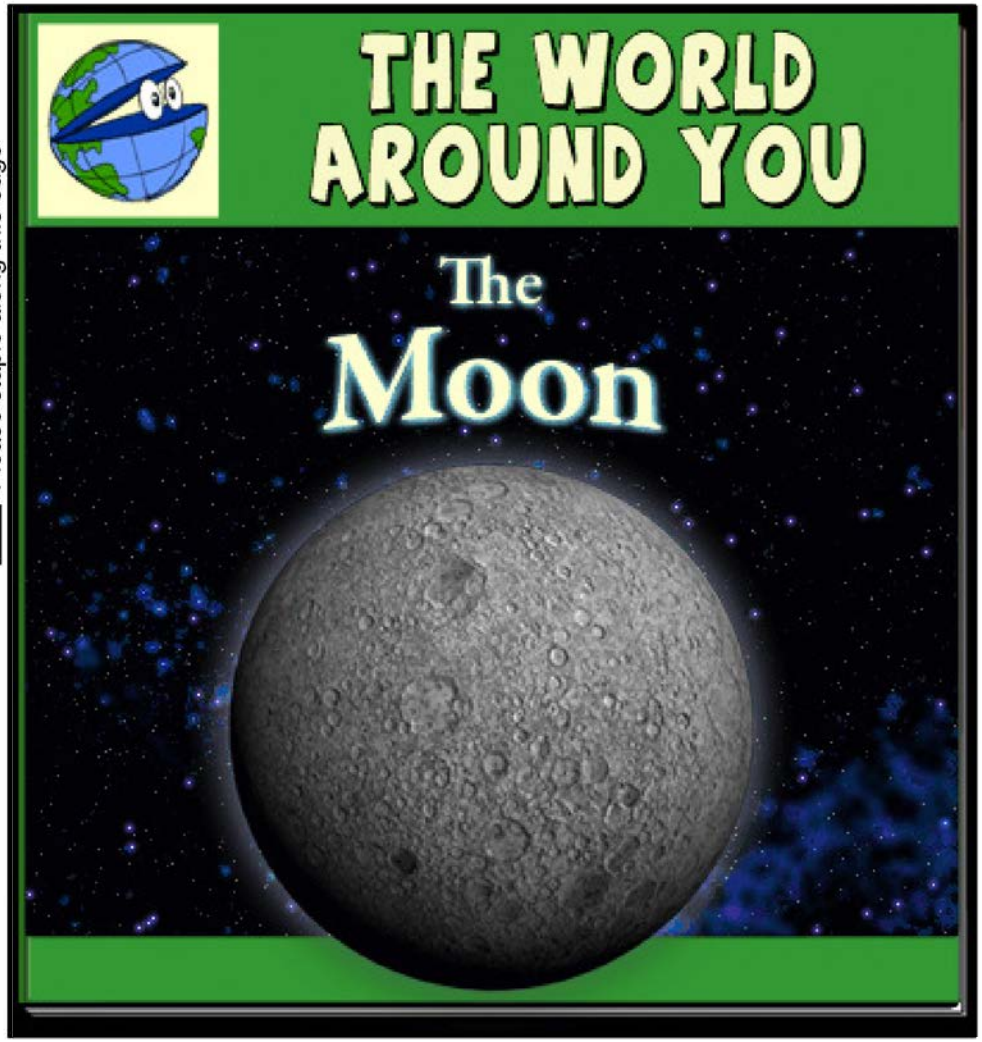
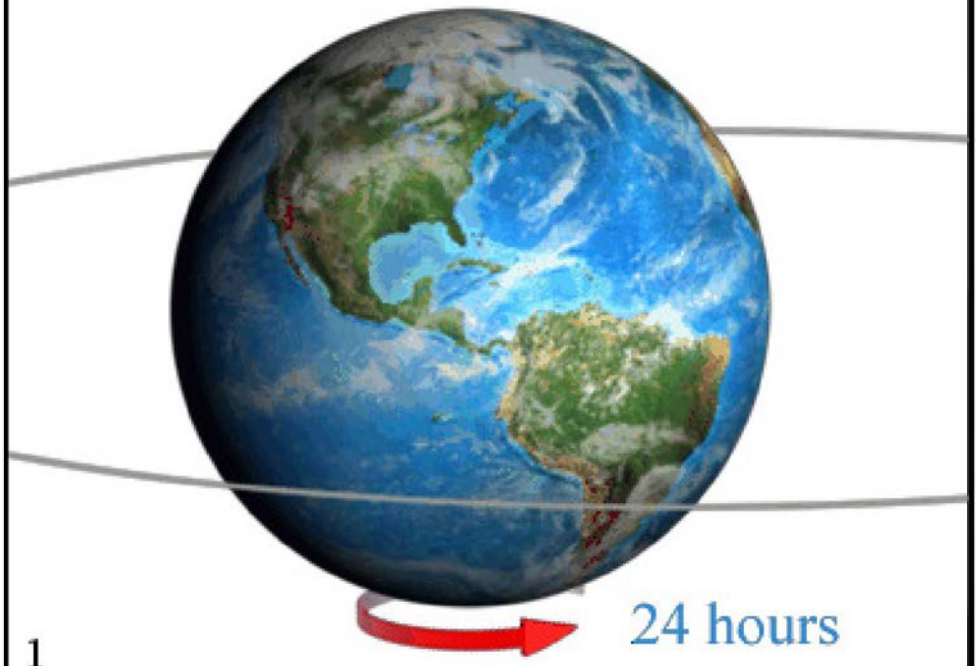
Please staple along this edge

