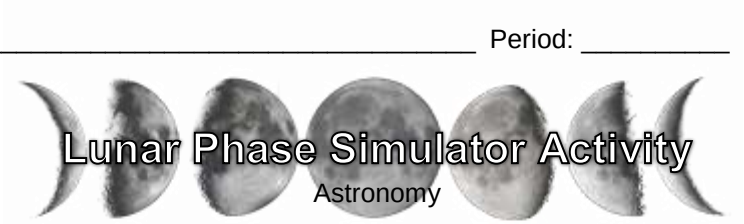
Name: _____ Period: _____ Date: _____



# Lunar Phase Simulator Activity

Astronomy

**Introduction:** There are several different factors that go into the visual lunar phases that can be seen from here on Earth. Between angles, sunlight, and orbit patterns, the lunar phases are shown in different shapes and sizes. Let's check out where these shapes and sizes come from by using an online simulator! Remember, complete sentences are very important!

**Directions:**

1. Open the class website and head to the "Notes" section. Scroll our section on the Moon and click the button that says "Lunar Phase Simulator".

2. Once the simulator has loaded, explain the three viewpoints that this simulator provides.

3. There are three options where information can be displayed on the simulator. Why would knowing the angle of the light be important in determining the lunar phase? Explain.

4. Select this option and move the Moon around its orbit. How does that angle change the lunar appearance?

5. Select the option to display the lunar mark and move the Moon around its orbit. What does this show? Explain.

6. Select the time tick marks and start the animation. What does this show? Why is it NOT accurate to move the moon manually with the mouse around the orbit? Explain.

7. According to the simulator, how many days does it take for the moon to orbit Earth completely? What lunar phases would have been visible throughout this process? Explain.

**Review:**

1. In which direction does the moon orbit Earth?

2. How much can the angular size of the Moon vary and what causes this? Explain.

3. Explain how we're able to see the same face of the Moon and what happens for this to take place.

4. Shade in the sequence of Moon phases below and be sure to label each.