

# Moon Phases – a “Snacktivity”

**Estimated Time: 30 minutes**

## SUMMARY

If you look at the moon daily you will notice that the view of the moon changes. The changes are called “moon phases” and have been observed and recorded by humans for as long as we have been making calendars. When you complete this activity, you will have your own edible lunar calendar!

## WHAT YOU’LL LEARN

- Recognize the different phases of the moon
- Identify the difference between moon phases and lunar and solar eclipses

<p><b>Materials Used</b></p> <ul style="list-style-type: none"> <li>● Flashlight</li> <li>● Pencil or chopstick</li> <li>● Paper or clay/Play Doh</li> <li>● 8 Chocolate sandwich cookies (such as Oreos)</li> <li>● Plates</li> </ul>	<p><b>Resources Used:</b></p> <p><a href="https://sservi.nasa.gov/articles/oldest-lunar-calendars/">https://sservi.nasa.gov/articles/oldest-lunar-calendars/</a></p>
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## WHAT TO DO

### Activity 1:

For the first activity, take your paper, clay or play doh and crumple or form it into a ball. Attach the ball to a pencil. If you have two people, have one person hold the flashlight and play the Sun. If you have one person, tape or prop the flashlight pointing toward a blank wall. The ball on the pencil is the Moon. The person holding the pencil is the Earth. The light is the sun. This activity works best in a dark room.

Hold the pencil arm’s length in front of you in the direction of the light. Because the light is shining on the side of the moon farthest from you, you should see a dark moon in front of you – this is the New Moon.

Turn to the left and watch the moon – you should start to see a little of the moon become illuminated. This is a Crescent Moon.

Turn again to the left, about one quarter of the way around. You should see about half of the moon facing you in the light – this is the First Quarter.

Turn again to the left. As you continue turning you will see more and more of the moon’s surface. This phase is called the Waxing Gibbous.

Now turn so your back is to the Sun. You should see the entire moon side facing you highlighted by the Sun. This is a Full Moon.

As you continue turning, pay attention to the light on the surface of the moon as it phases through Waning Gibbous, Last Quarter Moon, Waning Crescent and finally back to New Moon.

For more lunar observation, face the flashlight (Sun) and put the moon in front of you so it blocks the sun. This is a Solar Eclipse. Now turn and put your head (Earth) in line with the Sun so that the moon is dark. This is a Lunar Eclipse!

### **Activity 2:**

For the last activity, gather together your cookies and a plate. If you are using a sandwich cookie like Oreo, remove one cookie carefully so you can see the circle of frosting on the inside of the other. Set the cookie with frosting on the plate. Do this with seven cookies. Keep one of the unfrosted cookies as your New Moon.

Carefully scrape the icing off the frosted cookies to create your own lunar calendar.



### TIPS

If you don't have Oreos, try sugar cookies and frosting!

Why can you sometimes see the moon at night, and sometimes during the day? You can see the moon when it is in the right spot in rotation to catch light from the sun and reflect it back to Earth. When this reflected light is bright enough against the background of the sky, you will see the moon. From [space.com](https://www.space.com/7267-moon-daylight.html): *Because of the Earth's rotation, the moon is above the horizon roughly 12 hours out of every 24. Since those 12 hours almost never coincide with the roughly 12 hours of daylight in every 24 hours, the possible window for observing the moon in daylight averages about 6 hours a day.* <https://www.space.com/7267-moon-daylight.html>

As an extension, observe the moon for 3-5 successive days. Draw a picture of the moon each day and compare with your lunar calendar made from Oreos. What phase of the moon are you observing?