
Water Quality Sampling Unit Texas Essential Knowledge and Skills (TEKS) Alignment

Science

§112.24. Science, Grade 8

- (8.1) Scientific processes. The student conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.
- (8.2) Scientific processes. The student uses scientific inquiry methods during field and laboratory investigations.
- (8.3) Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.
- (8.4) Scientific processes. The student knows how to use a variety of tools and methods to conduct science inquiry.
- (8.14) Science concepts. The student knows that natural events and human activities can alter Earth systems.

Aquatic Science

§112.46. Aquatic Science

- (1) Scientific processes. The student, for at least 40% of instructional time, conducts field and laboratory investigations using safe, environmentally appropriate, and ethical practices.
- (2) Scientific processes. The student uses scientific methods during field and laboratory investigations.
- (3) Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions.
- (6) Science concepts. The student knows the roles of cycles in an aquatic environment.
- (7) Science concepts. The student knows environmental adaptations of aquatic organisms.
- (8) Science concepts. The student knows that aquatic environments change.
- (9) Science concepts. The student knows that geological phenomena and fluid dynamics affect aquatic systems.
- (10) Science concepts. The student knows the origin and use of water in a watershed.

Geology, Meteorology, and Oceanography.

- (1) topics that include: characteristics and conditions of the Earth; formation and history of the Earth; plate tectonics; origin and composition of minerals and rocks and the rock cycle; processes and products of weathering; natural energy resources; interactions in a watershed; characteristics of oceans; characteristics of the atmosphere; and the role of energy in weather and climate.
- (10) Science concepts. The student knows the interactions that occur in a watershed. The student is expected to:
- (A) identify the characteristics of a local watershed such as average annual rainfall, run-off patterns, aquifers, locations of river basins, and surface water reservoirs;
 - (B) analyze the impact of floods, droughts, irrigation, and industrialization on a watershed; and
 - (C) describe the importance and sources of surface and subsurface water.

Environmental Systems.

- (1) topics that include:
- biotic and abiotic factors in habitats;
 - interrelationships among resources and an environmental system;
 - sources and flow of energy through an environmental system;
 - changes in environments.
- (4) Science concepts. The student knows the relationships of biotic and abiotic factors within habitats, ecosystems, and biomes. The student is expected to:
- B) make observations and compile data about fluctuations in abiotic cycles and evaluate the effects of abiotic factors on local ecosystems and biomes;

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(C) evaluate the impact of human activity such as methods of pest control, hydroponics, organic gardening, or farming on ecosystems;

(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.

Mathematics

§111.24. Mathematics, Grade 8

(8.4) Patterns, relationships, and algebraic thinking. The student makes connections among various representations of a numerical relationship. The student is expected to generate a different representation given one representation of data such as a table, graph, equation, or verbal description.

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

(8.12) Probability and statistics. The student uses statistical procedures to describe data.

(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.

Geometry

§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.

Mathematical Models with Applications

§111.36. Mathematical Models with Applications (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.