

## Chapter 7: Moon Phases from Foam Balls

### Student Worksheet

#### **Objective:**

To learn the phases of the Moon via active modeling. To properly use moon phase terminology.

#### **Engage:**

There are many misconceptions associated with the Moon. How many widely held misconceptions can you list below?

#### **Introduction:**

In this activity you will mimic moon phases using simple materials.

#### **Procedure:**

Follow your teacher's instructions to model the phases of the Moon.

#### **Conclusion:**

1. According to your model, how much time has passed when you make one complete turn holding the Moon with your arm extended? How might your answer change if you did not have the Moon in your hand?
  
  
  
  
  
  
  
  
  
  
2. Which direction does the Earth turn?

3. Define the terms:

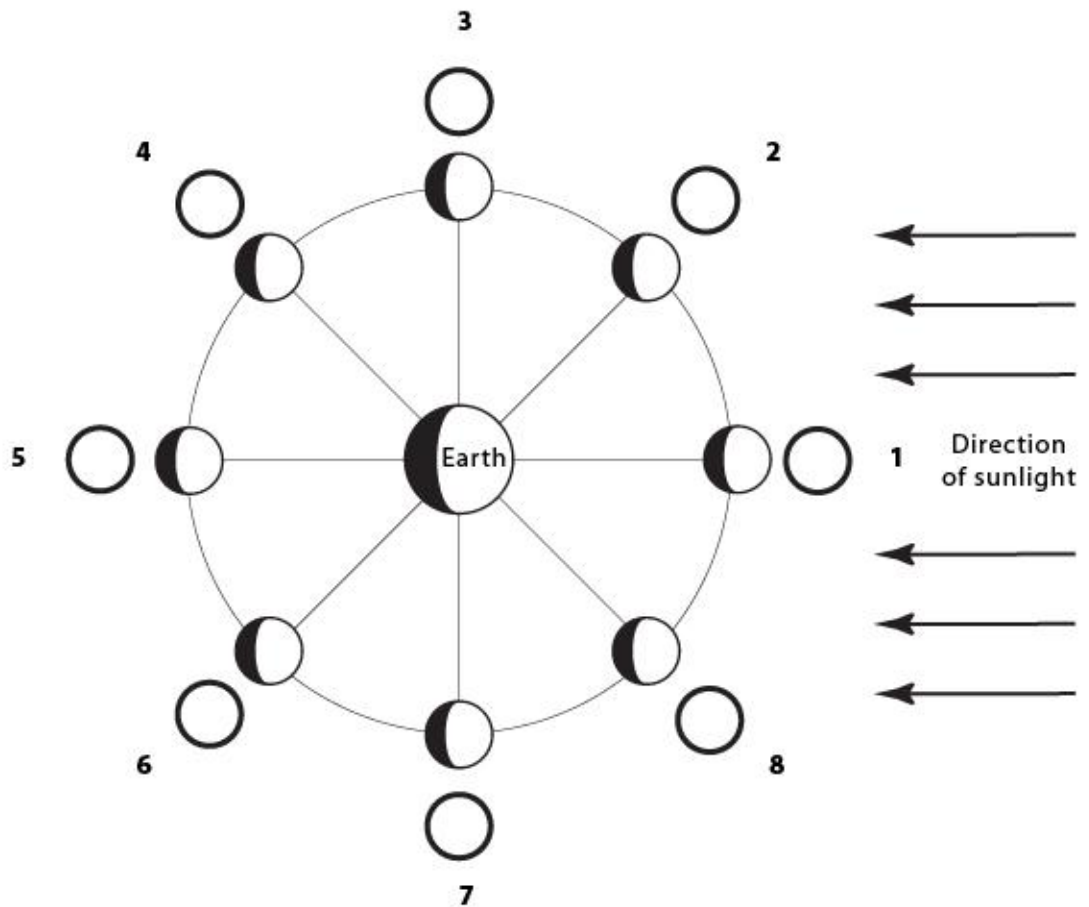
a. Waxing:

b. Waning:

c. Crescent:

d. Gibbous:

4. On the chart below label the names of the phases of the Moon and color in the blank numbered circles to show the appearance of the Moon from Earth.



5. If you were standing on the Moon, facing the Earth during a New Moon, what phase of Earth would you see? Would you be standing in shadow or light?
  
6. Is there a dark side of the Moon? Why or why not?
  
7. We always see the same side of the Moon. Does the Moon rotate?
  
8. During a New Moon, the Moon and Sun are overhead at noon. Where is the Moon at sunset? What time does the New Moon rise?

**Extend:**

- List the rise and set times for each phase of the moon.
- Describe how you would model lunar and solar eclipses in this model.
- A friend tells you that moon phases occur due to Earth's shadow covering portions of the Moon. How do you explain the true situation to your friend?
- Draw and annotate a model of the phases of Venus as seen from Earth.