays in presentations to clarify information.</td>
<td>CC.1.5.7.F</td>
<td>Include multimedia components and visual displays in presentations to clarify claims and findings and emphasize salient points.</td>
<td>CC.1.5.8.F</td>
</tr>
<tr>
<td></td>
<td>CC.1.5.9-10.F</td>
<td>Make strategic use of digital media in presentations to add interest and enhance understanding of findings, reasoning, and evidence.</td>
<td>CC.1.5.11-12.F</td>
<td>Make strategic use of digital media in presentations to add interest and enhance understanding of findings, reasoning, and evidence.</td>
<td></td>
</tr>
</tbody>
</table>
1.5 Speaking and Listening
Students present appropriately in formal speaking situations, listen critically, and respond intelligently as individuals or in group discussions.

<table>
<thead>
<tr>
<th>Conventions of Standard English</th>
<th>Grade 6</th>
<th>Grade 7</th>
<th>Grade 8</th>
<th>Grades 9-10</th>
<th>Grades 11-12</th>
</tr>
</thead>
</table>
| CC.1.5.6.G  
Demonstrate command of the conventions of standard English when speaking based on Grade 6 level and content. |         |         |         |             |              |
| CC.1.5.7.G  
Demonstrate command of the conventions of standard English when speaking based on Grade 7 level and content. |         |         |         |             |              |
| CC.1.5.8.G  
Demonstrate command of the conventions of standard English when speaking based on Grade 8 level and content. |         |         |         |             |              |
| CC.1.5.9-10.G  
Demonstrate command of the conventions of standard English when speaking based on Grades 9-10 level and content. |         |         |         |             |              |
| CC.1.5.11-12.G  
Demonstrate command of the conventions of standard English when speaking based on Grades 11-12 level and content. |         |         |         |             |              |

Pennsylvania Core Standards for Mathematics
Grades PreK—High School

INTRODUCTION

The Pennsylvania Core Standards in Mathematics in grades PreK-5 lay a solid foundation in whole numbers, addition, subtraction, multiplication, division, fractions, and decimals. Taken together, these elements support a student’s ability to learn and apply more demanding math concepts and procedures. The middle school and high school standards call on students to practice applying mathematical ways of thinking to real world issues and challenges; they prepare students to think and reason mathematically. Additionally, they set a rigorous definition of college and career readiness by demanding that students develop a depth of understanding and ability to apply mathematics to novel situations, as college students and employees regularly do. Although the standards are not a curriculum or a prescribed series of activities, school entities will use them to develop a local school curriculum that will meet local students’ needs.

This document includes PA Core Standards for Mathematical Content and Mathematical Practice. The mathematics standards define what students should understand and be able to do. Mathematical Practice Standards describes the habits of mind required to reach a level of mathematical proficiency.
Standards cannot be viewed or addressed in isolation, as each standard depends upon or may lead into multiple standards across grades; thus, it is imperative that educators are familiar with both the standards that come before and those that follow a particular grade level. These revised standards reflect instructional shifts that cannot occur without the integrated emphasis on content and practice.

Standards are overarching statements of what a proficient math student should know and be able to do. The Pennsylvania Assessment Anchors and Eligible Content closely align with the revised standards and are an invaluable source for greater detail.
Key Points in Mathematics

- The standards stress both procedural skills and conceptual understanding to ensure students are learning and applying the critical information they need to succeed at higher levels.
- K-5 standards, which provide students with a solid foundation in whole numbers, addition, subtraction, multiplication, division, fractions, and decimals, help young students build the foundation to successfully apply more demanding math concepts and procedures, and move into application. They also provide detailed guidance to teachers on how to navigate their way through topics such as fractions, negative numbers, and geometry, and do so by maintaining a continuous progression from grade to grade.
- Having built a strong foundation at K-5, students can do hands-on learning in geometry, algebra, and probability and statistics. Students who have mastered the content and skills through the seventh grade will be well-prepared for algebra in grade 8.
- High school standards emphasize practicing applying mathematical ways of thinking to real world issues and challenges.

The PA Core Standards for Mathematics detail four standard areas: Numbers and Operations, Algebraic Concepts, Geometry, and Measurement, Data, and Probability. These standard areas are reflective of the reporting categories in the PA Core Assessment Anchors and Eligible Content. The intent of this document is to provide a useful tool for designing curriculum, instruction, and assessment. The grade level curriculum and instructional shifts in mathematics cannot occur without the integrated emphasis on content and practice. The chart below illustrates the four standard areas and the development and progression of the strands, with an understanding that all is framed around the Standards for Mathematical Practice.
### Mathematical Standards: Development and Progression

#### Standards for Mathematical Practice

| Make sense of problems and persevere in solving them. |
| Construct viable arguments and critique the reasoning of others. |
| Use appropriate tools strategically. |
| Look for and make use of structure. |
| Reason abstractly and quantitatively. |
| Model with mathematics. |
| Attend to precision. |
| Look for and express regularity in repeated reasoning. |

#### 2.1 Numbers and Operations

<table>
<thead>
<tr>
<th>PreK</th>
<th>K</th>
<th>1</th>
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<th>HS</th>
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<tr>
<td>(A) Counting &amp; Cardinality</td>
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<td>(E) The Number System</td>
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#### 2.2 Algebraic Concepts

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<tbody>
<tr>
<td>(A) Operations and Algebraic Thinking</td>
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<td>(C) Functions</td>
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#### 2.3 Geometry

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<td>(A) Geometry</td>
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#### 2.4 Measurement, Data, and Probability

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<th>HS</th>
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<tbody>
<tr>
<td>(A) Measurement and Data</td>
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<td>(B) Statistics and Probability</td>
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</table>
### 2.1 Numbers and Operations

<table>
<thead>
<tr>
<th></th>
<th>Grade PreK 2.1.PreK</th>
<th>Grade K 2.1.K</th>
<th>Grade 1 2.1.1</th>
<th>Grade 2 2.1.2</th>
<th>Grade 3 2.1.3</th>
<th>Grade 4 2.1.4</th>
<th>Grade 5 2.1.5</th>
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</thead>
<tbody>
<tr>
<td><strong>(A) Counting &amp; Cardinality</strong></td>
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<tr>
<td>CC.2.1.PreK.A.1</td>
<td>Know number names and the count sequence.</td>
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<tr>
<td>CC.2.1.K.A.1</td>
<td>Know number names and write and recite the count sequence.</td>
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<tr>
<td>CC.2.1.PreK.A.2</td>
<td>Count to tell the number of objects.</td>
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<tr>
<td>CC.2.1.K.A.2</td>
<td>Apply one-to-one correspondence to count the number of objects.</td>
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<tr>
<td>CC.2.1.PreK.A.3</td>
<td>Compare numbers.</td>
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<tr>
<td>CC.2.1.K.A.3</td>
<td>Apply the concept of magnitude to compare numbers and quantities.</td>
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</tbody>
</table>

**Pennsylvania's public schools shall teach, challenge, and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:**

- Reason abstractly and quantitatively.
- Model with mathematics.
- Attend to precision.
- Look for and express regularity in repeated reasoning.
# 2.1 Numbers and Operations

<table>
<thead>
<tr>
<th>Grade PreK 2.1.PREK</th>
<th>Grade K 2.1.K</th>
<th>Grade 1 2.1.1</th>
<th>Grade 2 2.1.2</th>
<th>Grade 3 2.1.3</th>
<th>Grade 4 2.1.4</th>
<th>Grade 5 2.1.5</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pennsylvania's public schools shall teach, challenge, and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:</strong></td>
<td><strong>The Standards of Mathematical Practices</strong></td>
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<tr>
<td></td>
<td>Make sense of problems and persevere in solving them.</td>
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<td></td>
<td>Construct viable arguments and critique the reasoning of others.</td>
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<td></td>
<td>Use appropriate tools strategically.</td>
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<td></td>
<td>Look for and make use of structure.</td>
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<tr>
<td></td>
<td>Reason abstractly and quantitatively.</td>
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<td></td>
<td>Model with mathematics.</td>
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<td>Attend to precision.</td>
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<td></td>
<td>Look for and express regularity in repeated reasoning.</td>
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<tr>
<td><strong>(B) Numbers &amp; Operations in Base Ten</strong></td>
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<tr>
<td>CC.2.1.1.B.2 Use place-value concepts to represent amounts of tens and ones and to compare two digit numbers.</td>
<td>CC.2.1.2.B.2 Use place-value concepts to read, write, and skip count to 1000.</td>
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<tr>
<td>CC.2.1.1.B.3 Use place-value concepts and properties of operations to add and subtract within 100.</td>
<td>CC.2.1.2.B.3 Use place-value understanding and properties of operations to add and subtract within 1000.</td>
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Intentionally Blank
### 2.1 Numbers and Operations

#### The Standards of Mathematical Practices

- Make sense of problems and persevere in solving them.
- Construct viable arguments and critique the reasoning of others.
- Use appropriate tools strategically.
- Look for and make use of structure.
- Reason abstractly and quantitatively.
- Model with mathematics.
- Attend to precision.
- Look for and express regularity in repeated reasoning.

#### Pennsylvania’s public schools shall teach, challenge, and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

<table>
<thead>
<tr>
<th>Grade</th>
<th>2.1.3.C.1</th>
<th>2.1.4.C.1</th>
<th>2.1.5.C.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PreK</td>
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<td>K</td>
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- **CC.2.1.3.C.1** Explore and develop an understanding of fractions as numbers.
- **M03.A.F.1.1.1**
- **M03.A.F.1.1.2**
- **M03.A.F.1.1.3**
- **M03.A.F.1.1.4**
- **M03.A.F.1.1.5**

- **CC.2.1.4.C.1** Extend the understanding of fractions to show equivalence and ordering.
- **M04.A.F.1.1.1**
- **M04.A.F.1.1.2**

- **CC.2.1.5.C.1** Use the understanding of equivalency to add and subtract fractions.
- **M05.A.F.1.1.1**

- **CC.2.1.4.C.2** Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
- **M04.A.F.2.1.1**
- **M04.A.F.2.1.2**
- **M04.A.F.2.1.3**
- **M04.A.F.2.1.4**
- **M04.A.F.2.1.5**
- **M04.A.F.2.1.6**
- **M04.A.F.2.1.7**

- **CC.2.1.5.C.2** Apply and extend previous understandings of multiplication and division to multiply and divide fractions.
- **M05.A.F.2.1.1**
- **M05.A.F.2.1.2**
- **M05.A.F.2.1.3**
- **M05.A.F.2.1.4**

- **CC.2.1.4.C.3** Connect decimal notation to fractions, and compare decimal fractions (base 10 denominator, e.g., 10/100).
- **M04.A.F.3.1.1**
- **M04.A.F.3.1.2**
- **M04.A.F.3.1.3**
### 2.2 Algebraic Concepts

#### The Standards of Mathematical Practices

- Make sense of problems and persevere in solving them.
- Construct viable arguments and critique the reasoning of others.
- Use appropriate tools strategically.
- Look for and make use of structure.
- Reason abstractly and quantitatively.
- Model with mathematics.
- Attend to precision.
- Look for and express regularity in repeated reasoning.

#### Pennsylvania’s public schools shall teach, challenge, and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

**A) Operations and Algebraic Thinking**

<table>
<thead>
<tr>
<th>Grade</th>
<th>2.2.ProK</th>
<th>2.2.K</th>
<th>2.2.1</th>
<th>2.2.2</th>
<th>2.2.3</th>
<th>2.2.4</th>
<th>2.2.5</th>
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<tbody>
<tr>
<td><strong>CC.2.2.ProK.A.1</strong></td>
<td>Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.</td>
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<tr>
<td><strong>CC.2.2.K.A.1</strong></td>
<td>Extend the concepts of putting together and taking apart to add and subtract within 10.</td>
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<tr>
<td><strong>CC.2.2.1.A.1</strong></td>
<td>Represent and solve problems involving addition and subtraction within 20.</td>
<td>CC.2.2.1.A.2</td>
<td>Understand and apply properties of operations and the relationship between addition and subtraction.</td>
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<tr>
<td><strong>CC.2.2.2.A.1</strong></td>
<td>Represent and solve problems involving addition and subtraction within 100.</td>
<td>CC.2.2.2.A.2</td>
<td>Use mental strategies to add and subtract within 20.</td>
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<tr>
<td><strong>CC.2.2.3.A.1</strong></td>
<td>Represent and solve problems involving multiplication and division.</td>
<td>CC.2.2.3.A.2</td>
<td>Understand properties of multiplication and the relationship between multiplication and division.</td>
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<tr>
<td>M03.B.O.1.1.1</td>
<td>M03.B.O.1.1.2</td>
<td>M03.B.O.1.2.1</td>
<td>M03.B.O.1.2.2</td>
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<tr>
<td><strong>CC.2.2.4.A.1</strong></td>
<td>Represent and solve problems involving the four operations.</td>
<td>CC.2.2.4.A.2</td>
<td>Develop and/or apply number theory concepts to find factors and multiples.</td>
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<td>M04.B.O.1.1.3</td>
<td>M04.B.O.1.1.4</td>
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<td><strong>CC.2.2.5.A.1</strong></td>
<td>Interpret and evaluate numerical expressions using order of operations.</td>
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<tr>
<td><strong>CC.2.2.1.A.2</strong></td>
<td>Understand and apply properties of operations and the relationship between addition and subtraction.</td>
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<tr>
<td><strong>CC.2.2.2.A.2</strong></td>
<td>Use mental strategies to add and subtract within 20.</td>
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<tr>
<td><strong>CC.2.2.3.A.2</strong></td>
<td>Understand properties of multiplication and the relationship between multiplication and division.</td>
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<tr>
<td><strong>CC.2.2.4.A.2</strong></td>
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<tr>
<td><strong>CC.2.2.3.A.3</strong></td>
<td>Work with equal groups of objects to gain foundations for multiplication.</td>
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<tr>
<td><strong>CC.2.2.4.A.3</strong></td>
<td>Solve problems involving the four operations, and identify and explain patterns in arithmetic.</td>
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<td>M03.B.O.3.1.3</td>
<td>M03.B.O.3.1.4</td>
<td>M03.B.O.3.1.5</td>
<td>M03.B.O.3.1.6</td>
<td>M03.B.O.3.1.7</td>
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<tr>
<td><strong>CC.2.2.4.A.4</strong></td>
<td>Generate and analyze patterns using one rule.</td>
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<tr>
<td>M04.B.O.3.1.1</td>
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<tr>
<td><strong>CC.2.2.5.A.4</strong></td>
<td>Analyze patterns and relationships using two rules.</td>
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<td>M05.B.O.2.1.1</td>
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</table>
2.3 Geometry

<table>
<thead>
<tr>
<th>The Standards of Mathematical Practices</th>
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</thead>
<tbody>
<tr>
<td>Make sense of problems and persevere in solving them.</td>
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<tr>
<td>Construct viable arguments and critique the reasoning of others.</td>
</tr>
<tr>
<td>Use appropriate tools strategically.</td>
</tr>
<tr>
<td>Look for and make use of structure.</td>
</tr>
<tr>
<td>Reason abstractly and quantitatively.</td>
</tr>
<tr>
<td>Model with mathematics.</td>
</tr>
<tr>
<td>Attend to precision.</td>
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<tr>
<td>Look for and express regularity in repeated reasoning.</td>
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</table>

<table>
<thead>
<tr>
<th>Grade PreK</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
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</thead>
<tbody>
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<td>2.3.1 PreK</td>
<td>2.3.1 K</td>
<td>2.3.1</td>
<td>2.3.2</td>
<td>2.3.3</td>
<td>2.3.4</td>
<td>2.3.5</td>
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</tbody>
</table>

Pennsylvania’s public schools shall teach, challenge, and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

- Identify and describe shapes.
- Identify and describe two- and three-dimensional shapes.
- Compose and distinguish between two- and three-dimensional shapes based on their attributes.
- Analyze and draw two- and three-dimensional shapes having specified attributes.
- Identify, compare, and classify shapes and their attributes.
- Identify, compare, and classify shapes and their attributes.
- Identify, compare, and classify shapes and their attributes.
- Draw lines and angles and identify these in two-dimensional figures.
- Graph points in the first quadrant on the coordinate plane and interpret these points when solving real-world and mathematical problems.
- Classify two-dimensional figures by properties of their lines and angles.
- Classify two-dimensional figures into categories based on an understanding of their properties.
- Recognize symmetric shapes and draw lines of symmetry.

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2.4 Measurement, Data, and Probability

### The Standards of Mathematical Practices

Make sense of problems and persevere in solving them.

Construct viable arguments and critique the reasoning of others.

Use appropriate tools strategically.

Look for and make use of structure.

Reason abstractly and quantitatively.

Model with mathematics.

Attend to precision.

Look for and express regularity in repeated reasoning.

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<table>
<thead>
<tr>
<th>Grade PreK</th>
<th>Grade K</th>
<th>Grade 1</th>
<th>Grade 2</th>
<th>Grade 3</th>
<th>Grade 4</th>
<th>Grade 5</th>
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<tbody>
<tr>
<td>CC.2.4.1.A.1</td>
<td>CC.2.4.K.A.1</td>
<td>CC.2.4.1.A.1</td>
<td>CC.2.4.2.A.1</td>
<td>CC.2.4.3.A.1</td>
<td>CC.2.4.4.A.1</td>
<td>CC.2.4.5.A.1</td>
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<tr>
<td>Describe and compare measurable attributes of length and weight of everyday objects.</td>
<td>Describe and compare attributes of length, area, weight, and capacity of everyday objects.</td>
<td>Order lengths and measure them both indirectly and by repeating length units.</td>
<td>Measure and estimate lengths in standard units using appropriate tools.</td>
<td>Solve problems involving measurement and estimation of temperature, liquid volume, mass, and length.</td>
<td>Solve problems involving measurement and conversions from a larger unit to a smaller unit.</td>
<td>Solve problems using conversions within a given measurement system.</td>
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<td>CC.2.4.2.A.2</td>
<td>CC.2.4.2.A.2</td>
<td>CC.2.4.3.A.2</td>
<td>CC.2.4.2.A.3</td>
<td>CC.2.4.3.A.3</td>
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<tr>
<td>Tell and write time to the nearest half hour using both analog and digital clocks.</td>
<td>Tell and write time to the nearest five minutes using both analog and digital clocks.</td>
<td>Tell and write time to the nearest minute and solve problems by calculating time intervals.</td>
<td>Solve problems and make change using coins and paper currency with appropriate symbols.</td>
<td>Solve problems and make change involving money using a combination of coins and bills.</td>
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<tr>
<td>PreK</td>
<td>CC.2.4.PREK.A.4</td>
<td>Classify objects and count the number of objects in each category.</td>
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<tr>
<td>K</td>
<td>CC.2.4.K.A.4</td>
<td>Classify objects and count the number of objects in each category.</td>
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<tr>
<td>1</td>
<td>CC.2.4.1.A.4</td>
<td>Represent and interpret data using tables/charts.</td>
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<td>2</td>
<td>CC.2.4.2.A.4</td>
<td>Represent and interpret data using line plots, picture graphs, and bar graphs.</td>
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<td>3</td>
<td>CC.2.4.3.A.4</td>
<td>Represent and interpret data using tally charts, tables, pictographs, line plots, and bar graphs.</td>
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<td>4</td>
<td>CC.2.4.4.A.4</td>
<td>Represent and interpret data involving fractions using information provided in a line plot.</td>
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<td>5</td>
<td>CC.2.4.5.A.4</td>
<td>Solve problems involving computation of fractions using information provided in a line plot.</td>
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</table>

Pennsylvania’s public schools shall teach, challenge, and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

- Measure, Data, and Probability
- Reason abstractly and quantitatively.
- Model with mathematics.
- Attent to precision.
- Look for and express regularity in repeated reasoning.
2.1 Numbers and Operations

The Standards of Mathematical Practices

- Make sense of problems and persevere in solving them.
- Construct viable arguments and critique the reasoning of others.
- Use appropriate tools strategically.
- Look for and make use of structure.
- Reason abstractly and quantitatively.
- Model with mathematics.
- Attend to precision.
- Look for and express regularity in repeated reasoning.

2.1.6 Grade 6  
2.1.7 Grade 7  
2.1.8 Grade 8  
2.1.HS High School

Pennsylvania’s public schools shall teach, challenge, and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

- CC.2.1.6.E.4 Apply and extend previous understandings of numbers to the system of rational numbers.
- M06.A-N.3.1.1
- M06.A-N.3.1.2
- M06.A-N.3.1.3
- M06.A-N.3.2.1
- M06.A-N.3.2.2
- M06.A-N.3.2.3

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- CC.2.1.8.E.4 Estimate irrational numbers by comparing them to rational numbers.
- M08.A-N.1.1.3
- M08.A-N.1.1.4
- M08.A-N.1.1.5
- A1.1.1.1.1

Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS

22

216 Grades 6  
217 Grades 7  
218 Grades 8  
219 HS High School

The Standards of Mathematical Practices

- Look for and make use of structure.
- Look for and express regularity in repeated reasoning.
- The Standards for Mathematical Practice.
- Connect the ideas of numbers and quantities.
- The Standards for Mathematical Practice.
- The Standards for Mathematical Practice.
- The Standards for Mathematical Practice.
- The Standards for Mathematical Practice.
2.2 Algebraic Concepts

The Standards of Mathematical Practices

Make sense of problems and persevere in solving them.

Construct viable arguments and critique the reasoning of others.

Use appropriate tools strategically.

Look for and make use of structure.

Reason abstractly and quantitatively.

Model with mathematics.

Attend to precision.

Look for and express regularity in repeated reasoning.

2.2.6 Grade 6

CC.2.2.6.B.1 Apply and extend previous understandings of arithmetic to algebraic expressions.

M06.B-E.1.1.1

M06.B-E.1.1.2

M06.B-E.1.1.3

M06.B-E.1.1.4

M06.B-E.1.1.5

2.2.7 Grade 7

CC.2.2.7.B.1 Apply properties of operations to generate equivalent expressions.

M07.B-E.1.1.1

2.2.8 Grade 8

CC.2.2.8.B.1 Apply concepts of radicals and integer exponents to generate equivalent expressions.

M08.B-E.1.1.1

M08.B-E.1.1.2

M08.B-E.1.1.3

M08.B-E.1.1.4

A1.1.1.3.1

2.2.HS High School

CC.2.2.HS.D.1 Interpret the structure of expressions to represent a quantity in terms of its context.

A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3, A2.1.2.2.1, A2.1.2.2.2

CC.2.2.HS.D.2 Write expressions in equivalent forms to solve problems.

A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3, A2.1.2.1.1, A2.1.2.1.2, A2.1.2.1.3, A2.1.2.1.4, A2.1.2.2.1, A2.1.2.2.2

CC.2.2.HS.D.3 Extend the knowledge of arithmetic operations and apply to polynomials.

A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3, A2.1.2.2.1, A2.1.2.2.2

CC.2.2.HS.D.4 Understand the relationship between zeros and factors of polynomials to make generalizations about functions and their graphs.

A2.1.2.2.1, A2.1.2.2.2

CC.2.2.HS.D.5 Use polynomial identities to solve problems.

A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3, A2.1.2.2.1, A2.1.2.2.2, A2.1.3.1.1, A2.1.3.1.2, A2.1.3.1.3, A2.1.3.1.4

CC.2.2.HS.D.6 Extend the knowledge of rational functions to rewrite in equivalent forms.

A1.1.1.5.1, A1.1.1.5.2, A1.1.1.5.3, A2.1.3.1.1, A2.1.3.1.2, A2.1.3.1.3, A2.1.3.1.4

CC.2.2.HS.D.7 Create and graph equations or inequalities to describe numbers or relationships.

A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.1, A1.1.3.1.2, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.2, A2.1.3.1.1, A2.1.3.1.2, A2.1.3.1.3, A2.1.3.1.4, A2.1.3.2.1, A2.1.3.2.2, A2.2.2.1.1, A2.2.2.1.2, A2.2.2.1.3, A2.2.2.1.4

CC.2.2.HS.D.8 Apply inverse operations to solve equations or formulas for a given variable.

A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A2.1.3.1.1, A2.1.3.1.2, A2.1.3.1.3, A2.1.3.1.4, A2.1.3.2.1, A2.1.3.2.2, A2.2.2.1.1, A2.2.2.1.2, A2.2.2.1.3, A2.2.2.1.4

B1. Expressions and Equations

State Board of Education
2.2 Algebraic Concepts

The Standards of Mathematical Practices

- Make sense of problems and persevere in solving them.
- Construct viable arguments and critique the reasoning of others.
- Use appropriate tools strategically.
- Look for and make use of structure.
- Reason abstractly and quantitatively.
- Model with mathematics.
- Attend to precision.
- Look for and express regularity in repeated reasoning.

2.2.6 Grade 6

- Expressions and Equations
  - CC.2.2.6.B.3 Represent and analyze quantitative relationships between dependent and independent variables.
  - M06.B-E.3.1.1
  - M06.B-E.3.1.2

2.2.7 Grade 7

- Expressions and Equations
  - CC.2.2.7.B.3 Model and solve real-world and mathematical problems by using and connecting numerical, algebraic, and/or graphical representations.
  - M07.B-E.2.1.1
  - M07.B-E.2.2.1
  - A1.1.1.4.1
  - M07.B-E.2.3.1

2.2.8 Grade 8

- Expressions and Equations
  - CC.2.2.8.B.3 Analyze and solve linear equations and pairs of simultaneous linear equations.
  - M08.B-E.3.1.1
  - M08.B-E.3.1.2
  - M08.B-E.3.1.3
  - M08.B-E.3.1.4
  - A1.1.1.4.1
  - A1.1.2.1.1
  - A1.1.2.2.1
  - A1.1.2.2.2

2.2 HS High School

- Expressions and Equations
  - CC.2.2.HS.D.9 Use reasoning to solve equations and justify the solution method.
  - A1.1.1.4.1, A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.1, A1.1.3.1.2, A1.1.3.1.3, A2.1.3.1.1, A2.1.3.1.2, A2.1.3.1.3, A2.1.3.1.4
  - CC.2.2.HS.D.10 Represent, solve, and interpret equations/inequalities and systems of equations/inequalities algebraically and graphically.
  - A1.1.2.1.1, A1.1.2.1.2, A1.1.2.1.3, A1.1.2.2.1, A1.1.2.2.2, A1.1.3.1.1, A1.1.3.1.2, A1.1.3.1.3, A1.1.3.2.1, A1.1.3.2.2, A2.1.3.1.1, A2.1.3.1.2, A2.1.3.1.3, A2.1.3.1.4

Pennsylvania's public schools shall teach, challenge, and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

- Expressions and Equations
  - CC.2.2.6.B.3 Represent and analyze quantitative relationships between dependent and independent variables.
  - M06.B-E.3.1.1
  - M06.B-E.3.1.2

2.2 Academic Standards and Assessments
2.2.6 Grade 6  
CC.2.2.6.C.1  Define, evaluate, and compare functions.

CC.2.2.6.C.2  Use concepts of functions to model relationships between quantities.

CC.2.2.6.C.3  Write functions or sequences that model relationships between two quantities.

CC.2.2.6.C.4  Interpret the effects transformations have on functions and find the inverses of functions.

CC.2.2.6.C.5  Construct and compare linear, quadratic, and exponential models to solve problems.

CC.2.2.6.C.6  Interpret functions in terms of the situations they model.

CC.2.2.6.C.7  Apply radian measure of an angle and the unit circle to analyze the trigonometric functions.

CC.2.2.6.C.8  Choose trigonometric functions to model periodic phenomena and describe the properties of the graphs.

CC.2.2.6.C.9  Prove the Pythagorean identity and use it to calculate trigonometric ratios.

<table>
<thead>
<tr>
<th>CC.2.2.6.C.1</th>
<th>CC.2.2.6.C.2</th>
<th>CC.2.2.6.C.3</th>
<th>CC.2.2.6.C.4</th>
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<th>CC.2.2.6.C.8</th>
<th>CC.2.2.6.C.9</th>
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</tr>
</tbody>
</table>
2.3 Geometry

Make sense of problems and persevere in solving them.

Construct viable arguments and critique the reasoning of others.

Use appropriate tools strategically.

Look for and make use of structure.

Reason abstractly and quantitatively.

Model with mathematics.

Attend to precision.

Look for and express regularity in repeated reasoning.

2.3.6 Grade 6

CC.2.3.6.A.1 Apply appropriate tools to solve real-world and mathematical problems involving area, surface area, and volume.

M06.C-G.1.1.1
M06.C-G.1.1.2
M06.C-G.1.1.3
M06.C-G.1.1.4
M06.C-G.1.1.5
M06.C-G.1.1.6

2.3.7 Grade 7

CC.2.3.7.A.1 Solve real-world and mathematical problems involving angle measure, area, surface area, circumference, and volume.

M07.C-G.2.1.1
M07.C-G.2.1.2
M07.C-G.2.2.1
M07.C-G.2.2.2

2.3.8 Grade 8

CC.2.3.8.A.1 Apply the concepts of volume of cylinders, cones, and spheres to solve real-world and mathematical problems.

M08.C-G.3.1.1
G.2.3.1.2

2.3.HS High School

CC.2.3.HS.A.1 Use geometric figures and their properties to represent transformations in the plane.

G.1.3.1.1, G.1.3.1.2

CC.2.3.HS.A.2 Apply rigid transformations to determine and explain congruence.

G.1.3.1.1, G.1.3.1.2

CC.2.3.HS.A.3 Verify and apply geometric theorems as they relate to geometric figures.

G.1.2.1.1, G.1.2.1.2, G.1.2.1.3, G.1.2.1.4, G.1.2.1.5, G.1.3.2.1, G.2.2.1.1, G.2.2.1.2, G.2.2.2.1, G.2.2.2.2, G.2.2.2.3, G.2.2.2.4, G.2.2.2.5

CC.2.3.HS.A.4 Apply the concept of congruence to create geometric constructions.

CC.2.3.HS.A.5 Create justifications based on transformations to establish similarity of plane figures.

G.1.3.1.1, G.1.3.1.2

CC.2.3.HS.A.6 Verify and apply theorems involving similarity as they relate to plane figures.

G.1.3.1.1, G.1.3.1.2, G.1.3.2.1

CC.2.3.HS.A.7 Apply trigonometric ratios to solve problems involving right triangles.

G.2.1.1.1, G.2.1.1.2

CC.2.3.HS.A.8 Apply geometric theorems to verify properties of circles.

G.1.1.1.1, G.1.1.1.2, G.1.1.1.3, G.1.1.1.4, G.1.3.2.1, G.2.2.3.1

CC.2.3.HS.A.9 Extend the concept of similarity to determine arc lengths and areas of sectors of circles.

G.1.1.1.1, G.1.1.1.2, G.1.1.1.3, G.1.1.1.4, G.2.2.2.1, G.2.2.2.2, G.2.2.2.3, G.2.2.2.4, G.2.2.2.5, G.2.2.3.1
2.3 Geometry

The Standards of Mathematical Practices

- Make sense of problems and persevere in solving them.
- Construct viable arguments and critique the reasoning of others.
- Use appropriate tools strategically.
- Look for and make use of structure.
- Reason abstractly and quantitatively.
- Model with mathematics.
- Attend to precision.
- Look for and express regularity in repeated reasoning.

2.3.6 Grade 6

Pennsylvania’s public schools shall teach, challenge, and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

(A) Geometry

- Understand and apply the Pythagorean Theorem to solve problems.

- Translate between the geometric description and the equation for a conic section.

- Apply coordinate geometry to prove simple geometric theorems algebraically.

- Explain volume formulas and use them to solve problems.

- Analyze relationships between two-dimensional and three-dimensional objects.

- Apply geometric concepts to model and solve real-world problems.

2.3.7 Grade 7

2.3.8 Grade 8

2.3.HS High School
<table>
<thead>
<tr>
<th>Key Terms for this Document</th>
<th>Standards for Mathematical Practice</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Standards for Mathematical Contents</strong></td>
<td>These standards define what students should know and be able to do in their study of mathematics.</td>
</tr>
<tr>
<td><strong>Standards for Mathematical Practice</strong></td>
<td>These standards describe the processes and proficiencies in which all students grades K-12 should engage. Educators must instill these standards of practice in their students so that they become habitual. The standards for mathematical practice should be used as the vehicle to deliver the standards of mathematical content.</td>
</tr>
<tr>
<td><strong>Standard Algorithm</strong></td>
<td>A locally agreed upon method of computation which is conventionally taught for solving mathematical problems.</td>
</tr>
<tr>
<td><strong>Decimal Fraction</strong></td>
<td>A fraction whose denominator is a power of ten (examples: 2/100, 8/10). These fractions are commonly expressed as decimals.</td>
</tr>
<tr>
<td><strong>Unit Fraction</strong></td>
<td>A rational number written as a fraction where the numerator is one and the denominator is a positive integer (example: 1/7).</td>
</tr>
<tr>
<td><strong>Rule</strong></td>
<td>A single operation (examples: add 5, multiply by 2).</td>
</tr>
</tbody>
</table>

**Standards for Grade 6**

**CC.2.4.6.B.1**
- Demonstrate an understanding of statistical variability by displaying, analyzing, and summarizing distributions.

**M06.D-S.1.1.1**

**M06.D-S.1.1.2**

**M06.D-S.1.1.3**

**M06.D-S.1.1.4**

**CC.2.4.7.B.1**
- Draw inferences about populations based on random sampling concepts.

**M07.D-S.1.1.1**

**M07.D-S.1.1.2**

**CC.2.4.8.B.1**
- Analyze and/or interpret bivariate data displayed in multiple representations.

**M08.D-S.1.1.1**

**M08.D-S.1.1.2**

**M08.D-S.1.1.3**

**A1.2.2.2.1**

**CC.2.4.HS.B.1**
- Summarize, represent, and interpret data on a single count or measurement variable.

**A1.2.2.1.2, A1.2.3.1.1, A1.2.3.2.1, A1.2.3.2.2, A1.2.3.2.3**

**CC.2.4.HS.B.2**
- Summarize, represent, and interpret data on two categorical and quantitative variables.

**A1.2.1.1.1, A1.2.1.1.2, A1.2.1.1.3, A1.2.1.2.1, A1.2.1.2.2, A1.2.2.2.1, A2.2.1.1.1, A2.2.3.1.1, A2.2.3.1.2**

**CC.2.4.HS.B.3**
- Analyze linear models to make interpretations based on the data.

**A1.2.2.2.1, A1.2.3.1.1, A1.2.3.2.1, A1.2.3.2.2, A1.2.3.2.3, A2.2.3.1.1, A2.2.3.1.2**

**CC.2.4.HS.B.4**
- Recognize and evaluate random processes underlying statistical experiments.

**A1.2.3.3.1, A2.2.3.2.1, A2.2.3.2.2, A2.2.3.2.3**

**CC.2.4.HS.B.5**
- Make inferences and justify conclusions based on sample surveys, experiments, and observational studies.

**A1.2.3.2.1, A1.2.3.2.2, A1.2.3.2.3, A2.2.3.2.1, A2.2.3.2.2, A2.2.3.2.3**

**CC.2.4.HS.B.6**
- Use the concepts of independence and conditional probability to interpret data.

**A2.2.3.2.1, A2.2.3.2.2, A2.2.3.2.3**

**CC.2.4.HS.B.7**
- Apply the rules of probability to compute probabilities of compound events in a uniform probability model.

**A1.2.3.3.1, A2.2.3.2.1, A2.2.3.2.2, A2.2.3.2.3**

**Key Terms**

- **Bivariate Data**: The data involves two variables and is usually represented as a scatter plot.
- **Chances**: The likelihood of an event occurring.
- **Comparative Inferences**: Drawing conclusions about two or more groups or categories.
- **Conditional Probability**: The probability of an event occurring given that another event has already occurred.
- **Concepts**: Basic ideas or principles.
- **Data**: Information that is collected and analyzed.
- **Decimals**: Numbers that have a decimal point.
- **Denominator**: The number below the line in a fraction.
- **Distributions**: The way in which data is spread out.
- **Event**: A specific outcome of an experiment.
- **Experiment**: A procedure or process that results in an observation.
- **Frequency**: The number of times a particular event occurs.
- **Graphs**: Visual representations of data.
- **Inferences**: Conclusions drawn from data.
- **Integers**: Whole numbers, including positive and negative numbers.
- **Mean**: The average of a set of numbers.
- **Median**: The middle value in a set of numbers.
- **Probability**: The likelihood of an event occurring.
- **Random**: Not predictable or expected.
- **Range**: The difference between the highest and lowest values in a set of data.
- **Standard Deviation**: A measure of how spread out a set of data is.
- **Statistics**: The collection and analysis of data.
- **Sum**: The total or result of adding numbers together.
- **Theoretical Probability**: The probability based on the possible outcomes.
- **Variables**: Characteristics or quantities that can change.
- **Vegetables**: Different types of edible plants.
- **Venn Diagram**: A diagram that shows all possible logical relations between a finite collection of different sets.
- **Variability**: The extent to which data points differ from one another.
- **Vocabulary**: The set of words used in a particular field or system.
- **Whole Numbers**: Counting numbers, including zero.

**Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS**

- CC.4: Academic Standards and Assessments
APPENDIX B
Academic Standards for Science and Technology and Environment and Ecology
Grades 6-12

THE ACADEMIC STANDARDS

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B. Models
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E. Change

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B. Process Knowledge
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D. Problem Solving in Technology

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F. Structure and Function

Biological Sciences .............................................. 3.3.
A. Living Forms
B. Structure and Function
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D. Evolution

Cross References

Authority
School Code of 1949 (4 P. S. § 1-121.2) and 22 Pa. Code § 4.51 (relating to Keystone Exams). The provisions of this appendix B amended under sections 121, 2604-B and 2604-B. of the Public Board of Education.
Glossary

C. Consequences and Impacts
B. Meeting Human Needs
A. Constraints

Earth Sciences

3.5.

A. Land Forms and Processes
B. Resources
C. Meteorology
D. Hydrology and Oceanography

Reading
Students read, understand, and respond to informational text—with an emphasis on comprehension, vocabulary acquisition, and making connections among ideas and between texts with a focus on textual evidence.

• Key Ideas and Details
• Text Types and Purposes
• Integration of Knowledge and Ideas
• Craft and Structure
• Range and Level of Complex Texts

Technology Education

3.6.

A. Biotechnology
B. Information Technology
C. Physical Technologies (Construction, Manufacturing, and Transportation)

Writing
Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

• Research to Build and Present Knowledge
• Production and Distribution of Writing
• Text Types and Purposes
• Key Ideas and Details

Technological Devices

3.7.

A. Tools
B. Instruments
C. Computer Operations
D. Computer Software
E. Computer Communication Systems
VIII. INTRODUCTION

This document describes what students should know and be able to do in the following eight areas:

• 3.1. Unifying Themes of Science
• 3.2. Inquiry and Design
• 3.3. Biological Sciences
• 3.4. Physical Science, Chemistry and Physics
• 3.5. Earth Sciences
• 3.6. Technology Education
• 3.7. Technological Devices
• 3.8. Science, Technology and Human Endeavors

These standards describe what students should know and be able to do by the end of fourth, seventh, tenth and twelfth grade. In addition, these standards reflect the increasing complexity and sophistication that students are expected to achieve as they progress through school. This document avoids repetition, making an obvious progression across grade levels less explicit. Teachers shall expect that students know and can apply the concepts and skills expressed at the preceding level. Consequently, previous learning is reinforced but not retaught.

Standards are arranged by categories, for example, 3.1 Unifying Themes. Under each category are standard statements that are preceded by a capital letter for example in 3.1 Unifying Themes, grade 10.B, “Describe concepts of models as a way to predict and understand science and technology.” Following the standard statements are bulleted standard descriptors, which explain the nature and scope of the standard. Descriptors specify the nature of the standard and the level of complexity needed in meeting that standard in a proficient manner. Descriptors...
serve to benchmark the standard statement. Curriculum, instruction and assessment should focus on meeting the standard statement. Technology education, computer applications and science are separate curricular areas. Meeting standards should be approached as a collaborative effort among all curricular areas.

The following descriptors explain the intent of each standard category:

3.1. Unifying Themes

Unifying themes of science and technology provide big ideas that integrate with significant concepts. There are only a few fundamental concepts and processes that form the framework upon which science and technology knowledge is organized—motion and forces, energy, structure of matter, change over time and machines. These themes create the context through which the content of the disciplines can be taught and are emphasized in each standard.

3.2. Inquiry and Design

The nature of science and technology is characterized by applying process knowledge that enables students to become independent learners. These skills include observing, classifying, inferring, predicting, measuring, computing, estimating, communicating, using space/time relationships, defining operationally, raising questions, formulating hypotheses, testing and experimenting, designing controlled experiments, recognizing variables, manipulating variables, interpreting data, formulating models, designing models, and producing solutions. Everyone can use them to solve real-life problems. These process skills are developed across the grade levels and differ in the degree of sophistication, quantitative nature and application to the content.

3.3. Biological Sciences

Biology concerns living things, their appearance, their appearance, differences, and application to the content. How do they live and how they live. Living things, types of life, the scope of life, similarities and differences, and differences of life. The scope of life, similarities, and differences, and differences of life. The scope of life, similarities, and differences.
3.4. Physical Science

Chemistry and Physics

Physics and chemistry involve the study of objects and their properties. Students examine changes to materials during mixing, freezing, heating and dissolving and then learn how to observe and measure results. In chemistry, students study the relationship between matter, atomic structure and its activity. Laboratory investigations of the properties of substances and their changes provide a basis for students to understand some deeper principles. Mathematics and science are interrelated disciplines that help to explore and explain phenomena in the natural world. Physics deepens the understanding of materials and includes atoms, waves, light, electricity, magnetism and the role of energy, forces and motion.

3.5. Earth Sciences

The dynamics of earth science include the studies of energy, forces and motion, earth’s history, climate, environment, and the role of oceans and continents. Earth science is fundamental to understanding many of the phenomena that occur in the natural world. The interaction of the atmosphere, ocean and land is essential to understanding some deeper phenomena. Mathematics and science are interrelated disciplines that help to explore and explain phenomena in the natural world.

3.6. Technology Education

Technology education is the use of accumulated knowledge to process resources to meet human needs and improve the quality of life. Students develop the ability to select and correctly use materials, tools, techniques and processes to answer questions, understand explanations and solve problems encountered in real-life situations. The design, creation and use of new technologies in the field of technology education provide a basis for students to understand some deeper principles. Mathematics and science are interrelated disciplines that help to explore and explain phenomena in the natural world.

3.7. Technological Devices

Students use tools to observe, measure, move and make things. New technological tools and techniques make it possible to enact far-reaching changes in our world. Technology enhances the students’ abilities to identify problems and determine solutions. Computers play an integral role in every day life by providing our students with the ability to process resources to meet human needs and improve the quality of life.

3.8. Science, Technology and Human Endeavors

Scientific knowledge and societal needs often create a demand for new technology. Conversely, new technology advances scientific knowledge. Both influence society.

The dynamics of earth science include the studies of energy, forces and motion, earth’s history, climate, environment, and the role of oceans and continents. Earth science is fundamental to understanding many of the phenomena that occur in the natural world. The interaction of the atmosphere, ocean and land is essential to understanding some deeper phenomena. Mathematics and science are interrelated disciplines that help to explore and explain phenomena in the natural world.
What Is Science?

Any study of science includes the search for understanding the natural world and facts, principles, theories and laws that have been verified by the scientific community and are used to explain and predict natural phenomena and events. Scientific inquiry is the process of testing hypotheses using observation and experimentation to gather information, and then using this information to form and test explanations for natural phenomena and events. This process is repeated and refined over time, leading to a better understanding of the natural world.

Knowledge of science involves several key components:

1. **Nature of Science** - The ways in which scientists search for answers and explanations of observations about the natural world. This includes processes such as observing, classifying, inferring, predicting, measuring, hypothesizing, experimenting, and interpreting data.

2. **Unifying Themes of Science** - Concepts, generalizations, and principles that result from and lead to inquiry. These themes provide a framework for organizing scientific knowledge and understanding the natural world.

3. **Knowledge** - Facts, principles, theories, and laws derived from scientific inquiry by the world community of scientists. This includes physics, chemistry, earth science, and biological sciences.

4. **Inquiry** - The intellectual process of logic and reasoning. This involves recognizing variables, manipulating variables, interpreting data, formulating models, designing models, and producing solutions.

5. **Process Skills** - Recognizing that science is acquired and practiced. This involves observing, classifying, inferring, predicting, measuring, computing, estimating, communicating, using space/time relationships, defining operationally, formulating hypotheses, using scientific reasoning, and applying inferences to the natural world. In addition, science involves a process that allows for the development of new questions and hypotheses.

6. **Scientific Thinking** - The disposition to suspend judgment, not make decisions, and not take action until results, explanations, or answers have been tested and verified. This involves recognizing the importance of careful, critical thinking and the use of evidence to support conclusions.

7. **Problem Solving** - The application of scientific knowledge to solve problems and make decisions. This involves recognizing the importance of identifying and addressing problems, and applying scientific knowledge and reasoning to develop solutions.

What Is Technology Education?

Technology education is the study of the design and use of tools and systems to solve problems and improve human life. It involves the application of scientific knowledge to create and use technology. Technology education is separate from but related to the sciences, and it focuses on the application of scientific knowledge to real-world problems and situations.

Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS
with specific content, curriculum and specific certification requirements. Technology is the application of tools, materials, processes and systems by humans to solve problems and provide benefits to humankind. We use technology in an attempt to improve our environment. These improvements may relate to survival needs (e.g., food, shelter) or they may relate to human aspirations (e.g., education, culture). They can include unexpected benefits, unexpected costs, and unforeseen risks.

Technology education involves a broad spectrum of knowledge and skills. Effective technology education combines knowledge of content, process and skills to provide students with a holistic approach to learning. Knowledge of content, process and skills should be used together to effectively engage students and promote a complete understanding of the sciences, related technologies and their interrelationships.

Knowledge of content, process and skills in technology involves learning processes that include these components:

- Methods of designing and developing solutions
- Standards for selecting and using appropriate materials, tools and processes
- Criteria for judging the performance and impact of the solutions
- Experimental and design specifications for testing and evaluating solutions
- Evaluating the impact of modifying a system to improve performance

Technology education can be divided into three main systems that include bio-

Because these systems and technologies provide the practical application of these principles, they can include unexpected benefits, unexpected costs, and unforeseen risks.
### 3.1. Unifying Themes

<table>
<thead>
<tr>
<th>3.1.4. GRADE 4</th>
<th>3.1.7. GRADE 7</th>
<th>3.1.10. GRADE 10</th>
<th>3.1.12. GRADE 12</th>
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</table>

*Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...*

A. Know that natural and human-made objects are made up of parts.
- Identify and describe what parts make up a system.
- Identify system parts that are natural and human-made (e.g., ball point pen, simple electrical circuits, plant anatomy).
- Describe the purpose of analyzing systems.
- Know that technologies include physical technology systems (e.g., construction, manufacturing, transportation), informational systems and biochemical-related systems.

A. Explain the parts of a simple system and their relationship to each other.
- Describe a system as a group of related parts that work together to achieve a desired result (e.g., digestive system).
- Explain the importance of order in a system.
- Distinguish between system inputs, system processes and system outputs.
- Distinguish between open loop and closed loop systems.
- Apply systems analysis to solve problems.

A. Discriminate among the concepts of systems, subsystems, feedback and control in solving technological problems.
- Identify the function of subsystems within a larger system (e.g., role of thermostat in an engine, pressure switch).
- Describe the interrelationships among inputs, processes, outputs, feedback and control in specific systems.
- Explain the concept of system redesign and apply it to improve technological systems.
- Apply the universal systems model to illustrate specific solutions and troubleshoot specific problems.
- Analyze and describe the effectiveness of systems to solve specific problems.

A. Apply concepts of systems, subsystems, feedback and control to solve complex technological problems.
- Apply knowledge of control systems concept by designing and modeling control systems that solve specific problems.
- Apply systems analysis to predict results.
- Analyze and describe the function, interaction and relationship among subsystems and the system itself.
- Compare and contrast several systems that could be applied to solve a single problem.
- Evaluate the causes of a system’s inefficiency.
### 3.1. Unifying Themes

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**Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...**

B. Know models as useful simplifications of objects or processes.
   - Identify different types of models.
   - Identify and apply models as tools for prediction and insight.
   - Apply appropriate simple modeling tools and techniques.
   - Identify theories that serve as models (e.g., molecules).

B. Describe the use of models as an application of scientific or technological concepts.
   - Identify and describe different types of models and their functions.
   - Apply models to predict specific results and observations (e.g., population growth, effects of infectious organisms).
   - Explain systems by outlining a system's relevant parts and its purpose and/or designing a model that illustrates its function.

B. Describe concepts of models as a way to predict and understand science and technology.
   - Distinguish between different types of models and modeling techniques and apply their appropriate use in specific applications (e.g., kinetic gas theory, DNA).
   - Examine the advantages of using models to demonstrate processes and outcomes (e.g., blueprint analysis, structural stability).
   - Apply mathematical models to science and technology.

B. Apply concepts of models as a method to predict and understand science and technology.
   - Evaluate technological processes by collecting data and applying mathematical models (e.g., process control).
   - Apply knowledge of complex physical models to interpret data and apply mathematical models.
   - Appraise the importance of computer models in interpreting science and technological systems.
3.1. Unifying Themes

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<tr>
<td>C. Illustrate patterns that regularly occur and reoccur in nature. • Identify observable patterns (e.g., growth patterns in plants, crystal shapes in minerals, climate, structural patterns in bird feathers). • Use knowledge of natural patterns to predict next occurrences (e.g., seasons, leaf patterns, lunar phases).</td>
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<tr>
<td>C. Identify patterns as repeated processes or recurring elements in science and technology. • Identify different forms of patterns and use them to group and classify specific objects. • Identify repeating structure patterns. • Identify and describe patterns that occur in physical systems (e.g., construction, manufacturing, transportation), informational systems and biochemical-related systems.</td>
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<tr>
<td>C. Apply patterns as repeated processes or recurring elements in science and technology. • Examine and describe recurring patterns that form the basis of biological classification, chemical periodicity, geological order and astronomical order. • Examine and describe stationary physical patterns. • Examine and describe physical patterns in motion.</td>
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<tr>
<td>C. Assess and apply patterns in science and technology. • Assess and apply recurring patterns in natural and technological systems. • Compare and contrast structure and function relationships as they relate to patterns. • Assess patterns in nature using mathematical formulas.</td>
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</table>
### 3.1. Unifying Themes

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<tr>
<th>3.1.4. GRADE 4</th>
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<th>3.1.10. GRADE 10</th>
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</table>

**D.** Know that scale is an important attribute of natural and human made objects, events and phenomena.
- Identify the use of scale as it relates to the measurement of distance, volume and mass.
- Describe scale as a ratio (e.g., map scales).
- Explain the importance of scale in producing models and apply it to a model.

**D.** Explain scale as a way of relating concepts and ideas to one another by some measure.
- Apply various applications of size and dimensions of scale to scientific, mathematical, and technological applications.
- Describe scale as a form of ratio and apply to a life situation.

**D.** Apply scale as a way of relating concepts and ideas to one another by some measure.
- Apply dimensional analysis and scale as a ratio.
- Convert one scale to another.

**D.** Analyze scale as a way of relating concepts and ideas to one another by some measure.
- Compare and contrast various forms of dimensional analysis.
- Assess the use of several units of measurement to the same problem.
- Analyze and apply appropriate measurement scales when collecting data.
### 3.1. Unifying Themes

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**E. Recognize change in natural and physical systems.**
- Recognize change as fundamental to science and technology concepts.
- Examine and explain change by using time and measurement.
- Describe relative motion.
- Describe the change to objects caused by heat, cold, light or chemicals.

**E. Identify change as a variable in describing natural and physical systems.**
- Describe fundamental science and technology concepts that could solve practical problems.
- Explain how ratio is used to describe change.
- Describe the effect of making a change in one part of a system on the system as a whole.

**E. Describe patterns of change in nature, physical and man made systems.**
- Describe how fundamental science and technology concepts are used to solve practical problems (e.g., momentum, Newton’s laws of universal gravitation, tectonics, conservation of mass and energy, cell theory, theory of evolution, atomic theory, theory of relativity, Pasteur’s germ theory, relativity, heliocentric theory, gas laws, feedback systems).
- Recognize that stable systems often involve underlying dynamic changes (e.g., a chemical reaction at equilibrium has molecules reforming continuously).