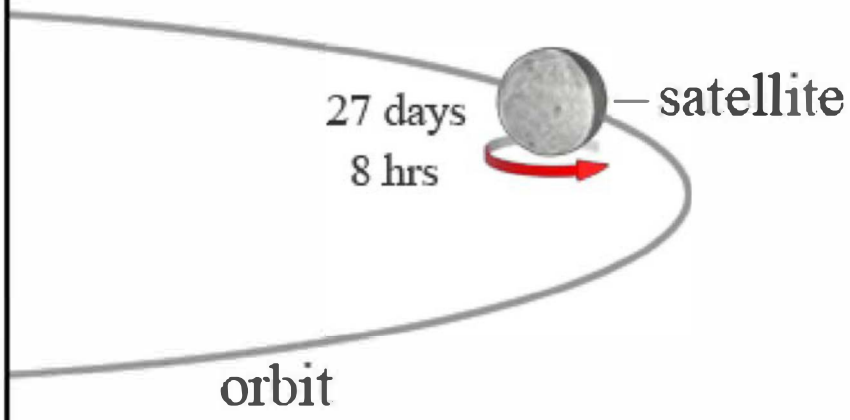


The Earth and the Moon

Do you know Earth's closest neighbor in space?
It's the **moon**! The moon is Earth's only **natural satellite**.
A satellite is an object that **orbits** around another.



Although the Earth and the moon are close in space, they only have a few things in common. The Earth and the moon are both spheres. Each rotates **counterclockwise** on its axis. The Earth rotates every 24 hours. But the moon takes 27 days and eight hours to rotate once on its axis.



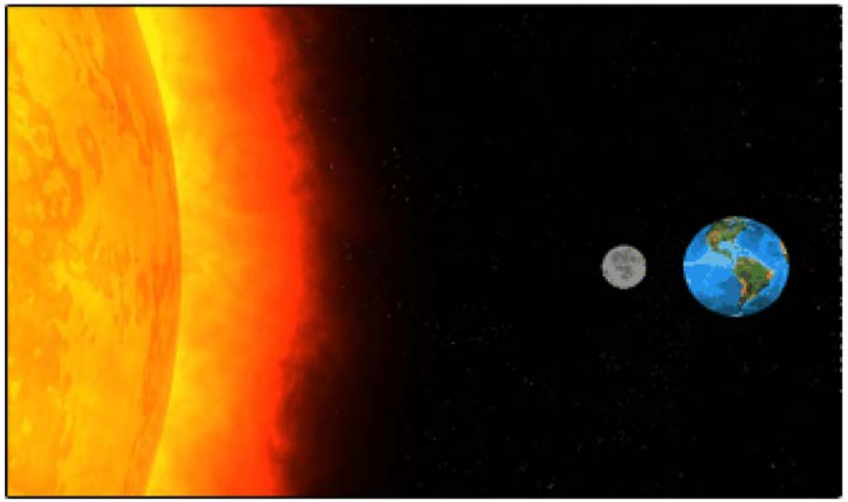
The Earth has liquid water and an **atmosphere** just right for living things. The moon has no water, almost no atmosphere, and no living things. The moon has no **weather**. However, it does get hot and cold on the moon. The side facing the sun gets very hot and the side facing away from the sun gets extremely cold.

