

UTeach Outreach



Spring 2015 6th Grade Lesson Objectives

Club Starter/Team Building Week of Feb 16th

Lesson 1 - Week of February 23rd, 2015

Title: Balloon Rockets

Skills TEKS: 6.1A-B, 6.2A-E, 6.3A, 6.4A-B

Knowledge TEKS: 6.8B-D, 6.8E

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

Objectives:

1. Students identify and describe the changes in position, direction of motion, and speed of an object when acted upon by an unbalanced force.
2. Students will calculate average speed using distance and time measurements.
3. Students will measure and graph changes in motion to predict speed, distance, or time.
4. Students will plan and implement investigative procedures including asking questions, formulating testable hypotheses, and using proper equipment.

Lesson 2 - Week of March 2nd, 2015

Title: Natural Selection

Skills TEKS: 6.2E, 6.3B-C

Knowledge 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:

- (E) describe biotic and abiotic parts of an ecosystem in which organisms interact; and
- (F) diagram the levels of organization within an ecosystem, including organism, population, community, and ecosystem.

Objectives:

1. Understand how adaptations help organisms survive by interpreting line graphs of the population of a species over time.
2. Develop conceptual understanding of natural selection by exploring how limiting factors, abiotic and biotic parts of an ecosystem, and mutations interact and contribute to the survival of a species.
3. Define positive, negative and neutral mutations and give examples.
4. Assess the usefulness of models in scientific investigations.
5. Propose modifications to a model by considering how it mimics a real world event.
6. to their environment to survive environmental changes.

Lesson 3 - Week of March 9th, 2015

Title: Plate Tectonics

Skills TEKS: 6.3A-D

Knowledge TEKS:

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.

Objectives:

1. Students will visualize simple models as examples of larger structures.
2. Students will identify the seven major plates that make up the Earth's crust on a map.
3. Students will model the three types of plate movements & plate boundary types (transform, convergent, and divergent) and speculate how such movements can lead to common geographic features.

Week of March 16th, 2015 – Spring Break

Lesson 4 - Week of March 23rd, 2015

Title: Toothpick Bridges

Knowledge TEKS:

6.10 Earth and space. The student understands the structure of Earth, the rock cycle, and plate tectonics. The student is expected to:

(D) describe how plate tectonics causes major geological events such as ocean basins, earthquakes, volcanic eruptions, and mountain building.

Objectives:

1. Students will predict and describe the direction of motion and change in position of a bridge when acted upon by a seismic force which they will related to the previous learn lesson about plate tectonics (relate here to plate tectonics and gravity).
2. Students will demonstrate that changes in motion can be measured and represented graphically.
3. Students will plan and implement investigative procedures (building toothpick bridges) including asking questions, formulating testable hypotheses, and selecting and using equipment and technology.

Week of March 30th, 2015 - No school visits – 5th, 7-8th grade STAAR Testing

Lesson 5 - Week of April 6th, 2015

Title: Minerals

Skills TEKS: 6.1A, 6.2E, 6.4A

Knowledge TEKS:

6.6 Matter and energy. The student knows matter has physical properties that can be used for classification. The student is expected to:

(C) Test the physical properties of minerals, including hardness, color, luster, and streak.

6.10 Earth and Space. The student is expected to:

(B) classify rocks as metamorphic, igneous, or sedimentary by the process of their formation.

Objectives:

1. Students will recognize that elements make up minerals.
2. Students will identify minerals by using equipment to test their different properties.
3. Students will use identification skills to classify rocks as metamorphic, igneous, or sedimentary.

Lesson 6 - Week of April 13th, 2015

Title: Space and Gravity

Skills TEKS: 6.3A-D

Knowledge TEKS:

6.11 Earth and space. The student understands the organization of our solar system and the relationships among the various bodies that comprise it. The student is expected to:

(B) understand that gravity is the force that governs the motion of our solar system; and

(C) describe the history and future of space exploration, including the types of equipment and transportation needed for space travel.

Objectives:

1. Students will identify advantages and limitations of models of the solar system.
2. Students will learn about the role of gravity in the solar system and how it affects the way planetary objects move in relation to each other.
3. Students will examine and judge scientific evidence and explanations using logical reasoning, experimental and observational testing.
4. Students will give accounts of the impact of scientists' contributions to current scientific thought and society.

Week of April 20th, 2015 - No school visits – 6-8th grade STARR Testing

Lesson 7 - Week of April 27th, 2015

Title: Planets and Asteroids

Skills TEKS: 6.3C-D

Knowledge TEKS:

6.11 Earth and space. The student understands the organization of our solar system and the relationships among the various bodies that comprise it. The student is expected to:

- (A) describe the physical properties, locations, and movements of the Sun, planets, Galilean moon, meteors, asteroids, and comets;
- (B) understand that gravity is the force that governs the motion of our solar system;
- (C) describe the history and future of space exploration, including the types of equipment and transportation needed for space travel.

Objectives:

1. Students will investigate the different properties of the planets to distinguish them from one another.
2. Students will be able to describe the physical properties and the movements of the Sun, planets, Galilean moons, meteors, asteroids, and comets.
3. Students will discuss the impact of research and contributions of scientists to the history of space discoveries.
4. Students will be able to describe the history and the future of space exploration.

Week of May 4th, 2015 - Make up week for lesson missed due to testing or holidays

Mini-Science Olympics at UT 10-1:30pm – May 11th, 2015