

INV. 2 ACTIVITY—MOON OBSERVATIONS

Focus Question: How does the Moon appear to change over time?

Is the Moon the same every night? Does it always look the same? Can you find it in the same location in the sky every night? Keep track of the Moon for a month or longer. What do you observe?

Materials:

- Clear night
- Calendar
- Pen or pencil

Instructions:

1. Go out at night and look for the Moon.
2. Record observations in your Science Notebook. Can you see the Moon that night? Where is it in the night sky? What does it look like?
3. On your calendar, draw what the Moon looks like that night.
4. Repeat at the same time each night for a month or more.
5. Look for patterns in how the Moon appears to change over time. How would you describe that pattern to your family?
6. Can you predict what the Moon will look like tomorrow night? Next week? Next month?

INV. 2 ACTIVITY—MOONS OF OTHER PLANETS

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Focus Question: Are there moons orbiting other planets in our solar system?

Research the other seven planets in our solar system and identify which planets have their own moons and how many each planet has.

Materials:

- Computer with Internet access

Instructions:

1. Do an Internet search of the planets in our solar system. A good site to start with is NASA (www.nasa.gov).
2. Create a chart that details the following information:
 - a. Name of the planet
 - b. Does this planet have its own moon(s)?
 - c. How many moons does the planet have?

INV. 2 ACTIVITY—SPACE EXPLORATION

Focus Question: How has space exploration progressed over time?

Find out when humans first explored space first-hand. How has that changed over time?

Instructions:

1. Do an Internet search on space exploration. What are the mile-stones in space exploration?
2. Create a time line that includes major events in space exploration.
3. Choose one of these major events and do more research on the topic.
4. Choose a way to present information on this event such as a written report, a PowerPoint presentation, creating a model (e.g., the Space Shuttle), or create a stop-action movie.

INV. 2 ACTIVITY—USING STAR MAPS

Focus Question: How can a star map help you identify night-sky constellations?

A constellation is a group of stars that appear to make an image in the night sky. Constellations change their orientation and location based on the time of year and time of night. Having a tool to help you find constellations at any time of year can be helpful.

Materials:

- A clear, dark night
- Seasonal star map for this time of year (go to FOSSmap multimedia, Star Maps)

Instructions:

1. Choose the star map for the current time of year.
2. Go outdoors on a clear, dark night where you can look up at the sky without obstacles in the way (such as trees).
3. In the Northern Hemisphere, the Big Dipper constellation can always be seen. Find the Big Dipper.
4. Orient your star map so that the Big Dipper is in the same orientation as it is in the sky. Match the map to the Big Dipper and North Star.
5. Based on the map, find other constellations in the night sky.

INV. 2 ACTIVITY—CREATE A CONSTELLATION

Focus Question: What is a constellation?

Constellations are groups of stars that appear to make an image in the night sky, like a “connect-the-dots” activity. The light from the stars creates the “dots” of the image. Create a constellation tube to see how light makes the image.

Materials:

- Empty paper-towel tube
- Black construction paper
- Push pin
- Darkened room
- Lamp
- Transparent tape
- Flashlight (optional)

Instructions:

1. Draw circles on a piece of black construction paper. Use the end of the paper-towel tube as the template for your circle.
2. Cut the circles out. Be sure to cut carefully so that the circle will completely fit over the end of the tube.
3. Research different constellations. Find images of ones you find interesting.
4. Use the push pin to poke holes in your black-circle pieces to represent the stars in the constellation. Use a new paper circle for each constellation you wish to make.
5. Use the transparent tape to tape a constellation circle at one end of the tube. Arrange the circle so no stray light comes in from the sides.
6. Darken the room and turn on a table lamp.
7. Hold the constellation tube to your eye and look toward the light. What do you see?
8. You can also shine a flashlight through the tube onto a table in a darkened room. Do you see the same image here?

INV. 2 ACTIVITY—PLANETARY MEDIA RESOURCES

Online Resources on FOSSweb (Must log in to FOSSweb with a username and password)

Use these online resources to help review content from Investigation 2 of Earth and Sun. The **tutorials and virtual investigations** provide interactive resources that review concepts from the FOSS active investigations. The virtual investigations often mimic the active investigations that were done in class.

For the articles in *FOSS Science Resources*, access the **interactive eBook** and make sure to click on the interactive links within the readings. Take notes on what you learn from the online resources and respond to the questions from the articles in your science notebook.

Investigation 2 Digital Resources

Online activities:

- Lunar Calendar
- Star Maps
- Stellar Motions

Streaming Video:

- All about the Moon
- The Planets and the Solar System
- All about Stars

FOSS eBook Readings

- The Night Sky
- Looking through Telescopes
- Comparing the Size of Earth and the Moon
- Apollo 11 Space Mission
- How Did Earth's Moon Form?
- Changing Moon
- Lunar Cycle
- Eclipses
- Exploring the Solar System
- Planets of the Solar System
- Why Doesn't Earth Fly Off into Space?
- Stargazing
- Star Scientists
- Our Galaxy