It is always dark on the moon. On Earth, we see stars only at night. If we were on the moon, we would see the stars all the time.

Both the Earth and the moon have **gravity**. But the moon has much less gravity than the Earth. If you dropped a ball on Earth, it would make it to the ground much faster than if you dropped it on the moon. Because the moon has less gravity, objects seem to float around.

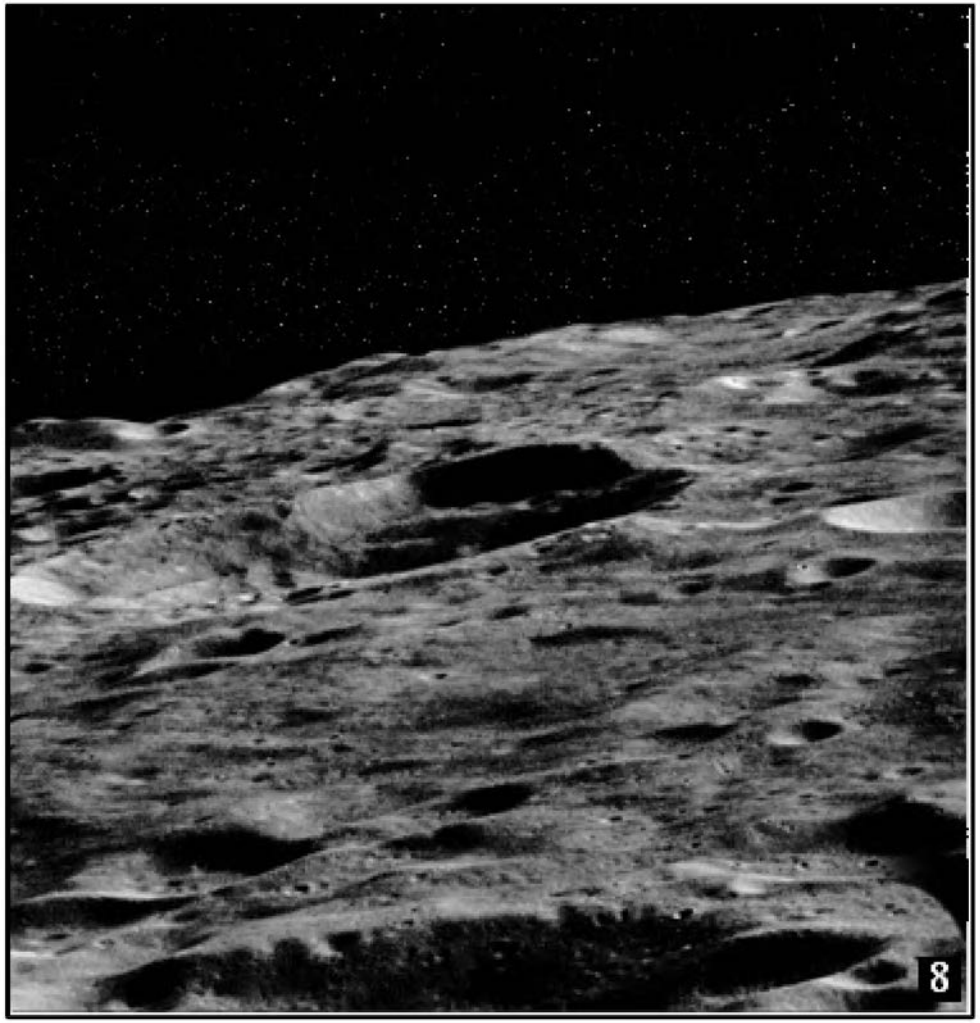
The Size of the Moon

The moon is about one-fourth the size of Earth. In the sky, the moon appears to be about the same size as the sun. But it's not. It looks that way because it is so close to the Earth. If the sun were a basketball, then the Earth would be a marble and the moon, a small round pebble.



