

Lesson Three: Fun with Space

Grade Level: First grade

Content Objective: Students will engage with the Gears! Gears! Gears!® Space Explorers Building Set to discover planets and create observations of the sun.

Language Objective: Students will be able to summarize the patterns seen of the sun.

STEM Career: Astronomer

Vocabulary:

- Observation: the act of viewing someone or something to gain information
- Solar System: the collection of eight planets and their moons
- Sun: the star that Earth orbits

Next Generation State Standard(s):

- 1-ESS1-1: Use observations of the sun, moon, and stars to describe patterns that can be predicted.
- Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.

ISTE Standards(s):

7.c. Contribute constructively to project teams, assuming various roles and responsibilities to work effectively toward a common goal.

Materials:

- Gears! Gears! Gears!® Space Explorers Building Set

Preparation:

- Upload videos onto computer

Lesson:

1. You can introduce our solar system by sharing the video [Outer Space: "We are the Planets," The Solar System Song by StoryBots](#)
2. Introduce the Gears! Gears! Gears!® Space Explorers Building Set in which students will be building our solar system.
 - a. If it helps, you can have students play with the set first and they can create their own planetary system.
 - b. You can also share a picture of the solar system
3. Ask students what planets they recognized in the set.
4. Share how we will focus on the Sun. What piece in their gear set is the sun? Why did students choose that piece? Ask the questions below to trigger student thinking.
 - a. What star can we see from Earth (**the sun**)?

- b. What does the sun do for our planet (**helps to grow food, keeps the earth warm, provides oxygen**)?
 - c. Why do we not see the sun at night (**the earth rotates around the sun, so the sun looks like it moves across our sky and then sets in the west. Half of the Earth will get sunlight (day) and the other half will not (night) as it rotates**)?
5. You can have students watch the video, [Here Comes the Sun: Crash Course Kids #5.1](#) to reinforce the concepts learned of the sun. There are questions below you can ask students after the video.
- a. What would happen to Earth if there was no sun (**dark, frozen world**)?
 - b. What is the sun made up of (**gas**)?
 - c. What type of energy do we get from the sun (**heat and light**)?
 - d. How long does it take for light, from the sun, to travel to the Earth (**8 minutes; you can have students sit or do something specific for 8 minutes to help them understand this length of time**).
 - e. There is a fun song that also explains what the sun does and its features: [Outer Space: "I'm So Hot," The Sun Song by StoryBots](#)

Extension: Your class can complete an art project that reinforces the sun. Use tissue paper and paper plates to create a handmade sun. Students can glue on pieces of the red, yellow, and orange tissue paper on the round paper plate.

Check for Understanding:

- Use the questions provided above to help you determine the understanding of the students. What concept could students learn further? Do students understand the material well and you can cut the lesson short?