

Name: _____ Date: _____ Period: _____

Oreo Moon Phases

Objective: To model the phases of the Moon, then analyze which positions of the Moon will create natural phenomena.

Materials: 7 Oreo cookies, plastic fork/knife for each student, paper towel

Procedure:

- (a) Find a partner! Decide who will create the waxing phases and who will create the waning phases.
- (b) Obtain the materials. Carefully twist apart the seven Oreo cookies without breaking them. Place them on the paper towel.
- (c) Place the lab sheets together with the opposite side of the paper facing up. The circle in the center represents the Earth. The 8 surrounding circles represent the phases of the Moon.
- (d) Draw in arrows on the RIGHT side of the entire diagram to represent the Sun's light.
- (e) First draw in each moon phase on each of the 8 circles. Label each moon phase correctly: *full, new, first quarter, last/third quarter, waxing gibbous, waning gibbous, waxing crescent, waning crescent*. Use the Handout Helper if you need assistance.
- (f) Using the plastic fork/knife, carefully remove the cream from each Oreo until they resemble each of the 8 phases of the Moon. Work with your partner to match up your waxing and waning phases! Place the cookie on the diagram over its correct phase.
- (g) After you have constructed all 8 phases, call your teacher over for a check. Once your phases are approved, you may consume the cookies and begin working on the analysis questions below.

Analysis Questions (Pick 4 out of 6):

- (1) Using evidence from your moon phase model, describe how you know which phases are waxing and which are waning.

- (2) Explain why the New Moon cannot be seen in the sky.

- (3) Explain how your moon phase model would be different if the sun's rays were coming from the LEFT side.

- (4) In which Moon phases would it be possible for a lunar or solar eclipse to occur? Explain why.

(5) Identify during which phases the strongest and weakest tides will occur on Earth and describe why.

(6) In your own words, explain why we can only see one side of the moon on Earth.

Summary Questions (Please respond with at least 5 sentences to each question):

(7) In your own words, describe what you learned today during this lab.

(8) Explain why we see the different phases of the moon from Earth.

(9) How can creating models like this help you better understand concepts in Earth Science?

Extra Credit Extension:

Imagine the moon was 100 times larger in diameter. How would that effect natural processes on Earth? How could it effect life?