**E. Evaluate change in nature, physical systems and man made systems.**
- Evaluate fundamental science and technology concepts and their development over time (e.g., DNA, cellular respiration, unified field theory, energy measurement, automation, miniaturization, Copernican and Ptolemaic universe theories).
- Analyze how models, systems and technologies have changed over time (e.g., germ theory, theory of evolution, solar system, cause of fire).
- Explain how correlation of variables does not necessarily imply causation.
<table>
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<tr>
<th>Grade</th>
<th>Skills</th>
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<tr>
<td>3.1.4.</td>
<td>Describe the effects of error in measurements.</td>
</tr>
<tr>
<td>3.1.7.</td>
<td>Describe changes to matter caused by heat, cold, light or chemicals</td>
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<tr>
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<td>using a rate function.</td>
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<tr>
<td>3.1.10.</td>
<td>Evaluate the patterns of change within a technology (e.g., changes in</td>
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<td>engineering in the automotive industry).</td>
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### 3.2. Inquiry and Design

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<tbody>
<tr>
<td><strong>A.</strong> Identify and use the nature of scientific and technological knowledge.</td>
<td><strong>A.</strong> Explain and apply scientific and technological knowledge.</td>
<td><strong>A.</strong> Apply knowledge and understanding about the nature of scientific and technological knowledge.</td>
<td><strong>A.</strong> Evaluate the nature of scientific and technological knowledge.</td>
</tr>
<tr>
<td>• Distinguish between a scientific fact and a belief.</td>
<td>• Distinguish between a scientific theory and a belief.</td>
<td>• Compare and contrast scientific theories and beliefs.</td>
<td>• Know and use the ongoing scientific processes to continually improve and better understand how things work.</td>
</tr>
<tr>
<td>• Provide clear explanations that account for observations and results.</td>
<td>• Answer “What if” questions based on observation, inference or prior knowledge or experience.</td>
<td>• Know that science uses both direct and indirect observation means to study the world and the universe.</td>
<td>• Critically evaluate the status of existing theories (e.g., germ theory of disease, wave theory of light, classification of subatomic particles, theory of evolution, epidemiology of AIDS).</td>
</tr>
<tr>
<td>• Relate how new information can change existing perceptions.</td>
<td>• Explain how skepticism about an accepted scientific explanation led to a new understanding.</td>
<td>• Integrate new information into existing theories and explain implied results.</td>
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### 3.2. Inquiry and Design

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</table>
| **B. Describe objects in the world using the five senses.**  
  • Recognize observational descriptors from each of the five senses (e.g., see-blue, feel-rough).  
  • Use observations to develop a descriptive vocabulary. | **B. Apply process knowledge to make and interpret observations.**  
  • Measure materials using a variety of scales.  
  • Describe relationships by making inferences and predictions.  
  • Communicate, use space/time relationships, define operationally, raise questions, formulate hypotheses, test and experiment.  
  • Design controlled experiments, recognize variables, and manipulate variables.  
  • Interpret data, formulate models, design models, and produce solutions. | **B. Apply process knowledge and organize scientific and technological phenomena in varied ways.**  
  • Describe materials using precise quantitative and qualitative skills based on observations.  
  • Develop appropriate scientific experiments: raising questions, formulating hypotheses, testing, controlled experiments, recognizing variables, manipulating variables, interpreting data, and producing solutions.  
  • Use process skills to make inferences and predictions using collected information and to communicate, using space/time relationships, defining operationally. | **B. Evaluate experimental information for appropriateness and adherence to relevant science processes.**  
  • Evaluate experimental data correctly within experimental limits.  
  • Judge that conclusions are consistent and logical with experimental conditions.  
  • Interpret results of experimental research to predict new information or improve a solution. |

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## 3.2. Inquiry and Design

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<tr>
<td>C. Recognize and use the elements of scientific inquiry to solve problems.</td>
<td>C. Identify and use the elements of scientific inquiry to solve problems.</td>
<td>C. Apply the elements of scientific inquiry to solve problems.</td>
<td>C. Apply the elements of scientific inquiry to solve multi-step problems.</td>
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<tr>
<td>• Generate questions about objects, organisms and/or events that can be answered through scientific investigations.</td>
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<tr>
<td>• Design an investigation.</td>
<td>• Evaluate the appropriateness of questions.</td>
<td>• Design an investigation with adequate control and limited variables to investigate a question.</td>
<td>• Design an investigation with adequate control and limited variables to investigate a question.</td>
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<tr>
<td>• Conduct an experiment.</td>
<td>• Design an investigation with limited variables to investigate a question.</td>
<td>• Conduct a multiple step experiment.</td>
<td>• Conduct a multiple step experiment.</td>
</tr>
<tr>
<td>• State a conclusion that is consistent with the information.</td>
<td>• Judge the significance of experimental information in answering the question.</td>
<td>• Organize experimental information using analytic and descriptive techniques.</td>
<td>• Organize experimental information using analytic and descriptive techniques.</td>
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<td></td>
<td>• Communicate appropriate conclusions from the experiment.</td>
<td>• Judge the significance of experimental information in answering the question.</td>
<td>• Evaluate the significance of experimental information in answering the question.</td>
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<tr>
<td></td>
<td></td>
<td>• Suggest additional steps that might be done experimentally.</td>
<td>• Project additional questions from a research study that could be studied.</td>
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<tr>
<td>D. Recognize and use the technological design process to solve problems.</td>
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<tr>
<td>- Recognize and explain basic problems.</td>
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<tr>
<td>- Identify possible solutions and their course of action.</td>
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<tr>
<td>- Try a solution.</td>
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<tr>
<td>- Describe the solution, identify its impacts and modify if necessary.</td>
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<td>- Show the steps taken and the results.</td>
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<tr>
<td>D. Know and use the technological design process to solve problems.</td>
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<tr>
<td>- Define different types of problems.</td>
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<tr>
<td>- Define all aspects of the problem, necessary information and questions that must be answered.</td>
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<tr>
<td>- Propose the best solution.</td>
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<tr>
<td>- Design and propose alternative methods to achieve solutions.</td>
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<tr>
<td>- Apply a solution.</td>
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<tr>
<td>- Explain the results, present improvements, identify and infer the impacts of the solution.</td>
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<tr>
<td>D. Identify and apply the technological design process to solve problems.</td>
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<tr>
<td>- Examine the problem, rank all necessary information and all questions that must be answered.</td>
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<tr>
<td>- Propose and analyze a solution.</td>
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<tr>
<td>- Implement the solution.</td>
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<tr>
<td>- Evaluate the solution, test, redesign and improve as necessary.</td>
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<tr>
<td>- Communicate the process and evaluate and present the impacts of the solution.</td>
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<tr>
<td>D. Analyze and use the technological design process to solve problems.</td>
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<tr>
<td>- Assess all aspects of the problem, prioritize the necessary information and formulate questions that must be answered.</td>
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<tr>
<td>- Propose, develop and appraise the best solution and develop alternative solutions.</td>
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<tr>
<td>- Implement and assess the solution.</td>
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<tr>
<td>- Evaluate and assess the solution, redesign and improve as necessary.</td>
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<td>- Communicate and assess the process and evaluate and present the impacts of the solution.</td>
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3.3. Biological Sciences

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</tbody>
</table>
| A. Know the similarities and differences of living things.  
  - Identify life processes of living things (e.g., growth, digestion, react to environment).  
  - Know that some organisms have similar external characteristics (e.g., anatomical characteristics; appendages, type of covering, body segments) and that similarities and differences are related to environmental habitat.  
  - Describe basic needs of plants and animals. |
| A. Describe the similarities and differences that characterize diverse living things.  
  - Describe how the structures of living things help them function in unique ways.  
  - Explain how to use a dichotomous key to identify plants and animals.  
  - Account for adaptations among organisms that live in a particular environment. |
| A. Explain the structural and functional similarities and differences found among living things.  
  - Identify and characterize major life forms according to their placement in existing classification groups.  
  - Explain the relationship between structure and function at the molecular and cellular levels.  
  - Describe organizing schemes of classification keys.  
  - Identify and characterize major life forms by kingdom, phyla, class and order. |
| A. Explain the relationship between structure and function at all levels of organization.  
  - Identify and explain interactions among organisms (e.g., mutually beneficial, harmful relationships).  
  - Explain and analyze the relationship between structure and function at the molecular, cellular and organ-system level.  
  - Describe and explain structural and functional relationships in each of the five (or six) kingdoms.  
  - Explain significant biological diversity found in each of the biomes. |
### 3.3. Biological Sciences

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**Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...**

**B. Know that living things are made up of parts that have specific functions.**
- Identify examples of unicellular and multicellular organisms.
- Determine how different parts of a living thing work together to make the organism function.

**B. Describe the cell as the basic structural and functional unit of living things.**
- Identify the levels of organization from cell to organism.
- Compare life processes at the organism level with life processes at the cell level.
- Explain that cells and organisms have particular structures that underlie their functions.
- Describe and distinguish among cell cycles, reproductive cycles and life cycles.
- Explain disease effects on structures or functions of an organism.

**B. Describe and explain the chemical and structural basis of living organisms.**
- Describe the relationship between the structure of organic molecules and the function they serve in living organisms.
- Identify the specialized structures and regions of the cell and the functions of each.
- Explain how cells store and use information to guide their functions.
- Explain cell functions and processes in terms of chemical reactions and energy changes.

**B. Analyze the chemical and structural basis of living organisms.**
- Identify and describe factors affecting metabolic function (e.g., temperature, acidity, hormones).
- Evaluate metabolic activities using experimental knowledge of enzymes.
- Evaluate relationships between structure and functions of different anatomical parts given their structure.
- Describe potential impact of genome research on the biochemistry and physiology of life.
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<td>C. Know that characteristics are inherited and, thus, offspring closely resemble their parents.</td>
<td>• Identify characteristics for animal and plant survival in different climates.</td>
<td>• Identify physical characteristics that appear in both parents and offspring and differ between families, strains or species.</td>
<td>C. Know that every organism has a set of genetic instructions that determines its inherited traits.</td>
<td>• Identify and explain inheritable characteristics.</td>
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<td></td>
<td>• Identify that the gene is the basic unit of inheritance.</td>
<td>• Describe how traits are inherited.</td>
<td>• Identify basic patterns of inheritance (e.g., dominance, recessive, codominance).</td>
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<td>• Distinguish how different living things reproduce (e.g., vegetative budding, sexual).</td>
<td>• Recognize that mutations can alter a gene.</td>
<td>• Describe how selective breeding, natural selection and genetic technologies can change genetic makeup of organisms.</td>
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<tr>
<td></td>
<td>• Describe how genetic information is inherited and expressed.</td>
<td>C. Describe how genetic information is inherited and expressed.</td>
<td>• Compare and contrast the function of mitosis and meiosis.</td>
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<tr>
<td></td>
<td>• Describe mutations’ effects on a trait’s expression.</td>
<td></td>
<td>• Distinguish different reproductive patterns in living things (e.g., budding, spores, fission).</td>
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<tr>
<td></td>
<td>• Compare random and selective breeding practices and their results (e.g., antibiotic resistant bacteria).</td>
<td></td>
<td>• Describe how selective breeding, natural selection and genetic technologies can change genetic makeup of organisms.</td>
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<tr>
<td></td>
<td>• Explain the relationship among DNA, genes and chromosomes.</td>
<td>C. Explain gene inheritance and expression at the molecular level.</td>
<td>• Analyze gene expression at the molecular level.</td>
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<tr>
<td></td>
<td>• Explain different types of inheritance (e.g., multiple allele, sex-influenced traits).</td>
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<td>• Describe the roles of nucleic acids in cellular reproduction and protein synthesis.</td>
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<td></td>
<td>• Describe the role of DNA in protein synthesis as it relates to gene expression.</td>
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<td>• Explain birth defects from the standpoint of embryological development and/or changes in genetic makeup.</td>
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<tr>
<td>Identify changes in living things over time. • Compare extinct life forms with living organisms.</td>
<td>Explain basic concepts of natural selection. • Identify adaptations that allow organisms to survive in their environment. • Describe how an environmental change can affect the survival of organisms and entire species. • Know that differences in individuals of the same species may give some advantage in surviving and reproducing. • Recognize that populations of organisms can increase rapidly. • Describe the role that fossils play in studying the past. • Explain how biologic extinction is a natural process.</td>
<td>Explain the mechanisms of the theory of evolution. • Analyze data from fossil records, similarities in anatomy and physiology, embryological studies and DNA studies that are relevant to the theory of evolution. • Explain the role of mutations and gene recombination in changing a population of organisms. • Compare modern day descendents of extinct species and propose possible scientific accounts for their present appearance. • Describe the factors (e.g., isolation, differential reproduction) affecting gene frequency in a population over time and their consequences.</td>
<td>Analyze the theory of evolution. • Examine human history by describing the progression from early hominids to modern humans. • Apply the concept of natural selection as a central concept in illustrating evolution theory.</td>
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### 3.3. Biological Sciences

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Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

- Describe and differentiate between the roles of natural selection and genetic drift.
- Describe changes that illustrate major events in the earth’s development based on a timeline.
- Explain why natural selection can act only on inherited traits.
- Apply the concept of natural selection to illustrate and account for a species’ survival, extinction or change over time.

Ecosystem Standards are in the Environment and Ecology Standard Category (4.6).
### A. Recognize basic concepts about the structure and properties of matter.
- Describe properties of matter (e.g., hardness, reactions to simple chemical tests).
- Know that combining two or more substances can make new materials with different properties.
- Know different material characteristics (e.g., texture, state of matter, solubility).

### A. Describe concepts about the structure and properties of matter.
- Identify elements as basic building blocks of matter that cannot be broken down chemically.
- Distinguish compounds from mixtures.
- Describe and conduct experiments that identify chemical and physical properties.
- Describe reactants and products of simple chemical reactions.

### A. Explain concepts about the structure and properties of matter.
- Know that atoms are composed of even smaller sub-atomic structures whose properties are measurable.
- Explain the repeating pattern of chemical properties by using the repeating patterns of atomic structure within the periodic table.
- Predict the behavior of gases through the use of Boyle’s, Charles’ or the ideal gas law, in everyday situations.
- Describe phases of matter according to the Kinetic Molecular Theory.
- Explain the formation of compounds and their resulting properties using bonding theories (ionic and covalent).

### A. Apply concepts about the structure and properties of matter.
- Apply rules of systematic nomenclature and formula writing to chemical substances.
- Classify and describe, in equation form, types of chemical and nuclear reactions.
- Explain how radioactive isotopes that are subject to decay can be used to estimate the age of materials.
- Explain how the forces that bind solids, liquids and gases affect their properties.
- Characterize and identify important classes of compounds (e.g., acids, bases, salts).
### 3.4. Physical Science, Chemistry and Physics

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<thead>
<tr>
<th>3.4.4. GRADE 4</th>
<th>3.4.7. GRADE 7</th>
<th>3.4.10. GRADE 10</th>
<th>3.4.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recognize formulas for simple inorganic compounds.</td>
<td>Describe various types of chemical reactions by applying the laws of conservation of mass and energy.</td>
<td>Apply knowledge of mixtures to appropriate separation techniques.</td>
<td>Understand that carbon can form several types of compounds.</td>
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<td></td>
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<td></td>
<td>Apply the conservation of energy concept to fields as diverse as mechanics, nuclear particles and studies of the origin of the universe.</td>
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<td>Apply the predictability of nuclear decay to estimate the age of materials that contain radioactive isotopes.</td>
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<td></td>
<td>Quantify the properties of matter (e.g., density, solubility coefficients) by applying mathematical formulas.</td>
</tr>
<tr>
<td>B. Know basic energy types, sources and conversions.</td>
<td>B. Relate energy sources and transfers to heat and temperature.</td>
<td>B. Analyze energy sources and transfers of heat.</td>
<td>B. Apply and analyze energy sources and conversions and their relationship to heat and temperature.</td>
</tr>
<tr>
<td>• Identify energy forms and examples (e.g., sunlight, heat, stored, motion).</td>
<td>• Identify and describe sound changes in moving objects.</td>
<td>• Determine the efficiency of chemical systems by applying mathematical formulas.</td>
<td>• Determine the heat involved in illustrative chemical reactions.</td>
</tr>
<tr>
<td>• Know the concept of the flow of energy by measuring flow through an object or system.</td>
<td>• Know that the sun is a major source of energy that emits wavelengths of visible light, infrared and ultraviolet radiation.</td>
<td>• Use knowledge of chemical reactions to generate an electrical current.</td>
<td>• Evaluate mathematical formulas that calculate the efficiency of specific chemical and mechanical systems.</td>
</tr>
<tr>
<td>• Describe static electricity in terms of attraction, repulsion and sparks.</td>
<td>• Explain the conversion of one form of energy to another by applying knowledge of each form of energy.</td>
<td>• Evaluate energy changes in chemical reactions.</td>
<td>• Use knowledge of oxidation and reduction to balance complex reactions.</td>
</tr>
<tr>
<td>• Apply knowledge of the basic electrical circuits to design and construction simple direct current circuits.</td>
<td>• Explain the parts and functions in an electrical circuit.</td>
<td>• Explain knowledge of conservation of energy and momentum to explain common phenomena (e.g., refrigeration system, rocket propulsion).</td>
<td>• Apply appropriate thermodynamic concepts (e.g., conservation, entropy) to solve problems relating to energy and heat.</td>
</tr>
<tr>
<td>• Classify materials as conductors and nonconductors.</td>
<td>• Know and demonstrate the basic properties of heat by producing it in a variety of ways.</td>
<td>• Explain resistance, current and electro-motive force (Ohm’s Law).</td>
<td>• Apply and analyze energy sources and conversions and their relationship to heat and temperature.</td>
</tr>
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<td>Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to. . .</td>
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<tr>
<td>• Know the characteristics of light (e.g., reflection, refraction, absorption) and use them to produce heat, color or a virtual image.</td>
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</table>
### 3.4. Physical Science, Chemistry and Physics

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<td><strong>Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...</strong></td>
<td><strong>C. Identify and explain the principles of force and motion.</strong></td>
<td><strong>C. Distinguish among the principles of force and motion.</strong></td>
<td><strong>C. Apply the principles of motion and force.</strong></td>
</tr>
<tr>
<td><strong>Observe and describe different types of force and motion.</strong></td>
<td><strong>• Describe the motion of an object based on its position, direction and speed.</strong></td>
<td><strong>• Identify the relationship of electricity and magnetism as two aspects of a single electromagnetic force.</strong></td>
<td><strong>• Evaluate wave properties of frequency, wavelength and speed as applied to sound and light through different media.</strong></td>
</tr>
<tr>
<td><strong>• Identify characteristics of sound (pitch, loudness and echoes).</strong></td>
<td><strong>• Classify fluid power systems according to fluid used or mode of power transmission (e.g., air, oil).</strong></td>
<td><strong>• Identify elements of simple machines in compound machines.</strong></td>
<td><strong>• Propose and produce modifications to specific mechanical power systems that will improve their efficiency.</strong></td>
</tr>
<tr>
<td><strong>• Recognize forces that attract or repel other objects and demonstrate them.</strong></td>
<td><strong>• Explain various motions using models.</strong></td>
<td><strong>• Explain fluid power systems through the design and construction of appropriate models.</strong></td>
<td><strong>• Analyze the principles of translational motion, velocity and acceleration as they relate to free fall and projectile motion.</strong></td>
</tr>
<tr>
<td><strong>• Describe various types of motions.</strong></td>
<td><strong>• Explain how convex and concave mirrors and lenses change light images.</strong></td>
<td><strong>• Describe sound effects (e.g., Doppler effect, amplitude, frequency, reflection, refraction, absorption, sonar, seismic).</strong></td>
<td><strong>• Analyze the principles of rotational motion to solve problems relating to angular momentum, and torque.</strong></td>
</tr>
<tr>
<td><strong>• Compare the relative movement of objects and describe types of motion that are evident.</strong></td>
<td><strong>• Explain how sound and light travel in waves of differing speeds, sizes and frequencies.</strong></td>
<td><strong>• Describe light effects (e.g., Doppler effect, dispersion, absorption, emission spectra, polarization, interference).</strong></td>
<td><strong>• Interpret a model that illustrates circular motion and acceleration.</strong></td>
</tr>
<tr>
<td><strong>• Describe the position of an object by locating it relative to another object or the background (e.g., geographic direction, left, up).</strong></td>
<td><strong>C. Identify and explain the principles of force and motion.</strong></td>
<td><strong>C. Distinguish among the principles of force and motion.</strong></td>
<td><strong>C. Apply the principles of motion and force.</strong></td>
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<td>Know Newton's laws of motion (including inertia, action and reaction) and gravity and apply them to solve problems related to forces and mass.</td>
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<td>7</td>
<td>Determine the efficiency of mechanical systems by applying mathematical formulas.</td>
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<tr>
<td>10</td>
<td>Describe inertia, motion, equilibrium, and action/reaction concepts through words, models and mathematical symbols.</td>
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<tr>
<td><strong>D.</strong> Describe the composition and structure of the universe and the earth’s place in it.</td>
<td><strong>D.</strong> Describe essential ideas about the composition and structure of the universe and the earth’s place in it.</td>
<td><strong>D.</strong> Explain essential ideas about the composition and structure of the universe.</td>
<td><strong>D.</strong> Analyze the essential ideas about the composition and structure of the universe.</td>
</tr>
<tr>
<td>• Recognize earth’s place in the solar system.</td>
<td>• Compare various planets’ characteristics.</td>
<td>• Compare the basic structures of the universe (e.g., galaxy types, nova, black holes, neutron stars).</td>
<td>• Analyze the Big Bang Theory’s use of gravitation and nuclear reaction to explain a possible origin of the universe.</td>
</tr>
<tr>
<td>• Explain and illustrate the causes of seasonal changes.</td>
<td>• Describe basic star types and identify the sun as a star type.</td>
<td>• Describe the structure and life cycle of star, using the Hertzsprung-Russell diagram.</td>
<td>• Compare the use of visual, radio and x-ray telescopes to collect data regarding the structure and evolution of the universe.</td>
</tr>
<tr>
<td>• Identify planets in our solar system and their general characteristics.</td>
<td>• Describe and differentiate comets, asteroids and meteors.</td>
<td>• Describe the nuclear processes involved in energy production in a star.</td>
<td>• Explain the impact of the Copernican and Newtonian thinking on man’s view of the universe.</td>
</tr>
<tr>
<td>• Describe the solar system motions and use them to explain time (e.g., days, seasons), major lunar phases and eclipses.</td>
<td>• Identify gravity as the force that keeps planets in orbit around the sun and governs the rest of the movement of the solar system and the universe.</td>
<td>• Explain the ‘red-shift’ and Hubble’s use of it to determine stellar distance and movement.</td>
<td>• Correlate the use of the special theory of relativity and the life of a star.</td>
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3.4. Physical Science, Chemistry and Physics

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<tr>
<td>• Identify the accomplishments and contributions provided by selected past and present scientists in the field of astronomy.</td>
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<td>• Identify and articulate space program efforts to investigate possibilities of living in space and on other planets.</td>
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<tr>
<td>• Identify and analyze the findings of several space instruments in regard to the extent and composition of the solar system and universe.</td>
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Refer to Technology Standard Category 3.6 for applied uses of these concepts and principles.
3.5. Earth Sciences

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<tbody>
<tr>
<td>A. Know basic landforms and earth history.</td>
<td>A. Describe earth features and processes.</td>
<td>A. Relate earth features and processes that change the earth.</td>
<td>A. Analyze and evaluate earth features and processes that change the earth.</td>
</tr>
<tr>
<td>• Describe earth processes (e.g., rusting, weathering, erosion) that have affected selected physical features in students' neighborhoods.</td>
<td>• Describe major layers of the earth.</td>
<td>• Illustrate and explain plate tectonics as the mechanism of continental movement and sea floor changes.</td>
<td>• Apply knowledge of geophysical processes to explain the formation and degradation of earth structures (e.g., mineral deposition, cave formations, soil composition).</td>
</tr>
<tr>
<td>• Identify various earth structures (e.g., mountains, faults, drainage basins) through the use of models.</td>
<td>• Describe the processes involved in the creation of geologic features (e.g., folding, faulting, volcanism, sedimentation) and that these processes seen today (e.g., erosion, weathering crustal plate movement) are similar to those in the past.</td>
<td>• Compare examples of change to the earth’s surface over time as they related to continental movement and ocean basin formation (e.g., Delaware, Susquehanna, Ohio Rivers system formations, dynamics).</td>
<td>• Interpret geological evidence supporting evolution.</td>
</tr>
<tr>
<td>• Identify the composition of soil as weathered rock and decomposed organic remains.</td>
<td>• Describe the processes that formed Pennsylvania geologic structures and resources including mountains, glacial formations, water gaps and ridges.</td>
<td>• Interpret topographic maps to identify and describe significant geologic history/structures in Pennsylvania.</td>
<td>• Apply knowledge of radioactive decay to assess the age of various earth features and objects.</td>
</tr>
<tr>
<td>• Describe fossils and the type of environment they lived in (e.g., tropical, aquatic, desert).</td>
<td>• Explain how the rock cycle affected rock formations in the state of Pennsylvania.</td>
<td>• Evaluate and interpret geologic history using geologic maps.</td>
<td>• Explain several methods of dating earth materials and structures.</td>
</tr>
</tbody>
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Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...
3.5. Earth Sciences

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<tr>
<td>• Distinguish between examples of rapid surface changes (e.g., landslides, earthquakes) and slow surface changes (e.g., weathering).</td>
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<tr>
<td>• Identify living plants and animals that are similar to fossil forms.</td>
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<tr>
<td>• Correlate rock units with general geologic time periods in the history of the earth.</td>
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<tr>
<td>• Describe and identify major types of rocks and minerals.</td>
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<tr>
<td><strong>B. Know types and uses of earth materials.</strong></td>
<td>• Identify uses of various earth materials (e.g., buildings, highways, fuels, growing plants).</td>
<td>• Identify and sort earth materials according to a classification key (e.g., soil/rock type).</td>
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<td></td>
<td>• Identify and locate significant earth resources (e.g., rock types, oil, gas, coal deposits) in Pennsylvania.</td>
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<tr>
<td></td>
<td>• Explain the processes involved in the formation of oil and coal in Pennsylvania.</td>
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<tr>
<td></td>
<td>• Explain the value and uses of different earth resources (e.g., selected minerals, ores, fuel sources, agricultural uses).</td>
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<tr>
<td></td>
<td>• Compare the locations of human settlements as related to available resources.</td>
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<tr>
<td><strong>B. Recognize earth resources and how they affect everyday life.</strong></td>
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<td>• Identify and locate significant earth resources (e.g., rock types, oil, gas, coal deposits) in Pennsylvania.</td>
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<td>• Compare the locations of human settlements as related to available resources.</td>
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<tr>
<td><strong>B. Explain sources and uses of earth resources.</strong></td>
<td>• Compare the locations of strategic minerals and earth resources in the world with their geologic history using maps and global information systems.</td>
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<td></td>
<td>• Demonstrate the effects of sedimentation and erosion before and after a conservation plan is implemented.</td>
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<td></td>
<td>• Evaluate the impact of geologic activities/hazards (e.g., earthquakes, sinkholes, landslides).</td>
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<tr>
<td></td>
<td>• Evaluate land use (e.g., agricultural, recreational, residential, commercial) in Pennsylvania based upon soil characteristics.</td>
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</tr>
<tr>
<td><strong>B. Analyze the availability, location and extraction of earth resources.</strong></td>
<td>• Describe how the location of earth’s major resources has affected a country’s strategic decisions.</td>
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<td></td>
<td>• Compare locations of earth features and country boundaries.</td>
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<td></td>
<td>• Analyze the impact of resources (e.g., coal deposits, rivers) on the life of Pennsylvania’s settlements and cities.</td>
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3.5. Earth Sciences

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<tr>
<td>C. Know basic weather elements.</td>
<td>C. Describe basic elements of meteorology.</td>
<td>C. Interpret meteorological data.</td>
<td>C. Analyze atmospheric energy transfers.</td>
</tr>
<tr>
<td>• Identify cloud types.</td>
<td>• Explain weather forecasts by interpreting weather data and symbols.</td>
<td>• Analyze information from meteorological instruments and online sources to predict weather patterns.</td>
<td>• Describe how weather and climate involve the transfer of energy in and out of the atmosphere.</td>
</tr>
<tr>
<td>• Identify weather patterns from data charts (including temperature, wind direction and speed, precipitation) and graphs of the data.</td>
<td>• Explain the oceans’ impact on local weather and the climate of a region.</td>
<td>• Describe weather and climate patterns on global levels.</td>
<td>• Explain how unequal heating of the air, ocean and land produces wind and ocean currents.</td>
</tr>
<tr>
<td>• Explain how the different seasons affect plants, animals, food availability and daily human life.</td>
<td>• Identify how cloud types, wind directions and barometric pressure changes are associated with weather patterns in different regions of the country.</td>
<td>• Evaluate specific adaptations plants and animals have made that enable them to survive in different climates.</td>
<td>• Analyze the energy transformations that occur during the greenhouse effect and predict the long-term effects of increased pollutant levels in the atmosphere.</td>
</tr>
<tr>
<td>C. Describe basic elements of meteorology.</td>
<td>C. Interpret meteorological data.</td>
<td>C. Analyze atmospheric energy transfers.</td>
<td>C. Analyze the mechanisms that drive a weather phenomena (e.g., El Nino, hurricane, tornado) using the correlation of three methods of heat energy transfer.</td>
</tr>
<tr>
<td>• Explain the processes of cloud formation and precipitation.</td>
<td>• Describe and illustrate the major layers of the earth’s atmosphere.</td>
<td>• Describe how weather and climate involve the transfer of energy in and out of the atmosphere.</td>
<td>• Explain how unequal heating of the air, ocean and land produces wind and ocean currents.</td>
</tr>
<tr>
<td>• Describe and illustrate the major layers of the earth’s atmosphere.</td>
<td>• Identify different air masses and global wind patterns and how they relate to the weather patterns in different regions of the U.S.</td>
<td>• Analyze information from meteorological instruments and online sources to predict weather patterns.</td>
<td>• Describe how weather and climate involve the transfer of energy in and out of the atmosphere.</td>
</tr>
<tr>
<td>C. Interpret meteorological data.</td>
<td>C. Analyze atmospheric energy transfers.</td>
<td>C. Analyze the mechanisms that drive a weather phenomena (e.g., El Nino, hurricane, tornado) using the correlation of three methods of heat energy transfer.</td>
<td>• Explain how unequal heating of the air, ocean and land produces wind and ocean currents.</td>
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<tr>
<td>D. Recognize the earth’s different water resources.</td>
<td>• Know that approximately three-fourths of the earth is covered by water.</td>
<td>• Explain the behavior and impact of the earth’s water systems.</td>
<td>• Assess the value of water as a resource.</td>
<td>• Analyze the principles and history of hydrology.</td>
</tr>
<tr>
<td>• Identify and describe types of fresh and saltwater bodies.</td>
<td>• Describe factors that affect evaporation and condensation.</td>
<td>• Explain the water cycle using the processes of evaporation and condensation.</td>
<td>• Compare specific sources of potable water (e.g., wells, public systems, rivers) used by people in Pennsylvania.</td>
<td>• Analyze the operation and effectiveness of a water purification and desalination system.</td>
</tr>
<tr>
<td>• Identify examples of water in the form of solid, liquid and gas on or near the surface of the earth.</td>
<td>• Distinguish salt from fresh water (e.g., density, electrical conduction).</td>
<td>• Explain the effect of water type (e.g., polluted, fresh, salt water) and the life contained in them.</td>
<td>• Identify the components of a municipal/agricultural water supply system and a wastewater treatment system.</td>
<td>• Evaluate the pros and cons of surface water appropriation for commercial and electrical use.</td>
</tr>
<tr>
<td>• Explain and illustrate evaporation and condensation.</td>
<td>• Compare the effect of water type (e.g., bays, inlets, spit, tidal marshes).</td>
<td>• Identify ocean and shoreline features (e.g., bays, inlets, spit, tidal marshes).</td>
<td>• Relate aquatic life to water conditions (e.g., turbidity, temperature, salinity, dissolved oxygen, nitrogen levels, pressure).</td>
<td>• Analyze the historical development of water use in Pennsylvania (e.g., recovery of Lake Erie).</td>
</tr>
<tr>
<td>• Recognize other resources available from water (e.g., energy, transportation, minerals, food).</td>
<td>• Explain and illustrate evaporation and condensation.</td>
<td>• Recognize other resources available from water (e.g., energy, transportation, minerals, food).</td>
<td>• Compare commercially important aquatic species in or near Pennsylvania.</td>
<td>• Identify economic resources found in marine areas.</td>
</tr>
<tr>
<td></td>
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<td></td>
<td>• Identify economic resources found in marine areas.</td>
<td>• Assess the natural and man-made factors that affect the availability of clean water (e.g., rock and mineral deposits, man-made pollution).</td>
</tr>
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### 3.5. Earth Sciences

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Refer to Environment and Ecology Standards Categories 4.1, 4.3, 4.8 for standards that deal with environmental impact of Earth structures and forces.

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### Pennsylvania Core Standards for Reading in Science and Technology  
**Grades 6-12**

**INTRODUCTION**

These standards describe what students in the science classroom should know and be able to do with the English language in reading, grade 6 through 12. The standards provide the targets for instruction and student learning essential for success in all academic areas, not just language arts classrooms. Although the standards are not a curriculum or a prescribed series of activities, school entities will use them to develop a local school curriculum that will meet local students’ needs.

The standards below begin at grade 6; standards for K-5 reading in history/social studies, science, and technical subjects are integrated into the K-5 Reading standards.

The English Language Arts Standards for Science and Technical Subjects also provide parents and community members with information about what students should know and be able to do as they progress through the educational program and at graduation. With a clearly defined target provided by the standards, parents, students, educators and community members become partners in learning. Each standard implies an end of year goal—with the understanding that exceeding the standard is an even more desirable end goal.
### 3.5 Reading Informational Text

Students read, understand, and respond to informational text—with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>Key Ideas and Details</th>
<th>GRADE 6-8</th>
<th>GRADE 9-10</th>
<th>GRADE 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>CC.3.5.6-8.A.</strong> Cite specific textual evidence to support analysis of science and technical texts.</td>
<td><strong>CC.3.5.9-10.A.</strong> Cite specific textual evidence to support analysis of science and technical texts, attending to the precise details of explanations or descriptions.</td>
<td><strong>CC.3.5.11-12.A.</strong> Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account.</td>
</tr>
<tr>
<td></td>
<td><strong>CC.3.5.6-8.B.</strong> Determine the central ideas or conclusions of a text; provide an accurate summary of the text distinct from prior knowledge or opinions.</td>
<td><strong>CC.3.5.9-10.B.</strong> Determine the central ideas or conclusions of a text; trace the text's explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.</td>
<td><strong>CC.3.5.11-12.B.</strong> Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms.</td>
</tr>
<tr>
<td></td>
<td><strong>CC.3.5.6-8.C.</strong> Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.</td>
<td><strong>CC.3.5.9-10.C.</strong> Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.</td>
<td><strong>CC.3.5.11-12.C.</strong> Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</td>
</tr>
</tbody>
</table>
### 3.5 Reading Informational Text
Students read, understand, and respond to informational text—with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>Craft and Structure</th>
<th>GRADE 6-8</th>
<th>GRADE 9-10</th>
<th>GRADE 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.3.5.6-8.D.</td>
<td>Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.</td>
<td>CC.3.5.9-10.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 9-10 texts and topics.</td>
<td>CC.3.5.11-12.D. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11-12 texts and topics.</td>
</tr>
<tr>
<td>CC.3.5.6-8.E.</td>
<td>Analyze the structure an author uses to organize a text, including how the major sections contribute to the whole and to an understanding of the topic.</td>
<td>CC.3.5.9-10.E. Analyze the structure of the relationships among concepts in a text, including relationships among key terms (e.g., force, friction, reaction force, energy).</td>
<td>CC.3.5.11-12.E. Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</td>
</tr>
<tr>
<td>CC.3.5.6-8.F.</td>
<td>Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text.</td>
<td>CC.3.5.9-10.F. Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, defining the question the author seeks to address.</td>
<td>CC.3.5.11-12.F. Analyze the author’s purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.</td>
</tr>
</tbody>
</table>
### 3.5 Reading Informational Text

Students read, understand, and respond to informational text—with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>Grade 6-8</th>
<th>Grade 9-10</th>
<th>Grade 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Integration of Knowledge and Ideas</strong></td>
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</tr>
<tr>
<td>CC.3.5.6-8.G. Integrate quantitative or technical information expressed in words in a text with a version of that information expressed visually (e.g., in a flowchart, diagram, model, graph, or table).</td>
<td>CC.3.5.9-10.G. Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.</td>
<td>CC.3.5.11-12.G. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.</td>
</tr>
<tr>
<td>CC.3.5.6-8.H. Distinguish among facts, reasoned judgment based on research findings, and speculation in a text.</td>
<td>CC.3.5.9-10.H. Assess the extent to which the reasoning and evidence in a text support the author’s claim or a recommendation for solving a scientific or technical problem.</td>
<td>CC.3.5.11-12.H. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information.</td>
</tr>
<tr>
<td>CC.3.5.6-8.I. Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic.</td>
<td>CC.3.5.9-10.I. Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.</td>
<td>CC.3.5.11-12.I. Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</td>
</tr>
</tbody>
</table>
### 3.5 Reading Informational Text
Students read, understand, and respond to informational text—with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>Range and Level of Complex Texts</th>
<th>GRADE 6-8</th>
<th>GRADE 9-10</th>
<th>GRADE 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.3.5.6-8.J.</td>
<td>By the end of grade 8, read and comprehend science/technical texts in the grades 6-8 text complexity band independently and proficiently.</td>
<td>CC.3.5.9-10.J. By the end of grade 10, read and comprehend science/technical texts in the grades 9-10 text complexity band independently and proficiently.</td>
<td>CC.3.5.11-12.J. By the end of grade 12, read and comprehend science/technical texts in the grades 11-12 text complexity band independently and proficiently.</td>
</tr>
<tr>
<td>3.6. Technology Education</td>
<td>3.6.4. GRADE 4</td>
<td>3.6.7. GRADE 7</td>
<td>3.6.10. GRADE 10</td>
</tr>
<tr>
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</tr>
<tr>
<td>A. Know that biotechnologies relate to propagating, growing, maintaining, adapting, treating and converting.</td>
<td>• Identify agricultural and industrial production processes that involve plants and animals.</td>
<td>• Identify waste management treatment processes.</td>
<td>• Describe how knowledge of the human body influences or impacts ergonomic design.</td>
</tr>
<tr>
<td>A. Explain biotechnologies that relate to related technologies of propagating, growing, maintaining, adapting, treating and converting.</td>
<td>• Identify the environmental, societal and economic impacts that waste has in the environment.</td>
<td>• Identify and explain the impact that a specific medical advancement has had on society.</td>
<td>• Explain the factors that were taken into consideration when a specific object was designed.</td>
</tr>
<tr>
<td>A. Apply biotechnologies that relate to propagating, growing, maintaining, adapting, treating and converting.</td>
<td>• Apply knowledge of plant and animal production processes in designing an improvement to existing processes.</td>
<td>• Apply knowledge of biomedical technology applications in designing a solution to a simple medical problem (e.g., wheelchair design, artificial arteries).</td>
<td>• Apply knowledge of how biomedical technology affects waste products in designing a solution that will result in reduced waste.</td>
</tr>
<tr>
<td>A. Analyze biotechnologies that relate to propagating, growing, maintaining, adapting, treating and converting.</td>
<td>• Analyze and solve a complex production process problem using biotechnologies (e.g., hydroponics, fish farming, crop propagation).</td>
<td>• Analyze specific examples where engineering has impacted society in protection, personal health application or physical enhancement.</td>
<td>• Appraise and evaluate the cause and effect and subsequent environmental, economic and societal impacts that result from biomass and biochemical conversion.</td>
</tr>
</tbody>
</table>
### 3.6. Technology Education

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<tbody>
<tr>
<td>Explain the impact that agricultural science has had on biotechnology.</td>
<td>Describe specific examples that reflect the impact that agricultural science has had on biotechnology.</td>
<td>Evaluate and apply biotechnical processes to complex plant and animal production methods.</td>
<td>Apply knowledge of biochemical-related technologies to propose alternatives to hazardous waste treatment.</td>
</tr>
<tr>
<td>• Apply knowledge of agricultural science to solve or improve a biochemical related problem.</td>
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</table>

Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...
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</table>
| B. Know that information technologies involve encoding, transmitting, receiving, storing, retrieving and decoding.  
- Identify electronic communication methods that exist in the community (e.g., digital cameras, telephone, internet, television, fiber optics).  
- Identify graphic reproduction methods.  
- Describe appropriate image generating techniques (e.g., photography, video).  
- Demonstrate the ability to communicate an idea by applying basic sketching and drawing techniques. | B. Explain information technologies of encoding, transmitting, receiving, storing, retrieving and decoding.  
- Demonstrate the effectiveness of image generating technique to communicate a story (e.g., photography, video).  
- Analyze and evaluate the effectiveness of a graphic object designed and produced to communicate a thought or concept.  
- Apply basic technical drawing techniques to communicate an idea or solution to a problem.  
- Apply the appropriate method of communications technology to communicate a thought. | B. Apply knowledge of information technologies of encoding, transmitting, receiving, storing, retrieving and decoding.  
- Describe the proper use of graphic and electronic communication systems.  
- Apply a variety of advanced mechanical and electronic drafting methods to communicate a solution to a specific problem.  
- Apply and analyze advanced communication techniques to produce an image that effectively conveys a message (e.g., desktop publishing, audio and/or video production).  
- Illustrate an understanding of a computer network system by modeling, constructing or assembling its components. | B. Analyze knowledge of information technologies of processes encoding, transmitting, receiving, storing, retrieving and decoding.  
- Apply and analyze advanced information techniques to produce a complex image that effectively conveys a message (e.g., desktop publishing, audio and/or video production).  
- Analyze and evaluate a message designed and produced using still, motion and animated communication techniques.  
- Describe the operation of fiber optic, microwave and satellite informational systems.  
- Apply various graphic and electronic information techniques to solve real world problems (e.g., data organization and analysis, forecasting, interpolation). |

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### 3.6. Technology Education

<table>
<thead>
<tr>
<th>Grade</th>
<th>Learning Objective</th>
</tr>
</thead>
</table>
| 4     | C. Know physical technologies of structural design, analysis and engineering, finance, production, marketing, research and design.  
• Identify and group a variety of construction tasks.  
• Identify the major construction systems present in a specific local building.  
• Identify specific construction systems that depend on each other in order to complete a project.  
• Know skills used in construction.  
• Identify examples of manufactured goods present in the home and school.  
• Identify basic resources needed to produce a manufactured item.  
• Identify basic component operations in a specific manufacturing enterprise (e.g., cutting, shaping, attaching). |
| 7     | C. Explain physical technologies of structural design, analysis and engineering, personnel relations, financial affairs, structural production, marketing, research and design.  
• Use knowledge of material effectiveness to solve specific construction problems (e.g., steel vs. wood bridges).  
• Differentiate among the different types of construction applications (e.g., microwave tower, power plants, aircrafts).  
• Explain basic material processes that manufactured objects undergo during production (e.g., separating, forming, combining).  
• Evaluate a construction activity by specifying task analyses and necessary resources. |
| 10    | C. Apply physical technologies to structural design, analysis and engineering, personnel relations, financial affairs, structural production, marketing, research and design to real world problems.  
• Describe and classify common construction by their characteristics and composition.  
• Compare and contrast specific construction systems that depend on each other in order to complete a project.  
• Evaluate material failure common to specific applications.  
• Demonstrate knowledge of various construction systems by building or interpreting models.  
• Select and apply the necessary resources to successfully conduct a manufacturing enterprise. |
| 12    | C. Analyze physical technologies of structural design, analysis and engineering, personnel relations, financial affairs, structural production, marketing, research and design to real world problems.  
• Apply knowledge of construction technology by designing, planning and applying all the necessary resources to successfully solve a construction problem.  
• Compare resource options in solving a specific manufacturing problem.  
• Analyze and apply complex skills needed to process materials in complex manufacturing enterprises.  
• Apply advanced information collection and communication techniques to successfully convey solutions to specific construction problems. |

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</tr>
</thead>
<tbody>
<tr>
<td>Identify waste and pollution resulting from a manufacturing enterprise.</td>
<td>Explain the relationships among the basic resources needed in the production process for a specific manufactured object.</td>
<td>Apply concepts of design engineering and production engineering in the organization and application of a manufacturing activity.</td>
<td>Assess the importance of capital on specific construction applications.</td>
</tr>
<tr>
<td>Explain and demonstrate the concept of manufacturing (e.g., assemble a set of papers or ball point pens sequentially, mass produce an object).</td>
<td>Explain the difference between design engineering and production engineering processes.</td>
<td>Apply the concepts of manufacturing by redesigning an enterprise to improve productivity or reduce or eliminate waste and/or pollution.</td>
<td>Analyze the positive and negative qualities of several different types of materials as they would relate to specific construction applications.</td>
</tr>
<tr>
<td>Identify transportation technologies of propelling, structuring, suspending, guiding, controlling and supporting.</td>
<td>Analyze manufacturing steps that affect waste and pollutants.</td>
<td>Evaluate the interrelationship of various transportation systems in the community.</td>
<td>Analyze transportation technologies of propelling, structuring, suspending, guiding, controlling and supporting.</td>
</tr>
<tr>
<td>Identify and experiment with simple machines used in transportation systems.</td>
<td>Explain transportation technologies of propelling, structuring, suspending, guiding, controlling and supporting.</td>
<td>Analyze the impacts that transportation systems have on a community.</td>
<td>Analyze the concepts of vehicular propulsion, guidance, control, suspension and structural systems while designing and producing specific complex transportation systems.</td>
</tr>
<tr>
<td>Explain how improved transportation systems have changed society.</td>
<td>Model and explain examples of vehicular propulsion, control, guidance, structure and suspension systems.</td>
<td></td>
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</tr>
</tbody>
</table>
The standard is an even more desirable end, and each student's progress in grade 6 will be assessed.

Pennsylvania Core Standards for Writing in Science and Technology

Grades 6-12

INTRODUCTION

These standards describe what students in the social studies classroom should know and be able to do with the English language in writing, grade 6 through 12.

Each standard implies an end of year goal—with the understanding that exceeding the standard is an even more desirable end. Students, educators, and community members become partners in learning and assessment. With clearly defined targets provided by the standards, parents and community members with information about what students should know and be able to do in their progress through the educational program.

The English Language Arts Standards for History and Social Studies also provide parents and community members with information about what students should know and be able to do in their progress through the educational program. The English Language Arts Standards for History and Social Studies also provide parents and community members with information about what students should know and be able to do in their progress through the educational program.

The standards below begin at grade 6; standards for K-5 reading in history/social studies, science, and technical subjects are integrated into the K-5 writing standards. The standards provide the targets for instruction and student learning essential for success in all academic areas, not just language arts. Although the standards provide the targets for instruction and student learning essential for success in all academic areas, not just language arts, school entities will use them to develop a local school curriculum that will meet local needs.
### 3.6 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Text Types and Purposes</th>
<th>GRADES 6-8</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.3.6.6-8.A.</td>
<td>Write arguments focused on discipline-specific content.</td>
</tr>
<tr>
<td>• Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.</td>
<td></td>
</tr>
<tr>
<td>• Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.</td>
<td></td>
</tr>
<tr>
<td>• Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.</td>
<td></td>
</tr>
<tr>
<td>• Establish and maintain a formal style.</td>
<td></td>
</tr>
<tr>
<td>• Provide a concluding statement or section that follows from and supports the argument presented.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>GRADES 9-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.3.6.9-10.A.</td>
</tr>
<tr>
<td>• Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</td>
</tr>
<tr>
<td>• Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience’s knowledge level and concerns.</td>
</tr>
<tr>
<td>• Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</td>
</tr>
<tr>
<td>• Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</td>
</tr>
<tr>
<td>• Provide a concluding statement or section that follows from or supports the argument presented.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>GRADES 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.3.6.11-12.A.</td>
</tr>
<tr>
<td>• Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</td>
</tr>
<tr>
<td>• Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience’s knowledge level, concerns, values, and possible biases.</td>
</tr>
<tr>
<td>• Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</td>
</tr>
<tr>
<td>• Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</td>
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<tr>
<td>• Provide a concluding statement or section that follows from or supports the argument presented.</td>
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### 3.6 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

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<thead>
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</table>
| **CC.3.6.6-8.B.** *Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.*  
• Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.  
• Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.  
• Use appropriate and varied transitions to create cohesion and clarify the relationships among ideas and concepts.  
• Use precise language and domain-specific vocabulary to inform about or explain the topic.  
• Establish and maintain a formal style and objective tone.  
• Provide a concluding statement or section that follows from and supports the information or explanation presented. | **CC.3.6.9-10.B.** *Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.*  
• Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.  
• Develop the topic with well-chosen, relevant, and sufficient facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic.  
• Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.  
• Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.  
• Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.  
• Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic). | **CC.3.6.11-12.B.** *Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes.*  
• Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.  
• Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic.  
• Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.  
• Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.  
• Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic). |
3.6 Writing
Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

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<tr>
<td>CC.3.6.6-8.C.</td>
<td>CC.3.6.9-10.C.</td>
<td>CC.3.6.11-12.C.</td>
</tr>
<tr>
<td>Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</td>
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<td>Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</td>
</tr>
<tr>
<td>With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.</td>
<td>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</td>
<td>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</td>
</tr>
<tr>
<td>CC.3.6.6-8.E.</td>
<td>CC.3.6.9-10.E.</td>
<td>CC.3.6.11-12.E.</td>
</tr>
<tr>
<td>Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</td>
<td>Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically.</td>
<td>Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.</td>
</tr>
</tbody>
</table>
### 3.6 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th></th>
<th>GRADES 6-8</th>
<th>GRADES 9-10</th>
<th>GRADES 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Research to Build and Present Knowledge</strong></td>
<td><strong>CC.3.6.6-8.F.</strong>  Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</td>
<td><strong>CC.3.6.9-10.F.</strong>  Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</td>
<td><strong>CC.3.6.11-12.F.</strong>  Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</td>
</tr>
<tr>
<td></td>
<td><strong>CC.3.6.6-8.G.</strong>  Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.</td>
<td><strong>CC.3.6.9-10.G.</strong>  Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.</td>
<td><strong>CC.3.6.11-12.G.</strong>  Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.</td>
</tr>
<tr>
<td></td>
<td><strong>CC.3.6.6-8.H.</strong>  Draw evidence from informational texts to support analysis, reflection, and research.</td>
<td><strong>CC.3.6.9-10.H.</strong>  Draw evidence from informational texts to support analysis, reflection, and research.</td>
<td><strong>CC.3.6.11-12.H.</strong>  Draw evidence from informational texts to support analysis, reflection, and research.</td>
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**3.6 Writing**

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

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<td><strong>Range of Writing</strong></td>
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</tr>
<tr>
<td>CC.3.6.6-8.I. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
<td>CC.3.6.9-10.I. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
<td>CC.3.6.11-12.I. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
</tr>
</tbody>
</table>

* Students’ narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.
<table>
<thead>
<tr>
<th>3.7.4. GRADE 4</th>
<th>3.7.7. GRADE 7</th>
<th>3.7.10. GRADE 10</th>
<th>3.7.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Explore the use of basic tools, simple materials and techniques to safely solve problems.</td>
<td>A. Describe the safe and appropriate use of tools, materials and techniques to answer questions and solve problems.</td>
<td>A. Identify and safely use a variety of tools, basic machines, materials and techniques to solve problems and answer questions.</td>
<td>A. Apply advanced tools, materials and techniques to answer complex questions.</td>
</tr>
<tr>
<td>- Describe the scientific principles on which various tools are based.</td>
<td>- Identify uses of tools, machines, materials, information, people, money, energy and time that meet specific design criteria.</td>
<td>- Select and safely apply appropriate tools, materials and processes necessary to solve complex problems.</td>
<td>- Demonstrate the safe use of complex tools and machines within their specifications.</td>
</tr>
<tr>
<td>- Group tools and machines by their function.</td>
<td>- Describe safe procedures for using tools and materials.</td>
<td>- Apply advanced tool and equipment manipulation techniques to solve problems.</td>
<td>- Select and safely apply appropriate tools, materials and processes necessary to solve complex problems that could result in more than one solution.</td>
</tr>
<tr>
<td>- Select and safely apply appropriate tools and materials to solve simple problems.</td>
<td>- Assess materials for appropriateness of use.</td>
<td></td>
<td>- Evaluate and use technological resources to solve complex multi-step problems.</td>
</tr>
</tbody>
</table>

*Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to.*
3.7. Technological Devices

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</thead>
</table>
| B. Select appropriate instruments to study materials.  
  • Develop simple skills to measure, record, cut and fasten.  
  • Explain appropriate instrument selection for specific tasks. | B. Use appropriate instruments and apparatus to study materials.  
  • Select appropriate instruments to measure the size, weight, shape and temperature of living and non-living objects.  
  • Apply knowledge of different measurement systems to measure and record objects’ properties. | B. Apply appropriate instruments and apparatus to examine a variety of objects and processes.  
  • Describe and use appropriate instruments to gather and analyze data.  
  • Compare and contrast different scientific measurement systems; select the best measurement system for a specific situation.  
  • Explain the need to estimate measurements within error of various instruments.  
  • Apply accurate measurement knowledge to solve everyday problems.  
  • Describe and demonstrate the operation and use of advanced instrumentation in evaluating material and chemical properties (e.g., scanning electron microscope, nuclear magnetic resonance machines). | B. Evaluate appropriate instruments and apparatus to accurately measure materials and processes.  
  • Apply and evaluate the use of appropriate instruments to accurately measure scientific and technologic phenomena within the error limits of the equipment.  
  • Evaluate the appropriate use of different measurement scales (macro and micro).  
  • Evaluate the utility and advantages of a variety of absolute and relative measurement scales for their appropriate application. |
### 3.7. Technological Devices

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Computer literacy, including the use of hardware and software in standard statements C, D, and E, should be integrated across all content areas.

