

1. **Scientific investigation and reasoning. The student conducts classroom and outdoor investigations, following home and school safety procedures and environmentally appropriate and ethical practices. The student is expected to:**
 - A. demonstrate safe practices and the use of safety equipment as described in Texas Education Agency-approved safety standards during classroom and outdoor investigations using safety equipment, including safety goggles or chemical splash goggles, as appropriate, and gloves, as appropriate; and
 - B. make informed choices in the use and conservation of natural resources and reusing and recycling of materials such as paper, aluminum, glass, cans, and plastic.
2. **Scientific investigation and reasoning. The student uses scientific practices during laboratory and outdoor investigations. The student is expected to:**
 - A. plan and implement descriptive investigations, including asking well defined questions, making inferences, and selecting and using appropriate equipment or technology to answer his/her questions;
 - B. collect and record data by observing and measuring, using the metric system, and using descriptive words and numerals such as labeled drawings, writing, and concept maps;
 - C. construct simple tables, charts, bar graphs, and maps using tools and current technology to organize, examine, and evaluate data;
 - D. analyze data and interpret patterns to construct reasonable explanations from data that can be observed and measured;
 - E. perform repeated investigations to increase the reliability of results; and
 - F. communicate valid oral and written results supported by data.
3. **Scientific investigation and reasoning. The student uses critical thinking and scientific problem solving to make informed decisions. The student is expected to:**
 - A. analyze, evaluate, and critique scientific explanations by using evidence, logical reasoning, and experimental and observational testing;
 - B. represent the natural world using models such as the water cycle and stream tables and identify their limitations, including accuracy and size; and
 - C. connect grade-level appropriate science concepts with the history of science, science careers, and contributions of scientists.

4. **Scientific investigation and reasoning. The student knows how to use a variety of tools, materials, equipment, and models to conduct science inquiry. The student is expected to**
 - A. collect, record, and analyze information using tools, including calculators, microscopes, cameras, computers, hand lenses, metric rulers, Celsius thermometers, mirrors, spring scales, balances, graduated cylinders, beakers, hot plates, meter sticks, magnets, collecting nets, and notebooks; timing devices; and materials to support observation of habitats of organisms such as terrariums and aquariums.
5. **Matter and energy. The student knows that matter has measurable physical properties and those properties determine how matter is classified, changed, and used. The student is expected to:**
 - A. measure, compare, and contrast physical properties of matter, including mass, volume, states (solid, liquid, gas), temperature, magnetism, and the ability to sink or float; and
 - B. compare and contrast a variety of mixtures, including solutions.
6. **Force, motion, and energy. The student knows that energy exists in many forms and can be observed in cycles, patterns, and systems. The student is expected to:**
 - A. differentiate among forms of energy, including mechanical, sound, electrical, light, and thermal;
 - B. differentiate between conductors and insulators of thermal and electrical energy;
 - C. demonstrate that electricity travels in a closed path, creating an electrical circuit; and
 - D. design a descriptive investigation to explore the effect of force on an object such as a push or a pull, gravity, friction, or magnetism.
7. **Earth and space. The students know that Earth consists of useful resources and its surface is constantly changing. The student is expected to:**
 - A. examine properties of soils, including color and texture, capacity to retain water, and ability to support the growth of plants;
 - B. observe and identify slow changes to Earth's surface caused by weathering, erosion, and deposition from water, wind, and ice; and
 - C. identify and classify Earth's renewable resources, including air, plants, water, and animals, and nonrenewable resources, including coal, oil, and natural gas, and the importance of conservation.

8. **Earth and space. The student knows that there are recognizable patterns in the natural world and among the Sun, Earth, and Moon system. The student is expected to:**
 - A. measure, record, and predict changes in weather;
 - B. describe and illustrate the continuous movement of water above and on the surface of Earth through the water cycle and explain the role of the Sun as a major source of energy in this process; and
 - C. collect and analyze data to identify sequences and predict patterns of change in shadows, seasons, and the observable appearance of the Moon over time.
9. **Organisms and environments. The student knows and understands that living organisms within an ecosystem interact with one another and with their environment. The student is expected to:**
 - A. investigate that most producers need sunlight, water, and carbon dioxide to make their own food, while consumers are dependent on other organisms for food; and
 - B. describe the flow of energy through food webs, beginning with the Sun, and predict how changes in the ecosystem affect the food web.
10. **Organisms and environments. The student knows that organisms undergo similar life processes and have structures and behaviors that help them survive within their environment. The student is expected to:**
 - A. explore how structures and functions enable organisms to survive in their environment;
 - B. explore and describe examples of traits that are inherited from parents to offspring such as eye color and shapes of leaves and behaviors that are learned such as reading a book and a wolf pack teaching their pups to hunt effectively; and
 - C. explore, illustrate, and compare life cycles in living organisms such as beetles, crickets, radishes, or lima beans.