

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Period: \_\_\_\_\_

### Modeling Moon Phases

**Problem:** What causes the phases of the moon?

**Materials:**

- flashlight
- pencil
- foam ball

**Procedure:**

1. Get a "moon pop" from your teacher.
2. Have one of the members of your group hold a flashlight.
3. Have another member of your group hold the moon pop just above your head and slightly above you facing the flashlight. Caution: Do not look directly into the flashlight.
4. Have another member of your group stand behind the person holding the moon pop to observe what part of the moon pop is being lit by the flashlight.
5. Shade in the circle on the diagram below to match what you see.
6. Have the person holding the moon pop turn  $45^\circ$  so that the moon pop is still being lit by of the flashlight.
7. Repeat step 5.
8. Repeat steps 6 and 7 until your partner holding the moon pop is facing the flashlight again.
9. If time allows, change places and repeat.

## Analysis and Conclusion

1. In your model, what represents Earth? The sun? The moon?

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2. How much of the lighted ball did you see when facing the flashlight?

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3. Label your diagram with the phases of the moon. *(Use pgs 22 23 in text to help you)*

4. What happened to the amount of the lighted part of the ball as you made each turn?

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5. Whether you could see it or not, how much of the balls surface was always lit by the flashlight? Predict how you think this might differ from how much will be lit up during an eclipse.

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6. How does making a model help you understand the phases of the moon? What are some disadvantages of using models? What is another way to make a model of the moon phases?

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