<table>
<thead>
<tr>
<th>C. Identify basic computer operations and concepts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Identify the major parts necessary for a computer to input and output data.</td>
</tr>
<tr>
<td>• Explain and demonstrate the basic use of input and output devices (e.g., keyboard, monitor, printer, mouse).</td>
</tr>
<tr>
<td>• Explain and demonstrate the use of external and internal storage devices (e.g., disk drive, CD drive).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Explain and demonstrate basic computer operations and concepts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Know specialized computer applications used in the community.</td>
</tr>
<tr>
<td>• Describe the function of advanced input and output devices (e.g., scanners, video images, plotters, projectors) and demonstrate their use.</td>
</tr>
<tr>
<td>• Demonstrate age appropriate keyboarding skills and techniques.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Apply basic computer operations and concepts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Identify solutions to basic hardware and software problems.</td>
</tr>
<tr>
<td>• Apply knowledge of advanced input devices.</td>
</tr>
<tr>
<td>• Apply knowledge of hardware setup.</td>
</tr>
<tr>
<td>• Describe the process for basic software installation and demonstrate it.</td>
</tr>
<tr>
<td>• Analyze and solve basic operating systems problems.</td>
</tr>
<tr>
<td>• Apply touch keyboarding skills and techniques at expectable speed and accuracy.</td>
</tr>
<tr>
<td>• Demonstrate the ability to perform basic software installation.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Evaluate computer operations and concepts as to their effectiveness to solve specific problems.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Describe and demonstrate atypical software installation.</td>
</tr>
<tr>
<td>• Analyze and solve hardware and advanced software problems.</td>
</tr>
<tr>
<td>• Assess and apply multiple input and output devices to solve specific problems.</td>
</tr>
</tbody>
</table>

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STATE BOARD OF EDUCATION

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3.7. Technological Devices

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<thead>
<tr>
<th>Grade</th>
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</tr>
</thead>
<tbody>
<tr>
<td>3.7.4. GRADE 4</td>
<td><strong>D. Use basic computer software.</strong>&lt;br&gt;• Apply operating system skills to perform basic computer tasks.&lt;br&gt;• Apply basic word processing skills.&lt;br&gt;• Identify and use simple graphic and presentation graphic materials generated by the computer.&lt;br&gt;• Apply specific instructional software.</td>
</tr>
<tr>
<td>3.7.7. GRADE 7</td>
<td><strong>D. Apply computer software to solve specific problems.</strong>&lt;br&gt;• Identify software designed to meet specific needs (e.g., Computer Aided Drafting, design software, tutorial, financial, presentation software).&lt;br&gt;• Identify and solve basic software problems relevant to specific software applications.&lt;br&gt;• Identify basic multimedia applications.&lt;br&gt;• Demonstrate a basic knowledge of desktop publishing applications.&lt;br&gt;• Apply intermediate skills in utilizing word processing, database and spreadsheet software.&lt;br&gt;• Apply basic graphic manipulation techniques.</td>
</tr>
<tr>
<td>3.7.10. GRADE 10</td>
<td><strong>D. Utilize computer software to solve specific problems.</strong>&lt;br&gt;• Identify legal restrictions in the use of software and the output of data.&lt;br&gt;• Apply advanced graphic manipulation and desktop publishing techniques.&lt;br&gt;• Apply basic multimedia applications.&lt;br&gt;• Apply advanced word processing, database and spreadsheet skills.&lt;br&gt;• Describe and demonstrate how two or more software applications can be used to produce an output.&lt;br&gt;• Select and apply software designed to meet specific needs.</td>
</tr>
<tr>
<td>3.7.12. GRADE 12</td>
<td><strong>D. Evaluate the effectiveness of computer software to solve specific problems.</strong>&lt;br&gt;• Evaluate the effectiveness of software to produce an output and demonstrate the process.&lt;br&gt;• Design and apply advanced multimedia techniques.&lt;br&gt;• Analyze, select and apply the appropriate software to solve complex problems.&lt;br&gt;• Evaluate the effectiveness of the computer as a presentation tool.&lt;br&gt;• Analyze the legal responsibilities of computer users.</td>
</tr>
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</table>
| **E. Identify basic computer communications systems.**  
  - Apply a web browser.  
  - Apply basic electronic mail functions.  
  - Use on-line searches to answer age appropriate questions. | **E. Explain basic computer communications systems.**  
  - Describe the organization and functions of the basic parts that make up the World Wide Web.  
  - Apply advanced electronic mail functions.  
  - Apply basic on-line research techniques to solve a specific problem. | **E. Apply basic computer communications systems.**  
  - Identify and explain various types of on-line services.  
  - Identify and explain the function of the parts of a basic network.  
  - Describe and apply the components of a web page and their function.  
  - Explain and demonstrate file transfer within and outside of a computer network.  
  - Identify, describe and complete advanced on-line research. | **E. Assess the effectiveness of computer communications systems.**  
  - Assess the effectiveness of a computer based communications system.  
  - Transfer files among different computer platforms.  
  - Analyze the effectiveness of on-line information resources to meet the needs for collaboration, research, publications, communications and productivity.  
  - Apply knowledge of protocol standards to solve connectivity problems. |
### 3.8. Science, Technology and Human Endeavors

<table>
<thead>
<tr>
<th>Grade 4</th>
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<th>Grade 10</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A.</strong> Know that people select, create and use science and technology and that they are limited by social and physical restraints.</td>
<td><strong>A.</strong> Explain how sciences and technologies are limited in their effects and influences on society.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Identify and describe positive and negative impacts that influence or result from new tools and techniques.</td>
<td>• Identify and describe the unavoidable constraints of technological design.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Identify how physical technology (e.g., construction, manufacturing, transportation), informational technology and biotechnology are used to meet human needs.</td>
<td>• Identify changes in society as a result of a technological development.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Describe how scientific discoveries and technological advancements are related.</td>
<td>• Identify and explain improvements in transportation, health, sanitation and communications as a result of advancements in science and technology and how they effect our lives.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Apply the technological design process to solve a simple problem.</td>
<td><strong>A.</strong> Analyze the relationship between societal demands and scientific and technological enterprises.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A.</strong> Explain how sciences and technologies are limited in their effects and influences on society.</td>
<td>• Identify past and current tradeoffs between increased production, environmental harm and social values (e.g., increased energy needs, power plants, automobiles).</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A.</strong> Analyze the relationship between societal demands and scientific and technological enterprises.</td>
<td>• Compare technologies that are applied and accepted differently in various cultures (e.g., factory farming, nuclear power).</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A.</strong> Synthesize and evaluate the interactions and constraints of science and technology on society.</td>
<td>• Describe and evaluate social change as a result of technological developments.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A.</strong> Synthesize and evaluate the interactions and constraints of science and technology on society.</td>
<td>• Assess the social impacts of a specific international environmental problem by designing a solution that applies the appropriate technologies and resources.</td>
<td></td>
<td></td>
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<tr>
<td><strong>A.</strong> Synthesize and evaluate the interactions and constraints of science and technology on society.</td>
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</table>
| B. Know how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.  
- Identify and distinguish between human needs and improving the quality of life.  
- Identify and distinguish between natural and human-made resources.  
- Describe a technological invention and the resources that were used to develop it. | B. Explain how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.  
- Identify interrelationships between systems and resources.  
- Identify and describe the resources necessary to solve a selected problem in a community and improve the quality of life.  
- Identify and explain specific examples of how agricultural science has met human needs and has improved the quality of life. | B. Analyze how human ingenuity and technological resources satisfy specific human needs and improve the quality of life.  
- Identify several problems and opportunities that exist in your community, apply various problem-solving methods to design and evaluate possible solutions.  
- Analyze a recently invented item, describing the human need that prompted its invention and the current and potential social impacts of the specific invention.  
- Apply knowledge of oceanography, meteorology, geology and human anatomy to explain important considerations that need to be made for construction of homes, buildings and businesses in the United States. | B. Apply the use of ingenuity and technological resources to solve specific societal needs and improve the quality of life.  
- Apply appropriate tools, materials and processes to solve complex problems.  
- Use knowledge of human abilities to design or modify technologies that extend and enhance human abilities.  
- Apply appropriate tools, materials and processes to physical, informational or biotechnological systems to identify and recommend solutions to international problems.  
- Apply knowledge of agricultural science to develop a solution that will improve on a human need or want. |
<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Grade 4</td>
<td>Assess the impacts that agricultural science has had on meeting human needs and improving the quality of life.</td>
</tr>
<tr>
<td>Grade 7</td>
<td></td>
</tr>
<tr>
<td>Grade 10</td>
<td></td>
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### 3.8. Science, Technology and Human Endeavors

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<thead>
<tr>
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<th>Standards</th>
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</table>
| GRADE 4 | C. Know the pros and cons of possible solutions to scientific and technological problems in society.  
- Compare the positive and negative expected and unexpected impacts of technological change.  
- Identify and discuss examples of technological change in the community that have both positive and negative impacts. |
| GRADE 7 | C. Identify the pros and cons of applying technological and scientific solutions to address problems and the effect upon society.  
- Describe the positive and negative expected and unexpected effects of specific technological developments.  
- Describe ways technology extends and enhances human abilities. |
| GRADE 10 | C. Evaluate possibilities, consequences and impacts of scientific and technological solutions.  
- Relate scientific and technological advancements in terms of cause and effect.  
- Describe and evaluate the impacts that financial considerations have had on specific scientific and technological applications.  
- Compare and contrast potential solutions to technological, social, economic and environmental problems.  
- Analyze the impacts on society of accepting or rejecting scientific and technological advances. |
| GRADE 12 | C. Evaluate the consequences and impacts of scientific and technological solutions.  
- Propose solutions to specific scientific and technological applications, identifying possible financial considerations.  
- Analyze scientific and technological solutions through the use of risk/benefit analysis.  
- Analyze and communicate the positive or negative impacts that a recent technological invention had on society.  
- Evaluate and describe potential impacts from emerging technologies and the consequences of not keeping abreast of technological advancements (e.g., assessment alternatives, risks, benefits, costs, economic impacts, constraints). |
Glossary

Allele:
Any of a set of possible forms of a gene.

Biological conversion:
The changing of organic matter which has been produced by photosynthesis into useful liquid, gas or fuel.

Biomedical technology:
The application of health care theories to develop methods, products and tools to maintain or improve homeostasis.

Biomes:
A community of living organisms of a single major ecological region.

Biotechnology:
The ways that humans apply biological concepts to produce products and provide services.

Carbon chemistry:
The science of the composition, structure, properties and reactions of carbon based molecules, especially of atomic and molecular systems; sometimes referred to as organic chemistry.

Construction technology:
The ways that humans build structures on sites.

Desalinization:
To remove salts and other chemicals from sea or saline water.

Dichotomous:
Divided or divided into two parts or classifications.

Electrical communication:
System for the transmission of information using electronic technology (e.g., digital cameras, cellular phone, Internet, television, fiber optics).

Embryology:
The branch of biology dealing with the development of living things from fertilized eggs to the developed state.

Enzyme:
A protein that increases the rate of a chemical reaction without being changed by the reaction; an organic catalyst.

Engineering:
The application of scientific, physical, mechanical and mathematical principles to design processes, products and systems for the transmission of information using electronic technology.
Ergonomical: Of or relating to the design of equipment or devices to fit the human body’s control, position, movement, and environment.

Learning: A systematic process for using knowledge and skills to acquire and apply new knowledge.

Theoretical Information: An assertion subject to verification or proof as a premise from which a conclusion is drawn.

Hydrology: The scientific study of the properties, distribution and effects of water on the earth’s surface, in the soil and underlying rocks and in the atmosphere.

Geologic Hazard: A naturally occurring or man-made condition or phenomenon that presents a risk or is a potential danger to life and property (e.g., landslides, floods, earthquakes, ground subsidence, coastal and beach erosion, faulting, dam leakage and failure, mining disasters, pollution and waste disposal, sinkholes).

Geologic Map: A representation of a region on which is recorded earth information that has been objectively verified.

Law: A summarizing statement of observed experimental facts that has been tested many times and is generally accepted as true.

Evolution: A process of change that explains what we see in the human body’s control, position, movement, and environment.

Information Technology: The technical means that humans create to store and transmit information.

Inquiry: A systematic process for using knowledge and skills to acquire and apply new knowledge.

Instructional Technology: Any mechanical aid (including computer technology) used to assist in or enhance the process of teaching and learning.

Fact: A summarizing statement of observed experimental facts.

Hypothesis: An assertion subject to verification or proof as a premise from which a conclusion is drawn.
Manufacturing technology:
The ways that humans produce goods and products.

Mitosis:
The sequential differentiation and segregation of replicated chromosomes in a cell's nucleus that precedes complete cell division.

Model:
A description, analogy or a representation of something that helps us understand it better (e.g., a physical model, a conceptual model, a mathematical model).

Nova:
A variable star that suddenly increases in brightness to several times its normal magnitude and returns to its original appearance in a few weeks to several months or years.

Patterns:
Repetitive processes that are exhibited in a wide variety of ways; identifiable recurrences of the element and/or the form.

Physical technology:
The ways that humans construct, manufacture and transport products.

Radioactive isotope:
An atom that gives off nuclear radiation and has the same number of protons (atomic number) as another atom but a different number of neutrons.

Relationship between science and technology:
Science builds principles or theories while technology is the practical application of those principles or theories.

Scale:
Relates concepts and ideas to one another by some measurement (e.g., quantitative, numeral, abstract, ideological); provides a measure of size and/or magnitude a description of something (e.g., a physical model, a conceptual model, a mathematical model).

System:
A group of related objects that work together to achieve a desired result.

System:
A group of related objects that work together to achieve a desired result.

System:
A sequential differentiation and segregation of replicated chromosomes in a cell's nucleus that do not have feedback, or

System:
A sequential differentiation and segregation of replicated chromosomes in a cell's nucleus that do not have feedback.
Subsystem:
A group of related parts that function together to form a major part in any form of transportation.

Technology education:
The application of tools, materials, processes and systems to solve problems and extend human capabilities including computer-based tools.

Theory of evolution:
A theory that the various types of animals and plants have their origin in other preexisting types and that the distinguishable differences are due to modification in successive generations.

Topographic map:
A representation of a region on a sufficient scale to show detail, selected man-made and natural features of a portion of the land surface, including the relief and characteristics of the land and of the water bodies.

Transportation systems:
A group of related parts that function together to perform a major task in any form of transportation.

Transportation technology:
The physical ways humans move materials, goods and people.

Technological design process:
Recognizing the problem, proposing a solution, implementing the solution, evaluating the solution and communicating the problem, design and solution.

Theory:
Systematically organized knowledge applicable in a relatively wide variety of circumstances; especially, a system of assumptions, accepted principles and rules of procedure devised to analyze, predict or otherwise explain the nature of phenomena or behavior of specified set of objects.

Computer-based tools:
Any device used to extend human capability including computer-based tools.
Academic Standards for Environment and Ecology

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Introduction..................................................XI.

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B. Impacts of Watersheds and Wetlands
C. Physical Factors
D. Characteristics and Functions of Watersheds and Wetlands
E. Physical Processes of Wetlands

THE ACADEMIC STANDARDS

Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS

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4.2. Renewable and Nonrenewable Resources

4.3. Environmental Health

4.4. Agriculture and Society

4.5. Integrated Pest Management

4.6. Ecosystems and their Interactions

4.7. Threatened, Endangered and Extinct Species

4.8. A. Living and Nonliving Components
B. Change over Time
C. Cycles
D. Management Practices
E. Human Actions
F. Influential Factors

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Environment and Ecology examines the world with respect to the economic, human, and environmental contexts and their interconnections. The human interactions with the ecosystem and the effects of humans on the environment have significant consequences for the economy. The overall responsibility to develop a citizenry that is aware of and concerned about the environment falls to this generation and to future generations, and it is our responsibility to ensure that the environment continues to be preserved.

Pennsylvania's public natural resources are the common property of all people, including future generations. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all people. To this end it is our responsibility to develop a citizenry that is aware of and concerned about the environment. The Declaration of Rights, Article 1, Section 27, of the Pennsylvania Constitution states: "The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and aesthetic values of the environment."

It is our responsibility to develop a citizenry that is aware of and concerned about the environment.
cultural, political and social structure as well as natural processes and systems.

This integration across systems is what sets this academic area apart from all others.

Environment and Ecology is a very engaging academic area that captivates students' innate interests in their surroundings of the natural and built environment. The skills and knowledge that are addressed in this area of study will serve as tools for student participation in a democratic world of constantly evolving issues and concerns. Environment and Ecology places its main emphasis in the real world. It allows students to understand, through a sound academic content base, how their everyday lives evolve around their use of the natural world and the resources it provides. As we move into a more technologically driven society, it is crucial for every student to be aware of his/her dependence on a healthy environment. The study of Environment and Ecology will allow students to be active participants in reaching decisions related to the environment.

The 21st century will demand a more sophisticated citizen capable of making sound decisions that will impact our natural systems forever.

A glossary is included to assist the reader in understanding terminology contained in the standards. This integration across systems is what sets this academic area apart from all others.
# 4.1. Watersheds and Wetlands

<table>
<thead>
<tr>
<th>4.1.4. GRADE 4</th>
<th>4.1.7. GRADE 7</th>
<th>4.1.10. GRADE 10</th>
<th>4.1.12. GRADE 12</th>
</tr>
</thead>
</table>
| **A.** Identify various types of water environments.  
  - Identify the lotic system (e.g., creeks, rivers, streams).  
  - Identify the lentic system (e.g., ponds, lakes, swamps). | **A.** Explain the role of the water cycle within a watershed.  
  - Explain the water cycle.  
  - Explain the water cycle as it relates to a watershed. | **A.** Describe changes that occur from a stream’s origin to its final outflow.  
  - Identify Pennsylvania’s major watersheds and their related river systems.  
  - Describe changes by tracing a specific river’s origin back to its headwaters including its major tributaries. | **A.** Categorize stream order in a watershed.  
  - Explain the concept of stream order.  
  - Identify the order of watercourses within a major river’s watershed.  
  - Compare and contrast the physical differences found in the stream continuum from headwater to mouth. |  

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<tr>
<th>Grade 4</th>
<th>Grade 7</th>
<th>Grade 10</th>
<th>Grade 12</th>
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</thead>
<tbody>
<tr>
<td><strong>B.</strong> Explain the differences between moving and still water.</td>
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<tr>
<td>• Explain why water moves or does not move.</td>
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<tr>
<td>• Identify types of precipitation.</td>
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<tr>
<td><strong>B.</strong> Understand the role of the watershed.</td>
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<tr>
<td>• Identify and explain what determines the boundaries of a watershed.</td>
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<tr>
<td>• Explain how water enters a watershed.</td>
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<tr>
<td>• Explain factors that affect water quality and flow through a watershed.</td>
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<tr>
<td><strong>B.</strong> Explain the relationship among landforms, vegetation and the amount and speed of water.</td>
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<tr>
<td>• Analyze a stream’s physical characteristics.</td>
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<tr>
<td>• Describe how topography influences streams.</td>
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<tr>
<td>• Explain the influence of mountains on precipitation.</td>
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<tr>
<td>• Explain how vegetation affects storm water runoff.</td>
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<tr>
<td>• Delineate the boundaries of a watershed.</td>
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<tr>
<td>• Describe factors that affect the quality of groundwater.</td>
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<tr>
<td>• Explain how the speed of water and vegetation cover relates to erosion.</td>
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<tr>
<td><strong>B.</strong> Explain the relationships that exist within watersheds in the United States.</td>
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<tr>
<td>• Understand that various ecosystems may be contained in a watershed.</td>
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<tr>
<td>• Examine and describe the ecosystems contained within a specific watershed.</td>
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<tr>
<td>• Identify and describe the major watersheds in the United States.</td>
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<tr>
<th>Grade</th>
<th>Objectives</th>
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</table>
| 4.1.4. GRADE 4 | C. Identify living things found in water environments.  
- Identify fish, insects and amphibians that are found in fresh water.  
- Identify plants found in fresh water.  
C. Explain the effects of water on the life of organisms in a watershed.  
- Explain how water is necessary for all life.  
- Explain how the physical components of aquatic systems influence the organisms that live there in terms of size, shape and physical adaptations.  
- Describe the life cycle of organisms that depend on water.  
- Identify organisms that have aquatic stages of life and describe those stages. |
| 4.1.7. GRADE 7 | C. Identify living things found in water environments.  
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| 4.1.12. GRADE 12 | C. Identify living things found in water environments.  
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</table>
| D. Identify a wetland and the plants and animals found there.  
  • Identify different kinds of wetlands.  
  • Identify plants and animals found in wetlands.  
  • Explain wetlands as habitats for plants and animals. | D. Explain and describe characteristics of a wetland.  
  • Identify specific characteristics of wetland plants and soils.  
  • Recognize the common types of plants and animals.  
  • Describe different types of wetlands.  
  • Describe the different functions of a wetland. | D. Describe the multiple functions of wetlands.  
  • Describe wetlands in terms of their effects (e.g., habitat, flood, buffer zones, prevention areas, nurseries, food production areas).  
  • Explain how a wetland influences water quality, wildlife and water retention.  
  • Analyze wetlands through their indicators (e.g., soils, plants, hydrology). | D. Analyze the complex and diverse ecosystems of wetlands.  
  • Explain the functions of habitat, nutrient production, migration stopover and groundwater recharge as it relates to wetlands.  
  • Explain the dynamics of a wetland ecosystem.  
  • Describe and analyze different types of wetlands. |
| E. Recognize the impact of watersheds and wetlands on animals and plants.  
  • Explain the role of watersheds in everyday life.  
  • Identify the role of watersheds and wetlands for plants and animals. | E. Describe the impact of watersheds and wetlands on people.  
  • Explain the impact of watersheds and wetlands in flood control, wildlife habitats and pollution abatement.  
  • Explain the influence of flooding on wetlands. | E. Identify and describe natural and human events on watersheds and wetlands.  
  • Describe how natural events affect a watershed (e.g., drought, floods).  
  • Identify the effects of humans and human events on watersheds. | E. Evaluate the trade-offs, costs and benefits of conserving watersheds and wetlands.  
  • Evaluate the effects of natural events on watersheds and wetlands.  
  • Evaluate the effects of human activities on watersheds and wetlands. |
### 4.2. Renewable and Nonrenewable Resources

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<tr>
<th></th>
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<th>4.2.12. GRADE 12</th>
</tr>
</thead>
</table>
| A. | Identify needs of people.  
  • Identify plants, animals, water, air, minerals and fossil fuels as natural resources.  
  • Explain air, water and nutrient cycles.  
  • Identify how the environment provides for the needs of people. | Know that raw materials come from natural resources.  
  • Identify resources used to provide humans with energy, food, housing and water.  
  • Explain how plants and animals may be classified as natural resources.  
  • Compare means of growing or acquiring food.  
  • Identify fiber and other raw materials used in clothing and shelter production.  
  • Identify types of minerals and fossil fuels used by humans. | Explain that renewable and nonrenewable resources supply energy and materials.  
  • Identify alternative sources of energy.  
  • Identify and compare fuels used in industrial and agricultural societies.  
  • Compare and contrast the cycles of various natural resources.  
  • Explain food and fiber as renewable resources. | Analyze the use of renewable and nonrenewable resources.  
  • Explain the effects on the environment and sustainability through the use of nonrenewable resources.  
  • Evaluate the advantages and disadvantages of reusing our natural resources. |

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<tbody>
<tr>
<td><strong>B. Identify products derived from natural resources.</strong></td>
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<tr>
<td>• Identify products made from trees.</td>
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<tr>
<td>• Identify by-products of plants and animals.</td>
</tr>
<tr>
<td>• Identify the sources of manmade products (e.g., plastics, metal, aluminum, fabrics, paper, cardboard).</td>
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<tr>
<td><strong>B. Examine the renewability of the resources.</strong></td>
</tr>
<tr>
<td>• Identify renewable resources and describe their uses.</td>
</tr>
<tr>
<td>• Identify nonrenewable resources and describe their uses.</td>
</tr>
<tr>
<td>• Compare finished products to their original raw material.</td>
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<tr>
<td>• Identify the waste derived from the use of renewable and nonrenewable resources.</td>
</tr>
<tr>
<td>• Determine how consumption may impact the availability of resources.</td>
</tr>
<tr>
<td>• Compare the time spans of renewability for fossil fuels and alternative fuels.</td>
</tr>
<tr>
<td><strong>B. Evaluate factors affecting availability of natural resources.</strong></td>
</tr>
<tr>
<td>• Describe natural occurrences that may affect the natural resources.</td>
</tr>
<tr>
<td>• Analyze technologies that affect the use of our natural resources.</td>
</tr>
<tr>
<td>• Evaluate the effect of consumer desires on various natural resources.</td>
</tr>
<tr>
<td><strong>B. Analyze factors affecting the availability of renewable and nonrenewable resources.</strong></td>
</tr>
<tr>
<td>• Evaluate the use of natural resources and offer approaches for using them while diminishing waste.</td>
</tr>
<tr>
<td>• Compare the economics of different areas based on the availability and accessibility of the natural resources.</td>
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</tbody>
</table>
4.2. Renewable and Nonrenewable Resources

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<tr>
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Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

- C. Know that some natural resources have limited life spans.
  - Identify renewable and nonrenewable resources used in the local community.
  - Identify various means of conserving natural resources.
  - Know that natural resources have varying life spans.

- C. Explain natural resource distribution.
  - Distinguish between readily available and less accessible resources.
  - Identify the locations of different concentrations of fossil fuels and mineral resources.
  - Analyze the effects of management practices on air, land and water in forestry, agriculture, fisheries, wildlife, mining and food and fiber production that is unique to different climates.

- C. Analyze how man-made systems have impacted the management and distribution of natural resources.
  - Explain the complete cycle of a natural resource, from extraction to disposal, detailing its uses and effects on the environment.
  - Analyze energy uses and energy conservation in different regions.
  - Examine conservation practices in different countries.
  - Analyze the costs and benefits of different man-made systems and how they use renewable and nonrenewable natural resources.
  - Analyze the impact of information systems on management and distribution of natural resources.

- C. Analyze factors that influence the availability of natural resources.
  - Compare the use of natural resources in different countries.
  - Determine how delivery systems influence the availability of resources at the local, regional and national level.
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</table>
| Grade 4 | D. Identify by-products and their use of natural resources.  
  - Understand the waste stream.  
  - Identify those items that can be recycled and those that can not.  
  - Identify use of reusable products.  
  - Identify the use of compost, landfills and incinerators. |
| Grade 7 | D. Describe the role of recycling and waste management.  
  - Identify materials that can be recycled in the community.  
  - Explain the process of closing the loop in recycling.  
  - Compare the decomposition rates of different organic materials.  
  - Describe methods that could be used to reuse materials for new products.  
  - Evaluate the costs and benefits of disposable products. |
| Grade 10| D. Explain different management alternatives involved in recycling and solid waste management.  
  - Analyze the manufacturing process (before, during and after) with consideration for resource recovery.  
  - Compare various methods dealing with solid waste (e.g., incineration, compost, land application).  
  - Differentiate between pre/post-consumer and raw materials.  
  - Illustrate how one natural resource can be managed through reduction, recycling, reuse or use. |
| Grade 12| D. Evaluate solid waste management practices.  
  - Examine and explain the path of a recyclable material from collection to waste, reuse or recycling identifying the market forces.  
  - Understand current regulations concerning recycling and solid waste.  
  - Research new technologies in the use, reuse or recycling of materials. |
### 4.3. Environmental Health

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<th>4.3.12. GRADE 12</th>
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</table>
| A. | Know that plants, animals and humans are dependent on air and water.  
   | • Know that all living things need air and water to survive.  
   | • Describe potentially dangerous pest controls used in the home.  
   | • Identify things that cause sickness when put into the air, water or soil.  
   | • Identify actions that can prevent or reduce waste pollution.  
| A. | Identify environmental health issues.  
   | • Identify various examples of long-term pollution and explain their effects on environmental health.  
   | • Identify diseases that have been associated with poor environmental quality.  
   | • Describe different types of pest controls and their effects on the environment.  
   | • Identify alternative products that can be used in life to reduce pollution.  
| A. | Describe environmental health issues.  
   | • Identify the effects on human health of air, water and soil pollution and the possible economic costs to society.  
   | • Describe how indoor pollution may affect human health (e.g., dust mites, fumes, cat dandruff).  
   | • Explain the costs and benefits of cleaning up contaminants.  
   | • Explain how common household cleaning products are manufactured and how to dispose of their by-products after use.  
| A. | Analyze the complexity of environmental health issues.  
   | • Identify environmental health issues and explain how they have been addressed on a worldwide level.  
   | • Analyze efforts to prevent, control and/or reduce pollution through cost and benefit analysis and risk management.  
   | • Describe the impact of occupational exposures as they relate to environmental health issues.  
   | • Identify invisible pollutants and explain their effects on human health.  
   | • Explain the relationship between wind direction and velocity as it relates to dispersal and occurrence of pollutants.  
   | • Explain the different disposal methods used for toxic and hazardous waste.  

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### 4.3. Environmental Health

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</thead>
</table>
| 4     | Identify how human actions affect environmental health.  
  - Identify pollutants.  
  - Identify sources of pollution.  
  - Identify litter and its effect on the environment.  
  - Describe how people can reduce pollution. |
| 7     | Describe how human actions affect the health of the environment.  
  - Identify land use practices and their relation to environmental health.  
  - Explain how natural disasters affect environmental health.  
  - Identify residential and industrial sources of pollution and their effects on environmental health.  
  - Explain the difference between point and nonpoint source pollution.  
  - Explain how nonpoint source pollution can affect the water supply and air quality.  
  - Explain how acid deposition can affect water, soil and air quality.  
  - Explain the relationship between resource use, reuse, recycling and environmental health. |
| 10    | Explain how multiple variables determine the effects of pollution on environmental health, natural processes and human practices.  
  - Explain how human practices affect the quality of the water and soil.  
  - Identify evidence of natural events around the world and their effects on environmental health (e.g., Yellowstone National Park fires).  
  - Identify local and state environmental regulations and their impact on environmental health.  
  - Analyze data and explain how point source pollution can be detected and eliminated.  
  - Identify and explain ways of detecting pollution by using state-of-the-art technologies. |
| 12    | Analyze the local, regional and national impacts of environmental health.  
  - Analyze the cost of natural disasters in both dollars and loss of natural habitat.  
  - Research and analyze the local, state and national laws that deal with point and nonpoint source pollution; evaluate the costs and benefits of these laws.  
  - Explain mitigation and its role in environmental health.  
  - Explain industry’s initiatives to meet state and federal mandates on clean air and water.  
  - Describe the impacts of point and nonpoint source pollution on the Chesapeake Bay.  
  - Identify and evaluate the costs and benefits of laws regulating air and water quality and waste disposal. |
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<tr>
<td>C. Understand that the elements of natural systems are interdependent. • Identify some of the organisms that live together in an ecosystem. • Understand that the components of a system all play a part in a healthy natural system. • Identify the effects of a healthy environment on the ecosystem.</td>
<td>C. Explain biological diversity. • Explain the complex, interactive relationships among members of an ecosystem. • Explain how diversity affects ecological integrity of the natural resources.</td>
<td>C. Explain biological diversity as an indicator of a healthy environment. • Explain species diversity. • Analyze the effects of species extinction on the health of an ecosystem.</td>
<td>C. Analyze the need for a healthy environment. • Research the relationship of some chronic diseases to an environmental pollutant. • Explain how man-made systems may affect the environment.</td>
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<tr>
<td>4</td>
<td>Know the importance of agriculture to humans.</td>
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<td>- Identify people’s basic needs.</td>
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<td>- Explain the influence of agriculture on food, clothing, shelter and culture from one area to another.</td>
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<td>- Know how people depend on agriculture.</td>
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<td>4.4.4.</td>
<td>Explain society’s standard of living in relation to agriculture.</td>
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<td></td>
<td>- Compare and contrast agricultural changes that have been made to meet society’s needs.</td>
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<td>7</td>
<td>- Compare and contrast how animals and plants affect agricultural systems.</td>
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<td></td>
<td>- Compare several technological advancements and their effect(s) on the historical growth of agriculture.</td>
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<td></td>
<td>- Compare different environmental conditions related to agricultural production, cost and quality of the product.</td>
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<tr>
<td>10</td>
<td>Describe the importance of agriculture to society.</td>
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<td></td>
<td>- Identify the major cash crops of Pennsylvania.</td>
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<td></td>
<td>- Identify what percentage of the United States’ population is involved in the food and fiber industry.</td>
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<td>12</td>
<td>- Compare and contrast the influence of agriculture on a nation’s culture, standard of living and foreign trade.</td>
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<td></td>
<td>- Identify laws that affect conservation and management of food and fiber production in the local area and analyze their impact.</td>
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<td></td>
<td>- Compare a contemporary economic issue in agriculture to its historical origin.</td>
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<tr>
<td>4.4.12</td>
<td>Analyze the management practices in the agriculture business.</td>
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<td></td>
<td>- Define the components of an agriculture system that would result in a minimal waste of resources.</td>
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<td></td>
<td>- Identify the diversity in crop production and analyze the advantages and disadvantages of such diversity.</td>
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<tr>
<td></td>
<td>- Research and analyze environmental practices related to agricultural systems.</td>
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<td></td>
<td>- Analyze the effects of agricultural practices on the economy.</td>
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<td></td>
<td>- Analyze the impact of nutrient management laws on Pennsylvania agriculture.</td>
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<td></td>
<td>- Assess the role of agriculture cooperatives.</td>
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</tbody>
</table>
### Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

**B. Identify the role of the sciences in Pennsylvania agriculture.**
- Identify common animals found on Pennsylvania farms.
- Identify common plants found on Pennsylvania farms.
- Identify the parts of important agricultural related plants (i.e., corn, soybeans, barley).
- Identify a fiber product from Pennsylvania farms.

**B. Investigate how agricultural science has recognized the various soil types found in Pennsylvania.**
- Explain the importance of particle sizes in different soil types.
- Determine how water has influenced the development of Pennsylvania soil types.
- Investigate how soil types have influenced the plant types used on Pennsylvania farms.
- Analyze how soil types and geographic regions have impacted the profitability of Pennsylvania farms.

**B. Assess the influence of agricultural science on farming practices.**
- Compare the practices of no-till farming to traditional soil preparation (e.g., plow, disc).
- Analyze and explain the various practices of nutrient management on the farm.
- Analyze and explain how farm efficiencies have changed human nutrition.

**B. Describe how agricultural science has influenced biotechnology.**
- Investigate how bioengineered crops may influence the food supply.
- Analyze the use of specific bacteria for the control of agricultural pests.
- Evaluate the use of feed additives in shifting metabolism to increase muscle mass and reduce fat in farm animals.
### 4.4. Agriculture and Society

<table>
<thead>
<tr>
<th>4.4.4. GRADE 4</th>
<th>4.4.7. GRADE 7</th>
<th>4.4.10. GRADE 10</th>
<th>4.4.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:</td>
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</tr>
<tr>
<td><strong>C.</strong> Know that food and fiber originate from plants and animals.</td>
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<tr>
<td>- Define and identify food and fiber.</td>
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<tr>
<td>- Identify what plants and animals need to grow.</td>
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<tr>
<td>- Identify agricultural products that are local and regional.</td>
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<tr>
<td>- Identify an agricultural product based on its origin.</td>
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<tr>
<td>- Describe several products and tell their origins.</td>
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<tr>
<td>- Describe the journey of a local agricultural product from production to the consumer.</td>
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</tbody>
</table>

| **C.** Explain agricultural systems’ use of natural and human resources. |
| - Analyze the needs of plants and animals as they relate to climate and soil conditions. |
| - Identify the plants and animals that can be raised in the area and explain why. |
| - Identify natural resources necessary for agricultural systems. |
| - Compare the need for crop production to the need for animal production. |
| - Define issues associated with food and fiber production. |

| **C.** Explain the functions of the components of the food and fiber system. |
| - Compare and analyze growing conditions in the United States to determine which plants and animals are most suitable to each region. |
| - Compare the management practices needed for a commodity (i.e., production, processing, research and development, marketing, distribution and regulations). |
| - Identify a commodity, its origin and its steps of production. |
| - Compare and analyze the cost of a commodity to its production cost. |
| - Identify and describe how food safety issues have impacted production in agriculture. |

| **C.** Analyze and research the social, economic and political factors that affect agricultural systems. |
| - Analyze the costs and benefits associated with agriculture practices and how they affect economic and human needs. |
| - Analyze the costs and benefits of agriculture research practices in society. |
| - Research the use of by-products that are the results of agriculture production (e.g., manure handling, bird feathers). |
Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Content</th>
</tr>
</thead>
</table>
| 4.4.4. GRADE 4 | Identify technology and energy use associated with agriculture.  
  - Identify the various tools and machinery necessary for farming.  
  - Identify the types of energy used in producing food and fiber.  
  - Identify tools and machinery used in the production of agricultural products. |
| 4.4.7. GRADE 7 | Explain the improvement of agricultural production through technology.  
  - Compare the technologies that have advanced agricultural production.  
  - Explain how energy sources have changed to meet agricultural technology. |
| 4.4.10. GRADE 10 | Analyze the efforts of increased efficiency in agriculture through technology.  
  - Compare various technological advancements and analyze each for its contribution toward labor and cost efficiency.  
  - Compare the current market value of both natural and alternative energy sources involved in the production of food and fiber. |
| 4.4.12. GRADE 12 | Analyze research and development activities as they relate to agriculture.  
  - Analyze the role of research, development and technology as it relates to the food and fiber system.  
  - Research and analyze energy sources used and/or generated by producing, processing and marketing agricultural products. |
4.5. Integrated Pest Management

<table>
<thead>
<tr>
<th>4.5.4. GRADE 4</th>
<th>4.5.7. GRADE 7</th>
<th>4.5.10. GRADE 10</th>
<th>4.5.12. GRADE 12</th>
</tr>
</thead>
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<td>Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:</td>
<td></td>
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</tr>
<tr>
<td>A. Know types of pests.</td>
<td>A. Explain benefits and harmful effects of pests.</td>
<td>A. Identify similar classifications of pests that may or may not have similar effects on different regions.</td>
<td>A. Research integrated pest management systems.</td>
</tr>
<tr>
<td>- Identify classifications of pests.</td>
<td>- Identify different examples of pests and explain the beneficial or harmful effects of each.</td>
<td>- Identify environmental effect(s) of pests on different regions of the world.</td>
<td>- Analyze the threshold limits of pests and the need for intervention in a managed environment.</td>
</tr>
<tr>
<td>- Identify and categorize pests.</td>
<td>- Identify several locations where pests can be found and compare the effects the pests have on each location.</td>
<td>- Identify introduced species that are classified as pests in their new environments.</td>
<td>- Research the types of germicides and analyze their effects on homes, industry, hospitals and institutions.</td>
</tr>
<tr>
<td>- Know how pests fit into a food chain.</td>
<td></td>
<td></td>
<td>- Design and explain an integrated pest management plan that uses a range of pest controls.</td>
</tr>
</tbody>
</table>
## 4.5. Integrated Pest Management

<table>
<thead>
<tr>
<th>4.5.4. GRADE 4</th>
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<td>Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:</td>
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</table>

<table>
<thead>
<tr>
<th><strong>B. Explain pest control.</strong></th>
<th><strong>B. Explain how pest management affects the environment.</strong></th>
<th><strong>B. Analyze health benefits and risks associated with integrated pest management.</strong></th>
<th><strong>B. Research and analyze integrated pest management practices globally.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Know reasons why people control pests.</td>
<td>• Explain issues related to integrated pest management including biological technology, resistant varieties, chemical practices, medical technology and monitoring techniques.</td>
<td>• Identify the health risks associated with chemicals used in common pesticides.</td>
<td>• Research worldwide integrated pest management systems and evaluate the level of impact.</td>
</tr>
<tr>
<td>• Identify different methods for controlling specific pests in the home, school and community.</td>
<td>• Describe how integrated pest management and related technology impact human activities.</td>
<td>• Assess various levels of control within different integrated pest management practices including increased immunity to pesticides, food safety, sterilization, nutrient management and weed control.</td>
<td>• Research and analyze the international regulations that exist related to integrated pest management.</td>
</tr>
<tr>
<td>• Identify chemical labels (e.g., caution, poison, warning).</td>
<td>• Identify issues related to integrated pest management that affect the environment.</td>
<td></td>
<td>• Explain the complexities associated with moving from one level of control to the next with different integrated pest management practices and compare the related costs of each system.</td>
</tr>
</tbody>
</table>
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<table>
<thead>
<tr>
<th>Grade</th>
<th>Academic Standard</th>
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<tbody>
<tr>
<td>4.5.4.</td>
<td><strong>GRADE 4</strong></td>
</tr>
<tr>
<td>C.</td>
<td>Understand society’s need for integrated pest management.</td>
</tr>
<tr>
<td></td>
<td>• Identify integrated pest management practices in the home.</td>
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<tr>
<td></td>
<td>• Identify integrated pest management practices outside the home.</td>
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<tr>
<td>C.</td>
<td>Explain various integrated pest management practices used in society.</td>
</tr>
<tr>
<td></td>
<td>• Compare and contrast integrated pest management monitoring methods utilized in different community settings.</td>
</tr>
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<td></td>
<td>• Compare integrated pest management to past practices.</td>
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<tr>
<td></td>
<td>• Compare and analyze the long-term effects of using integrated pest management products.</td>
</tr>
<tr>
<td>C.</td>
<td>Determine the effects of integrated pest management practices on society over time.</td>
</tr>
<tr>
<td></td>
<td>• Analyze the risks to the environment and society associated with alternative practices used in integrated pest management.</td>
</tr>
<tr>
<td></td>
<td>• Analyze the benefits to the environment and society associated with alternative practices used in integrated pest management.</td>
</tr>
<tr>
<td>C.</td>
<td>Analyze the historical significance of integrated pest management on society.</td>
</tr>
<tr>
<td></td>
<td>• Explain the dynamics of integrated pest management practices and their relative effects upon society.</td>
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<tr>
<td></td>
<td>• Identify historic events affecting integrated pest management and cite the practices used (e.g., avian flu, bubonic plague, potato blight).</td>
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<tr>
<td></td>
<td>• Research and analyze the long-term effects of pest management practices on the environment.</td>
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<tr>
<td>4.5.7.</td>
<td><strong>GRADE 7</strong></td>
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<tr>
<td>4.5.10.</td>
<td><strong>GRADE 10</strong></td>
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<tr>
<td>4.5.12.</td>
<td><strong>GRADE 12</strong></td>
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### 4.6. Ecosystems and their Interactions

<table>
<thead>
<tr>
<th>Grade</th>
<th>Content</th>
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</table>
| **4.6.4. GRADE 4** | A. Understand that living things are dependent on nonliving things in the environment for survival.  
- Identify and categorize living and nonliving things.  
- Describe the basic needs of an organism.  
- Identify basic needs of a plant and an animal and explain how their needs are met.  
- Identify plants and animals with their habitat and food sources.  
- Identify environmental variables that affect plant growth.  
- Describe how animals interact with plants to meet their needs for shelter.  
- Describe how certain insects interact with soil for their needs.  
- Understand the components of a food chain.  
| **4.6.7. GRADE 7** | A. Explain the flows of energy and matter from organism to organism within an ecosystem.  
- Identify and explain the characteristics of biotic and abiotic.  
- Describe and explain the adaptations of plants and animals to their environment.  
- Demonstrate the dependency of living components in the ecosystem on the nonliving components.  
- Explain energy flow through a food web.  
- Explain the importance of the predator/prey relationship and how it maintains the balances within ecosystems.  
- Understand limiting factors and predict their effects on an organism.  
| **4.6.10. GRADE 10** | A. Explain the biotic and abiotic components of an ecosystem and their interaction.  
- Identify the major biomes and explain their similarities and differences.  
- Compare and contrast the interactions of biotic and abiotic components in an ecosystem.  
- Analyze the effects of abiotic factors on specific ecosystems.  
- Describe how the availability of resources affects organisms in an ecosystem.  
- Explain energy flow in a food chain through an energy pyramid.  
- Evaluate the efficiency of energy flow in a food chain.  
- Explain the concept of carrying capacity in an ecosystem.  
- Explain trophic levels.  
| **4.6.12. GRADE 12** | A. Analyze the interdependence of an ecosystem.  
- Analyze the relationships among components of an ecosystem.  
- Evaluate the efficiency of energy flow within an ecosystem.  
- Explain limiting factors and their impact on carrying capacity.  
- Understand how biological diversity impacts the stability of an ecosystem.  
- Analyze the positive or negative impacts of outside influences on an ecosystem.  
- Analyze how different land use practices can affect the quality of soils.  
- Analyze the positive or negative impacts of outside influences on an ecosystem.  
- Explain how different land use practices can affect the quality of soils.  

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<th>4.6.12. GRADE 12</th>
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<tbody>
<tr>
<td>• Identify a local ecosystem and its living and nonliving components.</td>
<td>• Identify niches for producers, consumers and decomposers within an ecosystem.</td>
<td>• Identify a specific environmental impact and predict what change may take place to affect homeostasis.</td>
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<tr>
<td>• Identify a simple ecosystem and its living and nonliving components.</td>
<td>• Compare and contrast the major ecosystems of Pennsylvania.</td>
<td>• Examine and explain how organisms modify their environments to sustain their needs.</td>
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<tr>
<td>• Identify common soil textures.</td>
<td>• Identify the major characteristics of a biome.</td>
<td>• Assess the effects of latitude and altitude on biomes.</td>
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<tr>
<td>• Identify animals that live underground.</td>
<td>• Compare and contrast different biomes and their characteristics.</td>
<td>• Interpret possible causes of population fluctuations.</td>
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<tr>
<td></td>
<td>• Identify the relationship of abiotic and biotic components and explain their interaction in an ecosystem.</td>
<td>• Explain how erosion and sedimentation have changed the quality of soil related habitats.</td>
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</table>
4.6. Ecosystems and their Interactions

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<th>4.6.10. GRADE 10</th>
<th>4.6.12. GRADE 12</th>
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</thead>
</table>
| **B.** Understand the concept of cycles.  
  • Explain the water cycle.  
  • Explain the carbon dioxide/oxygen cycle (photosynthesis). | **B.** Explain the concepts of cycles.  
  • Identify and explain cycles within an ecosystem.  
  • Explain the role of different cycles within an ecosystem. | **B.** Explain how cycles affect the balance in an ecosystem.  
  • Describe an element cycle and its role in an ecosystem.  
  • Explain the consequences of interrupting natural cycles. | **B.** Analyze the impact of cycles on the ecosystem.  
  • Evaluate the materials necessary for natural cycles.  
  • Explain the processes involved in the natural cycles. |
| **C.** Identify how ecosystems change over time. | **C.** Explain how ecosystems change over time.  
  • Explain how ecosystems change.  
  • Identify the succession stages of a given ecosystem.  
  • Explain how specific organisms may change an ecosystem.  
  • Explain a change in an ecosystem that relates to humans. | **C.** Analyze how ecosystems change over time.  
  • Identify and explain the succession stages in an ecosystem.  
  • Identify causes of succession.  
  • Analyze consequences of interrupting natural cycles. | **C.** Analyze how human action and natural changes affect the balance within an ecosystem.  
  • Analyze the effects of substances that move through natural cycles.  
  • Analyze the effects of natural occurrences and their effects on ecosystems.  
  • Analyze effects of human action on an ecosystem.  
  • Compare the stages of succession and how they influence the cycles existing in an ecosystem. |

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<thead>
<tr>
<th>Grade</th>
<th>Standards</th>
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</thead>
</table>
| **4.7.4. GRADE 4** | A. Identify differences in living things.  
  • Explain why plants and animals are different colors, shapes and sizes and how these differences relate to their survival.  
  • Identify characteristics that living things inherit from their parents.  
  • Explain why each of the four elements in a habitat is essential for survival.  
  • Identify local plants or animals and describe their habitat. |
| **4.7.7. GRADE 7** | A. Describe diversity of plants and animals in ecosystems.  
  • Select an ecosystem and describe different plants and animals that live there.  
  • Identify adaptations in plants and animals.  
  • Recognize that adaptations are developed over long periods of time and are passed on from one generation to the next.  
  • Understand levels of ecosystem organization (e.g., individuals, populations, species). |
| **4.7.10. GRADE 10** | A. Explain the significance of diversity in ecosystems.  
  • Explain the role that specific organisms have in their ecosystem.  
  • Identify a species and explain what effects its increase or decline might have on the ecosystem.  
  • Identify a species and explain how its adaptations are related to its niche in the environment. |
| **4.7.12. GRADE 12** | A. Analyze biological diversity as it relates to the stability of an ecosystem.  
  • Examine and explain what happens to an ecosystem as biological diversity changes.  
  • Explain the relationship between species' loss and bio-diversity.  
  • Examine and explain how a specialized interaction between two species may affect the survival of both species. |
### 4.7. Threatened, Endangered and Extinct Species

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<tr>
<th>4.7.4. GRADE 4</th>
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<th>4.7.10. GRADE 10</th>
<th>4.7.12. GRADE 12</th>
</tr>
</thead>
</table>
| **B. Know that adaptations are important for survival.**  
  - Explain how specific adaptations can help a living organism to survive.  
  - Explain what happens to a living thing when its food, water, shelter or space is changed. | **B. Explain how species of living organisms adapt to their environment.**  
  - Explain the role of individual variations in natural selection.  
  - Explain how an adaptation is an inherited structure or behavior that helps an organism survive and reproduce.  
  - Describe how a particular trait may be selected over time and account for a species’ adaptation.  
  - Compare and contrast animals and plants that have very specific survival requirements with those that have more general requirements for survival.  
  - Explain how living things respond to changes in their environment.  
  - Explain how one species may survive an environmental change while another might not. | **B. Explain how structure, function and behavior of plants and animals affect their ability to survive.**  
  - Describe an organism’s adaptations for survival in its habitat.  
  - Compare adaptations among species. | **B. Examine the effects of extinction, both natural and human caused, on the environment.**  
  - Predict how human or natural action can produce change to which organisms cannot adapt.  
  - Identify species that became extinct through natural causes and explain how that occurred.  
  - Identify a species that became extinct due to human actions and explain what occurred. |

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<td>4.7.7.</td>
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</tr>
<tr>
<td><strong>C. Define and understand extinction.</strong></td>
<td><strong>C. Explain natural or human actions in relation to the loss of species.</strong></td>
</tr>
<tr>
<td>• Identify plants and animals that are extinct.</td>
<td>• Identify natural or human impacts that cause habitat loss.</td>
</tr>
<tr>
<td>• Explain why some plants and animals are extinct.</td>
<td>• Explain how habitat loss can affect the interaction among species and the population of a species.</td>
</tr>
<tr>
<td>• Know that there are local and state laws regarding plants and animals.</td>
<td>• Analyze and explain the changes in an animal population over time.</td>
</tr>
<tr>
<td></td>
<td>• Explain how a habitat management practice affects a population.</td>
</tr>
<tr>
<td></td>
<td>• Explain the differences among threatened, endangered and extinct species.</td>
</tr>
<tr>
<td></td>
<td>• Identify Pennsylvania plants and animals that are on the threatened or endangered list.</td>
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</tbody>
</table>
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<th>Grade 4</th>
<th>Grade 7</th>
<th>Grade 10</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Describe state laws passed regarding threatened and endangered species in Pennsylvania.</td>
<td>• Explain why one species may be more susceptible to becoming endangered than another species.</td>
<td>• Examine the influence of wildlife management in preserving different species in Pennsylvania (e.g., bobcat, elk, bald eagle).</td>
<td></td>
</tr>
</tbody>
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<tr>
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</tr>
</thead>
</table>
| 4     | A. Identify the biological requirements of humans.  
  • Explain how a dynamically changing environment provides for sustainability of living systems.  
  • Identify several ways that people use natural resources.  
   |
| 7     | A. Describe how the development of civilization relates to the environment.  
  • Explain how people use natural resources in their environment.  
  • Locate and identify natural resources in different parts of the world.  
  • Compare and contrast how people use natural resources throughout the world.  
   |
| 10    | A. Analyze how society’s needs relate to the sustainability of natural resources.  
  • Explain why some societies have been unable to meet their natural resource needs.  
  • Compare and contrast the use of natural resources and the environmental conditions in several countries.  
  • Describe how uses of natural resources impact sustainability.  
   |
| 12    | A. Explain how technology has influenced the sustainability of natural resources over time.  
  • Describe how technology has changed the use of natural resources by business and industry.  
  • Analyze the effect of natural resource conservation on a product over time (e.g., automobile manufacturing, aluminum can recycling, paper products).  
   |
### 4.8. Humans and the Environment

<table>
<thead>
<tr>
<th>4.8.4. GRADE 4</th>
<th>4.8.7. GRADE 7</th>
<th>4.8.10. GRADE 10</th>
<th>4.8.12. GRADE 12</th>
</tr>
</thead>
</table>
| **B. Know that environmental conditions influence where and how people live.**  
- Identify how regional natural resources influence what people use.  
- Explain the influence of climate on how and where people live. | **B. Explain how people use natural resources.**  
- Describe how natural resources are used for survival.  
- Explain how natural resources and technological changes have affected the development of civilizations.  
- Explain how climate and extreme weather events (e.g., drought, flood) influence people’s lives. | **B. Analyze the relationship between the use of natural resources and sustaining our society.**  
- Explain the role of natural resources in sustaining society.  
- Analyze the effects of a natural resource’s availability on a community or region. | **B. Analyze technology’s role on natural resource sustainability.**  
- Explain how technology has decreased the use of raw natural resources.  
- Explain how technology has impacted the efficiency of the use of natural resources.  
- Analyze the role of technology in the reduction of pollution. |

*Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:*
<table>
<thead>
<tr>
<th>Standard</th>
<th>Grade 4</th>
<th>Grade 7</th>
<th>Grade 10</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C.</strong> Explain how human activities may change the environment.</td>
<td>Describe what effect consumption and related generation of wastes have on the environment.</td>
<td>Analyze and evaluate changes in the environment that are the result of human activities.</td>
<td>Analyze how pollution has changed in quality, variety and toxicity as the United States developed its industrial base.</td>
<td><strong>C.</strong> Analyze how human activities may affect local, regional and national environments.</td>
</tr>
<tr>
<td><em>Identify everyday human activities and how they affect the environment.</em></td>
<td><em>Identify examples of how human activities within a community affect the natural environment.</em></td>
<td><em>Compare and contrast the environmental effects of different industrial strategies (e.g., energy generation, transportation, logging, mining, agriculture).</em></td>
<td><em>Analyze historical pollution trends and project them for the future.</em></td>
<td></td>
</tr>
<tr>
<td><em>Describe what effect consumption and related generation of wastes have on the environment.</em></td>
<td><strong>C.</strong> Explain how human activities may affect local, regional and national environments.</td>
<td><strong>C.</strong> Analyze how human activities may change the environment.</td>
<td><em>Compare and contrast historical and current pollution levels at a given location.</em></td>
<td></td>
</tr>
<tr>
<td><em>Explain how a particular human activity has changed the local area over the years.</em></td>
<td><strong>C.</strong> Explain how human activities may affect local, regional and national environments.</td>
<td><strong>C.</strong> Analyze how human activities may change the environment.</td>
<td><strong>C.</strong> Analyze how human activities may affect local, regional and national environments.</td>
<td></td>
</tr>
<tr>
<td>D. Know the importance of natural resources in daily life.</td>
<td>D. Explain the importance of maintaining the natural resources at the local, state and national levels.</td>
<td>D. Explain how the concept of supply and demand affects the environment.</td>
<td>D. Analyze the international implications of environmental occurrences.</td>
<td></td>
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<tr>
<td>--------------------------------------------------------</td>
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<td></td>
</tr>
<tr>
<td>• Identify items used in daily life that come from natural resources.</td>
<td>• Explain how human activities and natural events have affected ecosystems.</td>
<td>• Identify natural resources for which societal demands have been increasing.</td>
<td>• Identify natural occurrences that have international impact (e.g., El Niño, volcano eruptions, earthquakes).</td>
<td></td>
</tr>
<tr>
<td>• Identify ways to conserve our natural resources.</td>
<td>• Explain how conservation practices have influenced ecosystems.</td>
<td>• Identify specific resources for which human consumption has resulted in scarcity of supply (e.g., buffalo, lobsters).</td>
<td>• Analyze environmental issues and their international implications.</td>
<td></td>
</tr>
<tr>
<td>• Identify major land uses in the community.</td>
<td>• Define the roles of Pennsylvania agencies that deal with natural resources.</td>
<td>• Describe the relationship between population density and resource use and management.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:
Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

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<th>4.9.12. GRADE 12</th>
</tr>
</thead>
</table>
| **A.** Know that there are laws and regulations for the environment.  
  - Identify local and state laws and regulations regarding the environment.  
  - Explain how the recycling law impacts the school and home.  
  - Identify and describe the role of a local or state agency that deals with environmental laws and regulations. | **A.** Explain the role of environmental laws and regulations.  
  - Identify and explain environmental laws and regulations (e.g., Clean Air Act, Clean Water Act, Recycling and Waste Reduction Act, Act 26 on Agricultural Education).  
  - Explain the role of local and state agencies in enforcing environmental laws and regulations (e.g., Department of Environmental Protection, Department of Agriculture, Game Commission). | **A.** Explain why environmental laws and regulations are developed and enacted.  
  - Explain the positive and negative impacts associated with passing environmental laws and regulations.  
  - Understand conflicting rights of property owners and environmental laws and regulations.  
  - Analyze the roles that local, state and federal governments play in the development and enforcement of environmental laws.  
  - Identify local and state environmental regulations and their impact on environmental health.  
  - Explain the positive and negative impacts of the Endangered Species Act. | **A.** Analyze environmental laws and regulations as they relate to environmental issues.  
  - Analyze and explain how issues lead to environmental law or regulation (e.g., underground storage tanks, regulation of water discharges, hazardous, solid and liquid industrial waste, endangered species).  
  - Compare and contrast environmental laws and regulations that may have a positive or negative impact on the environment and the economy.  
  - Research and describe the effects of an environmental law or regulation and how it has impacted the environment. |
Academic Standards for Environment and Ecology

XII. GLOSSARY

**Abiotic:** A nonliving factor or element (e.g., light, water, heat, rock, energy, mineral).

**Acid deposition:** Precipitation with a pH less than 5.6 that forms in the atmosphere when certain pollutants mix with water vapor.