The Moon's Surface

The moon's surface is rocky and covered with a layer of dust. There are mountains, large flat plains, and **craters** everywhere! Craters are bowl-shaped dents made in the surface. They form when chunks of rock or metal from space crash into the moon. Some craters are as small as a table. Others are as large as a city.



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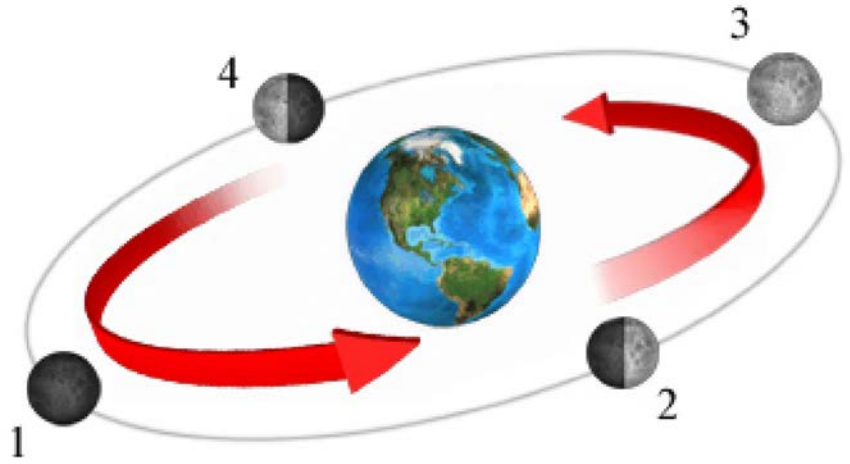
Phases of the Moon

The moon appears to shine in the sky. But the moon doesn't give off light at all. It reflects the sun's light. We see only the part of the moon that gets light from the sun.



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Because of the movement of the Earth and moon around the sun, the moon looks a little different every night. The different shapes you see are called the **phases of the moon**. The moon goes through four main phases every 29 and a half days.

1 

New Moon Phase - This phase occurs when the moon is between the sun and the Earth. The sun is shining on the side of the moon away from the Earth.

2 

First Quarter Phase - This phase occurs about seven days after the New Moon.

3 

Full Moon Phase - This phase occurs when the Earth is between the moon and the sun. The sun shines on the side of the moon facing the Earth.

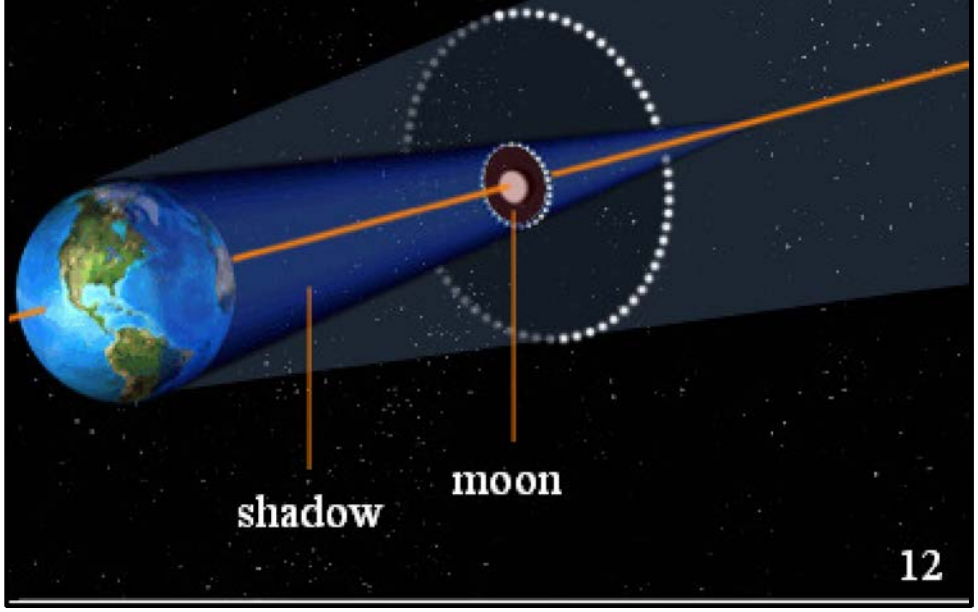
4 

Last Quarter Phase - This phase occurs about seven days after the Full Moon.

