Chapter 13, Lesson 2 – How Do Earth and the Moon Compare?

Define Vocabulary

moon – any natural body that revolves around a planet

crater – a low, bowl-shaped area on the surface of a planet or moon

moon phase – one of the shapes the moon seems to have as it orbits Earth

eclipse – an event that occurs when one object in space passes through the shadow of another object in space

refraction – the bending of light as it moves from one material to another

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1. How is the moon's surface different from that of Earth?

The moon has no liquid water and no living things, but Earth has both. The moon has more craters than Earth has.

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2. Are the orbits of Earth and the moon perfect circles?

No, the orbits are ellipses, or slightly flattened circles.

3. Does the moon have daytime and nighttime?

Yes; a day on the moon is equal to 29.5 Earth days.

4. Why do we see only one side of the moon from Earth?

The time it takes for the moon to orbit Earth once is equal to the time it takes the moon to rotate once, thus one side of the moon always faces Earth.

5. What is on the side of the moon we can't see from Earth?

The same surface features as on the side we can see.

6. Why can we see the moon?

The sun shines on the moon and we see the reflected light.

7. How much of the moon is lit when we can see only a sliver of the moon?

Since the moon is a sphere, one half is always lit whether we can see it or not.

8. Is the far side of the moon ever lit by the sun?

Yes; as the moon rotates, all of its surface area experiences daylight.

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9. How is a moon phase related to time?

The moon stays in a given phase for a certain amount of time in its cycle.

10. How long is each phase?

3 and 7/10th days, which is 29.5 days divided by 8 phases.

Eclipses

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11. Which body is eclipsed during a lunar eclipse?

The moon is eclipsed by the Earth's shadow during a lunar eclipse.

12. Which body is eclipsed during a solar eclipse?

The sun's light is blocked by the moon during a solar eclipse. To see a total solar eclipse, you must be in the moon's shadow.

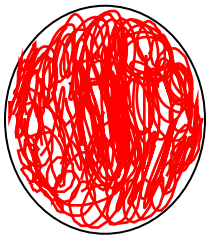
13. Why are more people likely to see a full lunar eclipse than a full solar eclipse?

Anyone on the night side of Earth can see a full lunar eclipse. Solar eclipses are visible from only a small area of Earth.

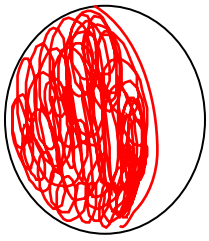
14. How do solar and lunar eclipses differ?

A solar eclipse happens when Earth passes through the moon's shadow. A lunar eclipse happens when the moon passes through Earth's shadow.

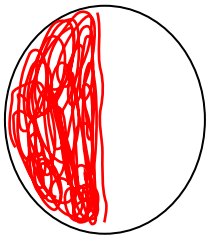
Illustrate and label the eight named moon phases below by shading in the unlit portion.



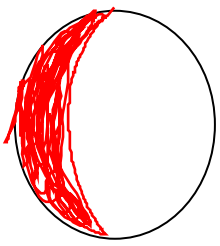
New moon



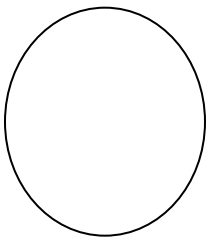
waxing crescent



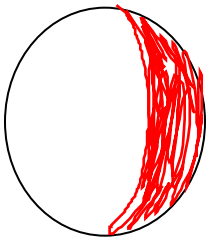
1st quarter



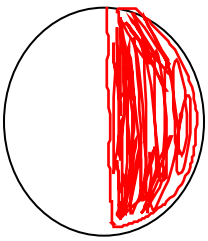
waxing gibbous



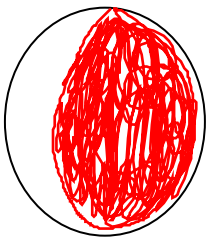
Full moon



waning gibbous



3rd quarter



waning crescent