**Biological diversity:** The variety and complexity of species present and interacting in an ecosystem and the relative abundance of each.

**Biotic:** An environmental factor related to or produced by living organisms.

**Closing the loop:** A link in the circular chain of recycling events that promotes the use of products made with recycled materials and other materials.

**Commodities:** Economic goods or products before they are processed and/or given a brand name; such as a product of agriculture.

**Composting:** The process of mixing decaying leaves, manure, and other nutritive matter to improve and fertilize soil.

**Consumer:** 1) Those organisms that obtain energy by feeding on other organisms and their remains. 2) A person buying goods or services for personal needs or to use in the production of other goods for resale.

**Decomposer:** An organism, often microscopic in size, that obtains nutrients by consuming dead organic matter, thereby making nutrients available to other organisms.

**Endangered Species:** A species that is in danger of extinction throughout all or a significant portion of its range.

**Ecosystem:** A community of living organisms and their interrelated physical and chemical environment.

**Example:** A nonliving factor or element (e.g., light, water, heat, rock, energy, mineral).

**Delineate:** To trace the outline; to sketch; to depict or picture.
Environment:
The total of the surroundings (air, water, soil, vegetation, people, wildlife) influencing each living being's existence, including physical, biological and all other factors; the surroundings of a plant or animal, including climate and food preferences, requirements for shelter, special behaviors and the limits of its activities (e.g., a lake, stream).

Equilibrium:
The ability of an ecosystem to remain in a state of equilibrium.

Extinction:
The complete elimination of a species from the earth.

Groundwater:
Water that infiltrates the soil and is located in underground reservoirs called aquifers.

Hazardous waste:
Material, including chemicals, that may cause or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of.

Incinerating:
Burning to ashes; reducing to ashes.

Integrated pest management:
A variety of control methods that include repairs, traps, bait, poison, etc. to eliminate pests.

Lentic:
Relating to or living in still water.

Lotic:
Relating to or living in actively moving water.

Nonpoint source pollution:
Contamination that originates from many locations, from a lake, stream, land area, or other areas, rather than from a single place.

Niche (ecological):
The role played by an organism in an ecosystem. It is determined by its food preferences, requirements for shelter, special behaviors and the limits of its activities (e.g., a lake, stream).

Mitigation:
The policy of constructing or creating man-made habitats, such as wetlands, to replace those lost to development.

Relating to or living in actively moving water.

Remain in a state of equilibrium.

The tendency for a system by resisting change to

The ability of an ecosystem to remain in a state of equilibrium.

The complete elimination of a species from the earth.

Homeostasis:
The ability of an ecosystem to remain in a state of equilibrium.

Location:

Mitigation: The policy of constructing or creating man-made habitats, such as wetlands, to replace those lost to development.
Nonrenewable:
resources:
Substances (e.g., oil, gas, coal, copper, gold) that, once used, cannot be replaced in the geological age.

Decomposer:
The role of an organism in nutrient and energy flow within an ecosystem (e.g., bacteria, fungi).

Point source pollution:
Pollutants discharged from a single identifiable source (e.g., pipes, ditches, channels, sewers, tunnels, containers of various types).

Sustainability:
The ability to keep in existence of maintenance with the passing of time. The series of changes that occur in an ecosystem (primary, secondary, tertiary)
(Primarily, these involve flows from land to ocean).

Stream order:
Energy and nutrient flows that increase in water through the series of changes that occur in an ecosystem (primary, secondary, tertiary).

Regulation:
A rule or order issued by an executive authority or a mandate developed to reduce or control the chance of harm or loss to one's health or life; the process of identifying, evaluating, selecting and implementing actions to reduce or control the chance of harm or loss to one's health or life.

Recycling:
Collecting and reprocessing a resource to make into new products, to reduce risk to human health and to conserve natural resources (e.g., the sun).

Risk management:
A strategy developed to reduce or control the chance of harm or loss to one's health or life; the process of identifying, evaluating, selecting and implementing actions to reduce or control the chance of harm or loss to one's health or life.

Shredder:
Through chewing and grinding, microorganisms feed on non-woody coarse particulate matter.

Sucession:
The series of changes that occur in an ecosystem (primarily, these involve flows from land to ocean).

Trophic levels:
The role of an organism in nutrient and energy flow within an ecosystem (e.g., bacteria, fungi).

Waste stream:
The flow of waste (material) from generation, collection and separation to disposal.
Watershed: The land area from which surface runoff drains into a stream, channel, lake, reservoir or other body of water; also called a drainage basin.

Wetlands: Lands where water saturation is the dominant factor determining the nature of the soil development and the plant and animal communities (e.g., sloughs, estuaries, marshes).

APPENDIX C

Academic Standards for Civics and Government and Economics and Geography and History

Academic Standards for History

Authority


Cross References

This appendix cited in 22 Pa. Code § 4.24 (relating to high school graduation requirements); 22 Pa. Code § 4.24 (relating to high school graduation requirements); 22 Pa. Code § 4.21 (relating to high school graduation requirements).

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D. Historical Research
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Historical Analysis and Skill Development

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Historical Analysis and Skill Development

Academic Standards for History

Academic Standards for Civics and Government and Economics and Geography and History

APPENDIX C

Academic Standards for History

Examinations

The provisions of this Appendix C amended under sections 121, 2604-B and 2604-B of the Public School Code of 1949 (24 P. S. §§ 1-121, 26-2603-B and 26-2604-B), unless otherwise noted.

Cross References

This appendix cited in 22 Pa. Code § 4.24 (relating to high school graduation requirements); 22 Pa. Code § 4.24 (relating to high school graduation requirements); 22 Pa. Code § 4.21 (relating to high school graduation requirements).

Source

The Pennsylvania Constitution of 1790 was the basis for the Free Public School Act of 1834 that is the underpinning of today's system of schools operating throughout the Commonwealth. These schools were created to educate children and prepare them to be good citizens. "Loyal to the principles upon which the Republic was founded, and aware of their duties as citizens to maintain those ideals."

This document includes Academic Standards for Civics and Government that describe what students should know and be able to do at four grade levels (third, sixth, ninth, and twelfth)."
The intent of the Code is that such instruction "shall have for its purpose also instilling into every boy and girl who comes out of public, private and parochial schools their solemn duty and obligation to exercise intelligently their voting privilege and to understand the advantages of the American republican form of government as compared with various other forms of governments."

The Academic Standards for Civics and Government consist of four standard categories (designated as 5.1., 5.2., 5.3., and 5.4.). Each category has a number of standards statements designated by a capital letter. Some standards statements have bulleted items known as standard descriptors. The standard descriptors are followed by an "e.g.". The "e.g.'s" are examples to illustrate and enhance the standard statement. These are suggestions and the choice of specific content is a local decision as is the method of instruction.

A glossary is included to assist the reader in clarifying terminology contained in the standards.

Social Studies/Citizenship Programs should include the four sets of standards as outlined in the Academic Standards for Civics and Government along with Economics, Geography and History. This identification is consistent with Chapter 49 and Chapter 354. Based on these regulations, Social Studies in Chapters 4, 354 and 352, and Civics and Government along with Economics, Geography and History are identified as Social Studies in Chapter 4. These identifiers are consistent with Chapter 49 and Chapter 354. Based on these regulations, Social Studies/Citizenship Programs should include the four sets of standards as outlined in the Academic Standards for Civics and Government along with Economics, Geography and History.

The Academic Standards for Civics and Government consist of four standard categories (designated as 5.1., 5.2., 5.3., and 5.4.). Each category has a number of standards statements designated by a capital letter. Some standards statements have bulleted items known as standard descriptors. The standard descriptors are followed by an "e.g.". The "e.g.'s" are examples to illustrate and enhance the standard statement. These are suggestions and the choice of specific content is a local decision as is the method of instruction.

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<table>
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<tbody>
<tr>
<td><strong>A.</strong> Describe what government is.</td>
<td><strong>A.</strong> Explain the purpose of government.</td>
<td><strong>A.</strong> Identify and explain the major arguments advanced for the necessity of government.</td>
<td><strong>A.</strong> Evaluate the major arguments advanced for the necessity of government.</td>
</tr>
<tr>
<td><strong>B.</strong> Explain the purposes of rules and laws and why they are important in the classroom, school, community, state and nation.</td>
<td><strong>B.</strong> Explain the importance of the rule of law for the protection of individual rights and the common good in the community, state, nation and world.</td>
<td><strong>B.</strong> Describe historical examples of the importance of the rule of law.</td>
<td><strong>B.</strong> Analyze the sources, purposes and functions of law.</td>
</tr>
<tr>
<td><strong>C.</strong> Define the principles and ideals shaping government.</td>
<td><strong>C.</strong> Describe the principles and ideals shaping government.</td>
<td><strong>C.</strong> Analyze the principles and ideals that shape government.</td>
<td><strong>C.</strong> Evaluate the importance of the principles and ideals of civic life.</td>
</tr>
<tr>
<td>Justice</td>
<td>Equality</td>
<td>Constitutional government</td>
<td></td>
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<tr>
<td>Truth</td>
<td>Majority rule/Minority rights</td>
<td>Liberal democracy</td>
<td></td>
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<tr>
<td>Diversity of people and ideas</td>
<td>Popular sovereignty</td>
<td>Classical republicanism</td>
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<tr>
<td>Patriotism</td>
<td>Privacy</td>
<td>Federalism</td>
<td></td>
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<tr>
<td>Common good</td>
<td>Checks and balances</td>
<td>Checks and balances</td>
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<tr>
<td>Liberty</td>
<td>Separation of powers</td>
<td>Separation of powers</td>
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<td>Rule of law</td>
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<td>Leadership</td>
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<td>Citizenship</td>
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**Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...**
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<th>5.1.12. GRADE 12</th>
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</thead>
<tbody>
<tr>
<td><strong>D. Identify the document which created Pennsylvania.</strong></td>
<td><strong>D. Explain the basic principles and ideals within documents of Pennsylvania government.</strong></td>
<td><strong>D. Interpret significant changes in the basic documents shaping the government of Pennsylvania.</strong></td>
<td><strong>D. Analyze the principles and ideals that shape the government of Pennsylvania and apply them to the government.</strong></td>
<td></td>
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<tr>
<td>• Charter of 1681</td>
<td>• Charter of Privileges</td>
<td>• The Great Law of 1682</td>
<td>• The Charter of 1681</td>
<td></td>
</tr>
<tr>
<td>• Pennsylvania Constitution</td>
<td>• Constitution of 1776</td>
<td>• Constitution of 1790</td>
<td>• Charter of Privileges</td>
<td></td>
</tr>
<tr>
<td>• Pennsylvania Declaration of Rights</td>
<td>• Constitution of 1838</td>
<td>• Constitution of 1874</td>
<td>• PA Constitution, its revisions and Amendments</td>
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<td>• Constitution of 1968</td>
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<td>5.1.12. GRADE 12</td>
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</tbody>
</table>
| E. Identify documents of United States government.  
  • Declaration of Independence  
  • Constitution of the United States  
  • Bill of Rights | E. Explain the basic principles and ideals within documents of United States government. | E. Analyze the basic documents shaping the government of the United States.  
  • Magna Carta  
  • English Bill of Rights  
  • Mayflower Compact  
  • Articles of Confederation  
  • Declaration of Independence  
  • Federalist papers  
  • Anti-federalist writings  
  • United States Constitution | E. Evaluate the principles and ideals that shape the United States and compare them to documents of government. |
Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...

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</thead>
<tbody>
<tr>
<td>F. Explain the meaning of a preamble.</td>
<td>F. Explain the meaning of the Preamble to the Constitution of the Commonwealth of Pennsylvania and compare it to the Preamble of the Constitution of the United States.</td>
<td>F. Contrast the individual rights created by the Pennsylvania Constitution and those created by the Constitution of the United States.</td>
<td>F. Analyze and assess the rights of the people as listed in the Pennsylvania Constitution and the Constitution of the United States.</td>
</tr>
<tr>
<td>• Constitution of the United States</td>
<td>• Pennsylvania Constitution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Describe the purpose of the United States Flag, The Pledge of Allegiance and The National Anthem.</td>
<td>G. Describe the proper use, display and respect for the United States Flag and explain the significance of patriotic activities.</td>
<td>G. Describe the procedures for proper uses, display and respect for the United States Flag as per the National Flag Code.</td>
<td>G. Analyze and interpret the role of the United States Flag in civil disobedience and in patriotic activities.</td>
</tr>
<tr>
<td>Grade</td>
<td>Standards</td>
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<td></td>
</tr>
</tbody>
</table>
| 3     | H. Identify framers of documents of governments.  
|       | - Pennsylvania  
|       | - United States  
|       | I. Explain why government is necessary in the classroom, school, community, state and nation and the basic purposes of government in Pennsylvania and the United States.  
|       | J. Explain the importance of respect for the property and the opinions of others. |
| 6     | H. Describe the roles played by the framers of the basic documents of governments of Pennsylvania and the United States.  
|       | I. Describe and compare the making of rules by direct democracy and by republican form of government. |
| 9     | H. Explain and interpret the roles of framers of basic documents of government from a national and Pennsylvania perspective.  
|       | I. Explain the essential characteristics of limited and unlimited governments and explain the advantages and disadvantages of systems of government.  
|       | - Confederal  
|       | - Federal  
|       | - Unitary  
| 12    | H. Analyze the competing positions held by the framers of the basic documents of government of Pennsylvania and United States.  
|       | I. Analyze historical examples of the importance of the rule of law explaining the sources, purposes and functions of law.  
|       | J. Analyze how the law promotes the common good and protects individual rights. |

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...
Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...

<table>
<thead>
<tr>
<th>Grade</th>
<th>Standards</th>
</tr>
</thead>
</table>
| 3     | K. Identify symbols and political holidays.  
• Pennsylvania (e.g., Charter Day, Liberty Bell, Keystone State)  
• United States (e.g., Presidents' Day, Statue of Liberty, White House) |
| 6     | K. Describe the purpose of symbols and holidays.  
L. Explain the role of courts in resolving conflicts involving the principles and ideals of government.  
• Local  
• State  
• Federal |
| 9     | K. Explain why symbols and holidays were created and the ideals they commemorate.  
L. Interpret Pennsylvania and United States court decisions that have impacted the principles and ideals of government. |
| 12    | K. Analyze the roles of symbols and holidays in society.  
L. Analyze Pennsylvania and United States court decisions that have affected principles and ideals of government in civic life.  
• Civil rights  
• Commerce  
• Judicial review  
• Federal supremacy |
5.1. Principles and Documents of Government

<table>
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<tr>
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<tbody>
<tr>
<td>Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...</td>
<td>M. Identify portions of famous speeches and writings that reflect the basic principles and ideals of government (e.g., “I have a dream,” Reverend Martin Luther King; “One small step for man,” Neil Armstrong).</td>
<td>M. Explain the basic principles and ideals found in famous speeches and writings (e.g., “Governments, like clocks, go from the motion people give them,” William Penn; “A date that will live in infamy,” Franklin D. Roosevelt).</td>
<td>M. Interpret the impact of famous speeches and writings on civic life (e.g., <em>The Gospel of Wealth</em>, <em>Declaration of Sentiments</em>).</td>
</tr>
</tbody>
</table>

Basic concepts found in lower grades for standard statements and their descriptors must be developed more fully throughout higher grade levels.
Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to . . .

### 5.2. Rights and Responsibilities of Citizenship

<table>
<thead>
<tr>
<th>5.2.3. GRADE 3</th>
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<th>5.2.12. GRADE 12</th>
</tr>
</thead>
</table>
| A. Identify examples of the rights and responsibilities of citizenship.  
  - Personal rights  
  - Political rights  
  - Economic rights  
  - Personal responsibilities  
  - Civic responsibilities | A. Compare rights and responsibilities of citizenship.  
  - Political rights  
  - Economic rights  
  - Personal responsibilities of the individual and to society  
  - Civic responsibilities of the individual and to society  
  - Traits of character of individuals and to a republican form of government | A. Contrast the essential rights and responsibilities of citizens in systems of government.  
  - Autocracy  
  - Democracy  
  - Oligarchy  
  - Republic | A. Evaluate an individual’s civic rights, responsibilities and duties in various governments. |
| B. Identify personal rights and responsibilities. | B. Explain the relationship between rights and responsibilities. | B. Analyze citizens’ rights and responsibilities in local, state and national government. | B. Evaluate citizen’s participation in government and civic life. |
### 5.2. Rights and Responsibilities of Citizenship

<table>
<thead>
<tr>
<th>5.2.3. GRADE 3</th>
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<th>5.2.9. GRADE 9</th>
<th>5.2.12. GRADE 12</th>
</tr>
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<tbody>
<tr>
<td>C. Identify sources of conflict and disagreement and different ways conflicts can be resolved.</td>
<td>C. Explain ways citizens resolve conflicts in society and government.</td>
<td>C. Analyze skills used to resolve conflicts in society and government.</td>
<td>C. Interpret the causes of conflict in society and analyze techniques to resolve those conflicts.</td>
</tr>
<tr>
<td>D. Identify the importance of political leadership and public service in the school, community, state and nation.</td>
<td>D. Describe the importance of political leadership and public service.</td>
<td>D. Analyze political leadership and public service in a republican form of government.</td>
<td>D. Evaluate political leadership and public service in a republican form of government.</td>
</tr>
<tr>
<td>E. Describe ways citizens can influence the decisions and actions of government.</td>
<td>E. Identify examples of the rights and responsibilities of citizenship.</td>
<td>E. Explain the importance of the political process to competent and responsible participation in civic life.</td>
<td>E. Analyze how participation in civic and political life leads to the attainment of individual and public goals.</td>
</tr>
<tr>
<td>F. Explain the benefits of following rules and laws and the consequences of violating them.</td>
<td>F. Describe the impact of the consequences of violating rules and laws in a civil society.</td>
<td>F. Analyze the consequences of violating laws of Pennsylvania compared to those of the United States.</td>
<td>F. Evaluate how individual rights may conflict with or support the common good.</td>
</tr>
<tr>
<td>G. Identify ways to participate in government and civic life.</td>
<td>G. Explain the importance of participating in government and civic life.</td>
<td>G. Analyze political and civic participation in government and society.</td>
<td>G. Evaluate what makes a competent and responsible citizen.</td>
</tr>
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<td><strong>Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...</strong></td>
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</tr>
<tr>
<td>A. Identify the elected representative bodies responsible for making local, Pennsylvania and United States laws.</td>
<td>A. Compare the structure, organization and operation of local, state and national governments.</td>
<td>A. Explain the structure, organization and operation of the local, state and national governments including domestic and national policy-making.</td>
<td>A. Analyze and evaluate the structure, organization and operation of the local, state and national governments including domestic and national policy-making.</td>
</tr>
<tr>
<td>B. Identify the role of the three branches of government. • Executive • Legislative • Judicial</td>
<td>B. Describe the responsibilities and powers of the three branches of government.</td>
<td>B. Compare the responsibilities and powers of the three branches within the national government.</td>
<td>B. Analyze the responsibilities and powers of the national government.</td>
</tr>
<tr>
<td>C. Identify reasons for rules and laws in the school and community.</td>
<td>C. Explain how government actions affect citizens’ daily lives.</td>
<td>C. Explain how a bill becomes a law on a federal, state, and local level.</td>
<td>C. Evaluate the process of how a bill becomes the law on a federal, state, and local levels.</td>
</tr>
</tbody>
</table>

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...
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</thead>
</table>
| D. Identify services performed by the local, state and national governments. | D. Describe how local, state and national governments implement their services. | D. Explain how independent government agencies create, amend and enforce regulatory policies.  
- Local (e.g., Zoning Board)  
- State (e.g., Pennsylvania Public Utility Commission)  
- National (e.g., Federal Communications Commission) | D. Evaluate how independent government agencies create, amend and enforce regulations. |
| E. Identify positions of authority at school and in local, state and national governments. | E. Identify major leaders of local, state and national governments, their primary duties and their political party affiliation. | E. Explain how citizens participate in choosing their leaders through political parties, campaigns and elections. | E. Evaluate the roles of political parties in election campaigns. |
### 5.3. How Government Works

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<tbody>
<tr>
<td>F. Explain what an election is.</td>
<td>F. Describe the voting process.</td>
<td>F. Explain the election process.</td>
<td>F. Evaluate the elements of the election process.</td>
</tr>
<tr>
<td>G. Explain why being treated fairly is important.</td>
<td>G. Describe how the government protects individual rights.</td>
<td>G. Explain how the government protects individual rights.</td>
<td>G. Evaluate how the government protects or curtails individual rights and analyze the impact of supporting or opposing those rights.</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>• Pennsylvania</td>
<td>• Voter registration</td>
<td>• Equal protection</td>
</tr>
<tr>
<td>United States</td>
<td>• United States</td>
<td>• Primary Elections</td>
<td>• Habeas Corpus</td>
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<td></td>
<td>• Caucuses</td>
<td>• Right Against Self Incrimination</td>
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<td>• Political party conventions</td>
<td>• Double Jeopardy</td>
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<td>• General Elections</td>
<td>• Right of Appeal</td>
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<tr>
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<td>• Electoral College</td>
<td>• Due Process</td>
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<tbody>
<tr>
<td>H. Identify individual interests and explain ways to influence others.</td>
<td>H. Identify individual interests and how they impact government.</td>
<td>H. Analyze how interest groups provide opportunities for citizens to participate in the political process.</td>
<td>H. Evaluate the impact of interest groups on the political process.</td>
</tr>
<tr>
<td>I. Explain why taxes are necessary and identify who pays them.</td>
<td>I. Describe why and how government raises money to pay for its operations and services.</td>
<td>I. Analyze how and why government raises money to pay for its operation and services.</td>
<td>I. Evaluate how and why government raises money to pay for its operations and services.</td>
</tr>
<tr>
<td>J. Identify the role of the media in society.</td>
<td>J. Describe the influence of media in reporting issues.</td>
<td>J. Analyze the importance of freedom of the press.</td>
<td>J. Evaluate the role of media in political life in the United States and explain the role of the media in setting the public agenda.</td>
</tr>
</tbody>
</table>
| K. Identify different ways people govern themselves. | K. Describe forms of government.  
- Limited  
- Unlimited | K. Identify and explain systems of government.  
- Autocracy  
- Democracy  
- Oligarchy  
- Republic | K. Evaluate the strengths and weaknesses of various systems of government.  
- Autocracy  
- Democracy  
- Oligarchy  
- Republic |

Basic concepts found in lower grades for standard statements and their descriptors must be developed more fully throughout higher grade levels.
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</thead>
<tbody>
<tr>
<td>A. Identify how customs and traditions influence governments.</td>
<td>A. Explain the concept of nation-states.</td>
<td>A. Explain how the United States is affected by policies of nation-states, governmental and non-governmental organizations.</td>
<td>A. Analyze the impact of international economic, technological and cultural developments on the government of the United States.</td>
<td></td>
</tr>
<tr>
<td>B. Recognize that the world is divided into various political units.</td>
<td>B. Describe how nation-states coexist in the world community.</td>
<td>B. Explain the role of the United States in world affairs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Identify ways in which countries interact with the United States.</td>
<td>C. Describe the governments of the countries bordering the United States and their relationships with the United States.</td>
<td>C. Explain the effects United States political ideas have had on other nations.</td>
<td>B. Analyze the United States’ interaction with other nations and governmental groups in world events.</td>
<td>C. Compare how past and present United States’ policy interests have changed over time and analyze the impact on future international relationships.</td>
</tr>
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### 5.4. How International Relationships Function

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</thead>
<tbody>
<tr>
<td>D. Identify treaties and other agreements between or among nations.</td>
<td>D. Describe the processes that resulted in a treaty or agreement between the United States and another nation-state.</td>
<td>D. Contrast how the three branches of federal government function in foreign policy.</td>
<td>D. Explain how foreign policy is developed and implemented.</td>
</tr>
</tbody>
</table>
| E. Identify how nations work together to solve problems. | E. Explain how nations work together on common environmental problems, natural disasters and trade. | E. Explain the development and the role of the United Nations and other international organizations, both governmental and non-governmental. | E. Compare the purposes and functions of international organizations.  
- Governmental (e.g., NATO, World Court, OAS)  
- Nongovernmental (e.g., International Red Cross, Amnesty International, World Council of Churches) |
Amendment (Constitutional): Changes in, or additions to, a constitution proposed by a two-thirds vote of both houses of Congress or a convention called by Congress. Ratified by approval of three-fourths of the states.


Bill of Rights: First Ten Amendments to the Constitution. Ratified in 1791, these amendments limit government power and protect basic rights and liberties of individuals.

Constitutional mechanisms that authorize each branch of government to check the actions of the other branches.

Congress: A private meeting of members of a political party to plan action or to select delegates for a nominating convention. The term also refers to the legislative branch of government to which Congress assigned the power and authority to make rules and regulations.

Caucus: A private meeting of members of a political party to plan action or to select delegates for a nominating convention. The term also refers to a distinct group, either official or unofficial, in Congress, as in the black caucus in the House of Representatives.

Authority: Right to control or direct the actions of others. Rights of persons to control or direct the actions of others.

Citizen: A member of a political society who therefore owes allegiance to and is entitled to protection by and from the government.

Citizenship: Status of being a member of a state; one who owes allegiance to and is entitled to protection by and from the government.

Checks and balances: Constitutional mechanisms that authorize each branch of government to check the actions of the other branches.

Cherenship: Right to control or direct the actions of others. Rights of persons to control or direct the actions of others.

Caucus: A private meeting of members of a political party to plan action or to select delegates for a nominating convention. The term also refers to a distinct group, either official or unofficial, in Congress, as in the black caucus in the House of Representatives.

Authority: Right to control or direct the actions of others. Rights of persons to control or direct the actions of others.

Citizen: A member of a political society who therefore owes allegiance to and is entitled to protection by and from the government.

Citizenship: Status of being a member of a state; one who owes allegiance to and is entitled to protection by and from the government.
Civic life:
A manner of existence of an individual concerned with the affairs of communities and the common good rather than solely in pursuit of private and personal interests.

Civic responsibilities:
Obligation of citizens to take part in the governance of the school, community, tribe, state or nation.

Civil disobedience:
Refusal to obey laws. This tactic is usually passive and nonviolent, aimed at bringing injustices to the attention of lawmakers and the public at large. An example of civil disobedience was the American Civil Rights Movement in the 1950s and 1960s.

Civil rights:
Protections and privileges given to all United States citizens by the Constitution and Bill of Rights.

Civil society:
The spheres of voluntary individual, social and economic relationships and organizations that are limited by laws but are not part of governmental institutions.

Classical republicanism:
Refers to government that seeks the public or common good rather than the good of a particular group or class of society.

Common or public good:
Benefit or interest of a politically organized society as a whole.

Confederal:
Relating to a league of independent states.

Constitutional government:
A form of government in which the powers of government are outlined in a legal structure and the actions of government are subject to these powers. Any action by government that is not in accord with the Constitution is considered illegitimate.

Democracy:
Form of government in which political control is exercised by the people either directly or through their elected representatives.

Diplomacy:
The art and practice of conducting negotiations between nations.
Direct democracy: Form of government in which the people completely exercise political decisions.

Diversity: State of being different; variety.

Documents of government: Papers necessary for the organization and powers of government in which the people are specifically granted to Congress by the legal system.

Double jeopardy: A concept established by law that says a person cannot be tried twice for the same offense. It is part of the Fifth Amendment, which states that "no person shall...be subject for the same offense to be twice put in jeopardy of life or limb."

Due process of law: Right of every citizen to be protected against arbitrary action by government.

Economic rights: Financial choices and privileges that individuals may select without government prohibition. Economic rights would include: right to own property, change employment, operate a business and join a labor union.

Electoral College: The group of presidential electors that casts the official votes for president after the presidential election. Each state has a number of electors equal to the sum of its members in the Senate and House of Representatives.

Enumerated powers: Powers that are specifically granted to Congress by Article I, Section 8 of the Constitution.

Equal protection: The condition of possessing substantially the same rights, privileges and immunities, and being subject to the same duties as other members of society.

Equal protection: An idea that no individual or group may receive special privileges from the political authority of the state.

Equality: The condition of possessing substantially the same powers that are specifically granted to Congress by Article I, Section 8 of the Constitution.
Federal Supremacy Clause:
Article VI of the Constitution provides that the Constitution and all federal laws and treaties shall be the "Supreme Law of the Land." Therefore, all federal laws take precedence over state and local laws.

Federal System (or Federalism):
Form of political organization in which governmental power is divided between a central government and territorial subdivisions (e.g., in the United States—the national, state and local governments).

Foreign Policy:
Actions of the federal government directed to matters beyond United States' borders, especially relations with other countries.

Government:
Institutions and procedures through which a territory and its people are ruled.

Habeas Corpus:
Court order demanding that the individual in custody be brought into court and shown the cause for detention. Habeas corpus is guaranteed by the Constitution and can be suspended only in the case of rebellion or invasion.

Individual Responsibility:
Fulfillment of the moral and legal obligations of membership in society.

Individual Rights:
Just claims due a person by law, morality or tradition as opposed to those due to groups.

Interest Group:
Organized body of individuals who share some goal and try to influence public policy to meet those goals.

International Organizations:
Groups formed by nation-states to achieve common political, social or economic goals.

Interest Group:
Organized body of individuals who share some goal and try to influence public policy to meet those goals.

Just claims due a person by law, morality or tradition as opposed to those due to groups.

Precedent:
The distribution of power in a government of the United States—the national, state and local governmental powers are divided between a central government and territorial subdivisions (e.g., state and local), and all federal, state and local laws and regulations shall be the "Supreme Law of the Land." Therefore, all federal laws take precedence over state and local laws and treaties.
Judicial Review:
Doctrine that permits the federal courts to declare unconstitutional, and thus null and void, acts of the Congress, the executive branch and the states. The precedent for judicial review was established in the 1803 case of Marbury v. Madison.

Justice:
That which may be obtained through the use of force.

Leadership:
State or condition of one who guides or governs.

Liberal Democracy:
Government that recognizes that the individual has rights that exist independently of government and which ought to be protected by and against government.

Liberty:
Freedom from restraint under conditions essential to the equal enjoyment of the same right by others.

Limited Government:
A legal structure where officials in authority do not have enormous power. The Constitution of the United States limits government through methods of checks and balances.

Majority Rule:
Decision by more than half of those participating in the decision-making process.

Minority Rights:
Opportunities that a member is entitled to have or to receive from others when the majority of the law's provisions have been unconstitutionally overreated, amended, and unjustly committed to the departments and branches of government.

Nation-state:
Divisions of the world in which each state claims sovereignty over defined territory and jurisdiction over everyone within it. These states interact using diplomacy, formal agreements and use of force.

Other:
Freedom from restraint under conditions essential to the equal enjoyment of the same right by others.

Political Theory:
The system that states have monopoly of the legitimate use of physical force in a given territory.

Public Choice:
Theory that may be obtained through the use of force.

Republic:
A political system in which a representative government is elected by the people who exercise the right to vote in free and secret elections.

Rule of Law:
In a nation-state, the rule of law is the expectation that the government will be subject to the same law to which everyone else is subject.

State Board of Education Pt. I
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(294936) No. 340 Mar. 03
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NATO:
North Atlantic Treaty Organization, an international transatlantic partnership consisting of various European states, the United States and Canada, which was designed through cooperation, consultation and collective defense to maintain peace and promote stability throughout Europe.

Non-governmental organization:
A group in a free society that is not a part of any government institution and does not derive its power from government.

OAS:
Organization of American States, an international governmental organization formed by the states of North and South America for security and the protection of mutual interests.

Oligarchy:
A government in which a small group exercises control. These systems are usually based on wealth, military power or social position.

Patriotism:
A feeling of pride in and respect for one's country.

Personal rights:
Private legal privileges and decisions that individuals are free to participate in without government intervention. These rights would include the right to vote, petition, assemble, and seek public office.

Presumption of innocence:
The legal concept that a criminal defendant is not guilty until the prosecution proves every element of the crime beyond a reasonable doubt.

Popular sovereignty:
The concept that ultimate political authority rests with the people in a free society, either directly or through elected representatives.

Political party:
Any group, however loosely organized, that seeks to elect government officials under a given label.

Political rights:
Legal claims by citizens to participate in government and be treated fairly. These rights would include the right to vote, petition, assemble, and seek public office.

Power from government:
A government in which a small group exercises control. These systems are usually based on wealth, military power or social position.

Privacy:
The right to be left alone; the right of an individual to withhold one's self and one's property from public scrutiny if one so chooses.
Public Service:
Action of benefit to local, state or national communities through appointed or elected office.

Representative Democracy:
Form of government in which power is held by elected representatives who make decisions. The voters and is exercised indirectly through a system of government in which power is held by elected representatives who make decisions. The voters and is exercised indirectly through

Republic:
Form of government in which power is held by elected representatives who make decisions. The voters and is exercised indirectly through

Republicanism:
Form of government in which power is held by elected representatives who make decisions. The voters and is exercised indirectly through

Right to counsel:
Individual right found in the Sixth Amendment to the United States Constitution that requires criminal defendants to have access to legal representation.

Rule of Law:
Principle that every member of a society, even a prince, must follow the law.

Separation of powers:
Principle that every branch of government to have access to legal representation. The Constitution burned scribes criminal defendants individual right found in the Sixth Amendment to the United States Constitution that requires criminal defendants to have access to legal representation.

Treaty:
Formal agreement between or among sovereign states.

Right against self-incrimination:
Individual right found in the Fifth Amendment to the United States Constitution that prevents an individual from being forced to testify against himself or herself.

Right of appeal:
The right to seek review by a superior court of an injustice done or error committed by an inferior court, whose judgment or decision the court above is called upon to correct or reverse.

Right to counsel:
Individual right found in the Sixth Amendment to the United States Constitution that requires criminal defendants to have access to legal representation.

Rule of Law:
Principle that every member of a society, even a prince, must follow the law.

Separation of powers:
Principle that every branch of government to have access to legal representation. The Constitution burned scribes criminal defendants individual right found in the Sixth Amendment to the United States Constitution that requires criminal defendants to have access to legal representation.

Treaty:
Formal agreement between or among sovereign states.
Trial by jury: Individual right found in the Sixth and Seventh Amendment of the Constitution that guarantees a person an impartial jury.

Truth: Agreement of thought and reality that can eventually be verified.

Unitary government: An authoritative system in which all regulatory power is vested in a central government from which regional and local governments derive their powers (e.g., Great Britain and France as well as the American states within their spheres of authority).

United Nations: International organization comprising most of the nation-states of the world. It was formed in 1945 to promote peace, security and economic development.

Unlimited government: A legal structure where officials in authority have unrestricted power. Examples of unlimited governments would be authoritarian or totalitarian systems without restraints on their power.

World Court: Court in the Hague, the Netherlands, set up by the United Nations treaty to which nations may voluntarily submit disputes.

Academic Standards for Economics

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Introduction ................................................ XVII.

THE ACADEMIC STANDARDS


A. Similarities and Differences in Economic Systems
B. Traditional, Command and Market Economies
C. Measures of Economic Activity
D. Expansion, Recession and Depression in the Economy
E. Changes in Supply and Demand

Markets and the Functions of Governments ............... 6.2.

A. Market Transactions
B. Costs and Benefits of Competition
C. Function of Money
D. Economic Institutions

Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS

22
This document includes Academic Standards for Economics that describe what students should know and be able to do in five areas:

- 6.1. Economic Systems
- 6.2. Markets and the Functions of Governments
- 6.3. Scarcity and Choice
- 6.4. Economic Interdependence
- 6.5. Work and Earnings

The Economic Standards describe what students should know and be able to do at four grade levels (third, sixth, ninth and twelfth). They reflect the incremental complexity and sophistication that students are expected to achieve as they progress through each grade level.
progress through school. This document attempts to avoid repetition and makes obvious progression across grade levels. Topics and concepts in Economics directly relate to Environment and Ecology Standard 4.2 and Geography Standard 7.3. As a social science, Economics Standards should be Cross-Walked and related to the Civics and Government, Geography and History Standards to create an interdisciplinary view of the world.

Economics is concerned with the behavior of individuals and institutions engaged in the production, distribution, and consumption of goods and services. As technology helps to reshape the economy, knowledge of how the world works is critical. People entering the workforce must know how to manage resources, prepare for the workforce, make wise investments, and understand how public policy affects the economy. Knowledge helps to reshape the economy’s knowledge of the characteristics of economic systems, how markets function effectively without a basic level of economic independence and how work and earnings impact productivity.

In the standards, a glossary is included to assist the reader in understanding terminology encountered. A glossary is included to assist the reader in understanding terminology encountered. The academic standards in Economics are intended to provide direction in learning how economic activity functions and how choices affect the allocation of resources. The standards are intended to clarify the role of the government in the economy, the role of the individual in the economy, and the role of society in the economy. The standards are intended to provide direction in learning how economic activity functions and how choices affect the allocation of resources. The standards are intended to clarify the role of the government in the economy, the role of the individual in the economy, and the role of society in the economy. The standards are intended to provide direction in learning how economic activity functions and how choices affect the allocation of resources. The standards are intended to clarify the role of the government in the economy, the role of the individual in the economy, and the role of society in the economy.

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### 6.1. Economic Systems

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</table>

**Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:**

A. Describe how individuals, families and communities with limited resources make choices.

B. Describe alternative methods of allocating goods and services and advantages and disadvantages of each.

C. Identify local economic activities.
   - Employment
   - Output

D. Identify examples of local businesses opening, closing, expanding or contracting.

A. Describe and identify the characteristics of traditional, command and market systems.

B. Explain the three basic questions that all economic systems attempt to answer.
   - What goods and services should be produced?
   - How will goods and services be produced?
   - Who will consume goods and services?

C. Define measures of economic activity and relate them to the health of the economy.
   - Prices
   - Employment
   - Output

D. Explain the importance of expansion and contraction on individual businesses (e.g., gourmet food shops, auto repair shops, ski resorts).

A. Analyze the similarities and differences in economic systems.

B. Explain how traditional, command and market economies answer the basic economic questions.

C. Explain how economic indicators reflect changes in the economy.
   - Consumer Price Index (CPI)
   - Gross Domestic Product (GDP)
   - Unemployment rate

D. Describe historical examples of expansion, recession and depression in the United States.

A. Evaluate the strengths and weaknesses of traditional, command and market economics.

B. Analyze the impact of traditional, command and market economies on the United States economy.

C. Assess the strength of the regional, national and/or international economy and compare it to another time period based upon economic indicators.

D. Describe historical examples of expansion, recession, and depression internationally.
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<tr>
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</thead>
<tbody>
<tr>
<td>A. Define and identify goods, services, consumers and producers.</td>
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<tr>
<td>B. Identify ways local businesses compete to get customers.</td>
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<td>C. Identify and compare means of payment.</td>
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<td>• Barter</td>
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<td>• Money</td>
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<tr>
<td>D. Identify groups of competing producers in the local area.</td>
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<tr>
<td>A. Describe market transactions in terms of goods, services, consumers and producers.</td>
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<tr>
<td>B. Describe the costs and benefits of competition to consumers in markets.</td>
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<tr>
<td>C. Explain the function of money and its use in society.</td>
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<tr>
<td>D. Define economic institutions (e.g., banks, labor unions).</td>
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<tr>
<td>A. Explain the flow of goods, services and resources in a mixed economy.</td>
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<tr>
<td>B. Analyze how the number of consumers and producers affects the level of competition within a market.</td>
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<tr>
<td>C. Explain the structure and purpose of the Federal Reserve System.</td>
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<tr>
<td>D. Analyze the functions of economic institutions (e.g., corporations, not-for-profit institutions).</td>
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<tr>
<td>A. Analyze the flows of products, resources and money in a mixed economy.</td>
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<tr>
<td>B. Evaluate the operation of noncompetitive markets.</td>
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<tr>
<td>C. Analyze policies designed to raise or lower interest rates and how the Federal Reserve Board influences interest rates.</td>
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<tr>
<td>D. Evaluate changes in economic institutions over time (e.g., stock markets, nongovernment organizations).</td>
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</table>
Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...

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<tr>
<td>E. Identify who supplies a product and who demands a product.</td>
<td>E. Explain the interaction of buyers and sellers determines prices and quantities exchanged.</td>
<td>E. Explain the laws of supply and demand and how these affect the prices of goods and services.</td>
<td>E. Predict how changes in supply and demand affect equilibrium price and quantity sold.</td>
</tr>
</tbody>
</table>
| F. Define price and identify the prices of different items. | F. Describe how prices influence both buyers and sellers and explain why prices may vary for similar products. | F. Analyze how competition among producers and consumers affects price, costs, product quality, service, product design and variety and advertising. | F. Identify and analyze forces that can change price.  
  • Government actions  
  • Weather conditions  
  • International events |
| G. Define what a tax is and identify a tax paid by most families. | G. Explain how taxes affect the price of goods and services. | G. Contrast the largest sources of tax revenue with where most tax revenue is spent in Pennsylvania. | G. Evaluate types of tax systems.  
  • Progressive  
  • Proportional  
  • Regressive |

E. Identify who supplies a product and who demands a product.

F. Define price and identify the prices of different items.

G. Define what a tax is and identify a tax paid by most families.
6.2. Markets and the Functions of Governments

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</thead>
</table>
| H. Identify government involvement in local economic activities. | H. Describe the Pennsylvania and United States governments' roles in monitoring economic activities. | H. Analyze the economic roles of governments in market economies.  
- Economic growth and stability  
- Legal frameworks  
- Other economic goals (e.g., environmental protection, competition) | H. Evaluate the economic roles of governments.  
- Macroeconomics (e.g., tariffs and quotas, exchange rates, trade balance)  
- Microeconomics (e.g., price controls, monopolies, cartels) |
| I. Identify goods and services produced by the government (e.g., postal service, food inspection). | I. Identify and describe public goods. | I. Explain how government provides public goods. | I. Evaluate government decisions to provide public goods. |
| J. Explain the relationship between taxation and government services. | J. Explain the cost and benefits of taxation. | J. Contrast the taxation policies of the local, state and national governments in the economy. | J. Evaluate the social, political and economic changes in tax policy using cost/benefit analysis. |
| K. Identify forms of advertising designed to influence personal choice. | K. Explain how advertisements influence perceptions of the costs and benefits of economic decisions. | K. Interpret how media reports can influence perceptions of the costs and benefits of decisions. | K. Analyze the impact of media on decision-making of consumers, producers and policymakers. |

Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...
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<tr>
<th>Grade</th>
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<td>Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...</td>
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<tr>
<td></td>
<td>L. Explain why most countries create their own form of money.</td>
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<td>L. Explain what an exchange rate is.</td>
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<td>L. Explain how the price of one currency is related to the price of another currency (e.g., Japanese yen in American dollar, Canadian dollar in Mexican nuevo peso).</td>
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<td>L. Analyze how policies and international events may change exchange rates.</td>
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</table>
### 6.3. Scarcity and Choice

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<tr>
<th>Grade 3</th>
<th>Grade 6</th>
<th>Grade 9</th>
<th>Grade 12</th>
</tr>
</thead>
</table>
| A. Define scarcity and identify limited resources scarcity. | A. Explain how scarcity influences choices and behaviors.  
  - Personal decision-making  
  - Family decision-making  
  - Community decision-making | A. Describe ways to deal with scarcity.  
  - Community  
  - Pennsylvania  
  - United States | A. Analyze actions taken as a result of scarcity issues in the regional, national and international economies. |
| B. Define and identify wants of different people. | B. Explain how limited resources and unlimited wants cause scarcity. | B. Analyze how unlimited wants and limited resources affect decision-making. | B. Evaluate the economic reasoning behind a choice. |
| C. Identify and define natural, human and capital resources. | C. Describe the natural, human and capital resources used to produce a specific good or service. | C. Explain how resources can be used in different ways to produce different goods and services. | C. Evaluate the allocation of resources used to produce goods and services. |
| D. Identify costs and benefits associated with an economic decision. | D. Explain the costs and benefits of an economic decision. | D. Explain marginal analysis and decision-making. | D. Evaluate regional, national or international economic decisions using marginal analysis. |
| E. Explain what is given up when making a choice. | E. Define opportunity cost and describe the opportunity cost of a personal choice. | E. Explain the opportunity cost of a public choice from different perspectives. | E. Analyze the opportunity cost of decisions by individuals, businesses, communities and nations. |

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...
### 6.3. Scarcity and Choice

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<tbody>
<tr>
<td>F. Explain how self interest influences choice.</td>
<td>F. Explain how negative and positive incentives affect choices.</td>
<td>F. Explain how incentives affect the behaviors of workers, savers, consumers and producers.</td>
<td>F. Evaluate in terms of marginal analysis how incentives influence decisions of consumers, producers and policy makers.</td>
</tr>
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</table>

*Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...*
### 6.4. Economic Interdependence

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</thead>
<tbody>
<tr>
<td>A. Define specialization and the concept of division of labor.</td>
<td>A. Explain the advantages and disadvantages of specialization and division of labor.</td>
<td>A. Explain why specialization may lead to increased production and consumption.</td>
<td>A. Analyze how specialization may increase the standard of living.</td>
</tr>
<tr>
<td>B. Explain why people trade.</td>
<td>B. Explain how specialization leads to more trade between people and nations.</td>
<td>B. Explain how trade may improve a society’s standard of living.</td>
<td>B. Analyze the relationships between trade, competition and productivity.</td>
</tr>
<tr>
<td>C. Explain why goods, services and resources come from all over the nation and the world.</td>
<td>C. Identify and define imports, exports, inter-regional trade and international trade.</td>
<td>C. Explain why governments sometimes restrict or subsidize trade.</td>
<td>C. Evaluate how a nation might benefit by lowering or removing trade barriers.</td>
</tr>
</tbody>
</table>
| D. Identify local resources.  
  - Natural (renewable, nonrenewable and flow resources)  
  - Human  
  - Capital | D. Explain how the locations of resources, transportation and communication networks and technology have affected Pennsylvania economic patterns.  
  - Agriculture (e.g., farms)  
  - Forestry (e.g., logging)  
  - Mining and mineral extraction (e.g., coal fields)  
  - Manufacturing (e.g., steel mills)  
  - Wholesale and retail (e.g., super stores, internet) | D. Explain how the locations of resources, transportation and communication networks and technology have affected United States economic patterns.  
  - Labor markets (e.g., migrant workers)  
  - Interstate highway system and sea and inland ports (e.g., movement of goods)  
  - Communication technologies (e.g., facsimile transmission, satellite-based communications) | D. Explain how the locations of resources, transportation and communication networks and technology have affected international economic patterns. |
### 6.4. Economic Interdependence

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<tr>
<td><strong>Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...</strong></td>
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</table>

#### E. Define specialization and identify examples of interdependence.

#### F. Explain why some products are produced locally while others are not.

#### G. Identify local geographic patterns of economic activities.
- Agriculture
- Travel and tourism
- Mining and mineral extraction
- Manufacturing
- Wholesale and retail
- Health services

#### E. Explain how specialization and trade lead to interdependence.

#### F. Explain how opportunity costs influence where goods and services are produced locally and regionally.

#### G. Describe geographic patterns of economic activities in Pennsylvania.
- Agriculture
- Travel and tourism
- Mining and mineral extraction
- Manufacturing
- Wholesale and retail
- Health services

#### E. Analyze how Pennsylvania consumers and producers participate in the global production and consumption of goods or services.

#### F. Explain how opportunity cost can be used to determine the product for which a nation has a comparative advantage.

#### G. Describe geographic patterns of economic activities in the United States.
- Primary—extractive industries (i.e., farming, fishing, forestry, mining)
- Secondary—materials processing industries (i.e., manufacturing)
- Tertiary—service industries (e.g., retailing, wholesaling, finance, real estate, travel and tourism, transportation)

#### E. Analyze how United States consumers and producers participate in the global production and consumption of goods or services.

#### F. Evaluate how trade is influenced by comparative advantage and opportunity costs.

#### G. Evaluate characteristics and distribution of international economic activities.
- Primary—extractive industries (i.e., farming, fishing, forestry, mining)
- Secondary—materials processing industries (i.e., manufacturing)
- Tertiary—service industries (e.g., retailing, wholesaling, finance, real estate, travel and tourism, transportation)
<table>
<thead>
<tr>
<th>6.5. Work and Earnings</th>
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<tbody>
<tr>
<td>Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...</td>
<td>A. Explain why people work to get goods and services.</td>
<td>A. Recognize that the availability of goods and services is the result of work by members of the society.</td>
<td>A. Define wages and explain how wages are determined by the supply of and demand of workers.</td>
<td>A. Analyze the factors influencing wages.</td>
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<td>B. Identify different occupations.</td>
<td>B. Explain the concept of labor productivity.</td>
<td>B. Describe how productivity is measured and identify ways in which a person can improve his or her productivity.</td>
<td>B. Evaluate how changes in education, incentives, technology and capital investment alter productivity.</td>
</tr>
<tr>
<td></td>
<td>C. Describe businesses that provide goods and services.</td>
<td>C. Compare the number of employees at different businesses.</td>
<td>C. Identify and explain the characteristics of the three types of businesses.</td>
<td>C. Analyze the costs and benefits of organizing a business as a sole proprietorship, partnership or corporation.</td>
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<td></td>
<td>D. Define profit and loss.</td>
<td>D. Explain how profits and losses serve as incentives.</td>
<td>D. Analyze how risks influence business decision-making</td>
<td>D. Analyze the role of profits and losses in the allocation of resources in a market economy.</td>
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<td>6.5.3. GRADE 3</td>
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| E. Identify examples of assets.  
  • Tangible (e.g., houses, cars, jewelry)  
  • Financial assets (e.g., stocks, bonds, savings accounts) | E. Describe how people accumulate tangible and financial assets through income, saving, and financial investment. | E. Define wealth and describe its distribution within and among the political divisions of the United States. | E. Compare distribution of wealth across nations. |
<p>| F. Define entrepreneurship and identify entrepreneurs in the local community. | | F. Identify leading entrepreneurs in Pennsylvania and the United States and describe the risks they took and the rewards they received. | F. Assess the impact of entrepreneurs on the economy. |</p>
<table>
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<tr>
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</table>
| **G.** Define saving and explain why people save. | **G.** Identify the costs and benefits of saving.  
- Piggy banks  
- Savings accounts  
- U.S. Savings Bonds | **G.** Explain the differences among stocks, bonds and mutual funds. | **G.** Analyze the risks and returns of various investments.  
- Stocks  
- Bonds  
- Mutual funds  
- Savings bonds  
- Retirement savings (e.g., Individual Retirement Account (IRA), Keogh, 401K)  
- Savings accounts (e.g., passbook, certificate of deposit) |
| **H.** Explain how banks bring savers and borrowers together. | **H.** Describe why there is a difference between interest rates for saving and borrowing. | **H.** Explain the impact of higher or lower interest rates for savers, borrowers, consumers and producers. | **H.** Evaluate benefits and costs of changes in interest rates to individuals and society. |
Glossary

Barter: The direct exchange of goods or services between people.

Bond: A financial promise for an investment issued by a corporation or government with regular interest payments and repayment at a later date.

Capital resources: The physical equipment used in the production of goods and services.

Cartels: A group of sellers acting together in the market.

Circular flow: The movement of resources, goods, and services through an economy. As a diagram, it can show how households and business firms interact with each other.

Command economy: A system in which decisions are made largely by an authority such as a feudal lord or government. The production of goods and services is planned, and resources are allocated according to priorities.

Comparative advantage: Economic theory that a country/individual should sell goods and services which it can produce at relatively lower costs and buy goods and services which it can produce at relatively higher costs.

Competition: The rivalry among people and/or business firms for resources and consumers.

