Moon's Phases Lab

Name _____
Date _____
Period _____

Essential Question: *Starting with a new moon, how does the portion of the moon we see from Earth change as it orbits Earth?*

Materials: Large Styrofoam moon, one pencil/stick, flashlight

Procedure: Listen to the teacher describe how to collect the data.

Variables *(if we change this, then we can record that)*

1. What is the thing we will be changing as we collect data? (independent variable) *circle one*
   a. the portion of the moon we see from Earth
   b. the position of the moon in its orbit around Earth

2. What is the thing we will be recording as we collect data? (dependent variable) *circle one*
   a. the portion of the moon we see from Earth
   b. the position of the moon in its orbit around Earth

Variables we will keep the same: The direction and angle of the Sun from the moon.

Safety: Do not drop the flashlight, do not drop or break the sphere, do not shine the flashlight at anyone

3. **Prediction:** Using words AND diagrams, answer the essential question as best you can.

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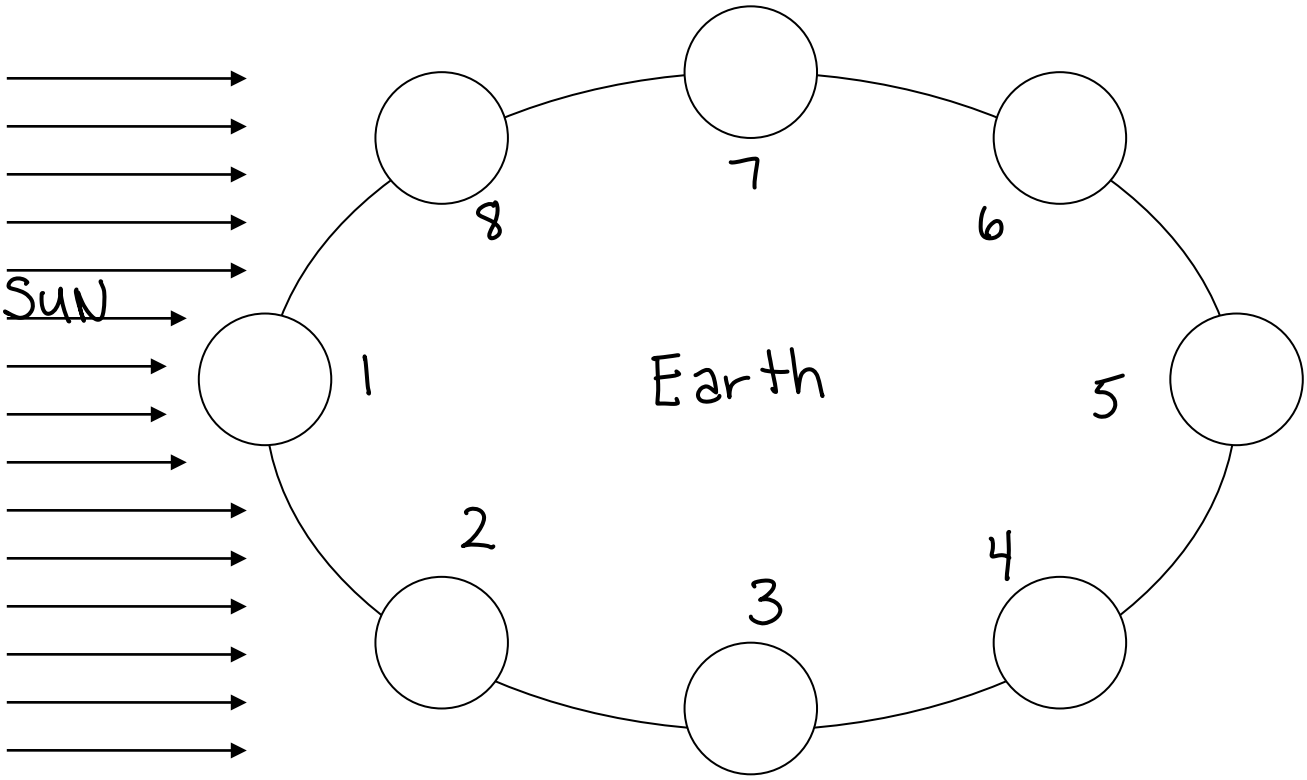
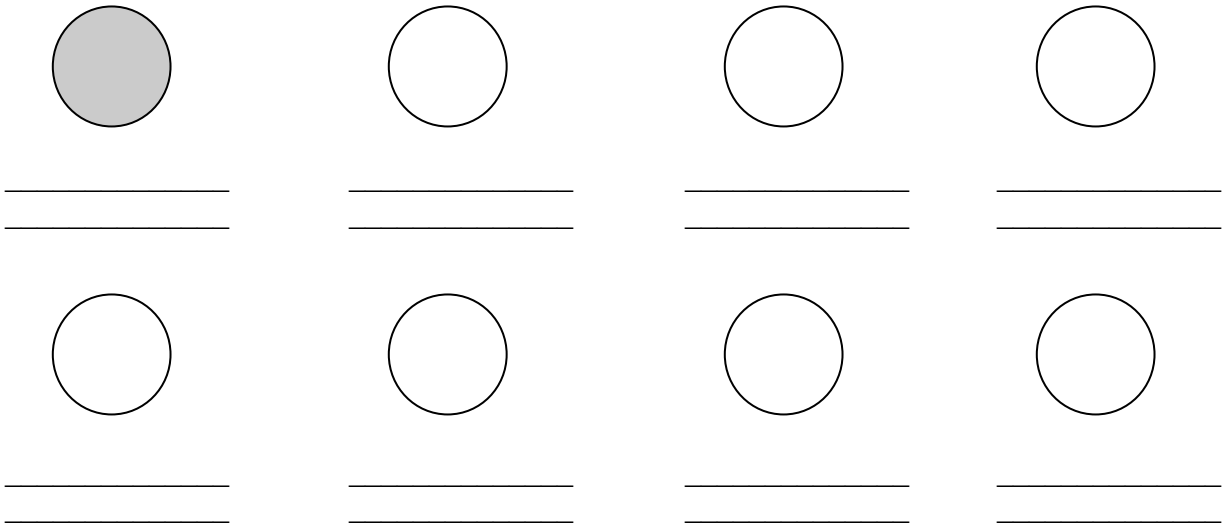
4. **Collecting Data** Fill in the diagram as you complete the inquiry.

The Moon As Seen From <u>Earth</u>



5. **Presenting Data** Draw the phases of the moon in the order they happen, starting with new moon. (Hint: coloring it in means the moon is dark/in shadow; leaving it white means we can see it from Earth.) AFTER you finish drawing them in, THEN go to Barb's Blog → Helpful Links → Moon Phases Diagram to label each phase.



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6. Using the phase names and the pattern created in question #5, what do the words waxing and waning mean?

WAXING: appearing to get _____

WANING: appearing to get _____

7. **Use your data to answer the Essential Question**: *Starting with a new moon, how does the portion of the moon we see from Earth change as it orbits Earth? (Be specific!)*

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8. **Conclusion:** What has to be happening in order to see the phases of the moon? (moon or Earth's motion, point of view, light...)

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9. **Problems:** Describe any problems that might have affected the results. Suggest possible improvements.

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If you finish early, go to Barb's Blog → Helpful Links → Moon Misconceptions. Read the article to help you with the mini post test.