

(12) Science concepts. The student knows that interdependence and interactions occur within an ecosystem. The student is expected to:

- (D) identify and illustrate that long-term survival of species is dependent on a resource base that may be limited

§112.46. Aquatic Science

(b)(1) Students conduct field and laboratory investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students study a variety of topics that include: components of an aquatic ecosystem; relationships among aquatic habitats and ecosystems; roles of cycles within an aquatic environment; adaptations of aquatic organisms; changes within aquatic environments; geological phenomena and fluid dynamics effects; and origin and use of water in a watershed.

(4) Science concepts. The student knows the components of aquatic ecosystems.

- (B) research and identify biological, chemical, geological, and physical components of an aquatic ecosystem

(7) Science concepts. The student knows environmental adaptations of aquatic organisms.

- (B) compare and describe how adaptations allow an organism to exist within an aquatic environment;

- (C) predict adaptations of an organism prompted by environmental changes

(8) Science concepts. The student knows that aquatic environments change.

- (C) identify and describe a local or global issue affecting an aquatic system; and
- (D) analyze and discuss human influences on an aquatic environment including fishing, transportation, and recreation

§112.44. Environmental Systems.

(b)(1) Students conduct field and laboratory investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students study a variety of topics that include: biotic and abiotic factors in habitats; ecosystems and biomes; interrelationships among resources and an environmental system; sources and flow of energy through an environmental system; relationship between carrying capacity and changes in populations and ecosystems; and changes in environments.

(5) Science concepts. The student knows the interrelationships among the resources within the local environmental system. The student is expected to:

- (A) summarize methods of land use and management;

- (B) identify source, use, quality, and conservation of water;

- (C) document the use and conservation of both renewable and non-renewable resources;

- (E) analyze and evaluate the economic significance and interdependence of components of the environmental system; and

- (F) evaluate the impact of human activity and technology on land fertility and aquatic viability.

Geology, Meteorology, and Oceanography.

(10) Science concepts. The student knows the interactions that occur in a watershed.

The student is expected to:

(C) describe the importance and sources of surface and subsurface water.

Mathematics

§111.22. Mathematics, Grade 6

(6.1) Number, operation, and quantitative reasoning. The student represents and uses rational numbers in a variety of equivalent forms.

(6.8) Measurement. The student solves application problems involving estimation and measurement of length, area, time, temperature, capacity, weight, and angles.

(6.11) Underlying processes and mathematical tools. The student applies Grade 6 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.

(6.12) Underlying processes and mathematical tools. The student communicates about Grade 6 mathematics through informal and mathematical language, representations, and models.

(6.13) Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions.

§111.23. Mathematics, Grade 7

(7.3) Patterns, relationships, and algebraic thinking. The student solves problems involving proportional relationships.

(7.4) Patterns, relationships, and algebraic thinking. The student represents a relationship in numerical, geometric, verbal, and symbolic form.

(7.9) Measurement. The student solves application problems involving estimation and measurement. The student is expected to estimate measurements and solve application problems involving length (including perimeter and circumference), area, and volume.

(7.13) Underlying processes and mathematical tools. The student applies Grade 7 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.

(7.14) Underlying processes and mathematical tools. The student communicates about Grade 7 mathematics through informal and mathematical language, representations, and models.

(7.15) Underlying processes and mathematical tools. The student uses logical reasoning to make conjectures and verify conclusions.

§111.24. Mathematics, Grade 8

(8.5) Patterns, relationships, and algebraic thinking. The student uses graphs, tables, and algebraic representations to make predictions and solve problems.

(8.14) Underlying processes and mathematical tools. The student applies Grade 8 mathematics to solve problems connected to everyday experiences, investigations in other disciplines, and activities in and outside of school.

(8.15) Underlying processes and mathematical tools. The student communicates about Grade 8 mathematics through informal and mathematical language, representations, and models.

§111.34. Geometry (One Credit)

(6) Underlying mathematical processes. Many processes underlie all content areas in mathematics. As they do mathematics, students continually use problem-solving, computation in problem-solving contexts, language and communication, connections within and outside mathematics, and reasoning, as well as multiple representations, applications and modeling, and justification and proof.

Precalculus**§111.35. Precalculus (One-Half to One Credit)**

(2) As students do mathematics, they continually use problem solving, language and communication, connections within and outside mathematics, and reasoning. Students also use multiple representations, applications and modeling, justification and proof, and computation in problem-solving contexts.

Technology Applications**§126.12. Technology Applications (Computer Literacy), Grades 6-8**

(2) Through the study of technology applications foundations, including technology-related terms, concepts, and data input strategies, students learn to make informed decisions about technologies and their applications. The efficient acquisition of information includes the identification of task requirements; the plan for using search strategies; and the use of technology to access, analyzes, and evaluates the acquired information. By using technology as a tool that supports the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create a solution, and evaluate the results. Students communicate information in different formats and to diverse audiences. A variety of technologies will be used. Students will analyze and evaluate the results.

(4) Information acquisition. The student uses a variety of strategies to acquire information from electronic resources, with appropriate supervision.

(5) Information acquisition. The student acquires electronic information in a variety of formats, with appropriate supervision.

(7) Solving problems. The student uses appropriate computer-based productivity tools to create and modify solutions to problems.

(8) Solving problems. The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge.

Social Studies**§113.22. Social Studies, Grade 6**

(6.21) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology.