Consumer: One who buys or rents goods or services and uses them.

Consumer Price Index: The price index most commonly used to measure the impact of changes in prices on households.

Cost: What is given up when a choice is made, monetary and non-monetary.

Corporation: A business firm that is owned by stockholders and is a legal entity with rights to buy, sell and make contracts.

Planning agencies: A group of sellers acting together in the market.

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Cost/benefit analysis: The process of weighing all predicted costs against the predicted benefits of an economic choice.

Deflation: A general decline in the price level.

Demand: The quantity of a commodity demanded at various possible prices during a specific time period.

Depression: A severe recession in terms of magnitude or length, or both.

Division of labor: A method of organizing production whereby each worker specializes in part of the productive process.

Economic growth: An increase in a society’s output.

Economic systems: The ways societies organize to determine what goods and services should be produced and how they will be consumed and distributed.

Entrepreneur: An individual who begins, manages and bears the risks of a business (e.g., Milton Hershey, F.W. Woolworth).

Equilibrium price: The price at which quantity demanded equals quantity supplied: market clearing price.

Exchange rate: The price of one country’s currency measured in terms of another country’s currency (e.g., American dollar in German mark, Japanese yen in Canadian dollar).

Federal Reserve System: The “Central Bank” of the United States, consisting of the Board of Governors and 12 Reserve Banks (which controls monetary policy).

WooWoo (e.g., Milton Hershey, F.W. Woolworth): Individuals who begin, manage, and bear the risks of a business.
Fiscal policy: Government decisions on taxation and spending to achieve economic goals.

Flow resources: Temporal energy forces that are neither renewable nor nonrenewable, but must be used as, when and where they occur or they are lost (e.g., wind, sunlight).

Gross Domestic Product: The market value of the total output of final goods and services produced by an economy in a given year.

Goods: Objects that can satisfy people’s wants.

Household: The group of people living together under one roof, usually family members.

Incentives: Factors that motivate or influence human behavior.

Interest: Payment made for the use of borrowed money.

Interest rate: The price of borrowed money.

Labor force: That part of the population which is employed or actively seeking employment.

Labor productivity: The output per hour of labor.

Labor union: An organization of workers who seek to improve their common interests.

Law of demand: An economic principle that states the lower the price of a good or service, the greater the quantity that people will buy, all else equal.

Law of supply: An economic principle that states the higher the price of a good or service, the greater the quantity of labor supplied.

Law of supply and demand: The price of a good or service is determined by the interaction of supply and demand in a market, with the price being the point at which the quantity supplied equals the quantity demanded.
The law of supply:
The higher the price of a good or service, the greater the quantity that business will sell, all else held constant (e.g., resource costs, technology).

Loss:
The difference that arises when a firm's total revenues are less than its total costs.

Macroeconomics:
Study of aggregate economic activity including how the economy works as a whole. Seeks to identify levels of national income, output, employment and prices.

Marginal analysis:
A decision making tool that weighs additional costs and benefits.

Market:
A place or process through which goods and services are exchanged.

Market economy:
An economic system in which decisions are made by interactions of buyers and sellers.

Monetary policy:
Government decisions on money supply and interest rates to achieve economic goals.

Money:
A medium of exchange.

Money supply:
The amount of liquid assets which exists in the economy at a given time (e.g., currency, checkable deposits, traveler's checks).

Natural resources:
Anything found in nature that can be used to produce a product (e.g., land, water, coal).

Opportunity cost:
The highest valued alternative given up when a decision is made.

Output:
The total amount of a commodity produced.

Nonrenewable resources:
Finite elements that cannot be replaced once they are used (e.g., petroleum, minerals).

Mutual fund:
An investment option that uses cash from a pool of savers to buy a wide range of securities.

Net national product:
The amount of final goods and services which exist in the economy at a given time (e.g., GDP, GNP).

Resource costs:
Anything found in nature that can be used to produce a product (e.g., land, water, coal).

Productive resources:
Resources available to achieve economic goals.

Government decisions on money supply and interest rates to achieve economic goals.

An economic system in which decisions are made by markets, government and institutions.

An economic system in which decisions are made by the interactions of consumers, firms and government.

In an economic system in which decisions are made by the interaction of buyers and sellers.

An economic system in which decisions are made by the interactions of buyers, sellers, government and institutions.

A decision making tool that weighs additional costs and benefits.

A decision making tool that weighs additional costs and benefits.

Opportunity costs:
The highest valued alternative given up when a decision is made.

Output:
The total amount of a commodity produced.

Opportunity cost:
The highest valued alternative given up when a decision is made.

Output:
The total amount of a commodity produced.

Opportunity cost:
The highest valued alternative given up when a decision is made.

Output:
The total amount of a commodity produced.
Partnership:
A business in which ownership is shared by two or more people who receive all the profits and rewards and bear all the losses and risks.

Price:
The amount of a good or service people are willing and able to purchase at a given price during a specific time period.

Price control:
Government restraint of prices to keep the cost of living down. It most usually happens in time of war, but there are also instances in peacetime. The amount of a good or service people are willing and able to purchase at a given price.

Price index:
A measure of the average level of costs at one time compared to the average level of costs at another time. It is used to measure the difference in the cost of government services, particularly public goods.

Price control:
A government's course of action that guides the amount of goods or services a particular good or service.

Quantity demanded:
The amount of a good or service people are willing and able to purchase at a given price during a specific time period.

Quantity supplied:
The amount of a good or service people are willing and able to sell at a given price during a specific time period.

Public goods:
Goods and services provided by the government without necessarily preventing others from using the same, as the taxpayer's income increases.

Public policy:
A government's course of action that guides the amount of goods or services a particular good or service.

Producer:
One who makes goods or services.

Producer's surplus:
The amount of a good or service people are willing and able to sell at a given price during a specific time period.

Progressive tax:
A levy for which the percentage of income used to pay the levy increases as the taxpayer's income increases.

Profit:
Total revenue minus total costs.

Proportional tax:
A levy for which the percentage of income used to pay the levy increases as the taxpayer's income increases.

Quantity demanded:
A levy for which the percentage of income used to pay the levy remains the same as the taxpayer's income increases.

Producer's surplus:
A measure of the average level of costs at one time. It is used to measure the difference in the cost of government services, particularly public goods.

Progressive tax:
A levy for which the percentage of income used to pay the levy increases as the taxpayer's income increases.

Quantity supplied:
A levy for which the percentage of income used to pay the levy remains the same as the taxpayer's income increases.
Quota: A form of import protectionism where the total quantity of imports of a particular commodity is limited.

Recession: A contraction in national production that lasts 6 months or longer. A recession might be marked by job layoffs and high unemployment, stagnant wages, reductions in retail sales and slowing of housing and car markets.

Regressive tax: A levy for which the percentage of income used to pay the levy decreases as the taxpayer's income increases.

Renewable resources: Substances that can be regenerated if used carefully (e.g., fish, timber).

Scarcity: An economic condition that exists when demand is greater than supply. Scarcity can lead to price increases and shortages, causing rationing and higher prices for goods and services.

Services: Actions that are valued by others.

Sole proprietorship: A business owned by an individual who receives all the profits and rewards and bears all the losses and risks.

Supply: The different quantities of a resource, good or service that potential sellers are willing and able to sell at various possible prices during a specific time period.

Resources: Inputs used to produce goods and services; categories include natural, human and capital.

Stock: A certificate representing a share of ownership in a company.

Specialization: A form of division of labor in which each individual or firm concentrates its productive efforts on a single or limited number of activities.

Standard of living: A measurement of an individual's quality of life, reflecting the sum of all the goods and services an individual perceives as needed.

Services: Actions that are valued by others.

Sole proprietorship: A business owned by an individual who receives all the profits and rewards and bears all the losses and risks.

Scarcity: An economic condition that exists when demand is greater than supply. Scarcity can lead to price increases and shortages, causing rationing and higher prices for goods and services.

Supply: The different quantities of a resource, good or service that potential sellers are willing and able to sell at various possible prices during a specific time period.
**Tariff:**
A surcharge placed on imported goods and services. The purpose of a tariff is to protect domestic products from foreign competition.

**Tertiary:**
The third level of economic activity. It includes service and service-related industries.

**Trade:**
Voluntary exchange between two parties in which both parties benefit.

**Trade balance:**
The payments of a nation that deal with merchandise imports and exports.

**Wants:**
Desires that can be satisfied by consuming goods, services or leisure activities.

**Unemployment rate:**
The percentage of the labor force that is actively seeking employment.

**Traditional economy:**
An economic system in which decisions are made largely by repeating the actions from an earlier time or generation.

**Title:**
A surplus fee placed on imported goods and services. The purpose of a tariff is to protect domestic products from foreign competition.
This document includes Academic Standards for Geography that describe what students should know and be able to do in four areas:

• 7.1. Basic Geographic Literacy
• 7.2. The Physical Characteristics of Places and Regions
• 7.3. The Human Characteristics of Places and Regions
• 7.4. The Interactions Between People and Places

Geography is the science of space and place on Earth's surface. Its subject matter is the physical and human phenomena that make up the world's environments and places. These standards build on using geographic tools as a means of inquiry; setting information into a range of spatial contexts; recognizing places and regions as human concepts; understanding the physical processes that have shaped Earth's surface and the patterns resulting from those processes; and explaining the interrelationships between places and environments. The standards focus on using geographic tools as a means of inquiry; setting information into a range of spatial contexts; recognizing places and regions as human concepts; understanding the physical processes that have shaped Earth's surface and the patterns resulting from those processes; and explaining the interrelationships between places and environments.

At each grade level, instructional content should be selected to support the development of geographic understanding. In the primary grade levels (1-3), the emphasis should be on identifying the basic characteristics of the world (answer the what question); in the intermediate grade levels (4-6), the emphasis should be on describing spatial patterns of phenomena (answer the where and when questions); in the intermediate grade levels (7-9), the emphasis should be on explaining the physical processes that have shaped Earth's surface and the patterns resulting from those processes (answer the how question); and in high school grade levels (10-12), the emphasis should be on analyzing spatial patterns of phenomena (answer the why question).
Geography is an integrative discipline that enables students to apply geography skills and knowledge to life situations at home, at work and in the community. Therefore, these standards should be cross-walked with those in Civics and Government, Economics and History to create an interdisciplinary view of the world. Topics and concepts in Geography directly relate to standards statements in those disciplines. Geography along with Civics and Government, Economics, and History are identified as Social Studies in Chapter 4. This identification is consistent with

<table>
<thead>
<tr>
<th>Theme Description</th>
<th>Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location: The absolute and relative position of a place on Earth's surface</td>
<td>How a region displays unity in terms of physical</td>
</tr>
<tr>
<td>Place: How physical and human characteristics define and distinguish a place</td>
<td>How people, ideas, and materials move between</td>
</tr>
<tr>
<td>Human-Environment Interactions: How humans modify and adapt to natural settings</td>
<td>Interactions</td>
</tr>
<tr>
<td>Movement: How people, ideas, and materials move between</td>
<td>How physical and human characteristics define</td>
</tr>
<tr>
<td>Regions: How an area displays unity in terms of physical and human characteristics</td>
<td>Earth's surface</td>
</tr>
<tr>
<td></td>
<td>The absolute and relative position of a place on</td>
</tr>
<tr>
<td></td>
<td>Earth's surface</td>
</tr>
</tbody>
</table>

The academic standards for Geography consist of four standard categories (designated as 7.1., 7.2., 7.3., and 7.4.). Each standard has two to five standard statements (designated by a capital letter). Most standard statements have multiple descriptors (designated by a capital letter). Six descriptor phrases to the standard statements are arrangements, The academic standards for Geography, the Academic Standards for Civics and Government, the Academic Standards for Economics, and the Academic Standards for History are consistent with this identification. The descriptors are  

These are the Five Fundamental Themes of Geography:

- Location: The absolute and relative position of a place on Earth's surface
- Place: How physical and human characteristics define and distinguish a place
- Human-Environment Interactions: How humans modify and adapt to natural settings
- Movement: How people, ideas, and materials move between
- Regions: How an area displays unity in terms of physical and human characteristics

Teachers should employ the Five Fundamental Themes of Geography while}


These standards should be cross-walked with those in Civics and Government, Economics, and History to create an interdisciplinary view of the world. The academic standards for Geography, Civics and Government, Economics, and History are consistent with this identification.

Geography is an integrative discipline that enables students to apply geography skills and knowledge to life situations at home, at work and in the community.
in the standards. A glossary is included to assist the reader in clarifying terminology contained in the standards. Based on these regulations, Social Studies/Citizenship programs should include the four sets of standards as an entity in developing a scope and sequence for curriculum and planned instruction.
### 7.1. Basic Geographic Literacy

<table>
<thead>
<tr>
<th>7.1.3. GRADE 3</th>
<th>7.1.6. GRADE 6</th>
<th>7.1.9. GRADE 9</th>
<th>7.1.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Identify geographic tools and their uses.</strong></td>
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<tr>
<td>Characteristics and purposes of different geographic representations</td>
<td></td>
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</tr>
<tr>
<td>Maps and basic map elements</td>
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<tr>
<td>Globes</td>
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<tr>
<td>Graphs</td>
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<tr>
<td>Diagrams</td>
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<tr>
<td>Photographs</td>
<td></td>
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</tr>
<tr>
<td>Geographic representations to display spatial information</td>
<td></td>
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<tr>
<td>Sketch maps</td>
<td></td>
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<tr>
<td>Thematic maps</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Mental maps to describe the human and physical features of the local area</td>
<td></td>
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</tr>
<tr>
<td><strong>A. Describe geographic tools and their uses.</strong></td>
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<tr>
<td>Basis on which maps, graphs and diagrams are created</td>
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<tr>
<td>Aerial and other photographs</td>
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<tr>
<td>Reference works</td>
<td></td>
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<tr>
<td>Field observations</td>
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<tr>
<td>Surveys</td>
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<tr>
<td>Geographic representations to display spatial information</td>
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<tr>
<td>Absolute location</td>
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<tr>
<td>Relative location</td>
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<tr>
<td>Flows (e.g., goods, people, traffic)</td>
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<tr>
<td>Topography</td>
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<tr>
<td>Historic events</td>
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<tr>
<td>Mental maps to organize an understanding of the human and physical features of Pennsylvania and the home county</td>
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<tr>
<td>Basic spatial elements for depicting the patterns of physical and human features</td>
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</tr>
<tr>
<td><strong>A. Explain geographic tools and their uses.</strong></td>
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<tr>
<td>Development and use of geographic tools</td>
<td></td>
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<tr>
<td>Geographic information systems [GIS]</td>
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<tr>
<td>Population pyramids</td>
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<tr>
<td>Cartograms</td>
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<tr>
<td>Satellite-produced images</td>
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<tr>
<td>Climate graphs</td>
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<tr>
<td>Access to computer-based geographic data (e.g., Internet, CD-ROMs)</td>
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<tr>
<td>Construction of maps</td>
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<tr>
<td>Projections</td>
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<td>Scale</td>
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<tr>
<td>Symbol systems</td>
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<tr>
<td>Level of generalization</td>
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<tr>
<td>Types and sources of data</td>
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<tr>
<td>Geographic representations to track spatial patterns</td>
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<tr>
<td>Weather</td>
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<tr>
<td>Migration</td>
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<tr>
<td>Environmental change (e.g., tropical forest reduction, sea-level changes)</td>
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</tr>
<tr>
<td><strong>A. Analyze data and issues from a spatial perspective using the appropriate geographic tools.</strong></td>
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<tr>
<td>Spatial patterns of human features that change over time (e.g., intervening opportunity, distance decay, central place theory, locational preference)</td>
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<tr>
<td>Physical patterns of physical features that change over time (e.g., climate change, erosion, ecological invasion and succession)</td>
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<tr>
<td>Human and physical features of the world through mental maps</td>
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</tr>
</tbody>
</table>

*Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...*
7.1. Basic Geographic Literacy

<table>
<thead>
<tr>
<th>7.1.3. GRADE 3</th>
<th>7.1.6. GRADE 6</th>
<th>7.1.9. GRADE 9</th>
<th>7.1.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point, line, area, location, distance, scale</td>
<td>Map grids</td>
<td>Alpha-numeric system</td>
<td>Cardinal and intermediate directions</td>
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Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...
### 7.1. Basic Geographic Literacy

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<th>7.1.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Identify and locate places and regions.</td>
<td>B. Describe and locate places and regions.</td>
<td>B. Explain and locate places and regions.</td>
<td>B. Analyze the location of places and regions.</td>
</tr>
<tr>
<td>- Physical features</td>
<td>- Coordinate systems (e.g., latitude and longitude, time zones)</td>
<td>- How regions are created to interpret Earth’s complexity (i.e., the differences among formal regions, functional regions, perceptual regions)</td>
<td>- Changing regional characteristics (e.g., short- and long-term climate shifts; population growth or decline; political instability)</td>
</tr>
<tr>
<td>- Continents and oceans</td>
<td>- Physical features</td>
<td>- How characteristics contribute to regional changes (e.g., economic development, accessibility, demographic change)</td>
<td>- Criteria to define a region (e.g., the reshaping of south Florida resulting from changing migration patterns; the US-Mexico border changes as a function of NAFTA; metropolitan growth in the Philadelphia region)</td>
</tr>
<tr>
<td>- Major landforms, rivers and lakes in North America</td>
<td>- In the United States (e.g., Great Lakes, Rocky Mountains, Great Plains)</td>
<td>- How culture and experience influence perceptions of places and regions</td>
<td>- Cultural change (e.g., influence on people’s perceptions of places and regions)</td>
</tr>
<tr>
<td>- Local community</td>
<td>- In Pennsylvania (e.g., Coastal Plain, Piedmont, Appalachians)</td>
<td>- How structures and alliances impact regions</td>
<td></td>
</tr>
<tr>
<td>- Human features</td>
<td>- Human features</td>
<td>- Development (e.g., First vs. Third World, North vs. South)</td>
<td></td>
</tr>
<tr>
<td>- Countries (i.e., United States, Mexico, Canada)</td>
<td>- Countries (e.g., United Kingdom, Argentina, Egypt)</td>
<td>- Trade (e.g., NAFTA, the European Union)</td>
<td></td>
</tr>
<tr>
<td>- States (i.e., Pennsylvania, Delaware, Maryland, New Jersey, New York, Ohio, West Virginia)</td>
<td>- Provinces (e.g., Ontario, Quebec, Nova Scotia)</td>
<td>- International treaties (e.g., NATO, OAS)</td>
<td></td>
</tr>
<tr>
<td>- Cities (i.e., Philadelphia, Erie, Altoona, Pittsburgh, Scranton, Harrisburg, Johnstown, Allentown, Washington D.C., Baltimore, New York, Toronto, Cleveland)</td>
<td>- Major human regions (e.g., Mid Atlantic, New England, Southwest)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Local community</td>
<td>- States (e.g., California, Massachusetts, Florida)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Regions as areas with unifying geographic characteristics</td>
<td>- Major cities (e.g., London, Los Angeles, Tokyo)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Physical regions (e.g., landform regions, climate regions, river basins)</td>
<td>- Counties (e.g., Lancaster, Lackawanna, Jefferson)</td>
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</tr>
</tbody>
</table>

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...

B. Identify and locate places and regions.
- Physical features
  - Continents and oceans
  - Major landforms, rivers and lakes in North America
- Local community
- Human features
  - Countries (i.e., United States, Mexico, Canada)
- States (i.e., Pennsylvania, Delaware, Maryland, New Jersey, New York, Ohio, West Virginia)
- Cities (i.e., Philadelphia, Erie, Altoona, Pittsburgh, Scranton, Harrisburg, Johnstown, Allentown, Washington D.C., Baltimore, New York, Toronto, Cleveland)
- Local community
- Regions as areas with unifying geographic characteristics
- Physical regions (e.g., landform regions, climate regions, river basins)

B. Describe and locate places and regions.
- Coordinate systems (e.g., latitude and longitude, time zones)
- Physical features
  - In the United States (e.g., Great Lakes, Rocky Mountains, Great Plains)
  - In Pennsylvania (e.g., Coastal Plain, Piedmont, Appalachians)
- Human features
  - Countries (e.g., United Kingdom, Argentina, Egypt)
  - Provinces (e.g., Ontario, Quebec, Nova Scotia)
  - Major human regions (e.g., Mid Atlantic, New England, Southwest)
  - States (e.g., California, Massachusetts, Florida)
  - Major cities (e.g., London, Los Angeles, Tokyo)
  - Counties (e.g., Lancaster, Lackawanna, Jefferson)

B. Explain and locate places and regions.
- How regions are created to interpret Earth’s complexity (i.e., the differences among formal regions, functional regions, perceptual regions)
- How characteristics contribute to regional changes (e.g., economic development, accessibility, demographic change)
- How culture and experience influence perceptions of places and regions
- How structures and alliances impact regions
- Development (e.g., First vs. Third World, North vs. South)
- Trade (e.g., NAFTA, the European Union)
- International treaties (e.g., NATO, OAS)

B. Analyze the location of places and regions.
- Changing regional characteristics (e.g., short- and long-term climate shifts; population growth or decline; political instability)
- Criteria to define a region (e.g., the reshaping of south Florida resulting from changing migration patterns; the US-Mexico border changes as a function of NAFTA; metropolitan growth in the Philadelphia region)
- Cultural change (e.g., influence on people’s perceptions of places and regions)
7.1. Basic Geographic Literacy

<table>
<thead>
<tr>
<th>7.1.3. GRADE 3</th>
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<th>7.1.9. GRADE 9</th>
<th>7.1.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Human regions (e.g., neighborhoods, cities, states, countries)</td>
<td>• Townships (e.g., Dickinson, Lower Mifflin, Southampton)</td>
<td>• Ways in which different people view places and regions (e.g., places to visit or to avoid)</td>
<td>• How regions are connected (e.g., watersheds and river systems, patterns of world trade, cultural ties, migration)</td>
</tr>
<tr>
<td>• Ways in which different people view places and regions (e.g., places to visit or to avoid)</td>
<td>• Community connections to other places</td>
<td>• Dependence and interdependence</td>
<td></td>
</tr>
<tr>
<td>• Community connections to other places</td>
<td>• Access and movement</td>
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</tbody>
</table>

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...
<table>
<thead>
<tr>
<th>7.2.3. GRADE 3</th>
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<th>7.2.9. GRADE 9</th>
<th>7.2.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Identify the physical characteristics of places and regions.</strong>&lt;br&gt;• Physical properties&lt;br&gt;  • Landforms (e.g., plains, hills, plateaus and mountains)&lt;br&gt;  • Bodies of water (e.g., rivers, lakes, seas and oceans)&lt;br&gt;  • Weather and climate&lt;br&gt;  • Vegetation and animals&lt;br&gt;  • Earth’s basic physical systems&lt;br&gt;  • Lithosphere&lt;br&gt;  • Hydrosphere&lt;br&gt;  • Atmosphere&lt;br&gt;  • Biosphere</td>
<td><strong>A. Describe the physical characteristics of places and regions.</strong>&lt;br&gt;• Components of Earth’s physical systems (e.g., clouds, storms, relief and elevation [topography], tides, biomes, tectonic plates)&lt;br&gt;• Comparison of the physical characteristics of different places and regions (e.g., soil, vegetation, climate, topography)&lt;br&gt;• Climate types (e.g., marine west coast, humid continental, tropical wet and dry)</td>
<td><strong>A. Explain the physical characteristics of places and regions including spatial patterns of Earth’s physical systems.</strong>&lt;br&gt;• Climate regions&lt;br&gt;• Landform regions</td>
<td><strong>A. Analyze the physical characteristics of places and regions including the interrelationships among the components of Earth’s physical systems.</strong>&lt;br&gt;• Biomes and ecosystem regions&lt;br&gt;• Watersheds and river basins&lt;br&gt;• World patterns of biodiversity</td>
</tr>
</tbody>
</table>

*Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to.*
### The Physical Characteristics of Places and Regions

<table>
<thead>
<tr>
<th>Standard</th>
<th>Grade 3</th>
<th>Grade 6</th>
<th>Grade 9</th>
<th>Grade 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B. Identify the basic physical processes that affect the physical characteristics of places and regions.</strong></td>
<td>Earth-sun relationships (i.e., seasons and length of daylight, weather and climate)</td>
<td>Extreme physical events (e.g., earthquakes, floods, hurricanes, tornadoes)</td>
<td>Earth-sun relationships (i.e., differences between equinoxes and solstices, reasons they occur and their relationship to latitude)</td>
<td>Climate change (e.g., global warming/cooling, decertification, glaciations)</td>
</tr>
<tr>
<td><strong>B. Describe the physical processes that shape patterns on Earth’s surface.</strong></td>
<td>Climate influences (e.g., elevation, latitude, nearby ocean currents)</td>
<td>Climate change (e.g., global warming/cooling, decertification, glaciations)</td>
<td>Plate tectonics</td>
<td>Hydrologic cycle</td>
</tr>
<tr>
<td><strong>B. Explain the dynamics of the fundamental processes that underlie the operation of Earth’s physical systems.</strong></td>
<td>Wind systems</td>
<td>Water cycle</td>
<td>Erosion/deposition cycle</td>
<td>Plate tectonics</td>
</tr>
<tr>
<td><strong>B. Analyze the significance of physical processes in shaping the character of places and regions.</strong></td>
<td>Ocean currents</td>
<td>Natural hazards</td>
<td>Natural hazards</td>
<td>Extreme natural events</td>
</tr>
</tbody>
</table>

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to.

The Physical Characteristics of Places and Regions must include local-to-global progression (scales) for all students at all grade levels for the standard statements and their descriptors. Basic concepts must be developed more fully throughout higher grade levels. Portions of Physical Characteristics of Places and Regions relate directly to Science and Technology and Environment and Ecology standards.
### 7.3 The Human Characteristics of Places and Regions

<table>
<thead>
<tr>
<th>7.3.3. GRADE 3</th>
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<th>7.3.9. GRADE 9</th>
<th>7.3.12. GRADE 12</th>
</tr>
</thead>
</table>
| **A. Identify the human characteristics of places and regions by their population characteristics:**  
- The number and distribution of people in the local community  
- Human movement in the local community (e.g., mobility in daily life, migration) | **A. Describe the human characteristics of places and regions by their population characteristics:**  
- Spatial distribution, size, density and demographic characteristics of population at the county and state level  
- Causes of human movement  
  - Mobility (e.g., shopping, commuting, recreation)  
  - Migration models (e.g., push/pull factors, barriers to migration) | **A. Explain the human characteristics of places and regions by their population characteristics:**  
- Spatial distribution, size, density and demographic characteristics of population at the state and National level  
- Demographic structure of a population (e.g., life expectancy, fertility rate, mortality rate, infant mortality rate, population growth rate, the demographic transition model)  
- Effects of different types and patterns of human movement  
  - Mobility (e.g., travel for business)  
  - Migration (e.g., rural to urban, short term vs. long term, critical distance) | **A. Analyze the significance of human activity in shaping places and regions by their population characteristics:**  
- Spatial distribution, size, density and demographic characteristics of population at the international level  
- Demographic trends and their impacts on patterns of population distribution (e.g., carrying capacity, changes in fertility, changes in immigration policy, the mobility transition model)  
- Impact of movement on human systems (e.g., refugees, guest workers, illegal aliens) |
7.3 The Human Characteristics of Places and Regions

<table>
<thead>
<tr>
<th>7.3.3. GRADE 3</th>
<th>7.3.6. GRADE 6</th>
<th>7.3.9. GRADE 9</th>
<th>7.3.12. GRADE 12</th>
</tr>
</thead>
</table>
| B. Identify the human characteristics of places and regions by their cultural characteristics.  
  - Components of culture (e.g., language, belief systems and customs, social organizations, foods, ethnicity)  
  - Ethnicity of people in the local community (e.g., customs, celebrations, languages, religions) | B. Describe the human characteristics of places and regions by their cultural characteristics.  
  - Ethnicity of people at the county and state levels (e.g., customs, celebrations, languages, religions)  
  - Spatial arrangement of cultures creates distinctive landscapes (e.g., cultural regions based on languages, customs, religion, building styles as in the Pennsylvania German region) | B. Explain the human characteristics of places and regions by their cultural characteristics.  
  - Ethnicity of people at national levels (e.g., customs, celebrations, languages, religions)  
  - Culture distribution (e.g., ethnic enclaves and neighborhoods)  
  - Cultural diffusion (e.g., acculturation and assimilation, cultural revivals of language) | B. Analyze the significance of human activity in shaping places and regions by their cultural characteristics.  
  - Cultural conflicts (e.g., over language (Canada), over political power (Spain), over economic opportunities (Mexico))  
  - Forces for cultural convergence (e.g., the diffusion of foods, fashions, religions, language) |

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...
### 7.3 The Human Characteristics of Places and Regions

<table>
<thead>
<tr>
<th>Grade</th>
<th>Content</th>
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</table>
| 7.3.3. GRADE 3 | C. Identify the human characteristics of places and regions by their settlement characteristics.  
- Types of settlements (e.g., villages, towns, suburbs, cities, metropolitan areas)  
- Factors that affect where people settle (e.g., water, resources, transportation) |
| 7.3.6. GRADE 6 | C. Describe the human characteristics of places and regions by their settlement characteristics.  
- Current and past settlement patterns in the local area  
- Factors that affect the growth and decline of settlements (e.g., immigration, transportation development, depletion of natural resources, site and situation) |
| 7.3.9. GRADE 9 | C. Explain the human characteristics of places and regions by their settlement characteristics.  
- Current and past settlement patterns in Pennsylvania and the United States  
- Forces that have re-shaped modern settlement patterns (e.g., central city decline, suburbanization, the development of transport systems)  
- Internal structure of cities (e.g., manufacturing zones, inner and outer suburbs, the location of infrastructure) |
| 7.3.12. GRADE 12 | C. Analyze the significance of human activity in shaping places and regions by their settlement characteristics.  
- Description of current and past settlement patterns at the international scale (e.g., global cities)  
- Use of models of the internal structure of cities (e.g., concentric zone, sector, multiple nuclei)  
- Forces that have reshaped settlement patterns (e.g., commuter railroads, urban freeways, the development of megalopolis and edge cities) |

*Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to.*
### 7.3 The Human Characteristics of Places and Regions

<table>
<thead>
<tr>
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<th>GRADE 3</th>
<th>GRADE 6</th>
<th>GRADE 9</th>
<th>GRADE 12</th>
</tr>
</thead>
</table>
| D. Identify the human characteristics of places and regions by their economic activities. | • Location factors in the spatial distribution of economic activities (e.g., market, transportation, workers, materials)  
• Producers of consumer products and services (e.g., bread, pizza, television, shopping malls)  
• Products of farms and factories at the local and regional level (e.g., mushrooms, milk, snack foods, furniture)  
• Spatial distribution of resources  
• Non-renewable resources  
• Renewable resources  
• Flow resources (e.g., water power, wind power) | | |
| D. Describe the human characteristics of places and regions by their economic activities. | • Spatial distribution of economic activities in the local area (e.g., patterns of agriculture, forestry, mining, retailing, manufacturing, services)  
• Factors that influence the location and spatial distribution of economic activities (e.g., market size for different types of business, accessibility, modes of transportation used to move people, goods and materials)  
• Spatial distribution of resources and their relationship to population distribution  
• Historical settlement patterns and natural resource use (e.g.,) | | |
| D. Explain the human characteristics of places and regions by their economic activities. | • Spatial distribution of economic activities in Pennsylvania and the United States (e.g., patterns of agriculture, forestry, mining, retailing, manufacturing, services)  
• Factors that shape spatial patterns of economic activity both Nationally and internationally (e.g., comparative advantage in location of economic activities; changes in resource trade; disruption of trade flows)  
• Technological changes that affect the definitions of, access to, and use of natural resources (e.g., the role of exploration, extraction, use and depletion of resources) | | |
| D. Analyze the significance of human activity in shaping places and regions by their economic characteristics. | • Changes in spatial distribution of economic activities at the global scale (e.g., patterns of agriculture, forestry, mining, retailing, manufacturing, services)  
• Forces that are reshaping business (e.g., the information economy, business globalization, the development of off-shore activities)  
• Effects of changes and movements in factors of production (e.g., resources, labor, capital) | | |
### 7.3 The Human Characteristics of Places and Regions

<table>
<thead>
<tr>
<th>7.3.3. GRADE 3</th>
<th>7.3.6. GRADE 6</th>
<th>7.3.9. GRADE 9</th>
<th>7.3.12. GRADE 12</th>
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</thead>
<tbody>
<tr>
<td><strong>Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:</strong></td>
<td></td>
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</tr>
<tr>
<td>• Waterpower sites along the Fall Line</td>
<td>• Natural resource-based industries (e.g., agriculture, mining, fishing, forestry)</td>
<td>• Spatial pattern of political units in Pennsylvania</td>
<td>• Spatial pattern of political units in the United States</td>
</tr>
<tr>
<td>E. Identify the human characteristics of places and regions by their political activities.</td>
<td>E. Describe the human characteristics of places and regions by their political activities.</td>
<td>E. Explain the human characteristics of places and regions by their political activities.</td>
<td>E. Analyze the significance of human activity in shaping places and regions by their political characteristics:</td>
</tr>
<tr>
<td>• Type of political units (e.g., townships, boroughs, towns, cities, counties, states, countries (nation-state))</td>
<td>• Spatial pattern of political units in Pennsylvania</td>
<td>• Spatial pattern of political units in the United States</td>
<td>• Spatial pattern of political units in the global system</td>
</tr>
<tr>
<td>• Political units in the local area</td>
<td>• Functions of political units (e.g., counties, municipalities, townships, school districts, PA General Assembly districts (House and Senate), U.S. Congressional districts, states)</td>
<td>• Geographic factors that affect decisions made in the United States (e.g., territorial expansion, boundary delineation, allocation of natural resources)</td>
<td>• Role of new political alliances on the international level (e.g., multinational organizations, worker’s unions, United Nations’ organizations)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Political and public policies that affect geography (e.g., open space, urban development)</td>
<td>• Impact of political conflicts (e.g., secession, fragmentation, insurgencies, invasions)</td>
</tr>
</tbody>
</table>

The Human Characteristics of Places and Regions must include local-to-global progression (scales) for all students at all grade levels for the standard statements and their descriptors. Basic concepts found in lower grade levels must be developed more fully throughout higher grade levels. Portions of Human Characteristics of Places and Regions relate directly to the Civics and Government and Economics Standards.
### 7.4 The Interactions Between People and Places

<table>
<thead>
<tr>
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*Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...*

#### A. Identify the impacts of physical systems on people.
- How people depend on, adjust to and modify physical systems on a local scale (e.g., soil quality and agriculture, snowfall and daily activities, drought and water use)
- Ways in which natural hazards affect human activities (e.g., storms, lightning, flooding)

#### A. Describe the impacts of physical systems on people.
- How people depend on, adjust to and modify physical systems on regional scale (e.g., coastal industries, development of coastal communities, flood control)
- Ways in which people adjust to life in hazard-prone areas (e.g., California and earthquakes, Florida and hurricanes, Oklahoma and tornadoes)

#### A. Explain the impacts of physical systems on people.
- How people depend on, adjust to and modify physical systems on National scale (e.g., soil conservation programs, projects of The Corps of Engineers)
- Ways in which people adjust to life in hazard-prone areas (e.g., building design in earthquake areas, dry-farming techniques in drought-prone areas)

#### A. Analyze the impacts of physical systems on people.
- How people depend on, adjust to and modify physical systems on international scales (e.g., resource development of oil, coal, timber)
- Ways in which people modify ways of life to accommodate different environmental contexts (e.g., building in permafrost areas; the role of air-conditioning in the United States South and Southwest; the development of enclosed spaces for movement in cold climates)
### 7.4 The Interactions Between People and Places

<table>
<thead>
<tr>
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<th>7.4.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Identify the impacts of people on physical systems.</td>
<td>B. Describe the impacts of people on physical systems.</td>
<td>B. Explain the impacts of people on physical systems.</td>
<td>B. Analyze the impacts of people on physical systems.</td>
</tr>
<tr>
<td>- Effects of energy use (e.g., water quality, air quality, change in natural vegetation)</td>
<td>- Changing spatial patterns on Earth’s surface that result from human activities (e.g., lake desiccation as in the Aral Sea, construction of dikes, dams and storm surge barriers in the Netherlands, designation of State parks and forests throughout Pennsylvania)</td>
<td>- Forces by which people modify the physical environment (e.g., increasing population; new agricultural techniques; industrial processes and pollution)</td>
<td>- How people develop international agreements to manage environmental issues (e.g., Rio de Janeiro Agreement, the Law of the Sea, the Antarctica Treaty)</td>
</tr>
<tr>
<td>- Ways humans change local ecosystems (e.g., land use, dams and canals on waterways, reduction and extinction of species)</td>
<td>- Ways humans adjust their impact on the habitat (e.g., Endangered Species Act, replacement of wetlands, logging and replanting trees)</td>
<td>- Spatial effects of activities in one region on another region (e.g., scrubbers on power plants to clean air, transportation systems such as Trans-Siberian Railroad, potential effects of fallout from nuclear power plant accidents)</td>
<td>- How local and regional processes can have global effects (e.g., wind and hydroelectric power transmitted across regions, water use and irrigation for crop production)</td>
</tr>
</tbody>
</table>

The Interactions Between People and Places must include local to global scales for all students at all grade levels for the standard statements and their descriptors. Basic concepts found in lower grade levels must be developed more fully throughout higher grade levels.
XXI. GLOSSARY

- **Absolute location**: The position of a point on Earth's surface that can usually be described by latitude and longitude. Another example of absolute location would be the use of a nine digit zip code and street address.

- **Acculturation**: The process of adopting the traits of a cultural group, a social group, a state or another system entirely into another.

- **Assimilation**: The acceptance, by one culture group or community, of a culture traits associated with another culture group or community.

- **Atmosphere**: The body of gases, aerosols and other materials that surrounds Earth and is held close by gravity. It extends about twelve miles from Earth’s surface.

- **Barrier to migration**: Factors that keep people from moving (e.g., lack of information about potential destination, lack of funds to cover the costs of moving, regulations that control migration).

- **Basic map elements**: Materials included on geographic representations. These include the scale, a legend, index of places on the map, and a geographic grid. Other materials included are the source of information, the date of the map, the mapmaker’s name, a legend and scale. Often a title and directions of north are also included.

- **Biome**: A community of living organisms of a single major ecological region. An example of a biome is the tundra, the desert, the forest, or the grassland.

- **Boundary**: The limit or extent within which a system exists, including a social group, a state or another system entirely.

- **Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS**

- **Difference**: The process of adopting the traits of a cultural group or community, a state or another system entirely into another.
Capital: One of the factors of production of goods and services. Capital can be goods (e.g., factories and equipment, highways, information, communications systems) and/or funds (investment and working capital) used to increase production and wealth. Other factors are land, water and labor.

Central Place Theory: The conceptual framework that explains the size, spacing and distribution of settlements and their economic relationships with their market areas.

Concentric Zone Model: A framework that proposes that urban functions and the associated land uses are arranged in rings that grow outward from a central area. One of three models developed to explain how cities and towns grow outward from a central area. The associated land uses are arranged in rings that grow outward from a central area. One of three models developed to explain how cities and towns grow outward from a central area. The associated land uses are arranged in rings that grow outward from a central area.

Comparative advantage: The specialization by a given area in the production of one or a few commodities for which it has a particular advantage (e.g., labor quality, resources availability, production costs). A diagram that combines average monthly temperature and precipitation data for a particular area.

Carrying capacity: The maximum population that an area can support over long-term patterns and trends in weather conditions and human interventions with their market areas. Economic relationships with their market areas. Space and distribution of settlements and their economic relationships with their market areas. A diagram that combines average monthly temperature and precipitation data for a particular area.

Climate: Long-term patterns and trends in weather conditions and atmospheric conditions. Economic relationships with their market areas. Space and distribution of settlements and their economic relationships with their market areas.

Climate graph (climagraph): A diagram that combines average monthly temperature and precipitation data for a particular area.

Comparative advantage: The specialization by a given area in the production of one or a few commodities for which it has a particular advantage (e.g., labor quality, resources availability, production costs).

Concentric Zone Model: A framework that proposes that urban functions and the associated land uses are arranged in rings that grow outward from a central area. One of three models developed to explain how cities and towns grow outward from a central area. The associated land uses are arranged in rings that grow outward from a central area.

Country: Unit of political space often referred to as a state.

Cardinal directions: The four main points of the compass: north, south, east, and west.
Culture: Learned behavior of people, which includes their belief systems and languages, their social relationships, their institutions and organizations and their material goods—food, clothing, buildings, tools and machines.

Cultural diffusion: The spread of people, ideas, technology and products among places.

Cultural landscape: The human imprint on the physical environment; the humanized image as created or modified by people.

Demographic change: Variation in population size, composition, rates of growth, density, fertility and mortality and patterns of migration.

Density: The population or number of objects per unit area (e.g., per square kilometer or mile).

Decertification: The spread of desert conditions in arid and semiarid regions resulting from a combination of climatic changes and increasing human pressures (e.g., overgrazing, removal of vegetation, cultivation of marginal land).

Desertification: See decertification.

Distance decay: The tendency for the acceptance of new ideas and products among places to decrease with distance from their source.

Diffusion: The spread of people, ideas, technology and products among places.

Developed country: An area of the world that is technologically and economically advanced, highly urbanized and wealthy and has an array of the world's major cultural landscapes.

Earthquake: Vibrations and shock waves caused by the sudden movement of tectonic plates along fracture zones.

See decertification.
Ecosystem (ecological system): A network formed by the interaction of all living organisms (plants, animals, humans) with each other and with the physical and chemical factors of the environment in which they live.

Elevation: Height of a point or place above sea level (e.g., Mount Everest has an elevation of 29,028 feet above sea level).

Enclaves: A country, territorial or culturally distinct unit enclosed within a larger country or community. This can be physical or political, such as the tiny country of Vatican City.

Environment: Everything in and on Earth's surface within which organisms, communities, or objects exist. This includes terrestrial, aquatic, and atmospheric elements.

Equilibrium: The state in which the driving forces and resisting forces are in balance.

Equinoxes: The two days during the calendar year (usually September 23 and March 21) when the sun's rays are perpendicular to the Equator. At these times, the length of day and night is equal around the world.

Erosional processes: The weathering of rock material by wind, water, ice, and gravity. Deposition is the end result of erosion and occurs when transported material is dropped.

Fall line: A linear connection joining the coastal plain and the Piedmont of the Southern United States where these two regions of the Piedmont meet. This line marks the point where each river and stream descends from the mountain region to the coastal plain.

Fertility rate: A measure of the number of children a woman will have during her child-bearing years (15 to 49 years of age) in comparison to the adult female population in a particular place.
Formal region:
An area defined by the uniformity or homogeneity of certain characteristics (e.g., landforms, subculture).

Functional region:
An area united by a strong node or center of human population and activity (e.g., banking linkages between large cities and smaller cities and towns).

Globe:
A scale model of Earth that correctly represents the size of Earth's surface, latitude, and longitude of all of the Earth's surface.

Geographic scale:
The size of Earth's surface being studied. Study areas vary from local to regional to global. Scale refers to the relationship between the size of space on a map and the size of that space on Earth's surface.

Geographic Information System (GIS):
A geographic database that contains information about the distribution of physical and human characteristics of places. In order to test hypotheses, maps of one characteristic or a combination of physical and human characteristics must be produced from the database to analyze the data relationships.

Global warming:
The theory that Earth's atmosphere is gradually warming due to the increased levels of gases, such as carbon dioxide and methane, released by human activities. The increased levels of these gases cause added heat energy from Earth's surface to be trapped in the atmosphere instead of being lost to space.

Grid:
A pattern of lines on a chart or map, such as those representing latitude and longitude, which helps in the determination of absolute location and assists in the analysis of distribution patterns.
Human features:
Tangible and intangible ideas associated with the culture, society and economy of places or areas. These include the spatial arrangement of land uses including transportation, the design of buildings and the nature and timing of activities that people conduct in these spaces.

Hydroelectric power:
Electrical energy generated by the force of falling water which turns turbines housed in power plants.

Hydrosphere:
The water realm of Earth which includes water contained in the oceans, lakes, rivers, ground, glaciers and water vapor in the atmosphere.

Infant mortality rate:
The annual number of deaths among infants under 1 year of age for every 1,000 live births. It usually provides an indication of health care levels. The United States, for example, has a 1994 rate of 6.3 infant deaths per 1,000 live births. Angola has a rate of 137 infant deaths per 1,000 live births.

Interdependence:
Ideas, goods and services in one area affect decisions and events in other areas reducing self-sufficiency.

Intermediate directions:
The points of the compass that fall between north and east, north and west, south and east and south and west (e.g., NE, NW, SE, SW).

Intervening opportunity:
An alternate area that is a source of a product or service of a destination in the case of migration.

Lake desiccation:
The reduction in water level (drying out) of an inland water body.

Land use:
The range of uses of Earth’s surface made by humans. Uses are classified into urban, rural, agricultural, forested, etc. with more specific sub-classifications useful for specific purposes (e.g., low-density residential, high industrial, nursery crops).

Landform:
The shape, form or nature of a specific physical feature of Earth’s surface (e.g., plain, hill, plain, mountain).

Sufficiency:
Products, goods and services available to meet human needs.
Life expectancy:
The average number of remaining years a person can expect to live under current mortality levels in a society. Life expectancy at birth is the most common use of this measure.

Lithosphere:
The uppermost portion of the solid Earth including soil, land and geologic formations.

Location:
The position of a point on Earth's surface expressed by means of a grid (absolute) or in relation (relative) to the position of other places.

Map:
A graphic representation of a portion of Earth that is usually drawn to scale on a flat surface.

Materials:
Raw or processed substances that are used in manufacturing (secondary economic activities). Other substances used in manufacturing are already manufactured to some degree and come from other factories rather than from sources of raw materials.

Megalopolis:
The intermingling of two or more large metropolitan areas into a continuous urban complex; sometimes referred to as a conurbation.

Mental map:
A geographic representation which conveys the cognitive image a person has of an area, including knowledge of features and spatial relationships as well as the individual's perceptions and attitudes toward the area's features. Also known as a cognitive map.

Metropolitan area:
The Federal Office of Management and Budget's designation for the functional area surrounding and including a central city; has a minimum population of 50,000; is contained in the same county as the central city; and includes adjacent counties having at least 15% of their residents working in the central city.

Migration:
The act or process of people moving from one place to another with the intent of staying at the destination permanently or for a relatively long period of time.
Multinational organizations: An association of nations aligned around a common economic or political cause (e.g., the Organization of Petroleum Exporting Countries, the Organization of American States).

Multiple Nuclei Model: A representation of urban structure based on the idea that the functional areas (land use) of cities develop around various points rather than just one in the Central Business District.

Municipality: A political unit incorporated for local self-government (e.g., Pennsylvania’s boroughs, townships).

NAFTA: North American Free Trade Agreement. NAFTA is an accord to establish clear and mutually advantageous rules governing commerce among Canada, Mexico and the United States.

NATO: North Atlantic Treaty Organization. NATO is an international transatlantic partnership consisting of various European states, the United States, and Canada, which was established through cooperation, consultation and collective defense to maintain peace and promote stability throughout Europe.

Nation: A cultural concept for a group of people bound together by a strong sense of shared values and common history and characterized by distinct and separate legal and political institutions.

Natural hazard: An event in the physical environment, such as a hurricane or earthquake, that is destructive to human life and property.

Natural resource: An element of the physical environment that people value and use to meet a need for fuel, food, industrial product or something else of value.

Nonrenewable resource: A finite element that cannot be replaced once it is used up.

Ocean currents: Persistent patterns of circulation in the atmosphere, usually in response to the regular and consistent horizontal flow of wind. Ocean currents influence climate and weather patterns, and affect marine life and the movement of ships.

Renewable resource: A resource that can be replenished or renewed over time, such as water, wind, and solar energy.

Nation: A cultural concept for a group of people bound together by a strong sense of shared values and common history.

North Atlantic Treaty Organization: An international transatlantic partnership consisting of various European states, the United States, and Canada, which was established through cooperation, consultation and collective defense to maintain peace and promote stability throughout Europe.

North America Free Trade Agreement: NAFTA is an accord to establish clear and mutually advantageous rules governing commerce among Canada, Mexico and the United States.

Renewable resource: A resource that can be replenished or renewed over time, such as water, wind, and solar energy.

Nonrenewable resource: A finite element that cannot be replaced once it is used up.

Ocean currents: Persistent patterns of circulation in the atmosphere, usually in response to the regular and consistent horizontal flow of wind. Ocean currents influence climate and weather patterns, and affect marine life and the movement of ships.
The number of individuals occupying an area

The organization, which lies in the
universe of human or material to the welfare of
environmental or social principles or actually
human action by which any part of the

The direct or indirect process resulting from

mover mountain ranges and valley systems.

day configurations of continents, oceans, and
of the different plains is responsible for present-
drivers, convos, and shifting city-shape-ly

The idea that Earth's surface is composed of

other areas.

meaning and character and distinguish it from

characteristics; these characteristics give it

general concept, developmental format, network

minimum of others. Earth's physical system (e.g.,

a course of method of operation that produces

physical environment

An aspect of a place or area that derives from the

information including other indicators and models

based on impressions from a variety of sources or

ideas that people have about the character of areas

regulation of physical occupation.

Population density: 

Population: 

Place: 

Physical feature:

Physical process:

Perceptual region:

OPEC: 

Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS 

OPC: 

Organization of American States. An international
governmental organization formed by the nation-
states of North America and South America for
security and the protection of mutual interests.

OPEC: The Organization of Petroleum Exporting
Countries; international cartel of thirteen nations
designed to promote collective policies and
pruning of petroleum, unified marketing policies and
regulation of petroleum extraction.

Perceptual region: Ideas that people have about the character of areas.
Population pyramid:
A bar graph showing the distribution by gender of a country's population.

Primary economic activity:
The production of naturally existing or culturally improved resources (i.e., agriculture, ranching, forestry, fishing, extraction of minerals and ores).

Pull factors:
In migration theory, the social, political, economic, and environmental attractions of new areas that draw people away from their previous location.

Push factors:
In migration theory, the social, political, economic, and environmental forces that drive people from their previous location.

Region:
An area with one or more common characteristics or features that give it a measure of consistency and make it different from surrounding areas.

Relative location:
The site of a place or region in relation to other places or regions (e.g., northwest, downstream).

Renewable resource:
A substance that can be regenerated if used carefully (e.g., fish, timber).

Resource:
An aspect of the physical environment that people value and use to meet a need for fuel, food, or other things of value.

Scale:
On maps, the relationship of size between a linear measurement on a map and the corresponding distance on Earth's surface. For example, the scale 1:1,000,000 means one unit (inch or centimeter) on the map represents 1,000,000 of the same units on the Earth.
sector model:
A theory of urban structure that recognizes the impact of transportation on land prices within the city and the resulting tendency for functional areas to be organized into sectors.

secondary economic activity:
Processing of raw and manufactured materials into products with added value.

settlement pattern:
The spatial distribution and arrangement of physical and human elements.

site:
The place where something can be found including its physical setting (e.g., on a floodplain).

situation:
The general location of something in relation to other places or features of a larger region (e.g., in the center of a group of cities).

soil:
Unconsolidated material found at the surface of Earth, which is divided into layers (or horizons) characterized by the accumulation or loss of organic and inorganic compounds. Loam types and depths vary greatly over Earth’s surface and are influenced by local relief, climate, organisms, rock type, time, and human activity.

spatial:
Pertains to space on Earth’s surface.

spatial distribution:
The distribution of physical and human elements on Earth’s surface.

spatial organization:
The arrangement on Earth’s surface of physical and human elements.

suburbanization:
The shift in population from living in higher density urban areas to lower density developments on the edge of cities.

system:
A collection of entities that are linked and interrelated by transportation modes, the hydrologic cycle, climate, organisms, rock depth and other physical features of Earth’s surface.

technology:
Application of knowledge to meet the goals, goods and services needed and desired by people.
Academic Standards for History

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A. Chronological Thinking
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C. Historical Interpretation
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A. Contributions of Individuals and Groups
B. Documents, Artifacts and Historical Places
C. Influences of Community and Change
D. Pennsylvania's Rigid Crust that Move as
Distinct Units on a Plastic-Like (Mantle) on
which They Rest. As Many as Twenty Different
plates have been identified, but only Seven are
considered to be major. (1. Eurasian Plate, South
American Plate,)

Time zone:

The shape of Earth's surface:

Thematic map:

Water cycle:

Topography:

Sections of Earth's Rigid Crust that Move as
Distinct Units on a Plastic-Like (Mantle) on
which They Rest. As Many as Twenty Different
plates have been identified, but only Seven are
considered to be major. (1. Eurasian Plate, South
American Plate,)
XXIII. INTRODUCTION

This document includes Academic Standards for History that describe what students should know and be able to do.

The History Standards describe what students should know and be able to do.

8.1. Historical Analysis and Skills Development
8.2. Pennsylvania History
8.3. United States History
8.4. World History

The Academic Standards for History are grounded in the Public School Code of 1949 which directs ''... study in the history and government of that portion of America which has become the United States of America, and of the Commonwealth of Pennsylvania.''

The Academic Standards for History are designed to meld historical thinking with historical understanding in the application of historical thinking skills in the instruction of individuals and groups.

The History Standards describe what students should know and be able to do.

The History Standards describe what students should know and be able to do.

A. Contributions of Individuals and Groups
B. Documents, Artifacts and Historical Places
C. Influences of Continuity and Change
D. Conflict and Cooperation Among Groups

The History Standards describe what students should know and be able to do.

The History Standards describe what students should know and be able to do.
Standard category 8.1. Historical Analysis and Skill Development provides the basis for learning the content within the other three standard categories. The intent of the history standards is to instill in each student an ability to comprehend chronology, develop historical comprehension, evaluate historical interpretation and to understand historical research. One should not view these standards as a list of facts to recall, rather as stated in the opening phrase to the Pennsylvania, United States, and World History standard categories, "Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to analyze the interaction of cultural, economic, geographic, political and social relations."

