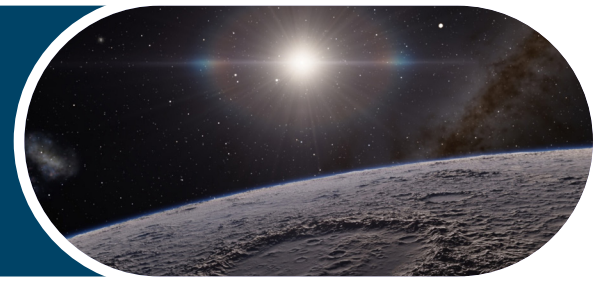


# DIGITAL DISCOVERY WORKSHOPS

Teacher Toolkit: Planetary Geology | Grades K–12



## PROGRAM OVERVIEW

*Get familiar with the program content.*

### Program Description

Take a wild virtual ride to visit some of the planets and moons that make up Earth's neighborhood, the solar system. Explore these unique landscapes searching for craters, volcanoes, oceans, and more. What can we discover about these faraway celestial bodies by comparing their geologic features to our home planet, Earth?

#### Program Objectives

Participants will be able to compare and contrast features on other planets and moons to similar features found on Earth.

Participants will be able to connect the geologic features seen on different planets with the forces or processes that created them.

Participants will recognize that the forces and processes that form geologic features are diverse: they can be internal or external, can happen on a local or global scale, and may happen quickly or span over a long time.

Participants will be able to reflect on how different geologic features can affect the conditions on the planet or moon they are found on.

