

# Space Odyssey Online Teacher's Guide

## **Moon Phases Dial**

Previsit Activity for Solar System



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**Grades K-3**  
**CDE Standards**  
Science: 4.4a, 4.4d

## **Preparation and Materials**

**Estimated Preparation Time:** 10 minutes

**Estimated Activity Time:** 45 minutes

### **Materials**

Chart paper

Copies of Moon-phases dial activity sheets

Crayons or colored pencils

Scissors

Brads

Card stock or construction paper

Glue

### **Learning Goals/Objectives**

Students will

- Learn the major phases of the Moon
- Identify and label the phases of the Moon

### **Connection to *Space Odyssey***

Visitors to *Space Odyssey* can learn about the different phases of the Moon by participating in the Moon Phases interactive. Using this model, students can see what causes the phases of the Moon. In this activity, students will learn that the same half of the Moon always faces the Earth and that as the Moon orbits Earth, only a portion of the side facing the Earth is lit up by the Sun.

### **Advanced Preparation**

1. Copy both pages of the Moon-phases dial on card stock or construction paper. Alternatively, you can copy it onto regular paper and have students mount the dial on construction paper.
2. Obtain a copy of one or more of the Moon books on the resource list below to share with your class.

### **Classroom Activity**

1. Read *The Moon Book* or a similar book from the list of resources below. Have students help you keep notes about the Moon on a piece of chart paper.

2. Discuss what students know about the shapes of the Moon during its phases. Ask students to list as many shapes as they know or remember from reading the book.
3. Talk about how the Moon has phases and these phases happen in the same order every month.
4. Give students copies of the Moon-phases dial activity sheets.
5. Students may color the front of the dial.
6. Ask students to cut out the pictures of the Moon and glue them on the appropriate section of their Moon-phases dial. Have students take special care so that they glue the photographs correctly in each square so that they are not upside down when manipulating their dials.
7. Have students cut out the dial and assemble it using a brad.
8. Show students how to turn the dial so that they learn the phases of the Moon in the correct order.

### **Variations/Extensions**

1. Have students “act out” the phases of the moon. An awesome way to do this is to paint a Styrofoam ball white. The paint is essential to make the ball opaque. An opaque round piece of fruit, such as an orange works pretty well too. Mark one side of the “moon” to show that the same side of the moon always faces us. Place a lamp in some central place to represent the sun. Turn off the room lights. Then have students orbit their “moon” around them and see the phases change. Have students record their observations of the “moon” as they change its orbit.
2. Ask students to complete additional research about the Moon. Allow students to present their research to the class.
3. Have students keep a Moon journal by observing the Moon at the same time every night. Ask them to draw a picture of what the Moon looks like and where it is in the sky.

### **Resources**

#### **Books**

Branley, Franklin. *The Moon Seems to Change*. New York: Harper Trophy, 1987.

Bennett, Jeff. *Max Goes to the Moon*. Boulder, Colo.: Big Kid Science, 2003.

Gibbons, Gail. *The Moon Book*. New York: Holiday House, 1997.

Krupp, E. C. *The Moon and You*. New York: Harper Collins Publishers, 1993.

Rosen, Sidney. *Where Does the Moon Go?* Minneapolis, MN: Carolrhoda Books, Inc., 1992.

**Web sites**

<http://aa.usno.navy.mil/data/>

<http://www.astro.wisc.edu/~dolan/java/MoonPhase.html>

<http://www.Moon-phases.com/>

<http://www.ameritech.net/users/paulcarlisle/MoonCalendar.html>



Directions: Cut out the two moon dials and the photographs of moon phases. Glue the photographs in the appropriate box on the second dial. Color the first dial.