These standards provide a history framework to permit every student to develop his or her potential and to acquire the knowledge and skills needed to analyze the interaction of cultural, economic, geographic, political and social relations. The content within this document is general and does not represent a course or even a portion thereof. Every school is encouraged to move beyond these standards. These standards are merely a starting point for the study of history. Planned instruction to meet these standards is required; however, the methodology, resources and time are not recommended nor implied. History is a discipline that interprets and analyzes the past. In order to tell the story it is not sufficient to simply recall facts; it is also necessary to understand the context of the time and place and to apply historical thinking skills. It is with this concept established that the content delineated in Pennsylvania, United States, and World histories should be approached. Having established the need to move beyond recall, it is the intent of these standards to give students throughout Pennsylvania a common cultural literacy.

Pennsylvania, United States, and World History standard categories use the same four standard statements to guide teachers in developing planned instruction: (A) Political and Cultural Contributions of Individuals and Groups; (B) Primary Documents, Material Artifacts and Historical Places; (C) How Continuity and Change Has Influenced History; (D) Conflict and Cooperation Among Social Groups and Organizations. The chart Four Standard Statements within the Academic Standards for History: An Overview outlines standard statements and descriptors. Although the standard statements are similar across grade levels and standard categories, the degree of comprehension, change in content and shifts in chronology differ. Although different grade levels outline different chronological periods, the standard statements remain consistent. Although the standard statements are similar across grade levels and standard categories, the degree of comprehension, change in content and shifts in chronology differ. Although different grade levels outline different chronological periods, the standard statements remain consistent. Nevertheless, the following chronological time periods for the standard categories are established for the standard categories.
A glossary is included to assist the reader in understanding terminology contained in the Academic Standards and Assessments. The Academic Standards for History consist of four standard categories (designated as 8.1., 8.2., 8.3., and 8.4.). Each category has four standard statements (designated A, B, C, and D). Most standard statements have bulleted items known as standard descriptors. The standard descriptors are items within the document to illustrate and enhance the standard statement. The categories, statements and descriptors are the regulations. The descriptors many times are followed by an "e.g." The "e.g.'s" are examples to clarify what type of information could be taught. These are suggestions and the choice of specific content is a local decision as is the method of instruction.

History along with civics and government, economics and geography are identified as social studies in Chapter 4. This identification is consistent with citizen education in Chapters 49 and 354 (relating to certification of professional personnel; and preparation of professional educators). Based on these regulations, social studies/citizenship programs should include the four sets of standards as an integral part of the curriculum. These social studies/citizenship programs are identified in Chapter 4. The Academic Standards are consistent with citizen education.
Four Standard Statements within the Academic Standards for History:

An Overview

Political and Cultural Contributions of Individuals and Groups

• Inhabitants (cultures, subcultures, groups)
• Political Leaders (monarchs, governors, elected officials)
• Military Leaders (generals, noted military figures)
• Cultural and Commercial Leaders (entrepreneurs, corporate executives, artists, entertainers, writers)
• Innovators and Reformers (inventors, philosophers, religious leaders, social change agents, improvers of technology)

How Continuity and Change Have Influenced History

• Belief Systems and Religions
• Commerce and Industry (jobs, trade, environmental change, labor systems, entertainment)
• Innovations (ideas, technology, methods and processes)
• Politics (political party systems, administration of government, rules, regulations and laws, political and judicial interpretation)
• Transportation (methods of moving people and goods over time, transportation routes, circulation systems)

Settlement Patterns and Expansion

• Social Organization (social structure, identification of social groups, families, groups and communities, education, school population, diversity, settlement types, land use, colonizations)

Women's Movement

• Changing roles of women, social and political movements, breaking barriers, role models
Four Standard Statements within the Academic Standards for History:

An Overview

Primary Documents, Material Artifacts and Historical Places

- Documents, Writings and Oral Traditions (government documents, letters and diaries, fiction and non-fiction works, newspapers and other media)
- Artifacts, Architecture and Historic Places (historic sites and places, museums and museum collections, official and popular cultural symbols, material culture)

Conflict and Cooperation Among Social Groups and Organizations

- Domestic Instability (political unrest, natural and man-made disasters, internal and external revolutions)
- Ethnic and Racial Relations (racism and xenophobia, ethnic and religious prejudices, collective and individual actions)
- Immigration and Migration (causes of population shifts, xenophobia, intercultural activity)
- Labor Relations (strikes and collective bargaining, working conditions over time, strikes and collective bargaining)
- Military Conflicts (causes, conduct and impact of military conflicts)

Each standard statement outlines its respective standard descriptors.

Each standard descriptor suggests content that may be addressed. These are not all encompassing and local planned instruction is not limited to these examples.
|-----------------------------------------------|----------------|----------------|----------------|----------------|
| **A.** Understand chronological thinking and distinguish between past, present and future time. | • Calendar time  
  • Time lines  
  • Continuity and change  
  • Events (time and place) | **B.** Develop an understanding of historical sources. | • Data in historical maps  
  • Visual data from maps and tables  
  • Mathematical data from graphs and tables  
  • Author or historical source | **A.** Analyze chronological thinking, | • Difference between past, present and future  
  • Sequential order of historical narrative  
  • Data presented in time lines  
  • Continuity and change  
  • Context for events |
| **B.** Develop an understanding of historical sources. | • Data in historical maps  
  • Visual data from maps and tables  
  • Mathematical data from graphs and tables  
  • Author or historical source | **B.** Explain and analyze historical sources. | • Literal meaning of a historical passage  
  • Data in historical and contemporary maps, graphs and tables  
  • Author or historical source  
  • Multiple historical perspectives  
  • Visual evidence  
  • Mathematical data from graphs and tables | **B.** Analyze and interpret historical sources. | • Literal meaning of historical passages  
  • Data in historical and contemporary maps, graphs and tables  
  • Different historical perspectives  
  • Data from maps, graphs and tables  
  • Visual data presented in historical evidence |
| **B.** Explain and analyze historical sources. | • Literal meaning of a historical passage  
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  • Data in historical and contemporary maps, graphs and tables  
  • Different historical perspectives  
  • Data from maps, graphs and tables  
  • Visual data presented in historical evidence | **B.** Synthesize and evaluate historical sources. | • Literal meaning of historical passages  
  • Data in historical and contemporary maps, graphs and tables  
  • Different historical perspectives  
  • Data presented in maps, graphs and tables  
  • Visual data presented in historical evidence |
<table>
<thead>
<tr>
<th>8.1.3. GRADE 3</th>
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<th>8.1.9. GRADE 9</th>
<th>8.1.12. GRADE 12</th>
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</table>
| C. Understand fundamentals of historical interpretation.  
  • Difference between fact and opinion  
  • The existence of multiple points of view  
  • Illustrations in historical stories  
  • Causes and results | C. Explain the fundamentals of historical interpretation.  
  • Difference between fact and opinion  
  • Multiple points of view  
  • Illustrations in historical stories  
  • Causes and results  
  • Author or source of historical narratives | C. Analyze the fundamentals of historical interpretation.  
  • Fact versus opinion  
  • Reasons/causes for multiple points of view  
  • Illustrations in historical documents and stories  
  • Causes and results  
  • Author or source used to develop historical narratives  
  • Central issue | C. Evaluate historical interpretation of events.  
  • Impact of opinions on the perception of facts  
  • Issues and problems in the past  
  • Multiple points of view  
  • Illustrations in historical stories and sources  
  • Connections between causes and results  
  • Author or source of historical narratives’ points of view  
  • Central issue |

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...
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<tr>
<td><strong>Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...</strong></td>
<td><strong>D. Understand historical research.</strong>&lt;br&gt;• Event (time and place)&lt;br&gt;• Facts, folklore and fiction&lt;br&gt;• Formation of historical question&lt;br&gt;• Primary sources&lt;br&gt;• Secondary sources&lt;br&gt;• Conclusions (e.g., storytelling, role playing, diorama)</td>
<td><strong>D. Describe and explain historical research.</strong>&lt;br&gt;• Historical events (time and place)&lt;br&gt;• Facts, folklore and fiction&lt;br&gt;• Historical questions&lt;br&gt;• Primary sources&lt;br&gt;• Secondary sources&lt;br&gt;• Conclusions (e.g., simulations, group projects, skits and plays)</td>
<td><strong>D. Analyze and interpret historical research.</strong>&lt;br&gt;• Historical event (time and place)&lt;br&gt;• Facts, folklore and fiction&lt;br&gt;• Historical questions&lt;br&gt;• Primary sources&lt;br&gt;• Secondary sources&lt;br&gt;• Conclusions (e.g., History Day projects, mock trials, speeches)&lt;br&gt;• Credibility of evidence</td>
<td><strong>D. Synthesize historical research.</strong>&lt;br&gt;• Historical event (time and place)&lt;br&gt;• Facts, folklore and fiction&lt;br&gt;• Historical questions&lt;br&gt;• Primary sources&lt;br&gt;• Secondary sources&lt;br&gt;• Conclusions (e.g., Senior Projects, research papers, debates)&lt;br&gt;• Credibility of evidence Pennsylvania History, 8.3. United States History and 8.4. World History.</td>
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Historical Analysis and Skill Development are learned through and applied to the standards statements and their descriptors for 8.2 Pennsylvania History, 8.3 United States History and 8.4 World History.
8.2. Pennsylvania History

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<th>8.2.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Understand the political and cultural contributions of individuals and groups to Pennsylvania history.</strong></td>
<td><strong>A. Identify and explain the political and cultural contributions of individuals and groups to Pennsylvania history from Beginnings to 1824.</strong></td>
<td><strong>A. Analyze the political and cultural contributions of individuals and groups to Pennsylvania history from 1787 to 1914.</strong></td>
<td><strong>A. Evaluate the political and cultural contributions of individuals and groups to Pennsylvania history from 1890 to Present.</strong></td>
</tr>
<tr>
<td>- William Penn</td>
<td>- Inhabitants (e.g., Native Americans, Europeans, Africans)</td>
<td>- Political Leaders (e.g., James Buchanan, Thaddeus Stevens, Andrew Curtin)</td>
<td>- Political Leaders (e.g., Gifford Pinchot, Genevieve Blatt, K. Leroy Irvis)</td>
</tr>
<tr>
<td>- Benjamin Franklin</td>
<td>- Military Leaders (e.g., Anthony Wayne, Oliver H. Perry, John Muhlenberg)</td>
<td>- Military Leaders (e.g., George Meade, George McClellan, John Hartranft)</td>
<td>- Military Leaders (e.g., Tasker H. Bliss, Henry “Hap” Arnold, George C. Marshall)</td>
</tr>
<tr>
<td>- Pennsylvanians impacting American Culture (e.g., John Chapman, Richard Allen, Betsy Ross, Mary Ludwig Hayes, Rachel Carson, Elizabeth Jane Cochran, Marian Anderson)</td>
<td>- Political Leaders (e.g., William Penn, Hannah Penn, Benjamin Franklin)</td>
<td>- Cultural and Commercial Leaders (e.g., John J. Audubon, Rebecca Webb Lukens, Stephen Foster)</td>
<td>- Cultural and Commercial Leaders (e.g., Milton Hershey, Marian Anderson, Fred Rogers)</td>
</tr>
<tr>
<td>- Local historical figures in municipalities and counties.</td>
<td>- Cultural and Commercial Leaders (e.g., Robert Morris, John Bartram, Albert Gallatin)</td>
<td>- Innovators and Reformers (e.g., George Westinghouse, Edwin Drake, Lucretia Mott)</td>
<td>- Innovators and Reformers (e.g., Frank Conrad, Rachel Carson, Joseph Rothrock)</td>
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### 8.2. Pennsylvania History

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<tr>
<th>8.2.3. GRADE 3</th>
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<th>8.2.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Identify and describe primary documents, material artifacts and historic sites important in Pennsylvania history.</td>
<td>B. Identify and explain primary documents, material artifacts and historic sites important in Pennsylvania history from Beginnings to 1824.</td>
<td>B. Identify and analyze primary documents, material artifacts and historic sites important in Pennsylvania history from 1787 to 1914.</td>
<td>B. Identify and evaluate primary documents, material artifacts and historic sites important in Pennsylvania history from 1890 to Present.</td>
</tr>
<tr>
<td>- Documents, Writings and Oral Traditions (e.g., Penn's Charter, Pennsylvania &quot;Declaration of Rights&quot;)</td>
<td>- Documents, Writings and Oral Traditions (e.g., Charter of Privileges, The Gradual Abolition of Slavery Act of 1780, <em>Letters from a Pennsylvania Farmer</em>)</td>
<td>- Documents, Writings and Oral Traditions (e.g., Pennsylvania Constitutions of 1838 and 1874, The &quot;Gettysburg Address,&quot; <em>The Pittsburgh Survey</em>)</td>
<td>- Documents, Writings and Oral Traditions (e.g., Constitution of 1968, <em>Silent Spring</em> by Rachel Carson, Pennsylvania historical markers)</td>
</tr>
<tr>
<td>- Artifacts, Architecture and Historic Places (e.g., Local historical sites, museum collections, Independence Hall)</td>
<td>- Artifacts, Architecture and Historic Places (e.g., Conestoga Wagon, Pennsylvania rifle, Brig Niagara)</td>
<td>- Artifacts, Architecture and Historic Places (e.g., Gettysburg, Eckley Miners’ Village, Drake’s Well)</td>
<td>- Artifacts, Architecture and Historic Places (e.g., 28th Division Shrine, Fallingwater, Levittown, Allegheny Ridge heritage corridor)</td>
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<tr>
<td>- Liberty Bell</td>
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<td>- Official Commonwealth symbols (e.g., tree, bird, dog, insect)</td>
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### 8.2. Pennsylvania History

<table>
<thead>
<tr>
<th>Grade</th>
<th>Standards</th>
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</table>
| 3     | Identify and describe how continuity and change have influenced Pennsylvania history.  
- Belief Systems and Religions (e.g., Native Americans, early settlers, contemporary religions)  
- Commerce and Industry (e.g., jobs, trade, environmental change)  
- Innovations (e.g., technology, ideas, processes)  
- Politics (e.g., rules, regulations, laws)  
- Settlement Patterns (e.g., farms, towns, rural communities, cities)  
- Social Organization (e.g., relationships of individuals, families, groups, communities; ability to be educated)  
- Transportation (e.g., methods of moving people and goods over time)  
- Women’s Movement (e.g., changes in roles and rights over time) |
| 6     | Identify and explain how continuity and change have influenced Pennsylvania history from the Beginnings to 1824.  
- Belief Systems and Religions (e.g., Native Americans, Quakers)  
- Commerce and Industry (e.g., iron production, sailing, fur trade)  
- Innovations (e.g., steam boat, Conestoga Wagon)  
- Politics (e.g., The Mason-Dixon Line, Pennsylvania’s acquisition and detachment of the “lower three counties,” movements of State capital)  
- Settlement Patterns (e.g., native settlements, Westward expansion, development of towns)  
- Social Organization (e.g., trade and development of cash economy, African Methodist Episcopal Church founded, schools in the colony) |
| 9     | Identify and analyze how continuity and change have influenced Pennsylvania history from 1787 to 1914.  
- Belief Systems and Religions (e.g., Ephrata Cloister, Harmonists, Amish, immigrant influences)  
- Commerce and Industry (e.g., mining coal, producing iron, harvesting timber)  
- Innovations (e.g., John Roebling’s steel cable, steel-tipped plow, improved techniques for making iron, steel and glass)  
- Politics (e.g., Fugitive Slave Act reaction, canal system legislation, The Free School Act of 1834)  
- Settlement Patterns (e.g., farms and growth of urban centers) |
| 12    | Identify and evaluate how continuity and change have influenced Pennsylvania history from the 1890s to Present.  
- Belief Systems and Religions (e.g., Buddhism, Christianity, Hinduism, Islam, Judaism)  
- Commerce and Industry (e.g., work of defense industries, rise and decline of the steel industry, increase of service industries)  
- Innovations (e.g., polio vaccine, air pollution examined, nuclear power plants)  
- Politics (e.g., Great Depression special legislative session, creation of the state income tax)  
- Settlement Patterns (e.g., growth and decline of cities, coal towns, Pittsburgh Renaissance) |
8.2. Pennsylvania History

<table>
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<tr>
<th>8.2.3. GRADE 3</th>
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<th>8.2.9. GRADE 9</th>
<th>8.2.12. GRADE 12</th>
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</table>
| • Transportation (e.g., trade routes, turnpikes, post roads)  
  • Women’s Movement (e.g., voting qualifications, role models)      | • Social Organization (e.g., the Philadelphia Centennial Exposition of 1876, prohibition of racial discrimination in schools)  
  • Transportation (e.g., canals, National Road, Thompson’s Horseshoe Curve)  
  • Women’s Movement (e.g., work of the Equal Rights League of Pennsylvania) | • Social Organization (e.g., creation of the State Soil Conservation Commission, First Amendment challenges to education, social services)  
  • Transportation (e.g., Pennsylvania Turnpike, Interstate highways, international airports)  
  • Women’s Movement (e.g., League of Women Voters, Commission for Women) |

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to analyze cultural, economic, geographic, political and social relations to...
**8.2. Pennsylvania History**

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<tr>
<th>Grade</th>
<th>Standards</th>
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<tbody>
<tr>
<td>3</td>
<td>D. Identify and describe conflict and cooperation among social groups and organizations in Pennsylvania history.  &lt;br&gt; - Domestic Instability (e.g., political, economic and geographic impact on daily activities)  &lt;br&gt; - Ethnic and Racial Relations (e.g., treatment of various ethnic and racial groups in history)  &lt;br&gt; - Labor Relations (e.g., working conditions, over time)  &lt;br&gt; - Immigration (e.g., diverse groups inhabiting the state)  &lt;br&gt; - Military Conflicts (e.g., struggle for control)</td>
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<td>6</td>
<td>D. Identify and explain conflict and cooperation among social groups and organizations in Pennsylvania history from Beginnings to 1824.  &lt;br&gt; - Domestic Instability (e.g., religious diversity, toleration and conflicts, incursion of the Iroquois)  &lt;br&gt; - Ethnic and Racial Relations (e.g., Penn’s Treaties with Indians, the Underground Railroad, the abolition of slavery)  &lt;br&gt; - Labor Relations (e.g., indentured servants, working conditions)  &lt;br&gt; - Immigration (e.g., Germans, Irish)  &lt;br&gt; - Military Conflicts (e.g., Dutch, Swedish and English struggle for control of land, Wyoming Massacre, The Whiskey Rebellion)</td>
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<tr>
<td>9</td>
<td>D. Identify and analyze conflict and cooperation among social groups and organizations in Pennsylvania history from 1787 to 1914.  &lt;br&gt; - Domestic Instability (e.g., impact of war, 1889 Johnstown Flood)  &lt;br&gt; - Ethnic and Racial Relations (e.g., Christiana riots, disenfranchisement and restoration of suffrage for African-Americans, Carlisle Indian School)  &lt;br&gt; - Labor Relations (e.g., National Trade Union, The “Molly Maguires,” Homestead steel strike)  &lt;br&gt; - Immigration (e.g., Anti-Irish Riot of 1844, new waves of immigrants)  &lt;br&gt; - Military Conflicts (e.g., Battle of Lake Erie, the Mexican War, the Civil War)</td>
</tr>
<tr>
<td>12</td>
<td>D. Identify and evaluate conflict and cooperation among social groups and organizations in Pennsylvania history from 1890 to Present.  &lt;br&gt; - Domestic Instability (e.g., The Great Depression, Three-Mile Island nuclear accident, floods of 1936, 1972 and 1977)  &lt;br&gt; - Ethnic and Racial Relations (e.g., segregation, desegregation, racial profiling)  &lt;br&gt; - Labor Relations (e.g., strikes, work stoppages, collective bargaining)  &lt;br&gt; - Immigration (e.g., increased immigration from Europe, migration of African-Americans from the South, influx of Hispanic and Asian peoples)  &lt;br&gt; - Military Conflicts (e.g., World War I, World War II, Persian Gulf War)</td>
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*Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to analyze cultural, economic, geographic, political and social relations to...*
8.2. Pennsylvania History

<p>| Standard Category 8.1. Historical Analysis and Skills Development should be applied to the above standard statements and descriptors. Suggested chronology for grade levels 4-6, 7-9 and 10-12 focus on a particular century; however, instruction is encouraged that draws on prior and later events in history so that students may develop a seamless view of the world. |</p>
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<th>8.3.3. GRADE 3</th>
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<th>8.3.9. GRADE 9</th>
<th>8.3.12. GRADE 12</th>
</tr>
</thead>
</table>
| A. Identify contributions of individuals and groups to United States history.  
  - George Washington  
  - Thomas Jefferson  
  - Abraham Lincoln  
  - Theodore Roosevelt  
  - Native Americans, Africans and Europeans  
  - Political Leaders (e.g., John Adams, Thomas Jefferson, John Marshall)  
  - Military Leaders (e.g., George Washington, Meriwether Lewis, Henry Knox)  
  - Cultural and Commercial Leaders (e.g., Paul Revere, Phyllis Wheatley, John Rolfe)  
  - Innovators and Reformers (e.g., Ann Hutchinson, Roger Williams, Junipero Serra) | A. Identify and explain the political and cultural contributions of individuals and groups to United States history from Beginnings to 1824.  
  - Native Americans, Africans and Europeans  
  - Political Leaders (e.g., John Adams, Thomas Jefferson, John Marshall)  
  - Military Leaders (e.g., George Washington, Meriwether Lewis, Henry Knox)  
  - Cultural and Commercial Leaders (e.g., Paul Revere, Phyllis Wheatley, John Rolfe)  
  - Innovators and Reformers (e.g., Ann Hutchinson, Roger Williams, Junipero Serra) | A. Identify and analyze the political and cultural contributions of individuals and groups to United States history from 1787 to 1914.  
  - Political Leaders (e.g., Daniel Webster, Abraham Lincoln, Andrew Johnson)  
  - Military Leaders (e.g., Andrew Jackson, Robert E. Lee, Ulysses S. Grant)  
  - Cultural and Commercial Leaders (e.g., Jane Addams, Jacob Riis, Booker T. Washington)  
  - Innovators and Reformers (e.g., Alexander G. Bell, Frances E. Willard, Frederick Douglass) | A. Identify and evaluate the political and cultural contributions of individuals and groups to United States history from 1890 to Present.  
  - Political Leaders (e.g., Theodore Roosevelt, Woodrow Wilson, Franklin D. Roosevelt)  
  - Military Leaders (e.g., John Pershing, Douglas MacArthur, Dwight D. Eisenhower)  
  - Cultural and Commercial Leaders (e.g., Abby Aldrich Rockefeller, Langston Hughes, Alan Greenspan)  
  - Innovators and Reformers (e.g., Wilbur and Orville Wright, John L. Lewis, Reverend Dr. Martin Luther King) |

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to analyze cultural, economic, geographic, political and social relations to...
Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to analyze cultural, economic, geographic, political and social relations to . . .

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<tr>
<td>B. Identify and describe primary documents, material artifacts and historic sites important in United States history.</td>
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<tr>
<td>• Documents (e.g., Declaration of Independence, U.S. Constitution, Bill of Rights)</td>
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<td>• Writings and Communications (e.g., Pledge of Allegiance, famous quotations and sayings)</td>
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<tr>
<td>• Historic Places (e.g., The White House, Mount Rushmore, Statue of Liberty)</td>
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<td>• The Flag of the United States</td>
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| B. Identify and explain primary documents, material artifacts and historic sites important in United States history from Beginnings to 1824. |
| • Documents (e.g., Mayflower Compact, Northwest Ordinance, Washington’s Farewell Address) |
| • 18th Century Writings and Communications (e.g., Paine’s Common Sense; Franklin’s “Join, or Die,” Henry’s “Give me liberty or give me death”) |
| • Historic Places (e.g., Cahokia Mounds, Spanish Missions, Jamestown) |

| B. Identify and analyze primary documents, material artifacts and historic sites important in United States history from 1787 to 1914. |
| • Documents (e.g., Fugitive Slave Law, Treaty of Guadalupe Hidalgo, Emancipation Proclamation) |
| • 19th Century Writings and Communications (e.g., Stowe’s Uncle Tom’s Cabin, Brown’s “Washed by Blood,” Key’s Star Spangled Banner) |
| • Historic Places (e.g., The Alamo, Underground Railroad sites, Erie Canal) |

<p>| B. Identify and evaluate primary documents, material artifacts and historic sites important in United States history from 1890 to Present. |
| • Documents (e.g., Treaty of Versailles, North Atlantic Treaty, Neutrality Acts) |
| • 20th Century Writings and Communication (e.g., Coolidge’s “The Business of America is Business,” King’s “I Have A Dream,” Armstrong’s “One Small Step for Man”) |
| • Historic Places (e.g., Ellis Island, Pearl Harbor, Los Alamos) |</p>
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<tr>
<th>Grade</th>
<th>Standard</th>
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<tr>
<td>3</td>
<td>C. Identify important changes in United States history (e.g., Belief Systems and Religions, Commerce and Industry, Politics, Settlement Patterns and Expansion, Social Organization, Transportation, Women’s Movement).</td>
</tr>
</tbody>
</table>
| 6     | C. Explain how continuity and change has influenced United States history from Beginnings to 1824.  
  - Belief Systems and Religions  
    (e.g., impact on daily life, colonial government established religions, communal sects)  
  - Commerce and Industry (e.g., fur trade, development of cash crops)  
  - Innovations (e.g., cotton gin, Whitney; wooden clock, Banneker; stove, Franklin)  
  - Politics (e.g., Hamilton’s defense of John Peter Zenger, The Great Compromise, Marbury v. Madison)  
  - Settlement Patterns (e.g., frontier settlements, slave plantation society, growth of cities)  
  - Social Organization (e.g., community structure on the frontier, cultural and language barriers) |
| 9     | C. Analyze how continuity and change has influenced United States history from 1787 to 1914.  
  - Belief Systems and Religions (e.g., 19th century trends and movements)  
  - Commerce and Industry (e.g., growth of manufacturing industries, economic nationalism)  
  - Innovations (e.g., Brooklyn Bridge, refrigerated shipping, telephone)  
  - Politics (e.g., election of 1860, impeachment of Andrew Johnson, Jim Crow Laws)  
  - Settlement Patterns and Expansion (e.g., Manifest Destiny, successive waves of immigrants, purchase of Alaska and Hawaii)  
  - Social Organization (e.g., social class differences, women’s rights and antislavery movement, education reforms) |
| 12    | C. Evaluate how continuity and change has influenced United States history from 1890 to Present.  
  - Belief Systems and Religions (e.g., 20th century movements, religions of recent immigrants)  
  - Commerce and Industry (e.g., corporations, conglomerates, multinational corporations)  
  - Innovations (e.g., The Tin Lizzie, radio, World Wide Web)  
  - Politics (e.g., New Deal legislation, Brown v. Topeka, isolationist/non-isolationist debate)  
  - Settlement Patterns (e.g., suburbs, large urban centers, decline of city population)  
  - Social Organization (e.g., compulsory school laws, court decisions expanding individual rights, technological impact) |
**8.3. United States History**

<table>
<thead>
<tr>
<th>8.3.3. GRADE 3</th>
<th>8.3.6. GRADE 6</th>
<th>8.3.9. GRADE 9</th>
<th>8.3.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Transportation and Trade (e.g., methods of overland travel, water transportation, National Road)</td>
<td>• Transportation and Trade (e.g., Pony Express, telegraph, Transcontinental Railroad)</td>
<td>• Transportation and Trade (e.g., expansion and decline of railroads, increased mobility, Internet)</td>
<td></td>
</tr>
<tr>
<td>• Women’s Movement (e.g., roles and changing status of women, Margaret Brent’s vote, soldier Deborah Sampson)</td>
<td>• Women’s Movement (e.g., roles in the Civil War, medical college for women, Seneca Falls Conference)</td>
<td>• Women’s Movement (e.g., right to vote, women in the war effort, Women’s Peace Party)</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td>Content</td>
<td></td>
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<tr>
<td>-------</td>
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</tr>
</tbody>
</table>
| 3     | D. Identify conflict and cooperation among social groups and organizations in United States history.  
- Domestic Instability (e.g., impact on daily activities)  
- Ethnic and Racial Relations (e.g., treatment of minority groups in history)  
- Labor Relations (e.g., working conditions over time)  
- Immigration (e.g., diverse groups inhabiting the state)  
- Military Conflicts (e.g., struggle for control)  
| 6     | D. Identify and explain conflict and cooperation among social groups and organizations in United States history from Beginnings to 1824.  
- Domestic Instability (e.g., Salem Witch Trials, Shays Rebellion, religious persecution)  
- Ethnic and Racial Relations (e.g., cooperation between and among Native Americans and European settlers, slave uprisings, “Colored” troops in the Revolution)  
- Labor Relations (e.g., early union efforts, 10-hour day, women’s role)  
- Immigration and Migration (e.g., western settlements, Louisiana Purchase, European immigration)  
| 9     | D. Identify and analyze conflict and cooperation among social groups and organizations in United States history from 1787 to 1914.  
- Domestic Instability (e.g., wartime confiscation of private property, abolitionist movement, Reconstruction)  
- Ethnic and Racial Relations (e.g., Cherokee Trail of Tears, slavery and the Underground Railroad, draft riots)  
- Labor Relations (e.g., female and child labor, trade unionism, strike breakers)  
- Immigration and Migration (e.g., Manifest Destiny, eastern and southern European immigration, Chinese Exclusion Act)  
| 12    | D. Identify and evaluate conflict and cooperation among social groups and organizations in United States history from 1890 to the Present.  
- Domestic Instability (e.g., Great Depression, assassination of political and social leaders, terrorist threats)  
- Ethnic and Racial Relations (e.g., internment camps for Japanese Americans, Montgomery Alabama Bus Boycott, land tensions with Native Americans)  
- Labor Relations (e.g., rise and decline of industrial unions, free trade agreements, imports impact on domestic employment)  
- Immigration and Migration (e.g., anti-immigrant attitudes, quota laws, westward and southward migration)  

Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to analyze cultural, economic, geographic, political and social relations to...
8.3. United States History

<table>
<thead>
<tr>
<th>8.3.3. GRADE 3</th>
<th>8.3.6. GRADE 6</th>
<th>8.3.9. GRADE 9</th>
<th>8.3.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Military Conflicts (e.g., French and Indian War, American Revolutionary War, War of 1812)</td>
<td>• Military Conflicts (e.g., Native American opposition to expansion and settlement, Civil War, Spanish-American War)</td>
<td>• Military Conflicts (e.g., World War I, World War II, War on Terrorism)</td>
<td></td>
</tr>
</tbody>
</table>

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to analyze cultural, economic, geographic, political and social relations to...

Standard Category 8.1. Historical Analysis and Skills Development should be applied to the above standard statements and descriptors.

Suggested chronology for grade levels 4-6, 7-9 and 10-12 focus on a particular century; however, instruction is encouraged that draws on prior or later events in history so that students may develop a seamless view of the world.
8.4. World History

<table>
<thead>
<tr>
<th>8.4.3. GRADE 3</th>
<th>8.4.6. GRADE 6</th>
<th>8.4.9. GRADE 9</th>
<th>8.4.12. GRADE 12</th>
</tr>
</thead>
</table>
| **A. Identify individuals and groups who have made significant political and cultural contributions to world history.**  
• Africa (e.g., Nefertiti, Mansa Musa, Nelson Mandela)  
• Americas (e.g., Montezuma, Simon Bolivar, Fidel Castro)  
• Asia (e.g., Hammurabi, Mohandas Gandhi, Benazir Bhutto)  
• Europe (e.g., Julius Caesar, Joan of Arc, Pope John Paul) | **A. Identify and explain how individuals and groups made significant political and cultural contributions to world history.**  
• Africa (e.g., Nelson Mandela, Desmond Tutu, F. W. de Klerk, Pieter Botha, African National Congress)  
• Americas (e.g., Pizarro, Atahualpa, Aztecs, Incas, Montezuma, Cortez)  
• Asia (e.g., Tokugawa Ieyasu, Toyotomi clan, shogun Iemitsu, Commodore Perry, daimyo)  
• Europe (e.g., Pope Leo X, John Calvin, John Wesley, Martin Luther, Ignatius of Loyola) | **A. Analyze the significance of individuals and groups who made major political and cultural contributions to world history before 1500.**  
• Political and Military Leaders (e.g., King Ashoka, Montezuma I, Ghenghis Khan, William the Conqueror)  
• Cultural and Commercial Leaders (e.g., Mansa Musa, Yak Pac, Cheng Ho, Marco Polo)  
• Innovators and Reformers (e.g., Erastostenes, Tupac Inka Yupenqui, Johannes Gutenberg) | **A. Evaluate the significance of individuals and groups who made major political and cultural contributions to world history since 1450.**  
• Political and Military Leaders (e.g., Askia Daud, Simon Bolivar, Napoleon Bonaparte, Mao Zedong)  
• Cultural and Commercial Leaders (e.g., Chinua Achebe, Gabriel Garcia Marquez, Akira Kurosa, Christopher Columbus)  
• Innovators and Reformers (e.g., Nelson Mandela, Louis-Joseph Papineau, Mohandas Gandhi, Alexander Fleming) |

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to analyze cultural, economic, geographic, political and social relations to...
Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to analyze cultural, economic, geographic, political and social relations to...

<table>
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<th>8.4.12. GRADE 12</th>
</tr>
</thead>
</table>
| **B. Identify historic sites and material artifacts important to world history.**  
  - Africa (e.g., Pyramids, treasures of Tutankhamen, Nefertiti’s sculpture)  
  - Americas (e.g., Olmec ritualistic centers, Mayan pyramids, arrowheads)  
  - Asia (e.g., Code of Hammurabi, Ziggurat at Ur, canals)  
  - Europe (e.g., ancient megaliths, Arc de Triomphe, Acropolis) | **B. Identify and explain important documents, material artifacts and historic sites in world history.**  
  - Africa (e.g., Prohibition of Marriages Act, prison on Robben Island)  
  - Americas (e.g., Tenochtitlan, Aztec masks)  
  - Asia (e.g., samurai sword, Commodore Perry’s Black Ships)  
  - Europe (e.g., Luther’s Ninety-Five Theses, Wittenberg Castle Church) | **B. Analyze historical documents, material artifacts and historic sites important to world history before 1500.**  
  - Documents, Writings and Oral Traditions (e.g., Rosetta Stone, Aztec glyph writing, Dead Sea Scrolls, Magna Carta)  
  - Artifacts, Architecture and Historic Places (e.g., Ethiopian rock churches, Mayan pyramids, Nok terra cotta figures, megaliths at Stonehenge)  
  - Historic districts (e.g., Memphis and its Necropolis, Sanctuary of Machu Picchu, Old City of Jerusalem and its Walls, Centre of Rome and the Holy See) | **B. Evaluate historical documents, material artifacts and historic sites important to world history since 1450.**  
  - Documents, Writings and Oral Traditions (e.g., Declaration of the International Conference on Sanctions Against South Africa; Monroe Doctrine, Communist Manifesto, Luther’s Ninety-five Theses)  
  - Artifacts, Architecture and Historic Places (e.g., Robben Island, New York Trade Center, Hiroshima Ground Zero Memorial, Nazi concentration camps)  
  - Historic districts (e.g., Timbuktu, Centre of Mexico City and Xochimilco, Taj Mahal and Gardens, Kremlin and Red Square) |
### 8.4. World History

<table>
<thead>
<tr>
<th>8.4.3. GRADE 3</th>
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<th>8.4.9. GRADE 9</th>
<th>8.4.12. GRADE 12</th>
</tr>
</thead>
</table>
| **C.** Compare similarities and differences between earliest civilizations and life today. (e.g., Africa, Egypt; Asia, Babylonia; Americas, Olmec; Europe, Neolithic settlements). | **C.** Identify and explain how continuity and change has affected belief systems, commerce and industry, innovations, settlement patterns, social organizations, transportation and women’s roles in world history.  
- Africa (e.g., Apartheid)  
- Americas (e.g., European conquest)  
- Asia (e.g., Japanese society prior to the Meiji Restoration)  
- Europe (e.g., Impact of the Great Schism and Reformation) | **C.** Analyze how continuity and change throughout history has impacted belief systems and religions, commerce and industry, innovations, settlement patterns, social organization, transportation and roles of women before 1500.  
- Africa  
- Americas  
- Asia  
- Europe | **C.** Evaluate how continuity and change throughout history has impacted belief systems and religions, commerce and industry, innovations, settlement patterns, social organization, transportation and roles of women since 1450.  
- Africa  
- Americas  
- Asia  
- Europe |

Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to analyze cultural, economic, geographic, political and social relations to...


<table>
<thead>
<tr>
<th>8.4. World History</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>8.4.3. GRADE 3</strong></td>
</tr>
<tr>
<td>D. Identify how conflict and cooperation among social groups and organizations affected world history.</td>
</tr>
<tr>
<td>- Domestic Instability (e.g., political, economic and geographic impact on normal activities)</td>
</tr>
<tr>
<td>- Labor Relations (e.g., working conditions over time)</td>
</tr>
<tr>
<td>- Racial and Ethnic Relations (e.g., treatment of various ethnic and racial groups in history)</td>
</tr>
<tr>
<td>- Immigration and Migration (e.g., diverse groups inhabiting a territory)</td>
</tr>
<tr>
<td>- Military Conflicts (e.g., struggle for control)</td>
</tr>
<tr>
<td><strong>8.4.6. GRADE 6</strong></td>
</tr>
<tr>
<td>D. Explain how conflict and cooperation among social groups and organizations affected world history.</td>
</tr>
<tr>
<td>- Africa (e.g., imperialism)</td>
</tr>
<tr>
<td>- Americas (e.g., European diseases)</td>
</tr>
<tr>
<td>- Asia (e.g., trade routes)</td>
</tr>
<tr>
<td>- Europe (e.g., Counter reformation)</td>
</tr>
<tr>
<td><strong>8.4.9. GRADE 9</strong></td>
</tr>
<tr>
<td>D. Analyze how conflict and cooperation among social groups and organizations impacted world history through 1500 in Africa, Americas, Asia and Europe.</td>
</tr>
<tr>
<td>- Domestic Instability</td>
</tr>
<tr>
<td>- Ethnic and Racial Relations</td>
</tr>
<tr>
<td>- Labor Relations</td>
</tr>
<tr>
<td>- Immigration and Migration</td>
</tr>
<tr>
<td>- Military Conflicts</td>
</tr>
<tr>
<td><strong>8.4.12. GRADE 12</strong></td>
</tr>
<tr>
<td>D. Evaluate how conflict and cooperation among social groups and organizations impacted world history from 1450 to Present in Africa, Americas, Asia and Europe.</td>
</tr>
<tr>
<td>- Domestic Instability</td>
</tr>
<tr>
<td>- Ethnic and Racial Relations</td>
</tr>
<tr>
<td>- Labor Relations</td>
</tr>
<tr>
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</tr>
<tr>
<td>- Military Conflicts</td>
</tr>
</tbody>
</table>

Standard Category 8.1. Historical Analysis and Skills Development should be applied to the above standard statements and descriptors. Suggested chronology in organizing the content for grade levels 7-9 and 10-12 use the 15th century as the dividing point; however, instruction is encouraged that draws on prior and later events in history so that students may develop a seamless view of the world.
Pennsylvania Core Standards for Reading in History and Social Studies

Grades 6-12

INTRODUCTION

These standards describe what students should know and be able to do as they progress through the educational program in history/social studies. Each standard implies an end-of-year goal—with the understanding that exceed-

ing the standard is an even more desirable and goal.

The English Language Arts Standards for History and Social Studies also pro-

vide parents and community members with information about what students

should know and be able to do as they progress through the educational program

and at graduation. With a clearly defined target provided by the standards, par-

ents, students, educators and community members become partners in learning.

The standards below begin at grade 6; standards for K-5 reading in history/

social studies, science, and technical subjects are integrated into the K-5 Reading

standards.

These standards describe what students in the social studies classroom should

know and be able to do with the English Language Arts in reading. Each standard implies an end-of-year goal—with the understanding that exceed-

ing the standard is an even more desirable and goal.
# Reading Informational Text

Students read, understand, and respond to informational text—with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>Key Ideas and Details</th>
<th>GRADE 6-8</th>
<th>GRADE 9-10</th>
<th>GRADE 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CC.8.5.6-8.A.</strong> Cite specific textual evidence to support analysis of primary and secondary sources.</td>
<td><strong>CC.8.5.9-10.A.</strong> Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.</td>
<td><strong>CC.8.5.11-12.A.</strong> Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.</td>
<td></td>
</tr>
<tr>
<td><strong>CC.8.5.6-8.B.</strong> Determine the central ideas or information of a primary or secondary source; provide an accurate summary of the source distinct from prior knowledge or opinions.</td>
<td><strong>CC.8.5.9-10.B.</strong> Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.</td>
<td><strong>CC.8.5.11-12.B.</strong> Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.</td>
<td></td>
</tr>
<tr>
<td><strong>CC.8.5.6-8.C.</strong> Identify key steps in a text’s description of a process related to history/social studies (e.g., how a bill becomes law, how interest rates are raised or lowered).</td>
<td><strong>CC.8.5.9-10.C.</strong> Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them.</td>
<td><strong>CC.8.5.11-12.C.</strong> Evaluate various explanations for actions or events and determine which explanation best accords with textual evidence, acknowledging where the text leaves matters uncertain.</td>
<td></td>
</tr>
</tbody>
</table>
## 8.5 Reading Informational Text
Students read, understand, and respond to informational text—with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>Craft and Structure</th>
<th>GRADE 6-8</th>
<th>GRADE 9-10</th>
<th>GRADE 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.8.5.6-8.D.</td>
<td>Determine the meaning of words and phrases as they are used in a text, including vocabulary specific to domains related to history/social studies.</td>
<td>CC.8.5.9-10.D. Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social science.</td>
<td>CC.8.5.11-12.D. Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines faction in Federalist No. 10).</td>
</tr>
<tr>
<td>CC.8.5.6-8.E.</td>
<td>Describe how a text presents information (e.g., sequentially, comparatively, causally).</td>
<td>CC.8.5.9-10.E. Analyze how a text uses structure to emphasize key points or advance an explanation or analysis.</td>
<td>CC.8.5.11-12.E. Analyze in detail how a complex primary source is structured, including how key sentences, paragraphs, and larger portions of the text contribute to the whole.</td>
</tr>
<tr>
<td>CC.8.5.6-8.F.</td>
<td>Identify aspects of a text that reveal an author’s point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts).</td>
<td>CC.8.5.9-10.F. Compare the point of view of two or more authors for how they treat the same or similar topics, including which details they include and emphasize in their respective accounts.</td>
<td>CC.8.5.11-12.F. Evaluate authors’ differing points of view on the same historical event or issue by assessing the authors’ claims, reasoning, and evidence.</td>
</tr>
</tbody>
</table>
Reading Informational Text
Students read, understand, and respond to informational text—with emphasis on comprehension, making connections among ideas and between texts with focus on textual evidence.

<table>
<thead>
<tr>
<th>GRADE 6-8</th>
<th>GRADE 9-10</th>
<th>GRADE 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Integration of Knowledge and Ideas</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC.8.5.6-8.G. Integrate visual information (e.g., in charts, graphs, photographs, videos, or maps) with other information in print and digital texts.</td>
<td>CC.8.5.9-10.G. Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text.</td>
<td>CC.8.5.11-12.G. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.</td>
</tr>
<tr>
<td>CC.8.5.6-8.H. Distinguish among fact, opinion, and reasoned judgment in a text.</td>
<td>CC.8.5.9-10.H. Assess the extent to which the reasoning and evidence in a text support the author’s claims.</td>
<td>CC.8.5.11-12.H. Evaluate an author’s premises, claims, and evidence by corroborating or challenging them with other information.</td>
</tr>
<tr>
<td>CC.8.5.6-8.I. Analyze the relationship between a primary and secondary source on the same topic.</td>
<td>CC.8.5.9-10.I. Compare and contrast treatments of the same topic in several primary and secondary sources.</td>
<td>CC.8.5.11-12.I. Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.</td>
</tr>
<tr>
<td><strong>Range and Level of Complex Texts</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC.8.5.6-8.J. By the end of grade 8, read and comprehend history/social studies texts in the grades 6-8 text complexity band independently and proficiently.</td>
<td>CC.8.5.9-10.J. By the end of grade 10, read and comprehend history/social studies texts in the grades 9-10 text complexity band independently and proficiently.</td>
<td>CC.8.5.11-12.J. By the end of grade 12, read and comprehend history/social studies texts in the grades 11-CCR text complexity band independently and proficiently.</td>
</tr>
</tbody>
</table>
These standards describe what students in the social studies classroom should know and be able to do as they progress through the educational program. Although the standards provide the targets for instruction and assessment essential for success in all academic areas, not just language arts classrooms, school entities will use them to develop a local school curriculum that will meet local students' needs. Each standard implies an end of year goal—with the understanding that exceed—

The standards below begin at grade 6; standards for K-5 reading in history/social studies, science, and technical subjects are integrated into the K-5 writing standards.

Pennsylvania Core Standards for Writing in History and Social Studies

ACADEMIC STANDARDS AND ASSESSMENTS

Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS

Grades 6-12

4-300.5

(371239) No. 474 May 14

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INTRODUCTION

Pennsylvania Core Standards for Writing in History and Social Studies
8.6 Writing
Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Text Types and Purposes</th>
<th>GRADES 6-8</th>
<th>GRADES 9-10</th>
<th>GRADES 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.8.6.6-8.A. Write arguments focused on discipline-specific content.</td>
<td>CC.8.6.9-10.A. Write arguments focused on discipline-specific content.</td>
<td>CC.8.6.11-12.A. Write arguments focused on discipline-specific content.</td>
<td></td>
</tr>
<tr>
<td>• Introduce claim(s) about a topic or issue, acknowledge and distinguish the claim(s) from alternate or opposing claims, and organize the reasons and evidence logically.</td>
<td>• Introduce precise claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that establishes clear relationships among the claim(s), counterclaims, reasons, and evidence.</td>
<td>• Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence.</td>
<td></td>
</tr>
<tr>
<td>• Support claim(s) with logical reasoning and relevant, accurate data and evidence that demonstrate an understanding of the topic or text, using credible sources.</td>
<td>• Develop claim(s) and counterclaims fairly, supplying data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form and in a manner that anticipates the audience’s knowledge level and concerns.</td>
<td>• Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience’s knowledge level, concerns, values, and possible biases.</td>
<td></td>
</tr>
<tr>
<td>• Use words, phrases, and clauses to create cohesion and clarify the relationships among claim(s), counterclaims, reasons, and evidence.</td>
<td>• Use words, phrases, and clauses to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</td>
<td>• Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims.</td>
<td></td>
</tr>
<tr>
<td>• Establish and maintain a formal style.</td>
<td>• Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</td>
<td>• Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</td>
<td></td>
</tr>
<tr>
<td>• Provide a concluding statement or section that follows from and supports the argument presented.</td>
<td>• Provide a concluding statement or section that follows from or supports the argument presented.</td>
<td>• Provide a concluding statement or section that follows from or supports the argument presented.</td>
<td></td>
</tr>
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### 8.6 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

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<thead>
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<th>GRADES 9-10</th>
<th>GRADES 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.8.6.6-8.B.* Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</td>
<td>CC.8.6.9-10.B.* Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</td>
<td>CC.8.6.11-12.B.* Write informative/explanatory texts, including the narration of historical events, scientific procedures/experiments, or technical processes.</td>
</tr>
<tr>
<td>- Introduce a topic clearly, previewing what is to follow; organize ideas, concepts, and information into broader categories as appropriate to achieving purpose; include formatting (e.g., headings), graphics (e.g., charts, tables), and multimedia when useful to aiding comprehension.</td>
<td>- Introduce a topic and organize ideas, concepts, and information to manage important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</td>
<td>- Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</td>
</tr>
<tr>
<td>- Develop the topic with relevant, well-chosen facts, definitions, concrete details, quotations, or other information and examples.</td>
<td>- Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among ideas and concepts.</td>
<td>- Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic.</td>
</tr>
<tr>
<td>- Use precise language and domain-specific vocabulary to inform about or explain the topic.</td>
<td>- Use precise language and domain-specific vocabulary to manage the complexity of the topic and convey a style appropriate to the discipline and context as well as to the expertise of likely readers.</td>
<td>- Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers.</td>
</tr>
<tr>
<td>- Provide a concluding statement or section that follows from and supports the information or explanation presented.</td>
<td>- Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing.</td>
<td>- Provide a concluding statement or section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).</td>
</tr>
</tbody>
</table>
### 8.6 Writing

Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>GRADES 6-8</th>
<th>GRADES 9-10</th>
<th>GRADES 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.8.6.6-8.C.</td>
<td>CC.8.6.9-10.C.</td>
<td>CC.8.6.11-12.C.</td>
</tr>
<tr>
<td>Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</td>
<td>Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</td>
<td>Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</td>
</tr>
<tr>
<td>With some guidance and support from peers and adults, develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on how well purpose and audience have been addressed.</td>
<td>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</td>
<td>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</td>
</tr>
<tr>
<td>CC.8.6.6-8.E.</td>
<td>CC.8.6.9-10.E.</td>
<td>CC.8.6.11-12.E.</td>
</tr>
<tr>
<td>Use technology, including the Internet, to produce and publish writing and present the relationships between information and ideas clearly and efficiently.</td>
<td>Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically.</td>
<td>Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.</td>
</tr>
<tr>
<td>GRADES 6-8</td>
<td>GRADES 9-10</td>
<td>GRADES 11-12</td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------------------------</td>
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<tr>
<td><strong>Research to Build and Present Knowledge</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CC.8.6.6-8.F.</td>
<td>CC.8.6.9-10.F.</td>
<td>CC.8.6.11-12.F.</td>
</tr>
<tr>
<td>Conduct short research projects to answer a question (including a self-generated question), drawing on several sources and generating additional related, focused questions that allow for multiple avenues of exploration.</td>
<td>Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem: narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</td>
<td>Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation.</td>
</tr>
<tr>
<td>CC.8.6.6-8.G.</td>
<td>CC.8.6.9-10.G.</td>
<td>CC.8.6.11-12.G.</td>
</tr>
<tr>
<td>Gather relevant information from multiple print and digital sources, using search terms effectively; assess the credibility and accuracy of each source; and quote or paraphrase the data and conclusions of others while avoiding plagiarism and following a standard format for citation.</td>
<td>Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the usefulness of each source in answering the research question; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and following a standard format for citation.</td>
<td>Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.</td>
</tr>
<tr>
<td>CC.8.6.6-8.H.</td>
<td>CC.8.6.9-10.H.</td>
<td>CC.8.6.11-12.H.</td>
</tr>
<tr>
<td>Draw evidence from informational texts to support analysis, reflection, and research.</td>
<td>Draw evidence from informational texts to support analysis, reflection, and research.</td>
<td>Draw evidence from informational texts to support analysis, reflection, and research.</td>
</tr>
</tbody>
</table>
8.6 Writing
Students write for different purposes and audiences. Students write clear and focused text to convey a well-defined perspective and appropriate content.

<table>
<thead>
<tr>
<th>Range of Writing</th>
<th>GRADES 6-8</th>
<th>GRADES 9-10</th>
<th>GRADES 11-12</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.8.6.6-8.I. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
<td>CC.8.6.9-10.I. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
<td>CC.8.6.11-12.I. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences.</td>
<td></td>
</tr>
</tbody>
</table>

* Students’ narrative skills continue to grow in these grades. The Standards require that students be able to incorporate narrative elements effectively into arguments and informative/explanatory texts. In history/social studies, students must be able to incorporate narrative accounts into their analyses of individuals or events of historical import. In science and technical subjects, students must be able to write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results.
Artifactual:
Any object made by human work or skill.

Beginnings:
A demarcation of time designating studies to commence with the written historical record.

Central Issue:
The primary concern from which other problems or matters are derived. For example, today's world migration flows are a central issue from which other concerns such as terrorist threats may arise.

Chronology:
The science of measuring time and of dating events. Examples include BCE (before the common era) and CE (common era). Another reference to chronology is CA, around the time, circa.

Conflict:
The opposition of persons or groups that gives rise to dramatic action. Such actions could include the use of force as in combat.

Culture:
The skills and arts of a given people in a given period of time or a civilization.

Document:
Anything written or printed used to record or prove something.

Exemplar:
The introduction of something new; an idea.

Historical Evidence:
Something that makes something else noticeable.

Historical Passage:
An article or section of a longer work that has importance to the past.

Innovation:
The opposition of persons or groups that gives rise to dramatic action. Such actions could include the use of force as in combat.

Interpretation:
Explanation or reply to a situation in order to make sense of it (e.g., a central issue from which other problems or matters are derived). For example, today's world migration flows are a central issue from which other concerns such as terrorist threats may arise.

Memorial:
An object or ceremony serving as a remembrance.

Museum:
A historical display in a building, room, etc. for the demonstration of time designating studies to the current year.

Theoretical:
A primary concern which other problems or issues derive from or are related to. The primary concern from which other matters are derived is the written historical record.
Opinion: A belief based not on certainty but on what seems to be true or probable.

Strike: A work stoppage by employees organized against the management of a business entity.

Time lines: A measure of a period during which something exists or happens, usually displayed in chronological order on a graph or linear lines.

War: A conflict in which two or more nations or two or more entities inside a nation are at odds.

Xenophobia: An intense fear or dislike of groups unknown or not within one’s experience including the group’s customs and culture.

APPENDIX D

Academic Standards for the Arts and Humanities and Health, Safety and Physical Education and Family and Consumer Sciences

Source
The provisions of this Appendix D adopted January 10, 2003, effective January 11, 2003, 33 Pa.B. 255, unless otherwise noted.

