



## Spring 2018 6th Grade Lesson Objectives

**Club Starter/Team Building: February 20<sup>th</sup> – 22<sup>nd</sup>, 2018 (Led by one of our staff members, but your UT students are coming to meet the class and see your classroom)**

### Lesson 1 - Week of February 26<sup>th</sup>, 2018

**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 5<sup>th</sup>, 2017

**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.

**March 12<sup>th</sup>- 16<sup>th</sup> is Spring Break: Not going to schools**

### **Lesson 3 - Week of March 19<sup>th</sup>, 2018**

#### **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.

### **Lesson 4 Week of March 26<sup>th</sup>, 2018**

#### **Title: Rocks and 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 5 - Week of April 2<sup>nd</sup>, 2018**

#### **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.

**April 9<sup>th</sup>-13<sup>th</sup> is STARR Testing: Not going to schools**

**Lesson 6 - Week of April 16<sup>th</sup>, 2018**

**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.

**Lesson 7 - Week of April 23<sup>rd</sup>, 2018**

**Title: Engineering in Space**

**Skills TEKS: 6.3D**

**Knowledge 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:

- (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.

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:

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

**May 1<sup>st</sup>-3<sup>rd</sup> - Make up days for lesson missed due to testing or holidays**

**May 7<sup>th</sup>, 2018- Mini-Science Competition at UT 10am-1:45pm**