Eclipses

When light cannot pass through an object, a shadow is formed. Both the Earth and moon have shadows in space. An **eclipse** happens when one object in space casts its shadow on another object. There are times when the Earth is directly between the sun and the moon. Therefore, the Earth casts its shadow on the moon. This causes a **lunar eclipse**.

During a lunar eclipse the Earth's shadow moves across the moon's surface. As a result, for a while the full moon appears to slowly disappear and then turns a reddish color. After a few hours the full moon can be seen again because it has moved out of the Earth's shadow. A lunar eclipse is only seen at night.



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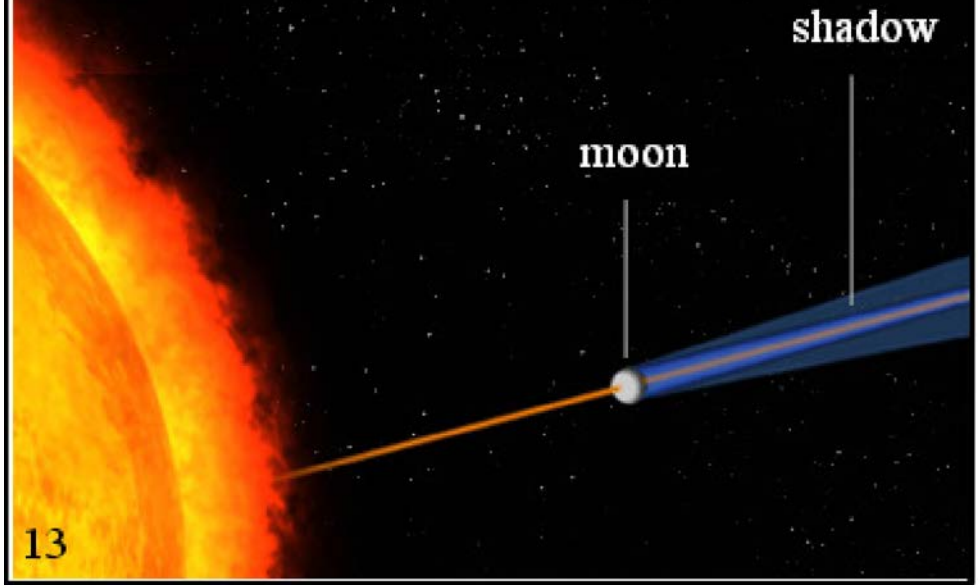
A **solar eclipse** occurs in the daytime. When the moon is directly between the sun and the Earth, then the moon casts its shadow on the Earth. For a few minutes, a part of the sun seems to be missing. Sometimes the moon blocks all of the sun's light. This causes the day to turn dark like the night. This is called a total solar eclipse.



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Looking at a lunar eclipse with an unaided eye is not harmful. However, you should never look directly at a solar eclipse. This could cause great damage to your eyes.

Glossary

atmosphere - gases surrounding a planet

counterclockwise - to turn the opposite direction of the hands on a clock

craters - bowl-shaped dents in the surface of Earth, other planets, or moons caused by falling meteorites

eclipse - when an object passes through the shadow of another object in space

gravity - the force that an object has to pull things toward it

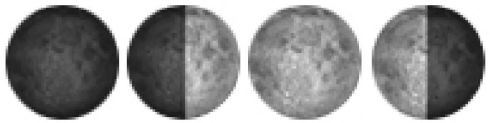
lunar eclipse - a lunar eclipse is when the moon passes through the Earth's shadow, blocking sunlight from reaching the moon's surface

moon - any planet's natural satellite

natural - from nature; the opposite of man-made

orbit - [noun] a curved path in which an object in space moves around another object; [verb] revolve around another object in space in a curved path

phases of the moon - the regular changes in the way the moon looks from Earth; new moon phase, first quarter phase, full moon phase, last quarter phase



satellite - any object, man-made or natural, that orbits another body

solar eclipse - a solar eclipse is when the moon travels between the Earth and the sun

weather - the state of the lower atmosphere at any given place or time

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