

Learning Through Art at the MFAH Middle School

SCIENCE TEK Alignment



1. Number 6, 1949

Understanding the Relationship between Force, Motion, and Energy

TEKS:

- 6.2 Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:
- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
 - (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
 - (C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;
 - (D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and
 - (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.
- 6.8 Force, motion, and energy.** The student knows force and motion are related to potential and kinetic energy. The student is expected to:
- (B) identify and describe the changes in position, direction, and speed of an object when acted upon by unbalanced forces;
 - (C) calculate average speed using distance and time measurements;
 - (D) measure and graph changes in motion; and
 - (E) investigate how inclined planes and pulleys can be used to change the amount of force to move an object.
- 7.2 Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:
- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
 - (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
 - (C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;
 - (D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and
 - (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.
- 7.7 Force, motion, and energy.** The student knows that there is a relationship among force, motion, and energy. The student is expected to:
- (A) contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still
- 8.2 Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:
- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
 - (B) design and implement comparative and experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
 - (C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;
 - (D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and
 - (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

8.6 Force, motion, and energy. The student knows that there is a relationship between force, motion, and energy. The student is expected to:

- (A) demonstrate and calculate how unbalanced forces change the speed or direction of an object's motion;
- (B) differentiate between speed, velocity, and acceleration; and
- (C) investigate and describe applications of Newton's law of inertia, law of force and acceleration, and law of action-reaction such as in vehicle restraints, sports activities, amusement park rides, Earth's tectonic activities, and rocket launches.

2. Hip Hop, 1993

Understanding the Law of Conservation of Energy

TEKS:

6.9 Force, motion, and energy. The student knows that the Law of Conservation of Energy states that energy can neither be created nor destroyed, it just changes form. The student is expected to:

- (A) investigate methods of thermal energy transfer, including conduction, convection, and radiation;
- (B) verify through investigations that thermal energy moves in a predictable pattern from warmer to cooler until all the substances attain the same temperature such as an ice cube melting; and
- (C) demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy.

3. Portrait of a Boy, c.1758–1760

Understanding the Law of Conservation of Energy

TEKS:

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- (B) verify through investigations that thermal energy moves in a predictable pattern from warmer to cooler until all the substances attain the same temperature such as an ice cube melting; and
- (C) demonstrate energy transformations such as energy in a flashlight battery changes from chemical energy to electrical energy to light energy.

4. The Chicken, c.1926

Understanding Relationships and Systems

TEKS:

6.12 Organisms and environments. The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:

- (A) understand that all organisms are composed of one or more cells

7.12 Organisms and environments. The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function. The student is expected to:

- (B) identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems;
- (C) recognize levels of organization in plants and animals, including cells, tissues, organs, organ systems, and organisms;
- (D) differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole;
- (E) compare the functions of a cell to the functions of organisms such as waste removal; and
- (F) recognize that according to cell theory all organisms are composed of cells and cells carry on similar functions such as extracting energy from food to sustain life.

7.13 Organisms and environments. The student knows that a living organism must be able to maintain balance in stable internal conditions in response to external and internal stimuli. The student is expected to:

- (A) investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight

5. *Hercules Upholding the Heavens, 1918*

Understanding Contrasting Situations

TEKS:

- 7.7 Force, motion, and energy.** The student knows that there is a relationship among force, motion, and energy. The student is expected to:
- (A) contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still

6. *The Cradle, 1950*

Understanding Contrasting Situations

TEKS:

- 7.7 Force, motion, and energy.** The student knows that there is a relationship among force, motion, and energy. The student is expected to:
- (A) contrast situations where work is done with different amounts of force to situations where no work is done such as moving a box with a ramp and without a ramp, or standing still

7. *Incense Burner (incensario) Lid, 150–650 AD*

Understanding Complex and Microscopic Structures and Systems

TEKS:

- 6.12 Organisms and environments.** The student knows all organisms are classified into Domains and Kingdoms. Organisms within these taxonomic groups share similar characteristics which allow them to interact with the living and nonliving parts of their ecosystem. The student is expected to:
- (C) recognize that the broadest taxonomic classification of living organisms is divided into currently recognized Domains
 - (D) identify the basic characteristics of organisms, including prokaryotic or eukaryotic, unicellular or multicellular, autotrophic or heterotrophic, and mode of reproduction, that further classify them in the currently recognized Kingdoms
- 7.11 Organisms and environments.** The student knows that populations and species demonstrate variation and inherit many of their unique traits through gradual processes over many generations. The student is expected to:
- (A) examine organisms or their structures such as insects or leaves and use dichotomous keys for identification;
 - (B) explain variation within a population or species by comparing external features, behaviors, or physiology of organisms that enhance their survival such as migration, hibernation, or storage of food in a bulb
- 7.12 Organisms and environments.** The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function. The student is expected to
- (C) recognize levels of organization in plants and animals, including cells, tissues, organs, organ systems, and organisms

8. *Hercules Upholding the Heavens, 1918*

Testing Hypothesis

TEKS:

- 6.1 Scientific investigation and reasoning.** The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:
- (A) demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; and
 - (B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.
- 6.2 Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:
- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
 - (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;

- (C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;
- (D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and
- (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

6.3 Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:

- (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student

6.4 Scientific investigation and reasoning. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:

- (A) use appropriate tools to collect, record, and analyze information, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum; and
- (B) use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

7.1 Scientific investigation and reasoning. The student, for at least 40% of the instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:

- (A) demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; and
- (B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.