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B. Demonstration of Dance, Music, Theatre and Visual Arts
C. Vocabulary within each Art Form
D. Styles in Production, Performance and Exhibition

Historical and Cultural Contexts

A. Context of Works in the Arts
B. Chronology of Works in the Arts
C. Chronologies of Representations and Practice Sessions
D. Styles in Production, Performance and Exhibition
E. Historical and Cultural Production, Performance and Exhibition
F. Historical and Cultural Production, Performance and Exhibition
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Sanctions

C. Varsity and College in the Arts
D. Elementary or Middle School in the Arts
E. Technologies in the Humanities
F. Technologies in the Arts
G. Technologies in the Arts
H. Safety Issues in the Arts
I. Time lines in Art Forms
J. Styles in Production, Performance and Exhibition
K. Technologies in the Humanities
L. Technologies in the Arts

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© 2003 Commonwealth of Pennsylvania
The Academic Standards for the Arts and Humanities describe what students should know and be able to do at the end of grades 3, 5, 8 and 12 in the visual and performing arts and the understanding of humanities content within the arts. The arts include dance, music, theatre and visual arts. The arts and the humanities are interconnected through the inclusion of history, criticism and aesthetics. In addition, the humanities include literature and language, philosophy, social studies and world languages. The areas encompassed in the humanities such as jurisprudence, comparative religions and ethics are included among other standards documents. The interconnected arts and humanities areas are divided into these standards categories:

• Production, Performance and Exhibition of Dance, Music, Theatre and Visual Arts
• Historical and Cultural Contexts
• Critical Response
• Aesthetic Response

The Academic Standards for the Arts and Humanities define the content for planned instruction that will result in measurable gains for all students in knowledge and skills and provide a basis of learning for continued study in the arts.
unifying themes of production, history, criticism and aesthetics are common to each area of study within the Academic Standards in the Arts and Humanities.

• Dance Education is a kinesthetic art form that satisfies the human need to respond to life experiences through movement of the physical being.

• Music Education is an aural art form that satisfies the human need to respond to life experiences through singing, listening and/or playing an instrument.

• Theatre Education is an interdisciplinary art form that satisfies the human need to express thoughts and feelings through written text, dramatic interpretation and multimedia production.

• Visual Arts Education is a spatial art form that satisfies the human need to respond to life experiences through images, structures and tactile works.

• Humanities Education is the understanding and integration of human thought.

Knowledge of the Academic Standards for the Arts and Humanities incorporates carefully developed and integrated components:

• Application of problem-solving skills
• Extensive practice in the comprehension of basic symbol systems and abstract concepts
• Application of technical skills in practical production and performance
• Development of verbal and nonverbal communication skills
• Understanding and integration of human thought
• Response to the experiences through imagery, rhetoric and aesthetic works
• Visual Arts Education is a spatial art form that satisfies the human need to respond to life experiences through movement of the physical being.
• Response to the experiences through imagery, rhetoric and aesthetic works
• Dance Education is a kinesthetic art form that satisfies the human need to respond to life experiences through movement of the physical being.

The arts represent society's capacity to integrate human experience with intellectual pursuits. School curricula that will meet these needs provide the knowledge essential for success in student learning in the arts and humanities. The Academic Standards for the Arts and Humanities describe the expectations for students' achievement and performance throughout their education in Pennsylvania schools. Utilizing these standards, school districts can develop a local school curriculum that will integrate the arts and humanities into their educational programs.

A glossary is included to assist the reader in understanding terminology contained in the standards.
9.1. Production, Performance and Exhibition of Dance, Music, Theatre and Visual Arts

<table>
<thead>
<tr>
<th>9.1.3. GRADE 3</th>
<th>9.1.5. GRADE 5</th>
<th>9.1.8. GRADE 8</th>
<th>9.1.12. GRADE 12</th>
</tr>
</thead>
</table>

Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

A. Know and use the elements and principles of each art form to create works in the arts and humanities.
   - **Elements**
     - Dance: • energy/force • space • time
     - Music: • duration • intensity • pitch • timbre
     - Theatre: • scenario • script/text • set design
     - Visual Arts: • color • form/shape • line • space • texture • value
   - **Principles**
     - Dance: • choreography • form • genre • improvisation • style • technique
     - Music: • composition • form • genre • harmony • rhythm • texture
     - Theatre: • balance • collaboration • discipline • emphasis • focus • intention • movement • rhythm • style
     - Visual Arts: • balance • contrast • emphasis/focal point • movement/rhythm • proportion/scale • repetition
     - unity/harmony

B. Recognize, know, use and demonstrate a variety of appropriate arts elements and principles to produce, review and revise original works in the arts.
   - Dance: • move • perform • read and notate dance • create and choreograph • improvise
   - Music: • sing • play an instrument • read and notate music • compose and arrange • improvise
   - Theatre: • stage productions • read and write scripts • improvise • interpret a role • design sets • direct
   - Visual Arts: • paint • draw • craft • sculpt • print • design for environment, communication, multi-media

C. Recognize and use fundamental vocabulary within each of the arts forms.
C. Know and use fundamental vocabulary within each of the arts forms.
C. Identify and use comprehensive vocabulary within each of the arts forms.
C. Integrate and apply advanced vocabulary to the arts forms.
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9.1. Production, Performance and Exhibition of Dance, Music, Theatre and Visual Arts
9.1.3. GRADE 3

9.1.5. GRADE 5

9.1.8. GRADE 8

9.1.12. GRADE 12

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the
knowledge and skills needed to:
D. Describe and use knowledge of a D. Demonstrate knowledge of at
specific style within each art
least two styles within each art
form through a performance or
form through performance or
exhibition of a unique work.
exhibition of unique works.

D. Demonstrate specific styles in
combination through the
production or performance of a
unique work of art (e.g., a dance
composition that combines jazz
dance and African dance).

E. Demonstrate the ability to define
objects, express emotions,
illustrate an action or relate an
experience through creation of
works in the arts.

E. Know and demonstrate how arts
can communicate experiences,
stories or emotions through the
production of works in the arts.

E. Delineate a unifying theme
through the production of a work
of art that reflects skills in media
processes and techniques.

E. Communicate a unifying theme
or point of view through the
production of works in the arts.

G. Recognize the function of
rehearsals and practice sessions.

F. Analyze works of arts influenced
by experiences or historical and
cultural events through
production, performance or
exhibition.

G. Identify the function and benefits G. Explain the function and benefits G. Analyze the effect of rehearsal
of rehearsal and practice
of rehearsal and practice
and practice sessions.
sessions.
sessions.

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F. Identify works of others through a F. Describe works of others through F. Explain works of others within
performance or exhibition (e.g.,
performance or exhibition in two
each art form through
exhibition of student paintings
art forms.
performance or exhibition.
based on the study of Picasso).

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D. Use knowledge of varied styles
within each art form through a
performance or exhibition of
unique work.


<table>
<thead>
<tr>
<th>Grade Level</th>
<th>Standards</th>
</tr>
</thead>
</table>
| 3           | Handle materials, equipment and tools safely at work and performance spaces.  
• Identify materials used.  
• Identify issues of cleanliness related to the arts.  
• Recognize some mechanical/electrical equipment.  
• Recognize differences in selected physical space/environments.  
• Recognize the need to select safe props/stage equipment.  
• Identify methods for storing materials in the arts. |
| 5           | Use and maintain materials, equipment and tools safely at work and performance spaces.  
• Describe some materials used.  
• Describe issues of cleanliness related to the arts.  
• Describe types of mechanical/electrical equipment usage.  
• Know how to work in selected physical space/environments.  
• Identify the qualities of safe props/stage equipment.  
• Describe methods for storing materials in the arts. |
| 8           | Demonstrate and maintain materials, equipment and tools safely at work and performance spaces.  
• Analyze the use of materials.  
• Explain issues of cleanliness related to the arts.  
• Explain the use of mechanical/electrical equipment.  
• Demonstrate how to work in selected physical space/environment.  
• Demonstrate the selection of safe props/stage equipment.  
• Demonstrate methods for storing materials in the arts. |
| 12          | Incorporate the effective and safe use of materials, equipment and tools into the production of works in the arts at work and performance spaces.  
• Evaluate the use and applications of materials.  
• Evaluate issues of neatness related to the arts.  
• Evaluate the use and applications of mechanical/electrical equipment.  
• Evaluate differences among selected physical space/environment.  
• Evaluate the use and apply safe methods for storing materials in the arts. |

Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

- H. Handle materials, equipment and tools safely at work and performance spaces.
- I. Identify arts events that take place in schools and in communities.
- H. Use and maintain materials, equipment and tools safely at work and performance spaces.
- I. Describe arts events that take place in schools and in communities.
- H. Demonstrate and maintain materials, equipment and tools safely at work and performance spaces.
- I. Know where arts events, performances and exhibitions occur and how to gain admission.
- H. Incorporate the effective and safe use of materials, equipment and tools into the production of works in the arts at work and performance spaces.
- I. Distinguish among a variety of regional arts events and resources and analyze methods of selection and admission.
<table>
<thead>
<tr>
<th>Grade 3</th>
<th>Grade 5</th>
<th>Grade 8</th>
<th>Grade 12</th>
</tr>
</thead>
</table>
| J. Know and use traditional and contemporary technologies for producing, performing and exhibiting works in the arts or the works of others.  
  • Know and use traditional technologies (e.g., charcoal, pigments, clay, needle/thread, quill pens, stencils, tools for wood carving, looms, stage equipment).  
  • Know and use contemporary technologies (e.g., CDs/software, audio/sound equipment, polymers, clays, board-mixers, photographs, recorders). | J. Apply traditional and contemporary technologies for producing, performing and exhibiting works in the arts or the works of others.  
  • Experiment with traditional technologies (e.g., ceramic/wooden tools, earthen clays, masks, instruments, folk shoes, etching tools, folk looms).  
  • Experiment with contemporary technologies (e.g., color fills on computers, texture methods on computers, fonts/point systems, animation techniques, video teleconferencing, multimedia techniques, internet access, library computer card catalogues). | J. Incorporate specific uses of traditional and contemporary technologies within the design for producing, performing and exhibiting works in the arts or the works of others.  
  • Explain and demonstrate traditional technologies (e.g., paint, tools, sponges, weaving designs, instruments, natural pigments/glazes).  
  • Explain and demonstrate contemporary technologies (e.g., MIDI keyboards, internet design, computers, interactive technologies, audio/sound equipment, board-mixer, video equipment, computerized lighting design). | J. Analyze and evaluate the use of traditional and contemporary technologies for producing, performing and exhibiting works in the arts or the works of others.  
  • Analyze traditional technologies (e.g., acid printing, etching methods, musical instruments, costume materials, eight track recording, super 8 movies).  
  • Analyze contemporary technologies (e.g., virtual reality design, instrument enhancements, photographic tools, broadcast equipment, film cameras, preservation tools, web graphics, computer generated marching band designs). |
| K. Know and use traditional and contemporary technologies for furthering knowledge and understanding in the humanities. | K. Apply traditional and contemporary technology in furthering knowledge and understanding in the humanities. | K. Incorporate specific uses of traditional and contemporary technologies in furthering knowledge and understanding in the humanities. | K. Analyze and evaluate the use of traditional and contemporary technologies in furthering knowledge and understanding in the humanities. |
## 9.2. Historical and Cultural Contexts

<table>
<thead>
<tr>
<th>9.2.3. GRADE 3</th>
<th>9.2.5. GRADE 5</th>
<th>9.2.8. GRADE 8</th>
<th>9.2.12. GRADE 12</th>
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</thead>
</table>

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to identify, compare, contrast and analyze works in the arts in their historical and cultural context appropriate for each grade level in concert with districts’ social studies, literature and language standards.

A. Explain the historical, cultural and social context of an individual work in the arts.

B. Relate works in the arts chronologically to historical events (e.g., 10,000 B.C. to present).

C. Relate works in the arts to varying styles and genre and to the periods in which they were created (e.g., Bronze Age, Ming Dynasty, Renaissance, Classical, Modern, Post-Modern, Contemporary, Futuristic, others).

D. Analyze a work of art from its historical and cultural perspective.

E. Analyze how historical events and culture impact forms, techniques and purposes of works in the arts (e.g., Gilbert and Sullivan operettas).

F. Know and apply appropriate vocabulary used between social studies and the arts and humanities.

G. Relate works in the arts to geographic regions:
   - Africa
   - Asia
   - Australia
   - Central America
   - Europe
   - North America
   - South America

H. Identify, describe and analyze the work of Pennsylvania Artists in dance, music, theatre and visual arts.

I. Identify, explain and analyze philosophical beliefs as they relate to works in the arts (e.g., classical architecture, rock music, Native American dance, contemporary American musical theatre).
Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to identify, compare, contrast and analyze works in the arts in their historical and cultural context appropriate for each grade level in concert with districts’ social studies, literature and language standards.

<table>
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<th>9.2.3. GRADE 3</th>
<th>9.2.5. GRADE 5</th>
<th>9.2.8. GRADE 8</th>
<th>9.2.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>J.</td>
<td>Identify, explain and analyze historical and cultural differences as they relate to works in the arts (e.g., plays by Shakespeare, works by Michelangelo, ethnic dance and music).</td>
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<tr>
<td>K.</td>
<td>Identify, explain and analyze traditions as they relate to works in the arts (e.g., story telling—plays, oral histories—poetry, work songs—blue grass).</td>
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<tr>
<td>L.</td>
<td>Identify, explain and analyze common themes, forms and techniques from works in the arts (e.g., Copland and Graham’s <em>Appalachian Spring</em> and Millet’s <em>The Gleaners</em>).</td>
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<tr>
<td>9.3.3. GRADE 3</td>
<td>9.3.5. GRADE 5</td>
<td>9.3.8. GRADE 8</td>
<td>9.3.12. GRADE 12</td>
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</tbody>
</table>
| **A.** Identify critical processes in the examination of works in the arts and humanities.  
• Compare and contrast  
• Analyze  
• Interpret  
• Form and test hypotheses  
• Evaluate/form judgments | **A.** Identify critical processes in the examination of works in the arts and humanities.  
• Compare and contrast  
• Analyze  
• Interpret  
• Form and test hypotheses  
• Evaluate/form judgments | **A.** Know and use the critical process of the examination of works in the arts and humanities.  
• Compare and contrast  
• Analyze  
• Interpret  
• Form and test hypotheses  
• Evaluate/form judgments | **A.** Explain and apply the critical examination processes of works in the arts and humanities.  
• Compare and contrast  
• Analyze  
• Interpret  
• Form and test hypotheses  
• Evaluate/form judgments |
| **B.** Describe works in the arts comparing similar and contrasting characteristics (e.g., staccato in Grieg’s *In the Hall of the Mountain King* and in tap dance). | **B.** Describe works in the arts comparing similar and contrasting characteristics (e.g., staccato in Grieg’s *In the Hall of the Mountain King* and in tap dance). | **B.** Analyze and interpret specific characteristics of works in the arts within each art form (e.g., pentatonic scales in Korean and Indonesian music). | **B.** Determine and apply criteria to a person’s work and works of others in the arts (e.g., use visual scanning techniques to critique the student’s own use of sculptural space in comparison to Julio Gonzales’ use of space in *Woman Combing Her Hair*). |
| **C.** Classify works in the arts by forms in which they are found (e.g., farce, architecture, graphic design). | **C.** Classify works in the arts by forms in which they are found (e.g., farce, architecture, graphic design). | **C.** Identify and classify styles, forms, types and genre within art forms (e.g., modern dance and the ethnic dance, a ballad and a patriotic song). | **C.** Apply systems of classification for interpreting works in the arts and forming a critical response. |

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:
## 9.3. Critical Response

<table>
<thead>
<tr>
<th>9.3.3. GRADE 3</th>
<th>9.3.5. GRADE 5</th>
<th>9.3.8. GRADE 8</th>
<th>9.3.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:</strong></td>
<td><strong>D.</strong> Explain meanings in the arts and humanities through individual works and the works of others using a fundamental vocabulary of critical response.</td>
<td><strong>D.</strong> Compare similar and contrasting important aspects of works in the arts and humanities based on a set of guidelines using a comprehensive vocabulary of critical response.</td>
<td><strong>D.</strong> Evaluate works in the arts and humanities using a complex vocabulary of critical response.</td>
</tr>
<tr>
<td><strong>E.</strong> Recognize and identify types of critical analysis in the arts and humanities.</td>
<td><strong>E.</strong> Describe and use types of critical analysis in the arts and humanities.</td>
<td><strong>E.</strong> Interpret and use various types of critical analysis in the arts and humanities.</td>
<td><strong>E.</strong> Examine and evaluate various types of critical analysis of works in the arts and humanities.</td>
</tr>
<tr>
<td>• Contextual criticism</td>
<td>• Contextual criticism</td>
<td>• Contextual criticism</td>
<td>• Contextual criticism</td>
</tr>
<tr>
<td>• Formal criticism</td>
<td>• Formal criticism</td>
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<td>• Formal criticism</td>
</tr>
<tr>
<td>• Intuitive criticism</td>
<td>• Intuitive criticism</td>
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<td>• Intuitive criticism</td>
</tr>
<tr>
<td><strong>F.</strong> Know how to recognize and identify similar and different characteristics among works in the arts (e.g., Amish and Hawaiian quilts, Navaho weavings and Kente cloth from West Africa).</td>
<td><strong>F.</strong> Know how to recognize the process of criticism in identifying and analyzing characteristics among works in the arts.</td>
<td><strong>F.</strong> Apply the process of criticism to identify characteristics among works in the arts.</td>
<td><strong>F.</strong> Analyze the processes of criticism used to compare the meanings of a work in the arts in both its own and present time.</td>
</tr>
</tbody>
</table>
### Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>G. Know and demonstrate what a critic’s position or opinion is related to works in the arts and humanities (e.g., I like patriotic songs because ...; The movie was enjoyed for its exceptional special effects).</td>
</tr>
<tr>
<td>5</td>
<td>G. Describe a critic’s position or opinion about selected works in the arts and humanities (e.g., student’s presentation of a critical position on Walt Disney’s <em>Evolution of Mickey and Minnie Mouse</em>).</td>
</tr>
<tr>
<td>8</td>
<td>G. Compare and contrast critical positions or opinions about selected works in the arts and humanities (e.g., critic’s review and comparison of Alvin Ailey’s <em>Revelations</em> to Tchaikovsky’s <em>Swan Lake</em>).</td>
</tr>
<tr>
<td>12</td>
<td>G. Analyze works in the arts by referencing the judgments advanced by arts critics as well as one’s own analysis and critique.</td>
</tr>
<tr>
<td>Grade</td>
<td>Objectives</td>
</tr>
<tr>
<td>-------</td>
<td>-----------</td>
</tr>
<tr>
<td>3rd</td>
<td>A. Know how to respond to a philosophical statement about works in the arts and humanities (e.g., “Can artworks that depict or are about ugly or unpleasant things ever be beautiful?”)</td>
</tr>
<tr>
<td>5th</td>
<td>B. Know how to communicate an informed individual opinion about the meaning of works in the arts (e.g., works of an artist of the month)</td>
</tr>
<tr>
<td>8th</td>
<td>C. Recognize that the environment of the observer influences individual aesthetic responses to works in the arts (e.g., the effect of live music as opposed to listening to the same piece on a car radio)</td>
</tr>
<tr>
<td>12th</td>
<td>A. Compare and contrast examples of group and individual philosophical meanings of works in the arts and humanities (e.g., group discussions on musical theatre versus the individual’s concept of musical theatre)</td>
</tr>
<tr>
<td></td>
<td>B. Describe how the attributes of the environment influence aesthetic responses (e.g., the ambiance of the theatre in a performance of Andrew Lloyd Weber’s <em>Cats</em>)</td>
</tr>
<tr>
<td></td>
<td>C. Compare and contrast the attributes of various audiences’ environments as they influence individual aesthetic response (e.g., viewing traditional Irish dance at county fair versus the performance of River Dance in a concert hall)</td>
</tr>
</tbody>
</table>
9.4. Aesthetic Response

<table>
<thead>
<tr>
<th>9.4.3. GRADE 3</th>
<th>9.4.5. GRADE 5</th>
<th>9.4.8. GRADE 8</th>
<th>9.4.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. Recognize that choices made by artists regarding subject matter and themes communicate ideas through works in the arts and humanities (e.g., artist’s interpretation through the use of classical ballet of the American West in Agnes De Mille’s <em>Rodeo</em>).</td>
<td>D. Explain choices made regarding media, technique, form, subject matter and themes that communicate the artist’s philosophy within a work in the arts and humanities (e.g., selection of stage lighting in Leonard Bernstein’s <em>West Side Story</em> to communicate mood).</td>
<td>D. Describe to what purpose philosophical ideas generated by artists can be conveyed through works in the arts and humanities (e.g., T. Ganson’s <em>Destructive Periods in Russia During Stalin’s and Deniken’s Leadership</em> conveys her memories and emotions of a specific incident).</td>
<td>D. Analyze and interpret a philosophical position identified in works in the arts and humanities.</td>
</tr>
</tbody>
</table>

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:
XXII. GLOSSARY

Aesthetics: A branch of philosophy that focuses on the nature of beauty, the nature and value of the arts and the inquiry processes and human responses they produce.

Aesthetic criteria: Standards on which to make judgments about the artistic merit of a work of art, derived from cultural, emotional, political, and cognitive meaning to the development and reception of sociocultural, historical, political, and economic influences and give a set of interpretational background conditions.

Aesthetic response: A philosophical reply to works in the arts.

Artistic choices: Selections made by artists in order to convey meaning.

Assess: To analyze and determine the nature and quality of the process/product through means appropriate to the art form.

Arts resource: An outside community asset (e.g., performers, exhibitions, performances, artists).

Assess: To analyze and determine the nature and quality of the process/product through means appropriate to the art form.

Create: To produce works in the arts using materials, techniques, processes, elements, principles and cultural and social contexts.

Contextual criticism: Discussion and evaluation with consideration of factors surrounding the origin and heritage of works in the arts.

Critical analysis: The process of examining and discussing the effective uses of specific aspects of works in the arts.

Context: A group of people who share a common social, historical, regional or cultural heritage.

Create: To produce works in the arts using materials, techniques, processes, elements, principles and cultural and social contexts.

Contemporary technology: Tools, machines or implements emerging and used today for the practice or production of works in the arts.

Community: A group of people who share a common social, historical, regional or cultural heritage.

Contemporary technology: Tools, machines or implements emerging and used today for the practice or production of works in the arts.

Assess: To analyze and determine the nature and quality of the process/product through means appropriate to the art form.

Arts resource: An outside community asset (e.g., performers, exhibitions, performances, artists).

Aesthetic response: A philosophical reply to works in the arts.

Aesthetic criteria: Standards on which to make judgments about the artistic merit of a work of art, derived from cultural, emotional, political, and economic influences and give a set of interpretational background conditions.

Aesthetics: A branch of philosophy that focuses on the nature of beauty, the nature and value of the arts and the inquiry processes and human responses they produce.
Formal Criticism: Discussion and evaluation of the elements and principles essential to works in the arts and humanities.

Intuitive Criticism: Discussion and evaluation of one's subjective insight to works in the arts and humanities.

Critical process: The use of sequential examination through comparison, analysis, interpretation, formation, and testing of hypothesis and evaluation to form judgments.

Critical response: The act or process of describing and evaluating the media, processes and meanings of works in the arts and making comparative judgments.

Culture: The way of life of a group of people, including customs, beliefs, arts, institutions, and worldview. Culture is acquired through many means and is always changing.

Elements: Core components that support the principles of the arts.

Genre: A type or category (e.g., music—opera, oratorio; theater—tragedy, comedy; dance—modern, ballet; visual arts—pastoral, scenes of everyday life).

Improvisation: Spontaneous creation requiring focus and concentration.

MIDI keyboard: (Musical Instrument Digital Interface) A piece of equipment that interacts with a computer that uses a MIDI language setup to notate and play music.

Multimedia: The combined use of media such as movies, CD-ROMs, television, radio, print and the Internet.

Original works in the arts: Dance, music, theatre, and visual arts pieces created by performing or visual artists.

Culture is acquired through many means and is always changing. Culture includes the customs, beliefs, arts, institutions, and worldview of a group of people. The way of life of a group of people is culture. The way of life of a group of people is culture.

The act of describing and evaluating the meanings of works in the arts and humanities.

Discussion and evaluation of one's subjective insight to works in the arts and humanities.

Discussion and evaluation of the elements and principles essential to works in the arts and humanities.

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Discussion and evaluation of the elements and principles essential to works in the arts and humanities.
Academic Standards for Health, Safety and Physical Education

Concepts of Health
A. Stages of Growth and Development
B. Interaction of Body Systems
C. Nutrition
D. Alcohol, Tobacco and Chemical Substances
E. Health Problems and Disease Prevention

Healthful Living
A. Health Practices, Products and Services
B. Health Information and Consumer Choices
C. Health Information and the Media
D. Decision-making Skills
E. Health Problems and Disease Prevention

Safety and Injury Prevention
A. Health and the Environment
B. Health Information and Consumer Choices
C. Health Information and the Media
D. Alcohol, Tobacco and Chemical Substances

Vocubulary:

Traditional Technology:

Timbre:

Style:

Principles:

Essential assumptions, basic or essential qualities determining intrinsic characteristics.

A distinctive or characteristic manner of expression.

Specific skills and details employed by an artist, craftsperson or performer in the production of works in the arts.

A unique quality of sound.

A distinctive characteristic manner of determining intrinsic characteristics.

Vocabulary:

Academic Standards for Health, Safety and Physical Education

and advanced—grade 12.

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Academic Standards for Health, Safety and Physical Education

and advanced—grade 12.
This document includes Academic Standards for Health, Safety, and Physical Education in these categories:

10.1 Concepts of Health
10.2 Healthful Living
10.3 Safety and Injury Prevention
10.4 Physical Activity
10.5 Concepts, Principles, and Strategies of Movement

The Academic Standards for Health, Safety, and Physical Education detail what students should know and be able to do by the end of third, sixth, ninth, and twelfth grade. The standards are sequential across the grade levels and reflect the increasing complexity and rigor that students are expected to achieve. The standards define the content for planned instruction that will result in measurable gains for all students in knowledge and skill. School entities will use these standards to develop local school curriculum and assessments that meet the needs of all students in K-12 education. The standards are essential across the grade levels and reflect the increasing complexity and rigor expected of students as they progress. The academic standards provide a framework for local school curriculum and assessments that meet the needs of all students in K-12 education. The standards are essential for all students in achieving the desired outcomes for planned instruction that will result in measurable gains for all students in knowledge and skill. School entities will use these academic standards to develop local school curriculum and assessments that meet the needs of all students in K-12 education. The standards are essential for all students in achieving the desired outcomes for planned instruction that will result in measurable gains for all students in knowledge and skill. School entities will use these academic standards to develop local school curriculum and assessments that meet the needs of all students in K-12 education. The standards are essential for all students in achieving the desired outcomes for planned instruction that will result in measurable gains for all students in knowledge and skill. 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CH. 4 ACADEMIC STANDARDS AND ASSESSMENTS
22

Academic Standards and Assessments
The Academic Standards for Health, Safety and Physical Education provide parents with specific information about the knowledge and skills students should be developing as they progress through their educational programs. With the standards serving as clearly defined targets, parents, students, teachers and community members will be able to become partners in helping children achieve educational success.

A glossary is included to assist the reader in understanding terminology contained in the standards.
Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

<table>
<thead>
<tr>
<th>A. Identify and describe the stages of growth and development.</th>
<th>A. Describe growth and development changes that occur between childhood and adolescence and identify factors that can influence these changes.</th>
<th>A. Analyze factors that impact growth and development between adolescence and adulthood.</th>
<th>A. Evaluate factors that impact growth and development during adulthood and late adulthood.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• infancy</td>
<td>• education</td>
<td>• relationships (e.g., dating, friendships, peer pressure)</td>
<td>• acute and chronic illness</td>
</tr>
<tr>
<td>• childhood</td>
<td>• socioeconomic</td>
<td>• interpersonal communication</td>
<td>• communicable and non-communicable disease</td>
</tr>
<tr>
<td>• adolescence</td>
<td>• risk factors (e.g., physical inactivity, substance abuse, intentional/unintentional injuries, dietary patterns)</td>
<td>• abstinence</td>
<td>• health status</td>
</tr>
<tr>
<td>• adulthood</td>
<td>• abstinence</td>
<td>• STD and HIV prevention</td>
<td>• relationships (e.g., marriage, divorce, loss)</td>
</tr>
<tr>
<td>• late adulthood</td>
<td>• community</td>
<td></td>
<td>• career choice</td>
</tr>
</tbody>
</table>

B. Identify and know the location and function of the major body organs and systems.
- circulatory
- respiratory
- muscular
- skeletal
- digestive

B. Identify and describe the structure and function of the major body systems.
- nervous
- muscular
- integumentary
- urinary
- endocrine
- reproductive
- immune

B. Analyze the interdependence existing among the body systems.

B. Evaluate factors that impact the body systems and apply protective/preventive strategies.
- fitness level
- environment (e.g., pollutants, available health care)
- health status (e.g., physical, mental, social)
- nutrition
10.1. Concepts of Health

<table>
<thead>
<tr>
<th>10.1.3. GRADE 3</th>
<th>10.1.6. GRADE 6</th>
<th>10.1.9. GRADE 9</th>
<th>10.1.12. GRADE 12</th>
</tr>
</thead>
</table>

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

C. Explain the role of the food guide pyramid in helping people eat a healthy diet.
   - food groups
   - number of servings
   - variety of food
   - nutrients

C. Analyze nutritional concepts that impact health.
   - caloric content of foods
   - relationship of food intake and physical activity (energy output)
   - nutrient requirements
   - label reading
   - healthful food selection

C. Analyze factors that impact nutritional choices of adolescents.
   - body image
   - advertising
   - dietary guidelines
   - eating disorders
   - peer influence
   - athletic goals

C. Analyze factors that impact nutritional choices of adults.
   - cost
   - food preparation (e.g., time, skills)
   - consumer skills (e.g., understanding food labels, evaluating fads)
   - nutritional knowledge
   - changes in nutritional requirements (e.g., age, physical activity level)

D. Know age appropriate drug information.
   - definition of drugs
   - effects of drugs
   - proper use of medicine
   - healthy/unhealthy risk-taking (e.g., inhalant use, smoking)
   - skills to avoid drugs

D. Explain factors that influence childhood and adolescent drug use.
   - peer influence
   - body image (e.g., steroids, enhancers)
   - social acceptance
   - stress
   - media influence
   - decision-making/refusal skills
   - rules, regulations and laws
   - consequences

D. Analyze prevention and intervention strategies in relation to adolescent and adult drug use.
   - decision-making/refusal skills
   - situation avoidance
   - goal setting
   - professional assistance (e.g., medical, counseling, support groups)
   - parent involvement

D. Evaluate issues relating to the use/non-use of drugs.
   - psychology of addiction
   - social impact (e.g., cost, relationships)
   - chemical use and fetal development
   - laws relating to alcohol, tobacco and chemical substances
   - impact on the individual
   - impact on the community
<table>
<thead>
<tr>
<th>Concepts of Health</th>
<th>10.1.3. GRADE 3</th>
<th>10.1.6. GRADE 6</th>
<th>10.1.9. GRADE 9</th>
<th>10.1.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. Identify types and causes of common health problems of children.</td>
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<tr>
<td>- infectious diseases (e.g., colds, flu, chickenpox)</td>
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<tr>
<td>- noninfectious diseases (e.g., asthma, hay fever, allergies, lyme disease)</td>
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<tr>
<td>- germs</td>
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<td>- pathogens</td>
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<tr>
<td>- heredity</td>
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<tr>
<td>E. Identify health problems that can occur throughout life and describe ways to prevent them.</td>
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<tr>
<td>- Diseases (e.g., cancer, diabetes, STD/HIV/AIDS, cardiovascular disease)</td>
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<tr>
<td>- Preventions (i.e. do not smoke, maintain proper weight, eat a balanced diet, practice sexual abstinence, be physically active)</td>
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<tr>
<td>E. Analyze how personal choice, disease and genetics can impact health maintenance and disease prevention.</td>
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<tr>
<td>E. Identify and analyze factors that influence the prevention and control of health problems.</td>
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<tr>
<td>- research</td>
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</tr>
<tr>
<td>- medical advances</td>
<td></td>
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<tr>
<td>- technology</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>- government policies/regulations</td>
<td></td>
<td></td>
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<tr>
<td>10.2.3. GRADE 3</td>
<td>10.2.6. GRADE 6</td>
<td>10.2.9. GRADE 9</td>
<td>10.2.12. GRADE 12</td>
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</tbody>
</table>
| A. Identify personal hygiene practices and community helpers that promote health and prevent the spread of disease. | B. Explain the relationship between personal health practices and individual well-being.  
• immunizations  
• health examinations | A. Identify and describe health care products and services that impact adolescent health practices. | A. Evaluate health care products and services that impact adult health practices. |
| B. Identify health-related information.  
• signs and symbols  
• terminology  
• products and services | B. Explain the relationship between health-related information and consumer choices.  
• dietary guidelines/food selection  
• sun exposure guidelines/sunscreen selection | B. Analyze the relationship between health-related information and adolescent consumer choices.  
• tobacco products  
• weight control products | B. Assess factors that impact adult health consumer choices.  
• access to health information  
• access to health care  
• cost  
• safety |
| C. Identify media sources that influence health and safety. | C. Explain the media’s effect on health and safety issues. | C. Analyze media health and safety messages and describe their impact on personal health and safety. | C. Compare and contrast the positive and negative effects of the media on adult personal health and safety. |
Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>3rd</td>
<td>D. Identify the steps in a decision making process.</td>
</tr>
<tr>
<td>6th</td>
<td>D. Describe and apply the steps of a decision making process to health and safety issues.</td>
</tr>
<tr>
<td>9th</td>
<td>D. Analyze and apply a decision making process to adolescent health and safety issues.</td>
</tr>
<tr>
<td>12th</td>
<td>D. Examine and apply a decision making process to the development of short and long-term health goals.</td>
</tr>
<tr>
<td></td>
<td>E. Identify environmental factors that affect health.</td>
</tr>
<tr>
<td></td>
<td>• pollution (e.g., air, water, noise, soil)</td>
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<tr>
<td></td>
<td>• waste disposal</td>
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<td></td>
<td>• temperature extremes</td>
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<td></td>
<td>• insects/animals</td>
</tr>
<tr>
<td></td>
<td>E. Analyze environmental factors that impact health.</td>
</tr>
<tr>
<td></td>
<td>• indoor air quality (e.g., second-hand smoke, allergens)</td>
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<td></td>
<td>• chemicals, metals, gases (e.g., lead, radon, carbon monoxide)</td>
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<td></td>
<td>• radiation</td>
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<td></td>
<td>• natural disasters</td>
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<td></td>
<td>E. Explain the interrelationship between the environment and personal health.</td>
</tr>
<tr>
<td></td>
<td>• ozone layer/skin cancer</td>
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<td></td>
<td>• availability of health care/individual health</td>
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<td></td>
<td>• air pollution/respiratory disease</td>
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<td></td>
<td>• breeding environments/lyme disease/West Nile virus</td>
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<tr>
<td></td>
<td>E. Analyze the interrelationship between environmental factors and community health.</td>
</tr>
<tr>
<td></td>
<td>• public health policies and laws/health promotion and disease prevention</td>
</tr>
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<td></td>
<td>• individual choices/maintenance of environment</td>
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<td></td>
<td>• recreational opportunities/health status</td>
</tr>
</tbody>
</table>
### 10.3. Safety and Injury Prevention

<table>
<thead>
<tr>
<th>10.3.3. GRADE 3</th>
<th>10.3.6 GRADE 6</th>
<th>10.3.9. GRADE 9</th>
<th>10.3.12. GRADE 12</th>
</tr>
</thead>
</table>

**Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:**

<table>
<thead>
<tr>
<th>A. Recognize safe/unsafe practices in the home, school and community.</th>
<th>A. Explain and apply safe practices in the home, school and community.</th>
<th>A. Analyze the role of individual responsibility for safe practices and injury prevention in the home, school and community.</th>
<th>A. Assess the personal and legal consequences of unsafe practices in the home, school or community.</th>
</tr>
</thead>
<tbody>
<tr>
<td>• general (e.g., fire, electrical, animals)</td>
<td>• emergencies (e.g., fire, natural disasters)</td>
<td>• modes of transportation (e.g., pedestrian, bicycle, vehicular, passenger, farm vehicle, all-terrain vehicle)</td>
<td>• loss of personal freedom</td>
</tr>
<tr>
<td>• modes of transportation (e.g., pedestrian, bicycle, vehicular)</td>
<td>• personal safety (e.g., home alone, latch key, harassment)</td>
<td>• violence prevention in school</td>
<td>• personal injury</td>
</tr>
<tr>
<td>• outdoor (e.g., play, weather, water)</td>
<td>• communication (e.g., telephone, Internet)</td>
<td>• self-protection in the home</td>
<td>• loss of income</td>
</tr>
<tr>
<td>• safe around people (e.g., safe/unsafe touch, abuse, stranger, bully)</td>
<td>• violence prevention (e.g., gangs, weapons)</td>
<td>• self-protection in public places</td>
<td>• impact on others</td>
</tr>
<tr>
<td>B. Recognize emergency situations and explain appropriate responses.</td>
<td>B. Know and apply appropriate emergency responses.</td>
<td>B. Describe and apply strategies for emergency and long-term management of injuries.</td>
<td>• loss of motor vehicle operator’s license</td>
</tr>
<tr>
<td>• importance of remaining calm</td>
<td>• basic first aid</td>
<td>• rescue breathing</td>
<td>B. Analyze and apply strategies for the management of injuries.</td>
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<tr>
<td>• how to call for help</td>
<td>• Heimlich maneuver</td>
<td>• water rescue</td>
<td>• CPR</td>
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<tr>
<td>• simple assistance procedures</td>
<td>• universal precautions</td>
<td>• self-care</td>
<td>• advanced first aid</td>
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<tr>
<td>• how to protect self</td>
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<td>• sport injuries</td>
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<tr>
<td>Grade</td>
<td>Standards</td>
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<td>10.3.3</td>
<td>C. Recognize conflict situations and identify strategies to avoid or resolve.</td>
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<td></td>
<td>• walk away</td>
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<td>• I-statements</td>
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<td></td>
<td>• refusal skills</td>
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<td></td>
<td>• adult intervention</td>
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<td>10.3.6</td>
<td>C. Describe strategies to avoid or manage conflict and violence.</td>
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<tr>
<td></td>
<td>• anger management</td>
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<td></td>
<td>• peer mediation</td>
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<td></td>
<td>• reflective listening</td>
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<td></td>
<td>• negotiation</td>
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<td>10.3.9</td>
<td>C. Analyze and apply strategies to avoid or manage conflict and violence.</td>
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<td></td>
<td>• affective negotiation</td>
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<td></td>
<td>• assertive behavior</td>
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<td>10.3.12</td>
<td>D. Identify and use safe practices in physical activity settings (e.g.,</td>
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<td>proper equipment, knowledge of rules, sun safety, guidelines of</td>
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<td></td>
<td>safe play, warm-up, cool-down).</td>
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<td></td>
<td>D. Analyze the role of individual responsibility for safety during physical</td>
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<td>activity.</td>
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<td></td>
<td>D. Analyze the role of individual</td>
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<td>responsibility for safety during organized group activities.</td>
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<td></td>
<td>C. Analyze the impact of violence on the victim and surrounding</td>
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<td></td>
<td>community.</td>
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<td></td>
<td>D. Evaluate the benefits, risks and safety factors associated with self-</td>
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<td></td>
<td>selected life-long physical activities.</td>
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<tr>
<td>10.4.3. GRADE 3</td>
<td>10.4.6. GRADE 6</td>
<td>10.4.9. GRADE 9</td>
<td>10.4.12. GRADE 12</td>
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<tr>
<td>A. Identify and engage in physical activities that promote physical fitness and health.</td>
<td>A. Identify and engage in moderate to vigorous physical activities that contribute to physical fitness and health.</td>
<td>A. Analyze and engage in physical activities that are developmentally/individually appropriate and support achievement of personal fitness and activity goals.</td>
<td>A. Evaluate and engage in an individualized physical activity plan that supports achievement of personal fitness and activity goals and promotes life-long participation.</td>
</tr>
</tbody>
</table>
| B. Know the positive and negative effects of regular participation in moderate to vigorous physical activities. | B. Explain the effects of regular participation in moderate to vigorous physical activities on the body systems. | B. Analyze the effects of regular participation in moderate to vigorous physical activities in relation to adolescent health improvement.  
• stress management  
• disease prevention  
• weight management | B. Analyze the effects of regular participation in a self-selected program of moderate to vigorous physical activities.  
• social  
• physiological  
• psychological |

Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:
### 10.4. Physical Activity

<table>
<thead>
<tr>
<th>Grade</th>
<th>Standards</th>
</tr>
</thead>
</table>
| 10.4.3. GRADE 3 | C. Know and recognize changes in body responses during moderate to vigorous physical activity.  
|              | • heart rate  
|              | • breathing rate |
| 10.4.6. GRADE 6 | C. Identify and apply ways to monitor and assess the body’s response to moderate to vigorous physical activity.  
|              | • heart rate monitoring  
|              | • checking blood pressure  
|              | • fitness assessment |
| 10.4.9. GRADE 9 | C. Analyze factors that affect the responses of body systems during moderate to vigorous physical activities.  
|              | • exercise (e.g., climate, altitude, location, temperature)  
|              | • healthy fitness zone  
|              | • individual fitness status (e.g., cardiorespiratory fitness, muscular endurance, flexibility)  
|              | • drug/substance use/abuse |
| 10.4.12. GRADE 12 | C. Evaluate how changes in adult health status may affect the responses of the body systems during moderate to vigorous physical activity.  
|              | • aging  
|              | • injury  
|              | • disease |
|              | D. Identify likes and dislikes related to participation in physical activities.  
|              | • enjoyment  
|              | • personal interest  
|              | • social experience  
|              | • opportunities to learn new activities  
|              | • parental preference  
|              | • environment |
|              | D. Describe factors that affect childhood physical activity preferences.  
|              | • skill competence  
|              | • social benefits  
|              | • previous experience  
|              | • activity confidence |
|              | D. Analyze factors that affect physical activity preferences of adolescents.  
|              | • skill competence  
|              | • social benefits  
|              | • previous experience  
|              | • activity confidence |
|              | D. Evaluate factors that affect physical activity and exercise preferences of adults.  
|              | • personal challenge  
|              | • physical benefits  
|              | • finances  
|              | • motivation  
|              | • access to activity  
|              | • self-improvement |
### 10.4. Physical Activity

<table>
<thead>
<tr>
<th>10.4.3. GRADE 3</th>
<th>10.4.6. GRADE 6</th>
<th>10.4.9. GRADE 9</th>
<th>10.4.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. Identify reasons why regular participation in physical activities improves motor skills.</td>
<td>E. Identify factors that have an impact on the relationship between regular participation in physical activity and the degree of motor skill improvement.</td>
<td>E. Analyze factors that impact on the relationship between regular participation in physical activity and motor skill improvement.</td>
<td>E. Analyze the interrelationships among regular participation in physical activity, motor skill improvement and the selection and engagement in lifetime physical activities.</td>
</tr>
</tbody>
</table>
| F. Recognize positive and negative interactions of small group activities.  
- roles (e.g., leader, follower)  
- cooperation/sharing  
- on task participation | F. Identify and describe positive and negative interactions of group members in physical activities.  
- leading  
- following  
- teamwork  
- etiquette  
- adherence to rules | F. Analyze the effects of positive and negative interactions of adolescent group members in physical activities.  
- group dynamics  
- social pressure | F. Assess and use strategies for enhancing adult group interaction in physical activities.  
- shared responsibility  
- open communication  
- goal setting |
Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Standards</th>
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</thead>
</table>
| 3      | A. Recognize and use basic movement skills and concepts.  
        | • locomotor movements (e.g., run, leap, hop)  
        | • non-locomotor movements (e.g., bend, stretch, twist)  
        | • manipulative movements (e.g., throw, catch, kick)  
        | • relationships (e.g., over, under, beside)  
        | • combination movements (e.g., locomotor, non-locomotor, manipulative)  
        | • space awareness (e.g., self-space, levels, pathways, directions)  
        | • effort (e.g., speed, force)  
| 6      | A. Explain and apply the basic movement skills and concepts to create and perform movement sequences and advanced skills.  
| 9      | A. Describe and apply the components of skill-related fitness to movement performance.  
        | • agility  
        | • balance  
        | • coordination  
        | • power  
        | • reaction time  
        | • speed  
| 12     | A. Apply knowledge of movement skills, skill-related fitness and movement concepts to identify and evaluate physical activities that promote personal lifelong participation.  
|
10.5. Concepts, Principles and Strategies of Movement

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<tr>
<th>10.5.3. GRADE 3</th>
<th>10.5.6. GRADE 6</th>
<th>10.5.9. GRADE 9</th>
<th>10.5.12. GRADE 12</th>
</tr>
</thead>
</table>
| **B.** Recognize and describe the concepts of motor skill development using appropriate vocabulary.  
  • form  
  • developmental differences  
  • critical elements  
  • feedback | **B.** Identify and apply the concepts of motor skill development to a variety of basic skills.  
  • transfer between skills  
  • selecting relevant cues  
  • types of feedback  
  • movement efficiency  
  • product (outcome/result) | **B.** Describe and apply concepts of motor skill development that impact the quality of increasingly complex movement.  
  • response selection  
  • stages of learning a motor skill i.e. verbal cognitive, motor, automatic  
  • types of skill i.e. discrete, serial, continuous | **B.** Incorporate and synthesize knowledge of motor skill development concepts to improve the quality of motor skills.  
  • open and closed skills  
  • short-term and long-term memory  
  • aspects of good performance |
| **C.** Know the function of practice. | **C.** Describe the relationship between practice and skill development.  
  | **C.** Identify and apply practice strategies for skill improvement.  
  | **C.** Evaluate the impact of practice strategies on skill development and improvement. | **C.** Identify and describe the principles of training using appropriate vocabulary.  
  • specificity  
  • overload  
  • progression  
  • aerobic/anaerobic  
  • circuit/interval  
  • repetition/set | **D.** Describe and apply the principles of exercise to the components of health-related and skill-related fitness.  
  • cardiorespiratory endurance  
  • muscular strength  
  • muscular endurance  
  • flexibility  
  • body composition | **D.** Identify and describe the principles of training using appropriate vocabulary.  
  • specificity  
  • overload  
  • progression  
  • aerobic/anaerobic  
  • circuit/interval  
  • repetition/set | **D.** Incorporate and synthesize knowledge of exercise principles, training principles and health and skill-related fitness components to create a fitness program for personal use. |
| **D.** Identify and use principles of exercise to improve movement and fitness activities.  
  • frequency/how often to exercise  
  • intensity/how hard to exercise  
  • time/how long to exercise  
  • type/what kind of exercise |  |  |  |
Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to:

<table>
<thead>
<tr>
<th>10.5.3. GRADE 3</th>
<th>10.5.6. GRADE 6</th>
<th>10.5.9. GRADE 9</th>
<th>10.5.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E.</strong> Know and describe scientific principles that affect movement and skills using appropriate vocabulary.</td>
<td><strong>E.</strong> Identify and use scientific principles that affect basic movement and skills using appropriate vocabulary.</td>
<td><strong>E.</strong> Analyze and apply scientific and biomechanical principles to complex movements.</td>
<td><strong>E.</strong> Evaluate movement forms for appropriate application of scientific and biomechanical principles.</td>
</tr>
<tr>
<td>- gravity</td>
<td>- Newton’s Laws of Motion</td>
<td>- centripetal/centrifugal force</td>
<td>- efficiency of movement</td>
</tr>
<tr>
<td>- force production/absorption</td>
<td>- application of force</td>
<td>- linear motion</td>
<td>- mechanical advantage</td>
</tr>
<tr>
<td>- balance</td>
<td>- static/dynamic balance</td>
<td>- rotary motion</td>
<td>- kinetic energy</td>
</tr>
<tr>
<td>- rotation</td>
<td>- levers</td>
<td>- friction/resistance</td>
<td>- potential energy</td>
</tr>
<tr>
<td><strong>F.</strong> Recognize and describe game strategies using appropriate vocabulary.</td>
<td><strong>F.</strong> Identify and apply game strategies to basic games and physical activities.</td>
<td><strong>F.</strong> Describe and apply game strategies to complex games and physical activities.</td>
<td><strong>F.</strong> Analyze the application of game strategies for different categories of physical activities.</td>
</tr>
<tr>
<td>- faking/dodging</td>
<td>- give and go</td>
<td>- offensive strategies</td>
<td>- individual</td>
</tr>
<tr>
<td>- passing/receiving</td>
<td>- one on one</td>
<td>- defensive strategies</td>
<td>- team</td>
</tr>
<tr>
<td>- moving to be open</td>
<td>- peer communication</td>
<td>- time management</td>
<td>- lifetime</td>
</tr>
<tr>
<td>- defending space</td>
<td>-</td>
<td></td>
<td>- outdoor</td>
</tr>
<tr>
<td>- following rules of play</td>
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</tr>
</tbody>
</table>
Abstinence: Choosing not to do something or completely giving something up in order to gain something.

Acute illness: A health condition of sudden onset, sharp rises and short course.

Adolescence: The period of life in which psychological or physical responses show and the individual can experience anxiety or the excitement of new experiences.

Aerobic: Physical activity or exercise done at a steady pace for an extended period of time so that the heart can supply as much oxygen as the body needs.

Agility: A component of physical fitness that relates to the ability to rapidly change the direction of the body in space with speed and accuracy.

AIDS: Acquired Immune Deficiency Syndrome: a condition that results when infection with HIV causes a breakdown of the body’s ability to fight other infections.

Allergen: A substance that stimulates the production of antibodies and subsequently results in allergic reactions (e.g., mold spores, cat/dog dander, dust).

Anaerobic: Physical activity or exercise done in short, fast bursts so that the heart cannot supply oxygen as fast as the body needs.
Body composition: A health-related component of physical fitness that relates to the percentage of fat tissue and lean tissue in the body.

Body systems: Anatomically or functionally related parts of the body (e.g., skeletal, nervous, immune, circulatory systems).

Caloric content: The amount of energy supplied by food. The more calories in the food, the more fattening.

Cardiorespiratory fitness: A health-related component of physical fitness relating to the ability of the circulatory and respiratory systems to supply oxygen during sustained physical activity.

Centrifugal: The force that seems to pull an object away from the center as it moves in a circle.

Centripetal: The force that is required to keep an object moving around a circular path.

Chronic illness: A health condition of long duration or frequent recurrence.

Circuit training: Exercise program, similar to an obstacle course, in which the person goes from one place to another without a change in the environment or schedule of exercise per se.

Closed: Skills that are performed in an environment in which the person does not change from one place to another (e.g., archery or the foul shot in basketball).

Communicable: Illness caused by pathogens that enter the body through direct or indirect contact and can be transmitted from one host to another.

Communicable disease: Disease that can be transmitted from one host to another.

Continuous: Two or more repetitions of the same skill such as dribbling in basketball or soccer.

Cool-down: Brief, mild exercise done after vigorous exercise to help the body safely return to a resting state.
Coordination: A skill-related component of physical fitness that relates to the ability to use the senses together with body parts in performing motor tasks smoothly and accurately.

CPR: A first aid technique, which involves rescue breathing and chest compressions, that is used to revive a person whose heart has stopped beating.

Critical elements: The important parts of a skill.

Decision-making process: An organized approach to making choices.

Developmental differences: Learners are at different levels in their motor, cognitive, emotional, social and physical development. The learners' developmental status will affect their ability to learn or improve.

Developmentally appropriate: Motor skill development and change that occur in an orderly, sequential fashion and are age and experience related.

Discrete: Single skill performed in isolation from other motor skills such as the soccer penalty kick and golf stroke.

Dynamic balance: Equilibrium used when in motion, standing, and stopping.

Dancing disorders: Eating disorders:

Efficiency of movement: The state or quality of competence in performance that results in no change in the motion of a body.

Equilibrium: The state of a body (e.g., sitting, standing, and moving) where there is no change in the motion of a body.

Flexibility: A health-related component of physical fitness that relates to the range of motion available at a joint.

Feedback: Information given to the learner about how to improve or correct a movement.

Equilibrium: The state of a body (e.g., sitting, standing, and moving) where there is no change in the motion of a body.

Forward, backward, left, right, up, down:

Forward: The movement of a body or body part in a forward direction.

Backward: The movement of a body or body part in a backward direction.

Left: The movement of a body or body part to the left.

Right: The movement of a body or body part to the right.

Up: The movement of a body or body part upwards.

Down: The movement of a body or body part downwards.

Golf stroke:

Soccer penalty kick:

Directions:

Discrete:

Single skill performed in isolation from other motor skills such as the soccer penalty kick and golf stroke.

Eating disorders:

Food-related dysfunction in which a person changes eating habits in a way that is harmful to their health.

Critical elements:

The important parts of a skill.

Decision-making process:

Feedback:

Efficiency of movement:

Equilibrium:

Flexibility:

Forward, backward, left, right, up, down:

Forward:

Backward:

Left:

Right:

Up:

Down:

Directions:

Discrete:

Single skill performed in isolation from other motor skills such as the soccer penalty kick and golf stroke.

Critical elements:

The important parts of a skill.

Decision-making process:

Feedback:

Efficiency of movement:

Equilibrium:

Flexibility:
Food guide pyramid: A visual tool used to help people plan healthy diets according to the Dietary Guidelines for America.

Force: Any external agent that causes a change in the motion of a body.

Form: Manner or style of performing a movement according to recognized standards of technique.

Good performance: The ability to correctly select what to do and the ability to execute the selection appropriately.

Health: A state of complete physical, mental and social well-being; not merely the absence of disease and infirmity.

Health education: Planned, sequential K—12 program of curricula and instruction that helps students develop knowledge, attitudes and skills related to the physical, mental, emotional and social dimensions of health.

Health-related fitness: Components of physical fitness that have a relationship with good health. Components are cardiorespiratory endurance, muscular strength and endurance, flexibility and body composition.

Heimlich maneuver: A first aid technique that is used to relieve complete airway obstruction.

HIV: Human immunodeficiency virus that affects the immune system and other issues and causes acquired immunodeficiency syndrome (AIDS).

Human immunodeficiency virus that affects the immune system and other issues and causes acquired immunodeficiency syndrome (AIDS).

I-statement: A statement describing a specific behavior or event and the effect that behavior or event has on a person and the feelings that result.