#### Program Key Words (English/Spanish)

Planets/ los planetas

Moon/ la luna

Planetarium/ el planetario

Astronomy/ la astronomía

Geology/ la geología

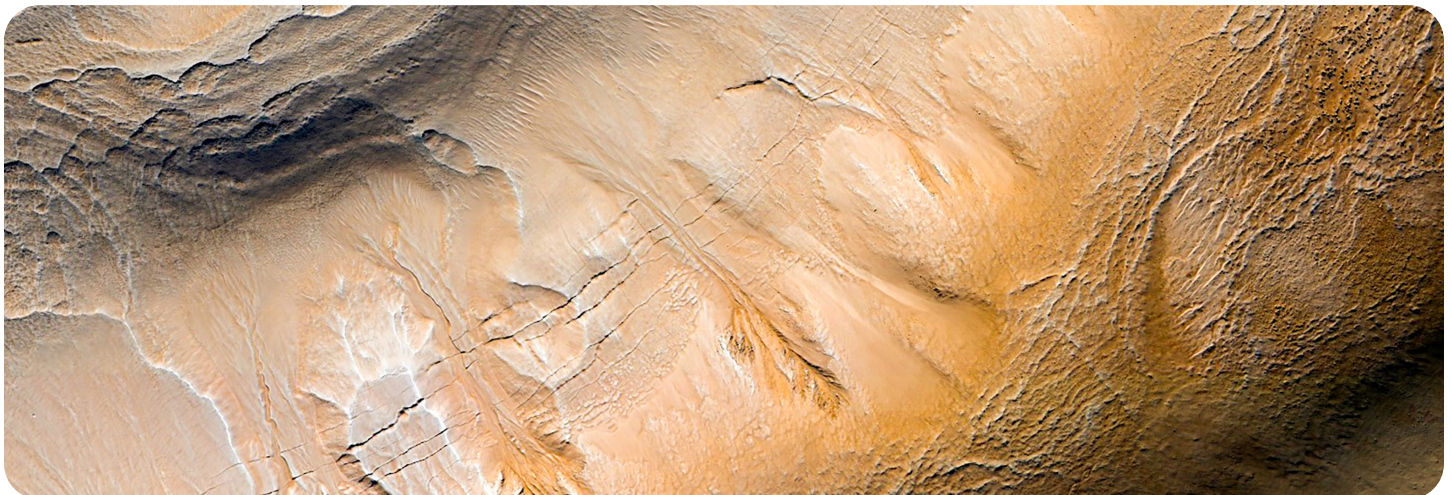
Astrogeology/ la astrogeología

Landforms / los accidentes geográficos

Volcano/ el volcán

Crater/ el cráter

Compare/ comparar



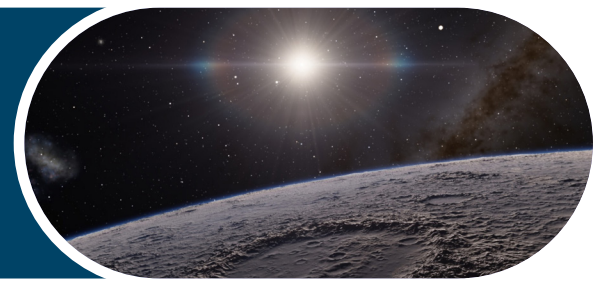
Show us how you're being curious! Share your results with us.

PACIFIC  
SCIENCE  
CENTER



# DIGITAL DISCOVERY WORKSHOPS

Teacher Toolkit: Planetary Geology | Grades K–12

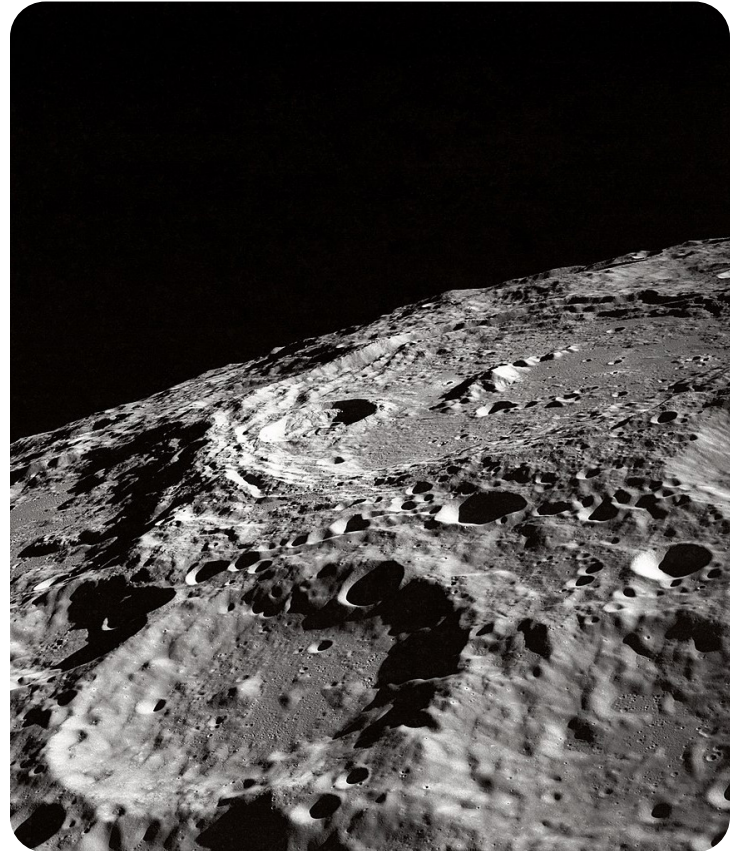


## Program Outline

*Specific locations and geologic features visited in program vary by age level and student interest.*

- Introduction to planetary science and remote sensing.
- Why astrogeology?
- Earth observations in the planetarium model.
- Visit 3–5 planets and moons in the planetarium, such as Mars, Earth’s Moon, Mercury, Jupiter, Io, Saturn, and/or Enceladus.
- At each location, make observations of visible geologic features, such as ice, volcanoes, impact craters, and mineral colorations.
- Compare and contrast to geologic features on Earth.
- Practice making inferences about what those comparisons can tell us about the planet or moon.
- Program conclusion.

[View Supported NGSS](#)



## BEFORE THE PROGRAM

### DISCUSSION PROMPTS

*Use these prompts to lead an optional pre-program discussion and reflection in your class.*

- What do you think of when you hear the word geology? Write down or draw your collective responses.
- Find a rock to observe. Practice making observations by writing down or drawing everything you notice about this rock, such as the size, color, texture, pattern or weight. What do you think these observations might be able to tell you about what the rock is made of, how it formed, or where it came from?
- Geologic events are the slow or sudden movements on or below the planet’s surface, such as earthquakes or geyser eruptions. What are some more examples of geologic events that occur here on earth? Do you think those events also happen on other planets and moons? Why or why not? (3rd grade +)



Show us how you’re being curious! Share your results with us.



