



Moon Mysteries

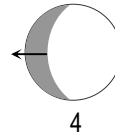
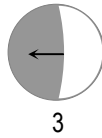
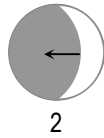
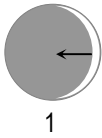
More Full or Less Full?

If you looked up in the night sky and saw the moon looking like this...



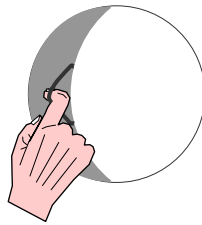
... would you say it would be more full or less full the following night?

Going to More Full



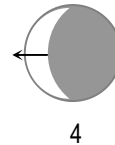
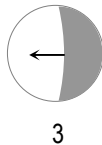
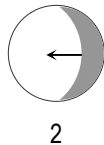
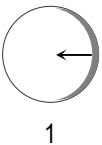
BrainAid
It's a ReaL
(Right to Left)
moon!

Left ← Right

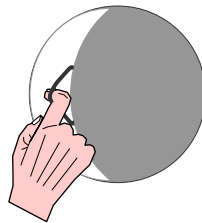


Imagine pulling a WHITE curtain Right to Left over a ReaL moon.

Going to Less Full



Left ← Right



Imagine pulling a GRAY curtain Right to Left over a ReaL moon.

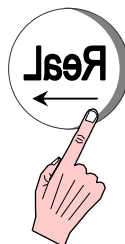


Be aware that R and L are opposite their left-right locations in ReaL.

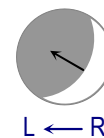
R is on the *left* → **Rea**L ← L is on the *right*



Sweep your finger from Right to Left across the moon as you spell ReaL backwards.



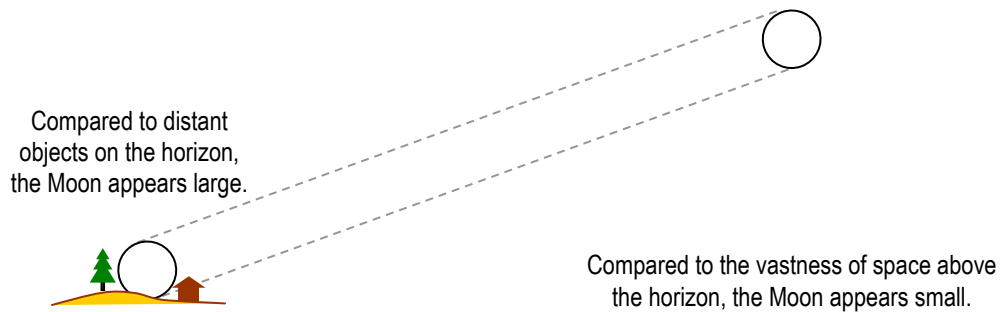
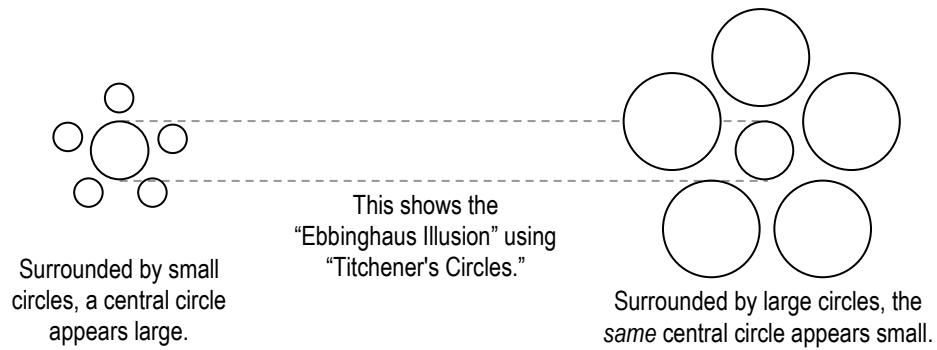
Even when the light or dark portion appears slightly below or above...



...it will be more to the right, and the Right-to-Left rule applies.