7.2 Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:

- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
- (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
- (C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;
- (D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and
- (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

7.3 Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:

- (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student;
- (B) use models to represent aspects of the natural world such as human body systems and plant and animal cells;
- (C) identify advantages and limitations of models such as size, scale, properties, and materials; and
- (D) relate the impact of research on scientific thought and society, including the history of science and contributions of scientists as related to the content.

7.4 Science investigation and reasoning. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:

- (A) use appropriate tools to collect, record, and analyze information, including life science models, hand lens, stereoscopes, microscopes, beakers, Petri dishes, microscope slides, graduated cylinders, test tubes, meter sticks, metric rulers, metric tape measures, timing devices, hot plates, balances, thermometers, calculators, water test kits, computers, temperature and pH probes, collecting nets, insect traps, globes, digital cameras, journals/notebooks, and other equipment as needed to teach the curriculum; and
- (B) use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

8.1 Scientific investigation and reasoning. The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:

- (A) demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; and
- (B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.

- 8.2 Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:
- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
 - (B) design and implement comparative and experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
 - (C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;
 - (D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and
 - (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.
- 8.3 Scientific investigation and reasoning.** The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:
- (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student
- 8.4 Scientific investigation and reasoning.** The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:
- (A) use appropriate tools to collect, record, and analyze information, including lab journals/notebooks, beakers, meter sticks, graduated cylinders, anemometers, psychrometers, hot plates, test tubes, spring scales, balances, microscopes, thermometers, calculators, computers, spectrometers, timing devices, and other equipment as needed to teach the curriculum; and
 - (B) use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

9. *Portrait of a Young Woman, 1633*

Supporting Original Observations

TEKS:

- 7.12 Organisms and environments.** The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function. The student is expected to:
- (A) investigate and explain how internal structures of organisms have adaptations that allow specific functions such as gills in fish, hollow bones in birds, or xylem in plants
 - (B) identify the main functions of the systems of the human organism, including the circulatory, respiratory, skeletal, muscular, digestive, excretory, reproductive, integumentary, nervous, and endocrine systems;
 - (C) recognize levels of organization in plants and animals, including cells, tissues, organs, organ systems, and organisms;
 - (D) differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole
- 7.13 Organisms and environments.** The student knows that a living organism must be able to maintain balance in stable internal conditions in response to external and internal stimuli. The student is expected to:
- (A) investigate how organisms respond to external stimuli found in the environment such as phototropism and fight or flight;
 - (B) describe and relate responses in organisms that may result from internal stimuli such as wilting in plants and fever or vomiting in animals that allow them to maintain balance.

10. *Haystack, 1938*

Scientific Investigation and Reasoning

TEKS:

- 6.1 Scientific investigation and reasoning.** The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:
- (A) demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; and
 - (B) practice appropriate use and conservation of resources, including disposal, reuse, or recycling of materials.

- 6.2 Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:
- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
 - (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
 - (C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;
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- (A) use appropriate tools to collect, record, and analyze information, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum; and
 - (B) use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.
- 7.12 Organisms and environments.** The student knows that living systems at all levels of organization demonstrate the complementary nature of structure and function. The student is expected to:
- (A) investigate and explain how internal structures of organisms have adaptations that allow specific functions such as gills in fish, hollow bones in birds, or xylem in plants
 - (D) differentiate between structure and function in plant and animal cell organelles, including cell membrane, cell wall, nucleus, cytoplasm, mitochondrion, chloroplast, and vacuole
- 8.1 Scientific investigation and reasoning.** The student, for at least 40% of instructional time, conducts laboratory and field investigations following safety procedures and environmentally appropriate and ethical practices. The student is expected to:
- (A) demonstrate safe practices during laboratory and field investigations as outlined in the Texas Safety Standards; and
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- 8.2 Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:
- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;

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8.4 Scientific investigation and reasoning. The student knows how to use a variety of tools and safety equipment to conduct science inquiry. The student is expected to:

- (A) use appropriate tools to collect, record, and analyze information, including journals/notebooks, beakers, Petri dishes, meter sticks, graduated cylinders, hot plates, test tubes, triple beam balances, microscopes, thermometers, calculators, computers, timing devices, and other equipment as needed to teach the curriculum; and
- (B) use preventative safety equipment, including chemical splash goggles, aprons, and gloves, and be prepared to use emergency safety equipment, including an eye/face wash, a fire blanket, and a fire extinguisher.