# DIGITAL DISCOVERY WORKSHOPS

Teacher Toolkit: Planetary Geology | Grades K–12



## DURING THE PROGRAM

Print the optional worksheet for your students to follow along with during the live presentation. The back of the worksheet includes additional prompts for after the program.

### PRINTABLE WORKSHEET

- Planetary Geology Printout: [Click to download](#), then print double sided.

## AFTER THE PROGRAM

These optional extension resources can be used within the learning space, or shared with students to do at home with their families.

### ACTIVITY GUIDES

- Experiment with making and measuring your own craters with [Crater Creators | Creadores de Cráteres](#). Use this five-minute [follow along activity video](#) to explain the activity steps. Activity time: 30–60 minutes.
- Learn more about different types of rocks of how they are formed in [Rock Cycle](#). (Recommended for 3rd grade +). Activity time: 30–60 minutes.

### ADDITIONAL RESOURCES

- In our program, we used a virtual model called [World Wide Telescope](#) to explore other planets and moons. Follow the link to explore this model on your own! You can also try [NASA's Eyes on the Solar System](#) for another virtual model that includes facts and information about each location as well. You can navigate together as a class on one shared screen, or have students explore on individual devices.



Show us how you're being curious! Share your results with us.

PACIFIC  
SCIENCE  
CENTER



# DIGITAL DISCOVERY WORKSHOPS

Teacher Toolkit: Planetary Geology | Grades K–12

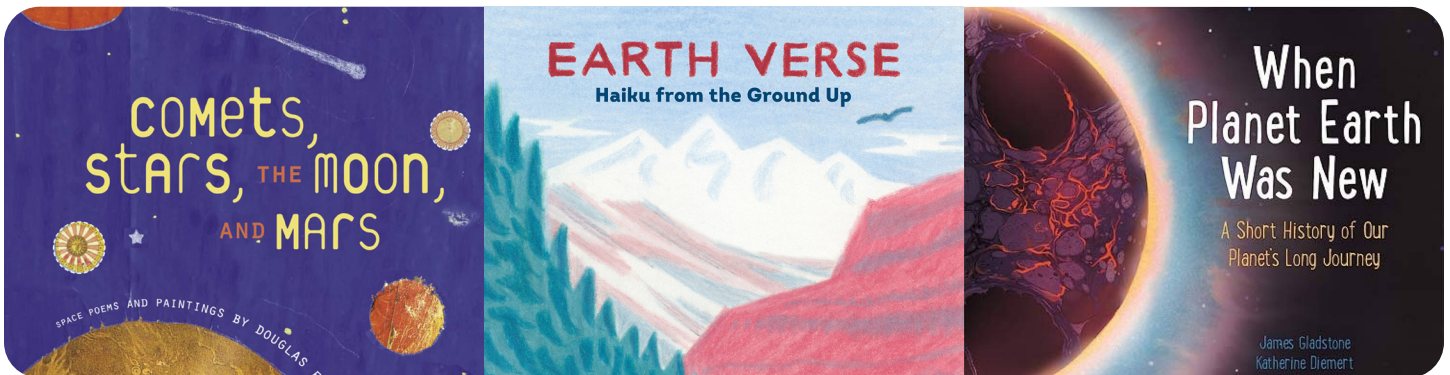


## 📺 STEAM VIDEO

- Did you know astronauts have brought Moon rocks back to Earth? Learn how NASA is studying these geological samples with this six-minute video about **Moon Rock Processors**.

## 📖 READING LIST

- Check out the [Planetary Geology reading list](#) for STEAM books related to the program themes.



For more activities with simple materials, check out the [Curiosity at Home / Curiosidad en Casa](#) web page. Explore activity sheets by age group and topic in both English and Spanish.



Show us how you're being curious! Share your results with us.