Inertia: A body at rest will remain at rest and a body in motion will remain in motion unless acted upon by a force.

Inhalant: Any chemical that produces a feeling of wellbeing or altered behavior and is taken into the body in a form that acts on the central nervous system.

Inhalant: Chemicals that produce vapors that act on the central nervous system and alter a user’s moods.

I-statement: A statement describing a specific behavior or event and the effect that behavior or event has on a person and the feelings that result.
Integumentary system: Body system composed of the skin, hair, nails and glands.

Intensity: How hard a person should exercise to improve fitness.

Interval training: An aerobic exercise program that consists of runs of short distance followed by rest.

Kinetic: Energy that an object possesses because it is moving, such as a pitched baseball or a person running.

Levels: Positions of the body (e.g., high, medium, low).

Linear motion: Movement which occurs in a straight path.

Locomotor movement: Movements producing physical displacement of the body, usually measured by weight transference via the feet. Movements include the walk, run, hop and jump as well as the skip, slide and gallop.

Long-term memory: Ability to recall information that was learned days, weeks, months or years ago.

Manipulative movements: Control of objects with body parts and implements. Action causes an object to move from one place to another.

Kinetic: How much physical activity should a person engage in to improve fitness?

Linear motion: Movements producing physical displacement of the body, usually measured by weight transference via the feet. Movements include the walk, run, hop and jump as well as the skip, slide and gallop.

Levels: Positions of the body (e.g., high, medium, low).

Locomotor movement: Movements producing physical displacement of the body, usually measured by weight transference via the feet. Movements include the walk, run, hop and jump as well as the skip, slide and gallop.
Motor stage of learning: Individual working to perfect the motor skill and makes conscious adjustments to the environment.

Movement skills: Proficiency in performing nonlocomotor, locomotor and manipulative movements that are the foundation for participation in physical activities.

Muscular endurance: A health-related component of physical fitness that relates to the ability of a muscle to continue to perform without fatigue.

Muscular strength: A health-related component of physical fitness that relates to the ability of a muscle to exert force.

Newton's laws of motion: Three laws by Sir Isaac Newton that explain the relations between force and the motions produced: The Law of Inertia, Force and Acceleration, Reacting Forces.

Noncommunicable: Illness that is not caused by a pathogen that is not transmitted from one host to another.

Noncommunicable: A basic component of food that nourishes the body.

Pathways: Patterns of travel while performing locomotor movements (e.g., straight, curved, zigzag).

Physical activity: A major component of an environment that varies or is unpredictable such as the tennis forehand or the soccer pass.

Physical activity: The normal way to improve fitness is to exercise more than a physical activity that makes the body perform in an environment that varies or is unpredictable.

Poised: A basic component of food that nourishes the body.

Newton's laws of motion: By Sir Isaac Newton, the forces and the motion produced are the relations in the law of inertia, force and the acceleration of physical fitness.

Overload: A principle of exercise that states that the only way to improve fitness is to exercise more than a physical activity that makes the body perform in an environment that varies or is unpredictable.

Open: A basic component of food that nourishes the body.

Open: A physical activity that is not caused by a pathogen that is not transmitted from one host to another.
Physical education: Planned, sequential, movement-based program of curricula and instruction that helps students develop knowledge, attitudes, motor skills, self-management skills and confidence needed to adapt and maintain a physically active life.

Physical fitness: A set of attributes that people have or achieve and that relate to their ability to perform physical activity. Generally accepted to consist of health-related fitness and skill-related fitness.

Potential: Energy stored in a body because of its position such as the crouch position prior to a jump.

Power: A skill-related component of physical fitness that relates to the rate at which one can perform work.

Progression: A principle of exercise that states that a person should start slowly and increase exercise gradually from an exercise plan.

Principles of exercise: Guidelines to follow to obtain the maximum benefits from physical activity and exercise.

Principles of training: Guidelines to follow to attain the maximum benefits from an exercise plan.

Progress: A principle of exercise that states that a person should start slowly and increase exercise gradually from an exercise plan.

Potential: Energy stored in a body because of its position such as the crouch position prior to a jump.

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Principles of exercise: Guidelines to follow to obtain the maximum benefits from physical activity and exercise.
Rotary motion:
Force that produces movement that occurs around an axis.

Sexually transmitted disease:
An approach to infection control. All human blood and body fluids are treated as if known to be infectious.

Self-space:
All the space that the body or its parts can reach without moving from a starting location.

Serial:
Two or more skills performed with each other such as catching a ball and throwing it off.

Set:
A group of several repetitions.

Short-term memory:
Ability to recall recently learned information, such as within the past few seconds or minutes.

Skill-related fitness:
Consists of components of physical fitness that have a relationship with enhanced performance in sports and motor skills. The components are agility, balance, coordination, power, reaction time, and speed.

Specificity:
A principle of exercise that states that specific kinds of exercise must be done to develop specific aspects of the body and specific aspects of performance.

Speed:
A skill-related component of physical fitness that relates to the ability to perform a movement or cover a distance in a short period of time.

Static balance:
Maintaining equilibrium while holding a pose or remaining motionless.

STD:
Sexually transmitted disease.

Universal precautions:
An approach to infection control. All human blood and body fluids are treated as if known to be infectious.

Warm-up:
A brief, mild exercise that is done to get ready for vigorous exercise.

STDs:
Sexually transmitted disease.

Self-space:
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A group of several repetitions.

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Speed:
A skill-related component of physical fitness that relates to the ability to perform a movement or cover a distance in a short period of time.
Verbal cognitive stage of learning: The individual is attempting to move from verbal instruction to figuring out how to actually do the skill. The first attempts at the skill are generally mechanical and success is inconsistent. The individual thinks through each step of the movement.

Vigorous physical activity: Sustained, repetitive, large muscle movements (e.g., running, swimming, soccer) done at 60% or more of maximum heart rate for age. Maximum heart rate is 220 beats per minute minus the participant’s age. Activity makes person sweat and breathe hard.

Food Science and Nutrition

Financial and Resource Management

Balancing Family, Work and Community Responsibility

Food Science and Nutrition

Academic Standards for Family and Consumer Sciences

Academic Standards for Family and Consumer Sciences

Introduction

Table of Contents

Il.1

Il.2

State Board of Education

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This document includes Academic Standards for Family and Consumer Sciences education at four grade levels (third, sixth, ninth and twelfth) with the emphasis on what students will know and be able to do in the following areas:

- Financial and Resource Management (11.1)
- Balancing Family, Work, and Community Responsibility (11.2)
- Food Science and Nutrition (11.4)
- Child Development (11.5)

The focus of the Academic Standards for Family and Consumer Sciences education is the individual, the family and the community. The economic, social and political well-being of our state depends on the well-being of Pennsylvania's families. The family is responsible for nurturing its members. Family experiences, to a great extent, determine who a person is and what a person becomes. Family and Consumer Sciences, working with Pennsylvania's families, supports families in their responsibilities, including meeting needs both inside and outside the home. The 21st Century requires students to develop the ability to transform information into knowledge by using standards to certify that this information is meaningful, categorizing it to a purpose and then using the knowledge and skills that students need to apply new knowledge and consumer decisions to lifelong learners. Meeting individual and family needs inside and outside the home are shared responsibilities.

Family and Consumer Sciences is a discipline composed of strong subject matter. Content areas include:

- Families are the fundamental unit of society.
- Families are responsible for nurturing their members.
- Family experiences, to a great extent, determine who a person is and what a person becomes.
- Meeting individual and family needs inside and outside the home are shared responsibilities.

The use of diverse modes of inquiry strengthens intellectual development.

A life-span approach to individual and family development contributes to creating lifelong learners.

Individual, family and community well-being is strengthened through an awareness of diversity.

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Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS

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G. Food Science

1.4. Child Development

The use of diverse modes of inquiry strengthens intellectual development.
Learners in Family and Consumer Sciences nurture themselves and others, taking increased responsibility for improving their quality of life.

The Academic Standards for Family and Consumer Sciences are written to empower individuals and families to manage the challenges of living and working in a diverse, global society. These Academic Standards address the function, evaluation, and alternative solutions to significant problems of everyday life. An integrative approach is used to help individuals and families identify, create, and evaluate goals and alternative solutions to significant problems of everyday life. Comprehensive classroom experiences allow students to develop the knowledge and skills needed to meet their personal, family, and work responsibilities.

The focus is on the recurring, practical problems of individuals and families. An integrative approach is used to help individuals and families identify, create, and evaluate goals and alternative solutions to significant problems of everyday life. Comprehensive classroom experiences allow students to develop the knowledge and skills needed to meet their personal, family, and work responsibilities. A glossary is included to assist the reader in understanding terminology contained in the standards.
<table>
<thead>
<tr>
<th></th>
<th>GRADE 3</th>
<th>GRADE 6</th>
<th>GRADE 9</th>
<th>GRADE 12</th>
</tr>
</thead>
</table>
| A. | Identify money denominations, services and material resources available as trade-offs within the home, school and community. | Justify the decision to use or not use resources based on scarcity. | Analyze current conservation practices and their effect on future renewable and non-renewable resources.  
- Refuse  
- Reduce  
- Reuse  
- Recycle | Evaluate the impact of family resource management on the global community. |
| B. | Define the components of a spending plan (e.g., income, expenses, savings). | Know the relationship of the components of a simple spending plan and how that relationship allows for managing income, expenses and savings. | Explain the responsibilities associated with managing personal finances (e.g., savings, checking, credit, noncash systems, investments, insurance). | Analyze the management of financial resources across the lifespan. |
| C. | Explain the need for shelter for the purpose of safety, warmth and comfort. | Describe the adaptability to meet basic human needs of the different types of housing available (e.g., single home, apartment, mobile home, shelter, recreational vehicle, public housing). | Delineate and assess the factors affecting the availability of housing (e.g., supply and demand, market factors, geographical location, community regulations). | Analyze the relationship among factors affecting consumer housing decisions (e.g., human needs, financial resources, location, legal agreements, maintenance responsibilities). |

Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...
### 11.1. Financial and Resource Management

<table>
<thead>
<tr>
<th>Grade 3</th>
<th>Grade 6</th>
<th>Grade 9</th>
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<tr>
<td>11.1.3.</td>
<td>11.1.6.</td>
<td>11.1.9.</td>
<td>11.1.12.</td>
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</tbody>
</table>

**Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to** ...

- **D.** Explain consumer rights and responsibilities.
  - To be safe
  - To be informed
  - To be heard
  - To choose
  - To redress

- **E.** Explain the relationship between work and income.

- **F.** Describe criteria needed to identify quality in consumer goods and services (e.g., food, clothing, furniture, home technology, health care, transportation, services).

- **G.** Identify the services that communities provide for individuals and families.

- **D.** Analyze information in care instructions, safety precautions and the use of consumable goods as a demonstration of understanding of consumer rights and responsibilities.

- **E.** Explain the principles of child labor laws and the opportunity cost of working by evaluating the advantages and disadvantages of holding a job while a teenager.

- **F.** Explain practices to maintain and/or repair consumer goods and services.

- **G.** Identify the public and nonpublic services that are available to serve families within the community.

- **D.** Explain how consumer rights and responsibilities are protected (e.g., government agencies, consumer protection agencies, consumer action groups).

- **E.** Compare the influences of income and fringe benefits to make decisions about work.

- **F.** Evaluate different strategies to obtain consumer goods and services.

- **G.** Analyze how public, nonpublic and for-profit service providers serve the family.

- **D.** Evaluate the role of consumer rights and responsibilities in the resolution of a consumer problem through the practical reasoning process.

- **E.** Compare and contrast factors affecting annual gross and taxable income and reporting requirements (e.g., W-2 form, Income tax form).

- **F.** Compare and contrast the selection of goods and services by applying effective consumer strategies.

- **G.** Compare the availability, costs and benefits of accessing public, nonpublic and for-profit services to assist the family.
### 11.2. Balancing Family, Work and Community Responsibility

<table>
<thead>
<tr>
<th>Grade</th>
<th>A.</th>
<th>B.</th>
<th>C.</th>
<th>D.</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>Examine consequences of family, work or career decisions.</td>
<td>Identify the importance of routines and schedules while differentiating between short and long term goals.</td>
<td>Indicate the benefits and costs of working as an individual or as a team member and of being a leader or follower.</td>
<td>Explain the importance of organizing space for efficiency and a sense of comfort (e.g., desk space, classroom space).</td>
</tr>
<tr>
<td>6</td>
<td>Contrast the solutions reached through the use of a simple decision making process that includes analyzing consequences of alternative solutions against snap decision making methods.</td>
<td>Deduce the importance of time management skills (e.g., home, school, recreational activities).</td>
<td>Classify the components of effective teamwork and leadership.</td>
<td>Identify the concepts and principles used in planning space for activities.</td>
</tr>
<tr>
<td>9</td>
<td>Solve dilemmas using a practical reasoning approach • Identify situation • Identify reliable information • List choices and examine the consequences of each • Develop a plan of action • Draw conclusions • Reflect on decisions</td>
<td>Know FCCLA action planning procedure and how to apply it to family, work and community decisions.</td>
<td>Assess the effectiveness of the use of teamwork and leadership skills in accomplishing the work of the family.</td>
<td>Analyze the space requirements for a specified activity to meet a given need (e.g., family room, home office, kitchen).</td>
</tr>
<tr>
<td>12</td>
<td>Justify solutions developed by using practical reasoning skills.</td>
<td>Evaluate the effectiveness of action plans that integrate personal, work, family and community responsibilities.</td>
<td>Analyze teamwork and leadership skills and their application in various family and work situations.</td>
<td>Based on efficiency, aesthetics and psychology, evaluate space plans (e.g., home, office, work areas) for their ability to meet a variety of needs including those of individuals with special needs.</td>
</tr>
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</table>

Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to . . .
## 11.2. Balancing Family, Work and Community Responsibility

### 11.2.3. GRADE 3

E. Analyze the effectiveness of technology used for school and home in accomplishing the work of the family (e.g., security, entertainment, communication, education).

F. Explain daily activities that fulfill family functions in meeting responsibilities (e.g., economic, emotional support, childcare and guidance, housekeeping, maintaining kinship, providing recreation).

G. Identify the life stages by identifying their developmental task (e.g., infant, pre-schooler, school age, teen-age, adult, senior citizen).

### 11.2.6. GRADE 6

E. Describe the role of technology within a community in maintaining a safe and healthy living environment (e.g., safety, hospitals, waste treatment, water quality, schools).

F. Compare and contrast how different cultures meet family responsibilities within differing configurations (e.g., new parent, just married, single adult living alone, "empty nest," retired, senior citizen).

### 11.2.9. GRADE 9

E. Evaluate the impact of technology and justify the use or nonuse of it (e.g., safety, cost/budget, appearance, efficiency).

F. Contrast past and present family functions and predict their probable impact on the future of the family.

### 11.2.12. GRADE 12

E. Assess the availability of emerging technology that is designed to do the work of the family and evaluate the impact of its use on individuals, families and communities.

F. Assess the relationship of family functions to human developmental stages.

G. Explain the influences of family life cycle stages on the needs of families and communities (e.g., a large number of young families needing day care, fixed income senior citizens, school age children).

G. Hypothesize the impact of present family life-cycle trends on the global community (e.g., over population, increase in an aging population, economic base).
<table>
<thead>
<tr>
<th>11.2.3. GRADE 3</th>
<th>11.2.6. GRADE 6</th>
<th>11.2.9. GRADE 9</th>
<th>11.2.12. GRADE 12</th>
</tr>
</thead>
</table>
| **H. Identify how to resolve conflict using interpersonal communications skills.**  
  - Speaking and listening  
  - I messages  
  - Active listening  
  - Checking for understanding  
  - Following directions  
  - Empathy  
  - Feedback | **H. Describe positive and negative interactions within patterns of interpersonal communications.**  
  - Placating  
  - Blaming  
  - Distracting  
  - Intellectualizing  
  - Asserting | **H. Justify the significance of interpersonal communication skills in the practical reasoning method of decision making.** | **H. Evaluate the effectiveness of using interpersonal communication skills to resolve conflict.** |
<table>
<thead>
<tr>
<th>11.3. Food Science and Nutrition</th>
<th>11.3.3. GRADE 3</th>
<th>11.3.6. GRADE 6</th>
<th>11.3.9. GRADE 9</th>
<th>11.3.12. GRADE 12</th>
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<tbody>
<tr>
<td>Pennsylvania's public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to . . .</td>
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</table>

**A.** Know the production steps that a food travels from the farm to the consumer.

**B.** Describe personal hygiene techniques in food handling (e.g., handwashing, sneeze control, signs of food spoilage).

**C.** Explain the importance of eating a varied diet in maintaining health.

**D.** Classify foods by food group within the food guide pyramid including the serving size and nutrient function within the body.

**A.** Demonstrate knowledge of techniques used to evaluate food in various forms (e.g., canned, frozen, dried, irradiated).

**B.** Describe safe food handling techniques (e.g., storage, temperature control, food preparation, conditions that create a safe working environment for food production).

**C.** Analyze factors that effect food choices.

**D.** Describe a well-balanced daily menu using the dietary guidelines and the food guide pyramid.

**A.** Explain how scientific and technological developments enhance our food supply (e.g., food preservation techniques, packaging, nutrient fortification).

**B.** Identify the cause, effect and prevention of microbial contamination, parasites and toxic chemicals in food.

**C.** Analyze the impact of food addictions and eating disorders on health.

**D.** Analyze relationship between diet and disease and risk factors (e.g., calcium and osteoporosis; fat, cholesterol and heart disease; folate and birth defects; sodium and hypertension).

**A.** Analyze how food engineering and technology trends will influence the food supply.

**B.** Evaluate the role of Government agencies in safeguarding our food supply (e.g., USDA, FDA, EPA and CDC).

**C.** Evaluate sources of food and nutrition information.

**D.** Critique diet modifications for their ability to improve nutritionally-related health conditions (e.g., diabetes, lactose-intolerance, iron deficiency).
### 11.3. Food Science and Nutrition

<table>
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<tr>
<th></th>
<th>GRADE 3</th>
<th>GRADE 6</th>
<th>GRADE 9</th>
<th>GRADE 12</th>
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</thead>
<tbody>
<tr>
<td><strong>E.</strong></td>
<td>Define energy-yielding nutrients and calories.</td>
<td>Explain the relationship between calories, nutrient and food input versus energy output; describe digestion.</td>
<td>Analyze the energy requirements, nutrient requirements and body composition for individuals at various stages of the life cycle.</td>
<td>Analyze the breakdown of foods, absorption of nutrients and their conversion to energy by the body.</td>
</tr>
<tr>
<td><strong>F.</strong></td>
<td>Identify components of a basic recipe (e.g., volume, weight, fractions, recipe ingredients, recipe directions, safety techniques).</td>
<td>Analyze basic food preparation techniques and food-handling procedures.</td>
<td>Hypothesize the effectiveness of the use of meal management principles (e.g., time management, budgetary considerations, sensory appeal, balanced nutrition, safety, sanitation).</td>
<td>Evaluate the application of nutrition and meal planning principles in the selection, planning, preparation and serving of meals that meet the specific nutritional needs of individuals across their lifespan.</td>
</tr>
<tr>
<td><strong>G.</strong></td>
<td>Classify foods according to senses (e.g., taste, touch, smell, mouth feel, sight, sound).</td>
<td>Describe the physical, biological, and chemical changes that take place in food preparation.</td>
<td>Analyze the application of physical and chemical changes that occur in food during preparation and preservation.</td>
<td>Analyze the relevance of scientific principles to food processing, preparation and packaging.</td>
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</tbody>
</table>

*Pennsylvania’s public schools shall teach, challenge and support every student to realize his or her maximum potential and to acquire the knowledge and skills needed to...*
<table>
<thead>
<tr>
<th>11.4. Child Development</th>
<th>11.4.3. GRADE 3</th>
<th>11.4.6. GRADE 6</th>
<th>11.4.9. GRADE 9</th>
<th>11.4.12. GRADE 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A.</strong> Identify characteristics in each stage of child development.</td>
<td>• Infancy/birth to 1 year</td>
<td>• Early childhood/1 to 6 years</td>
<td>• Middle childhood/6 to 9 years</td>
<td>• Late childhood/9—13 years</td>
</tr>
<tr>
<td><strong>B.</strong> Identify health and safety needs for children at each stage of child development.</td>
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<tr>
<td><strong>C.</strong> Identify the characteristics of a learning environment.</td>
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<td><strong>D.</strong> Identify community resources provided for children.</td>
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<tr>
<td><strong>E.</strong> Explain how the home and community help a person learn to read, write and compute.</td>
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<tr>
<td><strong>A.</strong> Compare and contrast child development guided practices according to the stage of child development.</td>
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<td><strong>B.</strong> Identify ways to keep children healthy and safe at each stage of child development.</td>
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<tr>
<td><strong>C.</strong> Identify the role of the caregiver in providing a learning environment (e.g., babysitting, daycare, preschool).</td>
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<td><strong>D.</strong> Identify child-care provider considerations.</td>
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<tr>
<td><strong>E.</strong> Identify characteristics of quality literature for children and other literacy enhancing activities.</td>
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<tr>
<td><strong>A.</strong> Analyze physical, intellectual and social/emotional development in relation to theories of child development.</td>
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<td><strong>B.</strong> Evaluate health and safety hazards relating to children at each stage of child development.</td>
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<tr>
<td><strong>C.</strong> Evaluate various environments to determine if they provide the characteristics of a proper learning environment.</td>
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<td><strong>D.</strong> Analyze the roles, responsibilities and opportunity for family involvement in schools.</td>
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<td><strong>E.</strong> Explain how storytelling, story reading and writing enhance literacy development in children.</td>
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<tr>
<td><strong>A.</strong> Analyze current research on existing theories in child development and its impact on parenting (e.g., Piaget, Erikson and prior findings versus new brain development research).</td>
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<td><strong>B.</strong> Analyze current issues in health and safety affecting children at each stage of child development.</td>
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<td><strong>C.</strong> Analyze practices that optimize child development (e.g., stimulation, safe environment, nurturing caregivers, reading to children).</td>
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<td><strong>D.</strong> Analyze plans and methods to blend work and family responsibilities to meet the needs of children.</td>
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<td><strong>E.</strong> Identify practices that develop the child’s imagination, creativity and reading and writing skills through literature.</td>
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XXXIII. GLOSSARY

Aesthetics: Appreciation of and responsive to beauty.

CDC: Center for Disease Control

Child-care provider considerations: Criteria to use in evaluating child care facilities. These include well-trained and highly motivated staff, pleasant sanitary surroundings, variety in toys and supplies, ratio of staff to children.

Child development stage: An age range with similar growth characteristics. Health and Human Services to help healthy people.

Consumer responsibilities: The need to interpret information in care instructions, safety precautions and proper use of consumable goods as a user of goods and services.

Consumer rights: The guarantee to be safe, the right to be informed, the right to choose, consumer education and redress as a user of goods and services.

Dietary guidelines: A set of seven recommendations developed by the United States Department of Agriculture and Health and Human Services to help healthy people over age 2 know what to eat to stay healthy.

Empathy: The action of understanding another's thoughts, feelings and behaviors.

Environmental Protection Agency: The decision-making process endorsed by the Family, Career and Community Leaders of America involving five steps:

1. Identify concerns—prioritization and evaluation.
2. Consider choices to workable ideas.
3. Form a plan—what, when, where and how.
4. Act—carry out the plan.
5. Follow up—determine if your goal was met and how.

Developmental tasks: Changes in the thinking and behavior of individuals over time.

EPA: Environmental Protection Agency

FCCLA Action planning procedure: The decision-making process endorsed by the Family, Career and Community Leaders of America involving five steps:

1. Identify concerns—prioritization and evaluation.
2. Consider choices to workable ideas.
3. Form a plan—what, when, where and how.
4. Act—carry out the plan.
5. Follow up—determine if your goal was met and how.

Developmental tasks: Changes in the thinking and behavior of individuals over time.

Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS

4-353

(295063) No. 340 Mar. 03
To set right or remedy.

6. Reject or decide.
5. Draw conclusion.
4. Develop plan of action.
3. List choices and examine consequences.
2. Identify reliable information.
1. Identify situation to be solved.

A decision making process unique because of its emphasis on relationships and involving six steps:

1. The situation
2. Identify reliable information
3. List choices and examine consequences
4. Develop plan of action
5. Reject or decide
6. Draw conclusion

Nutrient:
A basic component of food that nourishes the body.

Food and Drug Administration:
A visual tool used to help people plan healthy diets according to the Dietary Guidelines for America.

Guided practices:
Interaction with a child based on age appropriate developmental principles.

I message:
A statement containing three parts:
1. The situation
2. How it makes the speaker feel
3. What will happen if it continues

Opportunity cost:
The tangible and nontangible trade-off necessary to procure a good or service or to take an action.

Kinship:
Relationships or relatives.

Food guide pyramid:
A visual tool used to help people plan healthy diets according to the Dietary Guidelines for America.

Leadership skills:
The ability to:
1. Use resources
2. List reliable information
3. Identify situation to be solved
4. Develop plan of action
5. Reject or decide
6. Draw conclusion

Practical reasoning:
A decision making process unique because of its emphasis on relationships and involving six steps:

1. The situation
2. Identify reliable information
3. List choices and examine consequences
4. Develop plan of action
5. Reject or decide
6. Draw conclusion

Redress:
To set right or remedy.
Toxic chemical:
Contaminants found in natural, environmental and pesticide residue forms that are poisonous to the body.

Scarcity:
The lack of provisions for the support of life.

Team work skills:
The ability to:
• Collaborate
• Cooperate
• Set community goals
• Reach consensus
• Collaborate
• Formulate

Trade-off:
Exchange of goods, services or monies.

USDA:
United States Department of Agriculture

APPENDIX E
Academic Standards for Career Education

XXVII. TABLE OF CONTENTS

Introduction .............................................. XXXVIII.
THE ACADEMIC STANDARDS
Career Awareness and Preparation ............................. 13.1.
A. Abilities and Aptitudes
B. Personal Interests
C. Nontraditional Workplace Roles
D. Local Career Preparation Opportunities
E. Career Selection Influences
F. Preparation for Careers
G. Career Plan Components
H. Relationship Between Education and Career

Career Acquisition (Getting a Job) .............................. 13.2.
A. Interviewing Skills
B. Resources

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22

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Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS
22
The Academic Standards for Career Education and Work reflect the increasing complexity and sophistication that students experience as they progress through school. Career Education and Work Standards describe what students should know and be able to do at four grade levels (3, 5, 8 and 11) in four areas:

13.1 Career Awareness and Preparation
13.2 Career Acquisition (Getting a Job)
13.3 Career Retention and Advancement
13.4 Entrepreneurship

Pennsylvania's economic future depends on having a well-educated and skilled workforce. No student should leave secondary education without a solid foundation in Career Education and Work. It is the rapidly changing workplace and the demand for continuous learning and innovation on the part of the workers that drive the need to establish academic standards in Career Education and Work, where the needs of employers and the academic standards in other disciplines converge.

A comprehensive approach to Career Education and Work Standards is one that complements all disciplines and other academic standards. If Pennsylvania's workforce is to succeed in the workplace, these are certain skills that they need to develop. A glossary is included to assist the reader in understanding terminology contained in the standards.
Pennsylvania’s public schools shall teach, challenge and support every student to realize his maximum potential and to acquire the knowledge and skills needed to:

<table>
<thead>
<tr>
<th>13.1.3. GRADE 3</th>
<th>13.1.5. GRADE 5</th>
<th>13.1.8. GRADE 8</th>
<th>13.1.11. GRADE 11</th>
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<tbody>
<tr>
<td>A. Recognize that individuals have unique interests.</td>
<td>A. Describe the impact of individual interests and abilities on career choices.</td>
<td>A. Relate careers to individual interests, abilities and aptitudes.</td>
<td>A. Relate careers to individual interests, abilities and aptitudes.</td>
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<tr>
<td>B. Identify current personal interests.</td>
<td>B. Describe the impact of personal interest and abilities on career choices.</td>
<td>B. Relate careers to personal interests, abilities and aptitudes.</td>
<td>B. Analyze career options based on personal interests, abilities, aptitudes, achievements and goals.</td>
</tr>
<tr>
<td>C. Recognize that the roles of individuals at home, in the workplace and in the community are constantly changing.</td>
<td>C. Relate the impact of change to both traditional and nontraditional careers.</td>
<td>C. Explain how both traditional and nontraditional careers offer or hinder career opportunities.</td>
<td>C. Analyze how the changing roles of individuals in the workplace relate to new opportunities within career choices.</td>
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### 13.1. Career Awareness and Preparation

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<th>13.1.11. GRADE 11</th>
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</thead>
</table>
| **D.** | Identify the range of jobs available in the community. | Describe the range of career training programs in the community such as, but not limited to:  
- Two-and-four year colleges  
- Career and technical education programs at centers (formerly AVTS) and high schools  
- CareerLinks  
- Community/recreation centers  
- Faith-based organizations  
- Local industry training centers  
- Military  
- Registered apprenticeship  
- Vocational rehabilitation centers  
- Web-based training | Explain the relationship of career training programs to employment opportunities. | Evaluate school-based opportunities for career awareness/preparation, such as, but not limited to:  
- Career days  
- Career portfolio  
- Community service  
- Cooperative education  
- Graduation/senior project  
- Internship  
- Job shadowing  
- Part-time employment  
- Registered apprenticeship  
- School-based enterprise |

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<tbody>
<tr>
<td><strong>E.</strong> Describe the work done by school personnel and other individuals in the community.</td>
<td><strong>E.</strong> Describe the factors that influence career choices, such as, but not limited to:</td>
<td><strong>E.</strong> Analyze the economic factors that impact employment opportunities, such as, but not limited to:</td>
<td><strong>E.</strong> Justify the selection of a career.</td>
</tr>
<tr>
<td>- Geographic location</td>
<td>- Geographic location</td>
<td>- Competition</td>
<td>- Justify the selection of a career.</td>
</tr>
<tr>
<td>- Job description</td>
<td>- Job description</td>
<td>- Geographic location</td>
<td>- Job openings</td>
</tr>
<tr>
<td>- Salaries/benefits</td>
<td>- Salaries/benefits</td>
<td>- Global influences</td>
<td>- Labor supply</td>
</tr>
<tr>
<td>- Work schedule</td>
<td>- Work schedule</td>
<td>- Job growth</td>
<td>- Potential advancement</td>
</tr>
<tr>
<td>- Working conditions</td>
<td>- Working conditions</td>
<td>- Job openings</td>
<td>- Potential earnings</td>
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<td>- Labor supply</td>
<td>- Salaries/benefits</td>
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<td>- Potential advancement</td>
<td>- Unemployment</td>
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Pennsylvania's public schools shall teach, challenge and support every student to realize his maximum potential and to acquire the knowledge and skills needed to:
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<th>13.1.8. GRADE 8</th>
<th>13.1.11. GRADE 11</th>
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</table>
| F. Explore how people prepare for careers. | F. Investigate people’s rationale for making career choices. | F. Analyze the relationship of school subjects, extracurricular activities and community experiences to career preparation. | F. Analyze the relationship between career choices and career preparation opportunities, such as, but not limited to:  
• Associate degree  
• Baccalaureate degree  
• Certificate/licensure  
• Entrepreneurship  
• Immediate part/full time employment  
• Industry training  
• Military training  
• Professional degree  
• Registered apprenticeship  
• Tech Prep  
• Vocational rehabilitation centers |
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<tr>
<th>Grade</th>
<th>Standards</th>
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<tbody>
<tr>
<td>3</td>
<td>G. Explain why education and training plans are important to careers.</td>
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<tr>
<td>5</td>
<td>G. Identify the components of a career plan, such as, but not limited to:</td>
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<td></td>
<td>• Beginnings of career portfolio</td>
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<td></td>
<td>• Career goals</td>
</tr>
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<td></td>
<td>• Individual interests and abilities</td>
</tr>
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<td></td>
<td>• Training/education requirements and costs</td>
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<td>8</td>
<td>G. Create an individualized career plan including, such as, but not limited to:</td>
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<td></td>
<td>• Assessment and continued development of career portfolio</td>
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<td>• Career goals</td>
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<td>• Cluster/pathway opportunities</td>
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<td></td>
<td>• Individual interests and abilities</td>
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<td></td>
<td>• Training/education requirements and financing</td>
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<td>11</td>
<td>G. Assess the implementation of the individualized career plan through the ongoing development of the career portfolio.</td>
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<td>H. Explain how workers in their careers use what is learned in the classroom.</td>
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<td>H. Connect personal interests and abilities to personal career options.</td>
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<td>H. Choose personal electives and extra curricular activities based upon personal career interests, abilities and academic strengths.</td>
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<td>H. Review personal high school plan against current personal career goals and select postsecondary opportunities based upon personal career interests.</td>
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### 13.2. Career Acquisition (Getting a Job)

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<th>13.2.3. GRADE 3</th>
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<th>13.2.8. GRADE 8</th>
<th>13.2.11. GRADE 11</th>
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<tbody>
<tr>
<td><strong>A.</strong> Identify appropriate speaking and listening techniques used in conversation.</td>
<td><strong>A.</strong> Apply appropriate speaking and listening techniques used in conversation.</td>
<td><strong>A.</strong> Identify effective speaking and listening skills used in a job interview.</td>
<td><strong>A.</strong> Apply effective speaking and listening skills used in a job interview.</td>
</tr>
<tr>
<td><strong>B.</strong> Discuss resources available in researching job opportunities, such as, but not limited to:</td>
<td><strong>B.</strong> Identify and review resources available in researching job opportunities, such as, but not limited to:</td>
<td><strong>B.</strong> Evaluate resources available in researching job opportunities, such as, but not limited to:</td>
<td><strong>B.</strong> Apply research skills in searching for a job.</td>
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<tr>
<td>- Internet</td>
<td>- Internet</td>
<td>- CareerLinks</td>
<td>- CareerLinks</td>
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<td>- Internet (i.e. O*NET)</td>
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<td>- Professional associations</td>
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<th>13.2.3. GRADE 3</th>
<th>13.2.5. GRADE 5</th>
<th>13.2.8. GRADE 8</th>
<th>13.2.11. GRADE 11</th>
</tr>
</thead>
</table>
| C. Compose a personal letter. | C. Compose and compare a business and a personal letter. | C. Prepare a draft of career acquisition documents, such as, but not limited to:  
   - Job application  
   - Letter of appreciation following an interview  
   - Letter of introduction  
   - Request for letter of recommendation  
   - Resume | C. Develop and assemble, for career portfolio placement, career acquisition documents, such as, but not limited to:  
   - Job application  
   - Letter of appreciation following an interview  
   - Letter of introduction  
   - Postsecondary education/training applications  
   - Request for letter of recommendation  
   - Resume |
Pennsylvania’s public schools shall teach, challenge and support every student to realize his maximum potential and to acquire the knowledge and skills needed to:

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>D. Identify the importance of developing a plan for the future.</td>
<td>D. Identify individualized career portfolio components, such as, but not limited to:</td>
<td>D. Develop an individualized career portfolio including components, such as, but not limited to:</td>
<td>D. Analyze, revise and apply an individualized career portfolio to chosen career path.</td>
</tr>
<tr>
<td>• Achievements</td>
<td>• Achievements</td>
<td>• Achievements</td>
<td></td>
</tr>
<tr>
<td>• Awards/recognitions</td>
<td>• Awards/recognitions</td>
<td>• Awards/recognitions</td>
<td></td>
</tr>
<tr>
<td>• Career exploration results</td>
<td>• Career exploration results</td>
<td>• Career exploration results</td>
<td></td>
</tr>
<tr>
<td>• Career plans</td>
<td>• Career plans</td>
<td>• Career plans</td>
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</tr>
<tr>
<td>• Community service involvement/projects</td>
<td>• Community service involvement/projects</td>
<td>• Community service involvement/projects</td>
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</tr>
<tr>
<td>• Interests/hobbies</td>
<td>• Interests/hobbies</td>
<td>• Interests/hobbies</td>
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</tr>
<tr>
<td>• Personal career goals</td>
<td>• Personal career goals</td>
<td>• Personal career goals</td>
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</tr>
<tr>
<td>• Selected school work</td>
<td>• Selected school work</td>
<td>• Selected school work</td>
<td></td>
</tr>
<tr>
<td>• Self inventories</td>
<td>• Self inventories</td>
<td>• Self inventories</td>
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</table>
Pennsylvania’s public schools shall teach, challenge and support every student to realize his maximum potential and to acquire the knowledge and skills needed to:

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<th>13.2.11. GRADE 11</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>E. Discuss the importance of the essential workplace skills, such as, but not limited to:</strong></td>
<td><strong>E. Apply to daily activities, the essential workplace skills, such as, but not limited to:</strong></td>
<td><strong>E. Explain, in the career acquisition process, the importance of the essential workplace skills/knowledge, such as, but not limited to:</strong></td>
<td><strong>E. Demonstrate, in the career acquisition process, the application of essential workplace skills/knowledge, such as, but not limited to:</strong></td>
</tr>
<tr>
<td>• Dependability</td>
<td>• Commitment</td>
<td>• Commitment</td>
<td>• Commitment</td>
</tr>
<tr>
<td>• Health/safety</td>
<td>• Communication</td>
<td>• Communication</td>
<td>• Communication</td>
</tr>
<tr>
<td>• Team building</td>
<td>• Dependability</td>
<td>• Dependability</td>
<td>• Dependability</td>
</tr>
<tr>
<td>• Technology</td>
<td>• Health/safety</td>
<td>• Health/safety</td>
<td>• Health/safety</td>
</tr>
<tr>
<td>E. Explain, in the career acquisition process, the importance of the essential workplace skills/knowledge, such as, but not limited to:</td>
<td>E. Apply to daily activities, the essential workplace skills, such as, but not limited to:</td>
<td>E. Discuss the importance of the essential workplace skills, such as, but not limited to:</td>
<td>E. Demonstrate, in the career acquisition process, the application of essential workplace skills/knowledge, such as, but not limited to:</td>
</tr>
<tr>
<td>• Personal initiative</td>
<td>• Scheduling/time management</td>
<td>• Dependability</td>
<td>• Commitment</td>
</tr>
<tr>
<td>• Technical literacy</td>
<td>• Team building</td>
<td>• Health/safety</td>
<td>• Communication</td>
</tr>
<tr>
<td>• Technology</td>
<td>• Technical literacy</td>
<td>• Laws and regulations (that is Americans With Disabilities Act, child labor laws, Fair Labor Standards Act, OSHA, Material Safety Data Sheets)</td>
<td>• Depedability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Personal initiative</td>
<td>• Health/safety</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Self-advocacy</td>
<td>• Laws and regulations (that is Americans With Disabilities Act, child labor laws, Fair Labor Standards Act, OSHA, Material Safety Data Sheets)</td>
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<td></td>
<td></td>
<td>• Scheduling/time management</td>
<td>• Personal initiative</td>
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<td></td>
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<td>• Team building</td>
<td>• Self-advocacy</td>
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<td></td>
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<td>• Technical literacy</td>
<td>• Scheduling/time management</td>
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<td>• Team building</td>
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<td>• Technical literacy</td>
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<td></td>
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<td>Technology</td>
</tr>
</tbody>
</table>
### 13.3. Career Retention and Advancement

Pennsylvania’s public schools shall teach, challenge and support every student to realize his maximum potential and to acquire the knowledge and skills needed to:

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<tr>
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<th>13.3.11. GRADE 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Identify attitudes and work habits that contribute to success at home and school.</td>
<td>A. Explain how student attitudes and work habits transfer from the home and school to the workplace.</td>
<td>A. Determine attitudes and work habits that support career retention and advancement.</td>
<td>A. Evaluate personal attitudes and work habits that support career retention and advancement.</td>
</tr>
</tbody>
</table>
| B. Identify how to cooperate at both home and school. | B. Explain the importance of working cooperatively with others at both home and school to complete a task. | B. Analyze the role of each participant’s contribution in a team setting. | B. Evaluate team member roles to describe and illustrate active listening techniques:  
  - Clarifying  
  - Encouraging  
  - Reflecting  
  - Restating  
  - Summarizing |
| C. Explain effective group interaction terms, such as, but not limited to:  
  - Compliment  
  - Cooperate  
  - Encourage  
  - Participate | C. Identify effective group interaction strategies, such as, but not limited to:  
  - Building consensus  
  - Communicating effectively  
  - Establishing ground rules  
  - Listening to others | C. Explain and demonstrate conflict resolution skills:  
  - Constructive criticism  
  - Group dynamics  
  - Managing/leadership  
  - Mediation  
  - Negotiation  
  - Problem solving | C. Evaluate conflict resolution skills as they relate to the workplace:  
  - Constructive criticism  
  - Group dynamics  
  - Managing/leadership  
  - Mediation  
  - Negotiation  
  - Problem solving |
Pennsylvania’s public schools shall teach, challenge and support every student to realize his maximum potential and to acquire the knowledge and skills needed to:

<table>
<thead>
<tr>
<th>13.3.3. 13.3.5. 13.3.8. 13.3.11.</th>
<th>D. Explain how money is used.</th>
<th>D. Explain budgeting.</th>
<th>D. Analyze budgets and pay statements, such as, but not limited to:</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRADE 3</td>
<td>E. Discuss how time is used at both home and school.</td>
<td>E. Develop a personal schedule based on activities and responsibilities at both home and school.</td>
<td>E. Identify and apply time management strategies as they relate to both personal and work situations.</td>
</tr>
<tr>
<td>GRADE 5</td>
<td>F. Identify the changes in family and friend’s roles at home, at school and in the community.</td>
<td>F. Describe the impact of role changes at home, school, and at work, and how the role changes impact career advancement and retention.</td>
<td>F. Identify characteristics of the changing workplace including Americans With Disabilities Act accommodations, and explain their impact on jobs and employment.</td>
</tr>
<tr>
<td>GRADE 8</td>
<td>G. Define and describe the importance of lifelong learning.</td>
<td>G. Describe how personal interests and abilities impact lifelong learning.</td>
<td>G. Identify formal and informal lifelong learning opportunities that support career retention and advancement.</td>
</tr>
<tr>
<td>GRADE 11</td>
<td>D. Develop a personal budget based on career choice, such as, but not limited to:</td>
<td></td>
<td>D. Evaluate time management strategies and their application to both personal and work situations.</td>
</tr>
<tr>
<td></td>
<td>• Charitable contributions</td>
<td></td>
<td>F. Evaluate strategies for career retention and advancement in response to the changing global workplace.</td>
</tr>
<tr>
<td></td>
<td>• Expenses</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Gross pay</td>
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<td></td>
<td>• Net pay</td>
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</tr>
<tr>
<td></td>
<td>• Other income</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Savings</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Taxes</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>E. Discuss how time is used at both home and school.</td>
<td>E. Develop a personal schedule based on activities and responsibilities at both home and school.</td>
<td>E. Identify and apply time management strategies as they relate to both personal and work situations.</td>
</tr>
<tr>
<td></td>
<td>F. Identify the changes in family and friend’s roles at home, at school and in the community.</td>
<td>F. Describe the impact of role changes at home, school, and at work, and how the role changes impact career advancement and retention.</td>
<td>F. Identify characteristics of the changing workplace including Americans With Disabilities Act accommodations, and explain their impact on jobs and employment.</td>
</tr>
<tr>
<td></td>
<td>G. Define and describe the importance of lifelong learning.</td>
<td>G. Describe how personal interests and abilities impact lifelong learning.</td>
<td>G. Identify formal and informal lifelong learning opportunities that support career retention and advancement.</td>
</tr>
<tr>
<td></td>
<td>D. Develop a personal budget based on career choice, such as, but not limited to:</td>
<td></td>
<td>D. Evaluate time management strategies and their application to both personal and work situations.</td>
</tr>
<tr>
<td></td>
<td>• Charitable contributions</td>
<td></td>
<td>F. Evaluate strategies for career retention and advancement in response to the changing global workplace.</td>
</tr>
<tr>
<td></td>
<td>• Expenses</td>
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<td>• Gross pay</td>
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<td>• Other income</td>
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<td></td>
<td>• Savings</td>
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<td></td>
<td>• Taxes</td>
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Pennsylvania’s public schools shall teach, challenge and support every student to realize his maximum potential and to acquire the knowledge and skills needed to:

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</tr>
</thead>
<tbody>
<tr>
<td>A. Define entrepreneurship.</td>
<td>A. Identify the risks and rewards of entrepreneurship.</td>
<td>A. Compare and contrast entrepreneurship to traditional employment, such as, but not limited to:</td>
<td>A. Analyze entrepreneurship as it relates to personal career goals and corporate opportunities.</td>
</tr>
<tr>
<td>B. Describe the character traits of successful entrepreneurs, such as, but not limited to:</td>
<td>B. Discuss the entrepreneurial character traits of historical or contemporary entrepreneurs.</td>
<td>• Benefits</td>
<td>B. Analyze entrepreneurship as it relates to personal character traits.</td>
</tr>
<tr>
<td>• Adaptability</td>
<td>• Job security</td>
<td>• Operating costs</td>
<td></td>
</tr>
<tr>
<td>• Creative thinking</td>
<td>• Wages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Ethical behavior</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Leadership</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>• Positive attitude</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Risk-taking</td>
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</tbody>
</table>
## 13.4. Entrepreneurship

<table>
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<tr>
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<th>13.4.11. GRADE 11</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>C. Describe age-appropriate entrepreneurial opportunities, such as, but not limited to:</strong>&lt;br&gt;• Bake sale&lt;br&gt;• Crafts&lt;br&gt;• Lemonade stand&lt;br&gt;• Pet care</td>
<td><strong>C. Discuss the steps entrepreneurs take to bring their goods or services to market, such as, but not limited to:</strong>&lt;br&gt;• Marketing&lt;br&gt;• Production&lt;br&gt;• Research and development&lt;br&gt;• Selection of goods and services</td>
<td><strong>C. Identify and describe the basic components of a business plan, such as, but not limited to:</strong>&lt;br&gt;• Business idea&lt;br&gt;• Competitive analysis&lt;br&gt;• Daily operations&lt;br&gt;• Finances/budget&lt;br&gt;• Marketing&lt;br&gt;• Productive resources (human, capital, natural)&lt;br&gt;• Sales forecasting</td>
<td><strong>C. Develop a business plan for an entrepreneurial concept of personal interest and identify available resources, such as, but not limited to:</strong>&lt;br&gt;• Community based organizations (that is chambers of commerce, trade/technical associations, Industrial Resource Centers)&lt;br&gt;• Financial institutions&lt;br&gt;• School-based career centers&lt;br&gt;• Small Business Administration services (that is SCORE, Small Business Development Centers, Entrepreneurial Development Centers)&lt;br&gt;• Venture capital</td>
</tr>
</tbody>
</table>

Pennsylvania’s public schools shall teach, challenge and support every student to realize his maximum potential and to acquire the knowledge and skills needed to:
Academic Standards for Career Education and Work

Glossary

Americans With Disabilities Act (Pub. L. No. 101-336): The Americans With Disabilities Act is a Federal civil rights law that prohibits discrimination and ensures equal opportunity for persons with disabilities in employment, state and local government services, public accommodations, commercial facilities, transportation, and other areas.

Aptitudes: Capacity to learn and understand.

Associate degree: A postsecondary degree typically earned within a 2-year time frame.

Baccalaureate degree: A postsecondary degree, also known as a bachelor's degree, typically earned within a 4-year time frame.

Benefits: Something of value that an employee receives in addition to a wage or salary. Examples include health and life insurance, vacation leave, retirement plans, and the like.

Budget: A financial plan that summarizes anticipated income and expenditures over a period of time.

Career and technical centers: Schools that educate secondary students and adults through academic instruction, job preparation and acquisition of occupational skills leading to graduation and/or certification, and provide opportunities for transition to postsecondary education and employment in specific industries. The centers also provide opportunities for employment, or both, in specific career clusters.

Career cluster: A grouping of related occupations which share similar skill sets.

Business plan: A prepared document detailing the past, present, and future of an organization.

Commonwealth of Pennsylvania: The governing body of the state of Pennsylvania.

Delaware Act: A Federal law that provides disability and special education civil rights for students with disabilities in employment, state and local government services, public accommodations, commercial facilities, transportation, and other areas.

Glossary

STATE BOARD OF EDUCATION

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Career days: Special events that allow students to meet with employers, career development specialists, community-based organization representatives and postsecondary educators. Events are designed to encourage students to gain information about careers and job opportunities.

Career plan: A document developed by the student that identifies a series of educational studies and experiences to prepare them for postsecondary education or work, or both, in a selected career cluster or area.

Career portfolio: An ongoing, individualized collection of materials (electronic or hard copy) that documents a student's educational performance, career exploration and employment experiences over time. While there is no standard format that a career portfolio must take, it typically includes a range of work, containing assignments by the teacher/counselor and selections by the student. It serves as a guide for the student to transition to postsecondary education or the workplace, or both.

Career retention and advancement: Career retention is the process of keeping a job. Career advancement is the process of performing the necessary requirements to progress in a career.

CareerLinks: A cooperative system that provides one-stop delivery of career services to job seekers, employers, and other interested individuals. It is a cooperative system that provides one-stop delivery of career services to job seekers, employers, and other interested individuals.

Certificate/licensure: A document, issued by associations, employers, educational institutions, government, and the like, confirming that one has fulfilled the requirements and is able to perform to a specified level of proficiency within a career field.

Child labor laws: Legislation governing the employment of children under the age of 18.

Competitive analysis: A tool that allows a business to identify its competitors and evaluate their respective strategies.

Ch. 4 ACADEMIC STANDARDS AND ASSESSMENTS

Certificate/licensure:

CareerLinks:

Career portfolio:

Career retention and advancement:

Career plan:

Career days:
Cooperative education:
A structured method of instruction whereby students alternate or coordinate their high school studies with a job in a field related to their academic or career objectives.

Entrepreneurs:
Individuals who engage in the process of organizing, managing and assuming the risk of a business or enterprise.

Entrepreneurship:
The process of organizing, managing and assuming the risks of a business or enterprise.

Fair Labor Standards Act:

Fixed/variable expenses:
Fixed expenses are regular in their timing and amount, and include things such as rent, mortgage, car payment and insurance. Variable expenses are irregular in their timing and amount, and include things such as food, clothing and entertainment.

Global influences:
Political and cultural changes, which impact the world and its economy.

Industrial resource centers:
Nonprofit corporations, which provide assistance to improve the competitive position of small-to-medium sized manufacturers.

Internship:
A work experience with an employer for a specified period of time, to learn about a particular industry or occupation, which may or may not include financial compensation.

Gross pay:
The amount earned before deductions, such as taxes, insurance and retirement contributions.

Occupation:
Takes from different jobs or tasks from a single activity may include special projects, a sample of the workforce or an occupation, which may or may not be a regular part of a job, but is an important part of the skills and competencies needed for a particular job.

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Job shadowing: Typically as part of career exploration activities in late middle and early high school, a student follows an employee for 1 or more days to learn about a particular occupation or industry. Job shadowing is intended to help students explore a range of career objectives and to possibly select a career pathway.

Labor supply: The number of persons either working or unemployed and actively seeking work.

Marketing: The process or technique of promoting, selling, and distributing a product or service.

Material Safety Data Sheets: Federally-mandated listings of all hazardous materials that will impact the health and safety of workers, required to be posted in the workplace.

Mediation: Third-party intervention between conflicting parties to promote reconciliation, settlement or compromise.

Net pay: The amount remaining after deductions, such as taxes, insurance and retirement plan contributions, from one's wages.

Networking: The act of exchanging information, contacts and services.

O*NET: Occupational Information Network is a free, comprehensive, searchable database of information about various occupations, including job duties, education and training requirements, earnings, and more.

Nontraditional careers: Fields of work for which individuals from one gender comprise less than 25% of the individuals employed in each occupation or field of work.

Operating costs: The funds necessary to operate a business, not including the cost of goods sold. This is also referred to as overhead.

O*NET: Occupational Information Network

Job shadowing: Typically as part of career exploration activities in late middle and early high school, a student follows an employee for 1 or more days to learn about a particular occupation or industry. Job shadowing is intended to help students explore a range of career objectives and to possibly select a career pathway.
OSHÀ:
The Occupational Safety and Health Administration—A National agency with representatives in each state who monitor health and safety issues in the workplace.

Professional associations:
Organizations of people having common interests.

Professional degree:
A title conferred on students by a college, university or professional school upon completion of a program of study.

Resumes:
A summary of one's personal qualifications, education/training and employment experience.

Sales forecasting:
Predicting the number of services or units likely to be sold over a specific period of time.

School-based enterprise:
The production of goods or services as part of a school program.

School-based career centers:
Specialized areas in schools equipped with resources and materials used to research postsecondary and occupational opportunities.

Self inventories:
Evaluation of an individual's strengths, weaknesses and interests, as it relates to career planning.

SCORE:
Service Corps of Retired Executives—a Small Business Administration Federally-sponsored program to assist small-to-medium sized enterprises in moving to the next level.

Registered apprenticeship:
A formal program registered with the Pennsylvania Apprenticeship Council and the United States Department of Labor that qualifies individuals for the occupational classification for which they have been trained.

See "benefits" for definition.

Professional commissions and regulatory for services.
Tech Prep:
The name given to programs that offer at least 4 years of sequential course work at the secondary and postsecondary levels to prepare students for technical careers. The curricula are designed to build student competency in academic subjects, as well as provide broad technical preparation in a career area.

Technical literacy:
The ability of individuals to use existing and emerging technologies, equipment, language, materials and manuals to participate intelligently in performing tasks related to everyday life, school or job.

Time management strategies:
Scheduling techniques used to effectively and efficiently direct or control activities.

Traditional careers:
Fields of work for which individuals from one gender comprise more than 25% of the individuals employed in each occupation or field of work.

Unemployment:
Measurement of the number of people who are not employed and who are actively seeking work.

Venture capital:
Public or private funds invested in a potentially profitable business enterprise despite the risk of loss.

Vocational rehabilitation centers:
Educational facilities that provide life skills and occupational training services for individuals with special needs.

Wages:
Payments of money for labor or services according to contract and on an hourly, daily or piecework basis.

Web-based training:
Instruction that is available online.