(6.22) Social studies skills. The student communicates in written, oral, and visual forms.

(6.23) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings.

§113.23. Social Studies, Grade 7

(7.8) Geography. The student uses geographic tools to collect, analyze, and interpret data.

- (7.21) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology.
- (7.22) Social studies skills. The student communicates in written, oral, and visual forms.
- (7.23) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings.

§113.24. Social Studies, Grade 8

- (8.10) Geography. The student uses geographic tools to collect, analyze, and interpret data.
- (8.30) Social studies skills. The student applies critical-thinking skills to organize and use information acquired from a variety of sources including electronic technology.
- (8.31) Social studies skills. The student communicates in written, oral, and visual forms.
- (8.32) Social studies skills. The student uses problem-solving and decision-making skills, working independently and with others, in a variety of settings.

English Language Arts and Reading

§110.22. English Language Arts and Reading, Grade 6

- (6.1) Listening/speaking/purposes. The student listens actively and purposefully in a variety of settings.
- (6.2) Listening/speaking/critical listening. The student listens critically to analyze and evaluate a speaker's message(s).
- (6.5) Listening/speaking/audiences. The student speaks clearly and appropriately to different audiences for different purposes and occasions.
- (6.13) Reading/inquiry/research. The student inquires and conducts research using a variety of sources.
- (6.17) Writing/grammar/usage. The student applies standard grammar and usage to communicate clearly and effectively in writing.
- (6.20) Writing/inquiry/research. The student uses writing as a tool for learning and research.
- (6.24) Viewing/representing/production. The student produces visual images, messages, and meanings that communicate with others.

§110.23. English Language Arts and Reading, Grade 7

- (7.1) Listening/speaking/purposes. The student listens actively and purposefully in a variety of settings.
- (7.2) Listening/speaking/critical listening. The student listens critically to analyze and evaluate a speaker's message(s).
- (7.13) Reading/inquiry/research. The student inquires and conducts research using a variety of sources.
- (7.17) Writing/grammar/usage. The student applies standard grammar and usage to communicate clearly and effectively in writing.
- (7.20) Writing/inquiry/research. The student uses writing as a tool for learning and research.
- (7.22) Viewing/representing/interpretation. The student understands and interprets visual images, messages, and meanings.
- (7.24) Viewing/representing/production. The student produces visual images, messages, and meanings that communicate with others.

§110.24. English Language Arts and Reading, Grade 8

- (8.1) Listening/speaking/purposes. The student listens actively and purposefully in a variety of settings.
- (8.2) Listening/speaking/critical listening. The student listens critically to analyze and evaluate a speaker's message(s).
- (8.5) Listening/speaking/audiences. The student speaks clearly and appropriately to different audiences for different purposes and occasions.
- (8.7) Reading/fluency. The student reads with fluency and understanding in texts at appropriate difficulty levels.
- (8.10) Reading/comprehension. The student comprehends selections using a variety of strategies.
- (8.13) Reading/inquiry/research. The student inquires and conducts research using a variety of sources.
- (8.17) Writing/grammar/usage. The student applies standard grammar and usage to communicate clearly and effectively in writing.
- (8.18) Writing/writing process. The student selects and uses writing processes for self-initiated and assigned writing.
- (8.20) Writing/inquiry/research. The student uses writing as a tool for learning and research.
- (8.22) Viewing/representing/interpretation. The student understands and interprets visual images, messages, and meanings.
- (6.24) Viewing/representing/production. The student produces visual images, messages, and meanings that communicate with others.

§110.42. English I (One Credit)

- (1) Writing/purposes. The student writes in a variety of forms, including business, personal, literary, and persuasive texts, for various audiences and purposes.
- (4) Writing/inquiry/research. The student uses writing as a tool for learning.
- (6) Reading/word identification/vocabulary development. The student uses a variety of strategies to read unfamiliar words and to build vocabulary.
- (8) Reading/variety of texts. The student reads extensively and intensively for different purposes in varied sources, including world literature. The student is expected to: (B) read in such varied sources as diaries, journals, textbooks, maps, newspapers, letters, speeches, memoranda, electronic texts, and other media.
- (13) Reading/inquiry/research. The student reads in order to research self-selected and assigned topics.
- (15) Listening/speaking/evaluation. The student listens to analyze, appreciate, and evaluate oral performances and presentations.
- (16) Listening/speaking/purposes. The student speaks clearly and effectively for a variety of purposes and audiences.
- (21) Viewing/representing/production. The student produces visual representations that communicate with others.

§110.43. English II (One Credit)

- (1) Writing/purposes. The student writes in a variety of forms, including business, personal, literary, and persuasive texts, for various audiences and purposes.
- (4) Writing/inquiry/research. The student uses writing as a tool for learning.
- (6) Reading/word identification/vocabulary development. The student acquires an extensive vocabulary through reading and systematic word study.

- (7) Reading/comprehension. The student comprehends selections using a variety of strategies.
- (8) Reading/variety of texts. The student reads extensively and intensively for different purposes in varied sources, including world literature.
- (13) Reading/inquiry/research. The student reads in order to research self-selected and assigned topics.
- (15) Listening/speaking/evaluation. The student listens to analyze, appreciate, and evaluate oral performances and presentations.
- (16) Listening/speaking/purposes. The student speaks clearly and effectively for a variety of purposes and audiences.
- (21) Viewing/representing/production. The student produces visual representations that communicate with others.