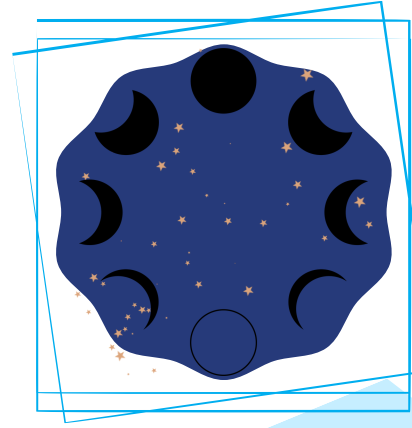


Moon Phases

Have you ever looked in the night sky and wondered why the Moon seems to change shapes in the sky? The Moon reflects light from the Sun as it orbits, or moves in a circular path, around the Earth.

Half of the moon is always lit up by light, but on Earth we don't always see this half. Instead, we see the shadow and light change shape as it moves towards the Sun, and then away from the Sun. We call these changes in shadow shapes phases of the Moon.



Materials:

- Small Round Object
- Flashlight or Lamp
- Yourself

This activity will be using models to represent different parts of the experiment:

- Small Round Object: The **Moon**
- Flashlight or Lamp: The **Sun**
- Your Head: The **Earth**

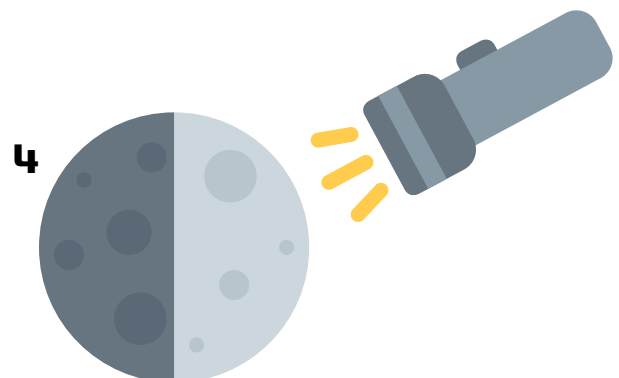
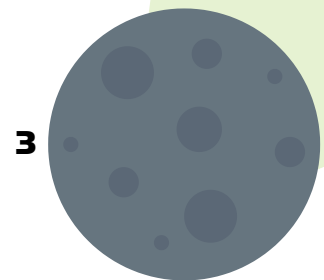
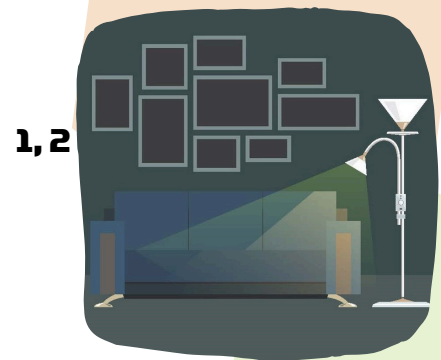
Procedure:

1. Place your light (the Sun) so it is a little higher than your head (the Earth). If you are using a flashlight, have someone hold it for you.

2. Turn off all the lights in the room except your Sun, and make sure there is no extra light coming in through the windows.

3. Hold your small round object (the Moon) out at arm's length facing the Sun. It should be completely covered in shadow. This phase is called **New Moon**.

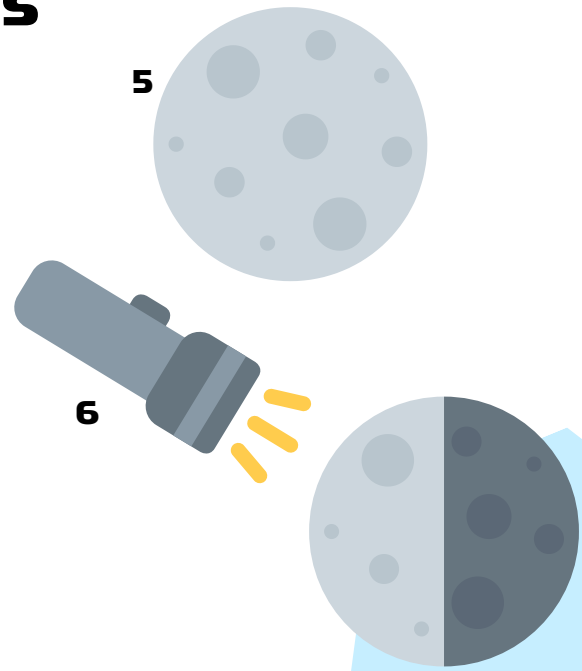
4. Now turn $\frac{1}{4}$ to the left. The right side of your Moon should be light and the left side should be shadowed. This phase is called **First Quarter**.



Moon Phases

5. Turn another $\frac{1}{4}$ to the left (facing away from the Sun). Your Moon should be lit up all the way. This phase is called **Full Moon**.

6. Turn one more $\frac{1}{4}$ to the left. The right side of your Moon should be in shadow and the left side should be in the light. This phase is called **Third Quarter**.



WHAT'S HAPPENING?

You just did four moon phases, but there are actually four more! Can you find them? Try finding the Waning Gibbous, Waning Crescent, Waxing Crescent, and Waxing Gibbous. Here's a few hints on how to find them.

1. They're between the phases you just did. So instead of turning $\frac{1}{4}$, now turn $\frac{1}{8}$.

2. You can find them using their names:

- **Waning:** light is getting smaller
- **Waxing:** light is getting bigger
- **Gibbous:** it is more than half light
- **Crescent:** it is a tiny bit of light



DID YOU KNOW?

An **astronomer** is someone who studies everything outside of our planet, Earth. If you liked this activity, maybe astronomy is for you!