

# 4<sup>TH</sup>

## Fourth Grade



**A typical Fourth Grade visit (except for Universe In A Day – refer to next page for details about this program) will consist of two 90-minute learning labs, one at 9:30am and a second one at 11:45am. Lunch will be scheduled as part of your visit.**

### **Storm Chaser Engineering** STEM Lab – 90 Minutes

The students are storm-chasing meteorologists on a mission. They will learn about how air masses and fronts cause the weather conditions that lead to thunderstorms and tornadoes. They will use what they learn along with engineering practices to help solve the real-world problem of how to better predict tornadoes by designing a tornado probe. **Science Standards: 4.E.2B.2, 4.S.1A.2, 4.S.1B.1**

### **Light Saves the Day!** STEM Lab – 90 Minutes

Superhero Rohawk has been captured! Working in collaborative teams as members of The Guardians of Greenville, students will use special skills and gadgets to help the hero escape through the assistance of light energy. They will use their engineering expertise to design/modify devices and find solutions to problems by taking advantage of the properties, behaviors, and interactions of light. By exploring light and energy, the Guardians of Greenville will free the superhero and save the world! **Science Standards: 4.P.4A.1, 4.P.4A.2, 4.P.4A.4, 4.P.4A.5; 4.S.1A.2**

### **American Revolutionaries** Living History Farm & One-Room School – 90 Minutes

By taking part in a reenactment, students will discover the hardships of military life as well as how the battle of Cowpens was part of the decisive turning point in our fight for freedom. Students will discover Revolutionary War spy techniques as they help to convey a secret message! Finally, they will learn about the significance of the Declaration of Independence and write with a quill pen. NOT available in January. **Social Studies Standard: 4-3.2, 4-3.3**

### **Sounds Dangerous! - Mystery on Mars** STEM Lab – 90 Minutes

Students will work as a team of engineers as they travel in their rover to a new base on Mars. The team detects a dangerous vibration in the rover which could jeopardize the vehicle and crew. Using sound meters and oscilloscope software, student teams will locate the source and properties of the sound, including pitch and volume. Then they will work as a team to decrease the vibration. Will they fix the threatening sound in time? Join the mission and find out! **Science Standards: 4.P.4B.2; 4.S.1A.6, 4.S.1B.1**



### Roper Mountain Science Center

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# 4<sup>TH</sup>

## Fourth Grade Continued



### Universe In A Day

9:30am to 1:30pm

Up to four classes rotate through five astronomy areas. Using the Planetarium and unique resources, students will cover 4th Grade astronomy performance indicators. Lunch will be scheduled as part of your visit.

#### Live Lesson by the Astronomer

The astronomer will use the unique, full-dome planetarium to illustrate specific and challenging 4th grade space science concepts including:

- Earth: axis, tilt, rotation, day and night, orbital revolution and seasonal pattern
- Moon: location, movement, phases and tidal effect on oceans
- Sun: properties, apparent path in the sky and effects on Earth.

Science Standards: 4.E.3A.1; 4.E.3A.2.; 4.E.3B.1; 4.E.3B.2

#### And: “Earth, Moon & Sun” Planetarium Show

This exciting show, inspired by American Indian oral traditions, will help students learn concepts about the Earth-Moon-Sun system. Learn the basics of solar energy and why the sun rises and sets. Examine the moon’s orbit, craters, phases and eclipses. You’ll even take a look at past and future space travel to our moon... and beyond! Science Standards: 4.E.3A.1; 4.E.3A.2.; 4.E.3B.4

### Then Your Group Rotates through Four Labs:

#### Universe In A Day Labs:

##### Phases of the Moon Universe Classroom – 30 Minutes

Using moon box models students will manipulate the position of the moon in its orbit around the Earth. They will use this data to describe the Moon Phase Cycle.

Science Standards: 4.E.3B.1; S.1.A.2

##### Seasons Astronomy Classroom – 30 Minutes

Students will utilize Sun, Earth and moon models (Orrery) to explore the relationship between seasonal changes and the tilt, revolution and angle of sunlight on the Earth. Science Standards: 4.E.3B.4; S.1.A.6

##### Shadows of the Sun STEM Lab – 30 Minutes

Students will use Earth and shadow models to explain why the Sun appears to move across the sky throughout the day. Science Standards: 4.E.3B.3; S.1.A.6

##### Observatory & Telescope Observatory – 30 Minutes

Using small telescopes, students will observe objects to understand the significance of these tools in the study of outer space. They will construct reasons to support the claim that telescopes aid in exploration. The center’s historic telescope, one of the nation’s largest, will be the backdrop for the lesson.

Science Standards: 4.E.3A.3; S.1.A.6



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