



A Lesson on Learning about the Solar System by Sarah Farmer

Grade Level: Grade 4

Subject Area: English Language Arts

Lesson Length: 1 hour

Lesson Keywords: Solar system, Astronauts, Scientists, Earth

Lesson Description: This lesson will allow for students to learn what it might be like being a scientist who studies Earth and the Solar System. They will be prompted to think about whether they would like to be a scientist, and asked to write about what they might experience as an astronaut in space. Vocabulary, literacy, and writing skills will be assessed. This lesson could be used in correlation with a Solar System unit in science.

Common Core Standards Covered with This Lesson

CCSS.ELA-Literacy.RI.4.1: Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.

CCSS.ELA-Literacy.RI.4.3: Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

CCSS.ELA-Literacy.RI.4.4: Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

CCSS.ELA-Literacy.RF.4.4c: Use context to confirm or self-correct word recognition and understanding, rereading as necessary.

CCSS.ELA-Literacy.W.4.2d: Use precise language and domain-specific vocabulary to inform about or explain the topic.

CCSS.ELA-Literacy.W.4.3: Write narratives to develop real or imagined experiences or events using effective technique, descriptive details, and clear event sequences.

CCSS.ELA-Literacy.W.4.3d: Use concrete words and phrases and sensory details to convey experiences and events precisely.

Lesson Content: Book/Story/Reading Passage

Instructions: Please read the following reading passage as many times as needed (aloud and silent) before starting to go through other lesson pages. Understanding the content of this passage is very important since the lesson activities will be all about this content. Feel free to print the passage if needed.

Learning about the Solar System

by

Content: When scientists looked at the stars long ago, they saw patterns. They did not understand everything about what they saw. So they kept looking to learn more. That is what scientists do. They ask questions and look for information to answer their questions. They are like explorers. They do not travel far the way explorers do. But they do make a kind of journey. They want to learn more. They go from what they know to what they discover.

Scientists have learned about our planet. It is very big. It is very diverse. There are places that are hot. There are places that are freezing. There are mountains and plains. There are hills and valleys. There are deep oceans. There are great rivers and waterfalls. There are rainforests. There are deserts. Those are all parts of our planet. There is much more to learn about what is here on Earth. A scientist dedicates much time to learning. The scientist works hard. The scientist helps us all find out more about our world.

Our planet is in a galaxy called the Milky Way. The sun is a big star in our part of this giant galaxy. Our galaxy holds millions of other stars. The sun is very important to our planet. The sun gives us light during the day. It gives us heat, too. Two other planets are closer to the sun than Earth: Mercury and Venus.

Scientists figured out how the Earth changes. Earth orbits the sun once each year. It travels once around the sun every 365 days. The other eight planets in our solar system also orbit around the sun. All travel in a pattern called an ellipse, which is a kind of oval. So at times Earth is farther from the sun. Scientists figured out that made it cooler on Earth then. But they also figured out that it is the tilt of the Earth's axis, however, that has the greatest effect on temperatures.

Scientists are still learning about our galaxy. There is much to discover. Today astronauts travel into space. They are explorers. It is dangerous to travel in space, but they are dauntless. They bravely travel thousands of miles to learn.

Task 1: Vocabulary

Instructions: Please complete the following vocabulary activity by choosing the correct meaning of each word selected from the passage and use of each word correctly in a sentence.

Q: 1 WordPhrase: diverse **WordPhraseTier:** 2

Question: The passage describes the Earth as being very "diverse". What is the meaning behind diverse?

- A: Cold
- B: Large
- C: Different
- D: Tiny

Question: Which of the sentences below uses "diverse" correctly?

- A: Cheerios are all diverse.
- B: Our school has many diverse students and teachers.
- C: My dog is diverse.
- D: The diverse ice cream was beginning to melt.

Q: 2 WordPhrase: Axis **WordPhraseTier:** 3

Question: Here is a sentence from the passage: "But they also figured out that it is the tilt of the Earth's axis, however, that has the greatest effect on temperatures." What might the word "axis" mean?

- A: An imaginary line an object turns around
- B: A giant stick through the center of the Earth
- C: A microwave that makes it hot outside
- D: A giant rope around the circumference of Earth

Question: Based on the meaning of the word "axis" choose the sentence below where it is used correctly.

- A: The axis of Earth is made of wood and metal
- B: It is very hot today so the axis must be on.
- C: The Earth spins on it's axis one time every day.
- D: The axis is tied in a big knot near Australia.

Q: 3 WordPhrase: Dauntless **WordPhraseTier:** 2

Question: The author says "It is dangerous to travel in space, but they are dauntless." It is likely that dauntless means...

- A: Scared
- B: Excited
- C: Nervous
- D: Fearless

Question: Which sentence below uses the word "dauntless" properly?

- A: They were dauntless about the big test coming up.
- B: The child was dauntless and rode the rollercoaster all alone.
- C: The bear made me feel dauntless when I saw it.
- D: I am dauntless because I am going to Disney World soon.

Q: 4 WordPhrase: Orbit **WordPhraseTier:** 3

Question: The passage states that "Earth orbits the sun once each year." What does "orbit" mean in this sentence?

- A: Moves closer to in a straight line
- B: An oval path that one object takes around another
- C: Goes over and under
- D: Moves further in a straight line

Question: Which of the sentences below uses the word "orbit" correctly?

- A: The ball is shaped like an orbit, it is a perfect sphere.
- B: I ride my bike up the driveway, orbiting my mom.
- C: The moon orbits around the Earth in an elliptical path.
- D: The highway bridges were like orbits, going over and under each other.

Task 2: Forum Discussion

Instructions: This discussion forum will have questions for students to respond. Read the posted questions, and respond to each. Students are responsible for posting one initial and two peer responses for each topic.

1 - A Scientist's Journey

The author talks about scientists being explorers and says?They do not travel far the way explorers?do. But they do make a kind of journey. What kind of journey do scientists make if they do not travel far like an explorer?

2 - Being an Astronaut

According to the passage Today?astronauts travel into space. They are explorers. Astronauts have to face many difficulties and dangers when in space. They must be brave. Would you want to be an astronaut and travel to space? Why or why not?

3 - The Earth and Sun

The passage talks about the Earth being cooler when it is further from the Sun. Why is this? What causes the Earth to be further from the Sun? When do you think the Earth is furthest from the Sun? How might this explain different countries experiencing different seasons at the same time? (i.e. summer in Australia being from December to February)

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Task 3: Writing Activity

Instructions: Imagine you are an astronaut about to go on a trip to space. How would you prepare??What might you bring with you? Remember, there is no gravity in space so everything has to be strapped down in the rocket. What do you think being in space would feel like? What would it look like? Tell me all about your experience in 2-3 paragraphs.

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