

Moon Maps

Objectives

This is a map reading activity, so students need to have the capability of reading maps. This activity is recommended for children in fourth grade or above. For more map reading activities, see PASS: *Constellations Tonight*, Classroom Activities. In this activity, students will be able to:

1. Read a map of the moon.
2. Locate features on a telescopic image of the moon with the aid of their lunar maps.
3. Point out to their classmates the lunar features that they have found.
4. Decide what type of landscape might be best for a lunar community.

In this activity, students learn to read maps of the moon and identify features on an image of the moon. The activity can be connected to “Building a Lunar Settlement,” since location is an important consideration in the founding of a lunar community.

Materials

For each student

- 1 Map of the Moon (Master on page 3)

For the class _____

- Projector
- Projectable image or poster of the full moon
- Battery light pointer or a stick that can be used as a pointer

Before Class

1. Make sure the light pointer works or stick is on hand.
2. Set up the projector with full moon image or poster of full moon.
3. Duplicate moon maps (1 per student).

In Class

Show your students an image of the Moon (projection or poster).

What sorts of features are visible on the Moon? [Craters, dark areas, light areas.]

What kind of terrain do you think the dark areas are? [They are flat plains; long ago, they were thought to be oceans.]

What kind of terrain do you think the light areas are? [They are mountainous areas or highlands.]

How are the craters formed? [By impact of meteoroids.]

Point out the “rays” which are straight lines radiating outward from a couple of the larger craters (notably, Copernicus).

The rays are lines of debris which formed right after the meteoroid impact when lunar surface material was splashed up and outward from the impact site.

In order to be able to locate appropriate sites for a lunar mission or building lunar settlements, we need to be able to use maps of the moon.

Hand out moon maps.

Note the directions north, east, south, and west on the moon maps. The map of the moon is drawn as seen through binoculars.

Each of you is going to find a particular “ocean,” “sea,” or “bay.”

Assign a particular ocean, sea, or bay to groups of students. There are 12 oceans and seas, so you can divide your class into 12 groups. Help groups who need assistance. Those who finish quickly may practice finding other features that were not assigned to them. When each group has found its assigned feature, have the groups, one at a time, point out their feature to the rest of the class using the pointer.

For a more difficult challenge, assign each group a crater or mountain range. Again, have each group point out their feature to the whole class.

What type of terrain do you think would be best for a lunar settlement? Where on the moon would you build one?

Going Further: Rabbit in the Moon

Show the moon image again. Ask the students if they can see a rabbit. Ask where are the ears? Where is the tail? Tell the class that many Native American cultures associated the moon with a rabbit.

Many Native American cultures, the Japanese, and other cultures around the world visualize a “rabbit in the moon.” Suggest that next time your students look at the real moon in the sky, they look for the rabbit—it’s easy to see!

Optional: Duplicate the rabbit picture from PASS, *Astronomy of the Americas*, (on the cover), for each student. Tell them that the rabbit is a depiction of the rabbit in the moon found on pottery of the Mimbres tribe, who lived in what is now the Southwestern United States from the 9th to 12th centuries. (One piece of Mimbres pottery, which shows a burst of light below the leg of a rabbit, is believed to depict the supernova that created the Crab nebula in 1054!)

For younger students, a “Faces in the Moon” activity is very popular. Show a high contrast image or poster of the Moon and ask the students if they can see a picture or face outlined by the light and dark areas. Have them draw the pictures or faces that they see. Explain that the light areas are actually mountains while the dark areas are low flat areas on the surface of the moon.

Moon Map

North Pole



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