

## **Surface Water Quality Data Interpretation Curriculum Correlation to Texas Essential Knowledge and Skills**

### §112.24. Science, Grade 8

(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.

### §112.46. Aquatic Science

(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.

(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.

(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.

### §112.44. Environmental Systems

(c) Knowledge and skills

(3) Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;

(D) describe the connection between environmental science and future careers;

(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;

(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;

(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.

### §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.

### §112.42. Integrated Physics and Chemistry

(c) Knowledge and skills.

(2) Scientific processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:

(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology;

(B) collect data and make measurements with precision;

(C) organize, analyze, evaluate, make inferences, and predict trends from data;

(D) communicate valid conclusions.

(3) Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;

§112.43. Biology

(c) Knowledge and skills.

2) Scientific processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:

(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology;

(B) collect data and make measurements with precision;

(C) organize, analyze, evaluate, make inferences, and predict trends from data;

(D) communicate valid conclusions

§112.45. Chemistry

(c) Knowledge and skills.

(2) Scientific processes. The student uses scientific methods during field and laboratory investigations. The student is expected to:

(A) plan and implement investigative procedures including asking questions, formulating testable hypotheses, and selecting equipment and technology;

(B) collect data and make measurements with precision;

(D) organize, analyze, evaluate, make inferences, and predict trends from data; and

(E) communicate valid conclusions.

(3) Scientific processes. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:

(A) analyze, review, and critique scientific explanations, including hypotheses and theories, as to their strengths and weaknesses using scientific evidence and information;

(D) describe the connection between chemistry and future careers; and

§126.22. Computer Science I

(2) Foundations. The student uses data input skills appropriate to the task. The student is expected to:

(A) demonstrate proficiency in the use of a variety of input devices such as keyboard, scanner, voice/sound recorder, mouse, touch screen, or digital video by appropriately incorporating such components into the product; and

(B) use digital keyboarding standards for the input of data.