



# Try This at Home Science: Oreo Moon Phases

## Activity Overview:

Use Oreos to create the phases of the Moon!

## Materials:

- 4-8 Oreos, or Glutino Gluten Free option
- Kid friendly knife or butter knife
- Plate
- Napkin or paper towel
- Adult supervision

## Try this!

1. Carefully spilt the first Oreo in half, either by hand or with the knife. Make sure one side has the cream filling on it. This is your Full Moon and the empty half is your New Moon.
2. Carefully spilt the second Oreo in half, either by hand or with the knife. Cut straight down into the middle of the cream filling, then drag the knife under one half of the cream freeing it from the cookie. Place the loose half of the cream on the blank half of the cookie. These will make your First Quarter and Third Quarter moons.
3. Carefully split the remaining two Oreos, using your hands or provided knife, cut down into the cream so that it is split into a crescent shape (see image below) and a gibbous shape. Now use the plastic knife to free the crescent shape. Place the crescent shape on the blank half of the cookie. Repeat this process with the final cookie and you have Waxing (lighter side on left) and Waning (lighter side on right) cookies for both the Crescent and Gibbous moons.
4. Now, on a sheet of paper draw the Earth in the middle of the page, and the Sun on one side of the page.
5. Place each Oreo Moon Phase around the Earth drawn in Step 4 to see how we would view the Moon as it revolves around the Earth.

## What's happening?

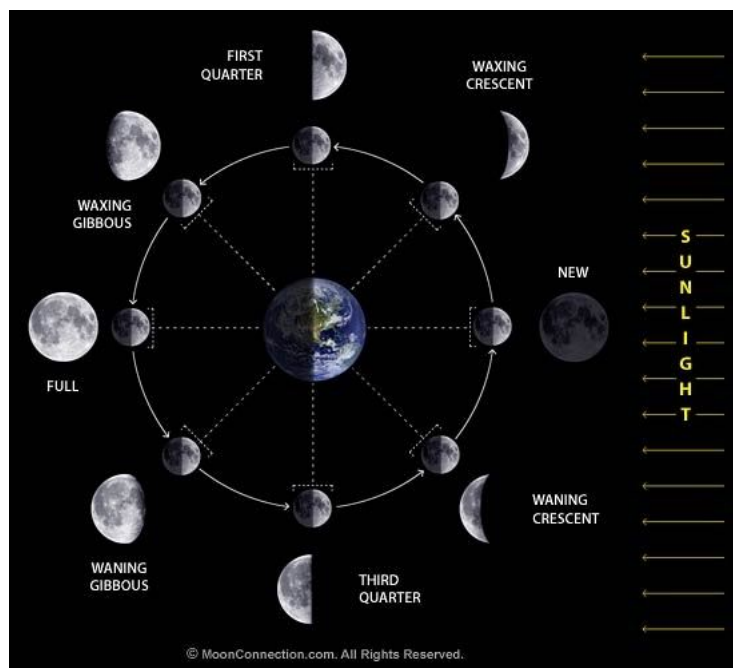
We have created an edible Moon Phase chart! As the Oreo cream filling is removed from each cookie and cut a certain way we are creating the different phases of the Moon. As the Moon revolves around the Earth, half of its surface is illuminated by sunlight just like the Earth is. The Moon is not creating its own light, it is reflecting sunlight. As the Moon revolves around the Earth through the month, it changes position in space; thus, changing the angle of the sunlight hitting the surface of the Moon. This is how we can observe the Quarter, Crescent and Gibbous phases.



So how can we see a Full Moon and New Moon from the surface of the Earth? Again, the Moon is revolving around the Earth through the month and is always changing its position in space. When the Moon moves between the Earth and the Sun, we observe a New Moon. We can only see the dark side of the Moon, since the illuminated portion is facing away from Earth. A Full Moon is observed when the Earth comes between the Moon and the Sun but does not block the sunlight. If the Earth is between the Sun and the Moon and is properly aligned, the Earth can block the sunlight from reaching the Moon resulting in a Lunar Eclipse which can also turn the face of the Moon red.

### How does this relate to astronomy?

Every object in space is a 3D shape allowing each object to cast a shadow, or an absence of light. These shadows are extremely helpful in identifying how that object is traveling through space. Astronomers can track the movement of different objects through space by their shadow. For example, an asteroid is hurtling through our Solar System and scientists want to know if it will hit the Earth or just pass by. Astronomers will take a look at the shadows cast on the asteroid to see where it is in relation to the Sun. They will also observe any eclipses that may occur as it passes between other space objects, which would indicate the asteroid is moving in front of or behind the space object. All of this data assists astronomers in determining how fast the asteroid is moving, how large it is, and what path it is traveling through our Solar System.



### Now try...

- Take a basketball outside and hold it at eye level on a sunny day. Can you replicate any of the Moon phases? (Remember: never look directly at the Sun!)
- Can you replicate a Solar or Lunar Eclipse? How?
- Observe the shadow cast by your house hourly through a day. What do you notice? If you repeated this for a week what would happen? Did the shadows change position from the previous day?

### Additional Information

Visit our website for a full Educator Guide for the *Junior Astronomer* program

<https://www.mi-sci.org/educators/cultural-passport-resources/>

For more “Try This at Home Science” activities, visit [www.mi-sci.org](http://www.mi-sci.org).