**Materials:** Large Styrofoam moon, one stick, flashlight

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

**Procedure**: Read the procedure ***carefully*** before beginning the data collection!

1.Stand with the moon in your hand, arm outstretched, so the moon is in position 1 on the

diagram. Hold the moon somewhat low to simulate the tilt in the moon’s orbit.

2. Have a partner shine the flashlight on the moon

3. Observe and record any part of the moon that you, as Earth, see lit up at the first

position.

4. Move the moon to position 2 on the diagram. Be sure the moon is held a little higher

than position #1.

5. Make sure the flashlight is shining on the moon at position #2 (it may have to move a bit

to the right or left.)

6. Observe and record any part of the moon that you, as Earth, see lit up at the second

position.

7. Continue moving the moon around in its tilted orbit, making observations and recording

how much of the moon is lit up at each of the eight positions on the diagram. **(**At

position 5, you will need to be sure the moon is above your head so the flashlight can

reach it.)

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

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

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

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

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

**The Moon As Seen From Earth**

3. **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.) Then, go to my website and look at the diagram to find and write the actual names of each phase. Spelling counts!

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4. **Answer**: Looking at your results, describe any conclusions you can make about the testable question: *Starting with a new moon, how does the portion of the moon we see from Earth change as it orbits Earth?*

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5. **Problems:** Describe any problems and how they might have affected the results. Suggest possible improvements.

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6. In your own words, what causes the phases of the moon?

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7. 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 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_