11. The Cradle, 1950

Scientific Inquiry

TEKS:

6.2 Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:

- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
- (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
- (C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;
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- (C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;
- (D) construct tables and graphs, using repeated trials and means, to organize data and identify patterns; and
- (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

12. Kara, 1983

Analyzing Data

TEKS:

**The following TEKS are represented in the powerpoint that accompanies this lesson:*

- 6.5 Matter and energy.** The student knows the differences between elements and compounds. The student is expected to:
- (A) know that an element is a pure substance represented by chemical symbols
- 6.8 Force, motion, and energy.** The student knows force and motion are related to potential and kinetic energy. The student is expected to:
- (A) compare and contrast potential and kinetic energy
- 7.5 Matter and energy.** The student knows that interactions occur between matter and energy. The student is expected to:
- (A) recognize that radiant energy from the Sun is transformed into chemical energy through the process of photosynthesis
- 7.6 Matter and energy.** The student knows that matter has physical and chemical properties and can undergo physical and chemical changes. The student is expected to:
- (A) identify that organic compounds contain carbon and other elements such as hydrogen, oxygen, phosphorus, nitrogen, or sulfur;
 - (B) distinguish between physical and chemical changes in matter in the digestive system; and
 - (C) recognize how large molecules are broken down into smaller molecules such as carbohydrates can be broken down into sugars.
- 8.5 Matter and energy.** The student knows that matter is composed of atoms and has chemical and physical properties. The student is expected to:
- (D) recognize that chemical formulas are used to identify substances and determine the number of atoms of each element in chemical formulas containing subscripts

13. Portrait of Louise-Antoinette-Scholastique Guéhéneuc, Madame la Maréchale Lannes, Duchesse de Montebello, with her Children, 1814

Modes of Scientific Inquiry

TEKS:

- 6.2 Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:
- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
 - (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
 - (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.
- 7.2 Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:
- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
 - (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
 - (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.
- 7.14 Organisms and environments.** The student knows that reproduction is a characteristic of living organisms and that the instructions for traits are governed in the genetic material. The student is expected to:
- (A) define heredity as the passage of genetic instructions from one generation to the next generation;
 - (B) compare the results of uniform or diverse offspring from sexual reproduction or asexual reproduction; and
 - (C) recognize that inherited traits of individuals are governed in the genetic material found in the genes within chromosomes in the nucleus.
- 8.2 Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:
- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;

- (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
- (E) analyze data to formulate reasonable explanations, communicate valid conclusions supported by the data, and predict trends.

14. *Still Life with Golden Bream, 1808–1812*

Analyzing Patterns in Natural Systems

TEKS:

- 6.3 Scientific investigation and reasoning.** The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:
- (B) use models to represent aspects of the natural world such as a model of Earth's layers
- 6.10 Earth and space.** The student understands the structure of Earth, the rock cycle, and plate tectonics. The student is expected to:
- (C) identify the major tectonic plates, including Eurasian, African, Indo-Australian, Pacific, North American, and South American; and
 - (D) describe how plate tectonics causes major geological events such as ocean basins, earthquakes, volcanic eruptions, and mountain building.
- 8.3 Scientific investigation and reasoning.** The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:
- (B) use models to represent aspects of the natural world such as an atom, a molecule, space, or a geologic feature
- 8.9 Earth and space.** The student knows that natural events can impact Earth systems. The student is expected to:
- (A) describe the historical development of evidence that supports plate tectonic theory;
 - (B) relate plate tectonics to the formation of crustal features

15. *Ventriloquist, 1983*

Descriptive Investigations

TEKS:

- 6.3 Scientific investigation and reasoning.** The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:
- (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student
- 7.3 Scientific investigation and reasoning.** The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:
- (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student
- 8.3 Scientific investigation and reasoning.** The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:
- (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student

16. *from the series 11:02 Nagasaki/Beer Bottle After the Atomic Bomb Explosion, 1961*

Art and the Scientific Method

TEKS:

- 6.2 Scientific investigation and reasoning.** The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:
- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;

- (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
- (C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;

6.3 Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:

- (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student

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- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
- (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
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7.3 Scientific investigation and reasoning. The student uses critical thinking, scientific reasoning, and problem solving to make informed decisions and knows the contributions of relevant scientists. The student is expected to:

- (A) in all fields of science, analyze, evaluate, and critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, including examining all sides of scientific evidence of those scientific explanations, so as to encourage critical thinking by the student

8.2 Scientific investigation and reasoning. The student uses scientific inquiry methods during laboratory and field investigations. The student is expected to:

- (A) plan and implement comparative and descriptive investigations by making observations, asking well-defined questions, and using appropriate equipment and technology;
- (B) design and implement experimental investigations by making observations, asking well-defined questions, formulating testable hypotheses, and using appropriate equipment and technology;
- (C) collect and record data using the International System of Units (SI) and qualitative means such as labeled drawings, writing, and graphic organizers;

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17. *The Chicken*, c.1926

Art and the Scientific Method

TEKS:

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