

Astronomy Pre-Post Trip Activities

Activity 1. Create Your Own Constellation

Many of our modern constellation systems came from Ancient Greek gods and goddesses, each cluster of stars having a name and a mythical story that portrays them. These associations are important to remembering where stars patterns are in the sky! Have your students create their own constellation and write an exciting story about it!



Activity 2. Planet Tours

Split the class into teams that will research one planetary body (if you have a large number of teams, you can include some of the moons of the solar system, or comets and asteroids). The students use the information they collect to create travel posters, brochures, or television or radio commercials for their object. Each project should include real facts about the solar system object, but may use “far-out” features to form the basis of unusual recreation opportunities. Have each team present the final product to the rest of the class.

Activity 3. Constellation Battleship

Using graph paper, your students can set up a game of battleship with constellations or planets and use coordinates to try and strike their opponents constellations or planets.

Activity 4. The Bright Moon

Use a ball in a darkened room to show how the moon doesn't make light of its own but reflects light from the sun (our flashlight). Explain how the dark side of the moon is just the side facing away from the sun. Show the position of the earth, moon, and sun for all phases of the moon.

Activity 5. Star Light, Star Bright: Classifying Stars

Students will work in small groups to organize cutouts of stars into different categories based on observations of properties for a collection of stars. As a class, ensure that students understand what type of information is known about each star by examining the sun. Make sure students notice each star has a name, a color, and a temperature. Encourage the students to spread the stars out on their tables to examine them more easily and note the characteristics. Each group should report and discuss their findings as a class.

Activity 6. Phases of the Moon

Each student will be able to visualize the phases of the moon by demonstrating with a styrofoam ball and light. Students will go over each phase as the moon revolves around the Earth. (Additional instructions can be found on page 2-3).



Additional Instructions

Activity 6. Phases of the Moon

Materials:

- ✿ styrofoam balls
- ✿ pencils
- ✿ bright light source at least a 100-watt bulb (if using a lamp remove the shade)

Instructions:

1. Place the lamp in the middle of the room.
2. Have each student poke a hole into their sphere with their pencil and hold the pencil, with sphere attached, in one hand. They should be holding what looks like a spherical lollipop.
3. Explain to students that the bulb is the sun, each of their spheres is the moon and each student is Earth
4. Rotate around the room for each of the phases described below. Remind students that what they are doing in 30 minutes takes the moon about 30 days to do: complete one full circle around Earth.

Phases of the Moon:

- ✿ **New Moon:** To begin, students should face the lamp and extend the sphere directly in front of them, raising the sphere enough so they can also see the lamp.

- ✿ **Waxing Crescent Moon:** Keeping their arm extended in front of their body, have students turn their body counterclockwise about 45 degrees.

- ✿ **First Quarter Moon:** Have students continue turning left so their moon and body are now 90 degrees to the left of their original position.

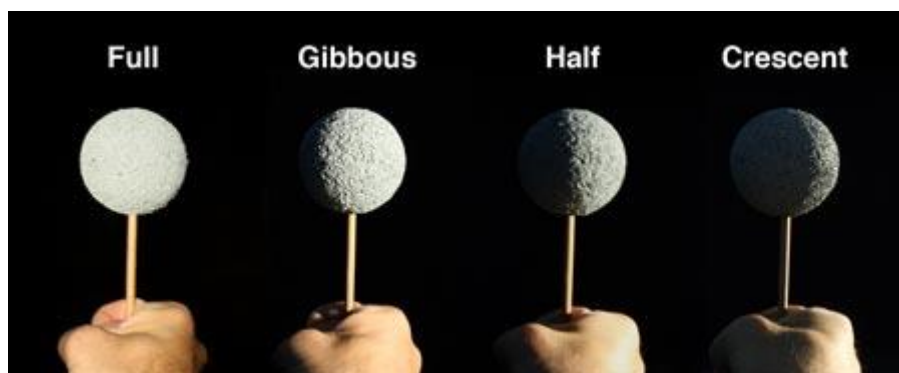
- ✿ **Full Moon:** When students move their moon so it is directly opposite the sun, as viewed from Earth (the student), the half seen from Earth is fully illuminated. (Make sure they hold their moon high enough so the "sunlight" is not blocked by their head.) To simulate a lunar eclipse, have students block the "sunlight" with their head.

- ✿ **Waning Gibbous Moon:** As students continue to turn, they start to see less and less of the illuminated surface.

- ✿ **Third Quarter Moon:** Keep students turning, with arms extended, so they are now three-quarters of the way around from their original position. This is the third quarter. They should observe that the opposite side from the first quarter moon is now illuminated.

- ✿ **Waning Crescent Moon:** Now the illuminated surface of the moon is growing smaller and smaller, bringing it back to a new moon.

- ✿ **Return to New Moon:** The continued counterclockwise movement brings a thinning crescent and finally a return to a new moon.



Making the best better!