Blue

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Moon Phases (MS-ESS1-1, ESS1. A)

**Question:** How do the positions of the sun, the earth, and the moon affect the phases of the moon?

**Hypothesis:**

**Materials:**

-Sun - Moon -Earth

**Procedure:**

1. You will be assigned a phase of the moon. With your team and materials provided model the moon phase you are assigned.

Model 1:

Name of your moon phase:

Illustration of your model (colored and labeled)

Explanation of your model: Why did you place the materials where you did?

**2. Complete research about your moon phase.**

-What does your moon phase look like (illustration)

-Why does it look this way?

-When does the phase appear?

-How does this happen?

Model 2:

Illustration:

Explanation (answer the above questions)

3. Make any necessary changes to your moon phase model and be ready to present your model to the class

**Background:** A moon is a celestial object that is a natural satellite to a planet. Many planets have multiple moons, each given a different name. Earth, however, only has one natural satellite that we call “the Moon”. You have probably noticed that our moon does not always appear to be the same shape. The moon phase we see on any given night depends on the positions of Earth, the sun, and the moon in space.

The moon does not generate its own light. Instead, it receives light from the sun just like Earth. Just as half of Earth experiences day while the other half is dark. As the moon revolves counter-clockwise around Earth, we see various parts of the side of the moon that is facing the sun. This makes the moon appear to change shape in the sky. Waxing refers to a moon that is growing larger night after night. This occurs as the moon moves from the position of full to new moon. The moon is said to be waning when it appears to be getting smaller night after night. A waning moon is moving from the position of full to new moon. A new moon is when the sky is absent of an illuminated moon. It takes the moon 29.5 days to go through a complete lunar cycle.

**Answer the following comprehension questions using complete sentence and a restate.**

1. Define moon (DOK 1):

2. What is a lunar cycle? (DOK 2)

3. Describe the appearance of a moon that is going through the waxing phase of the lunar cycle. (DOK 1)

4. How would the moon appear to change to an observer on Earth during the waning phase of the lunar cycle? (DOK 1)

5. Explain why the moon often appears to be illuminated in the night sky. (DOK 1)

6. In which direction does the moon orbit Earth?(DOK 1)

7. Explain why the moon appears to change shape. (DOK 3)

8. Explain how learning about the moon phases related to our essential question “How do things stay in space”. (DOK 4)