The Moon Illusion

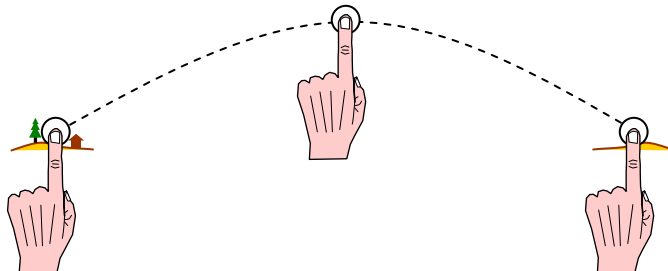
Why does the Moon appear to change size as it moves through the sky?



The Fingernail Test

Although the eyes and mind perceive it as being larger or smaller, the Moon's size doesn't change as it moves through the sky.

Proof: Hold your hand at arms length and observe how your fingernail covers the same portion of the Moon at all positions in the sky.



Lunar Phases

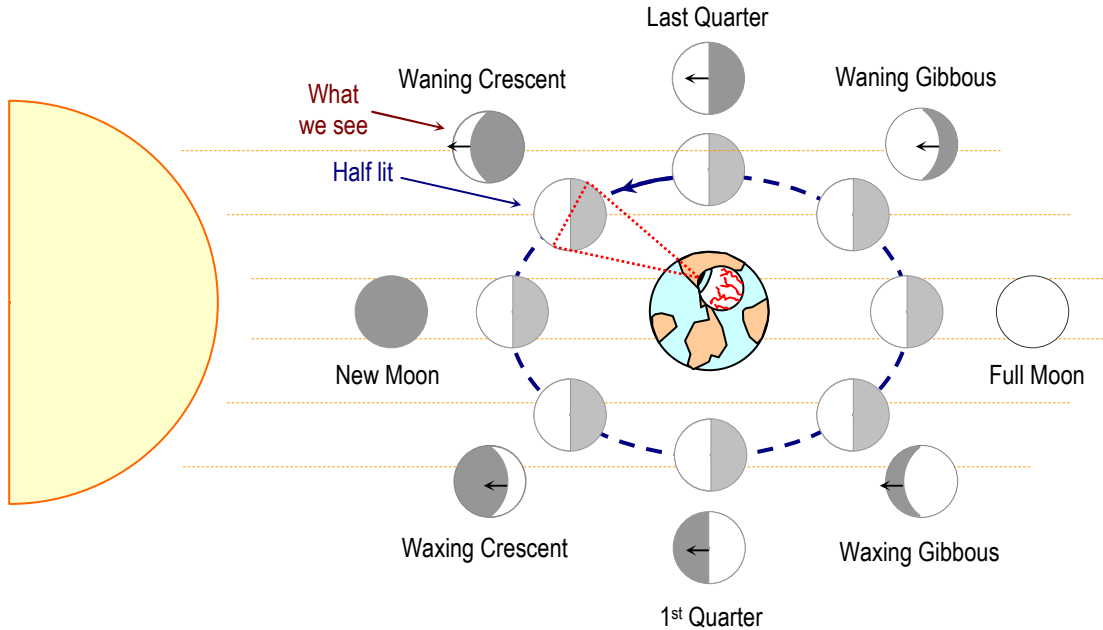
What causes the Moon to have different shapes?

What We See

From Earth, the Moon appears to shift from light to dark to light.

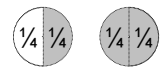
Always Half Lit

In relation to the Sun, the Moon is *always* half lit.



Quarter Moon?

A Quarter Moon looks half full, but it's called a "quarter" because it accounts for both sides of the moon.

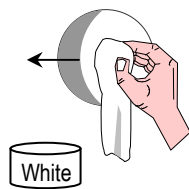


Of course, if the same logic were used, the Full Moon would be called a *Half Moon!*



Crescent Moon

White part is less than half.
"Cres = Less"
Imagine a croissant.



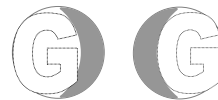
Waxing Moon

White part is getting bigger. Imagine applying white wax from Right to Left.



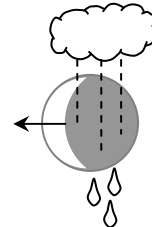
TIP

Observe that PHASE terms all refer to the WHITE part of the Moon.



Gibbous Moon

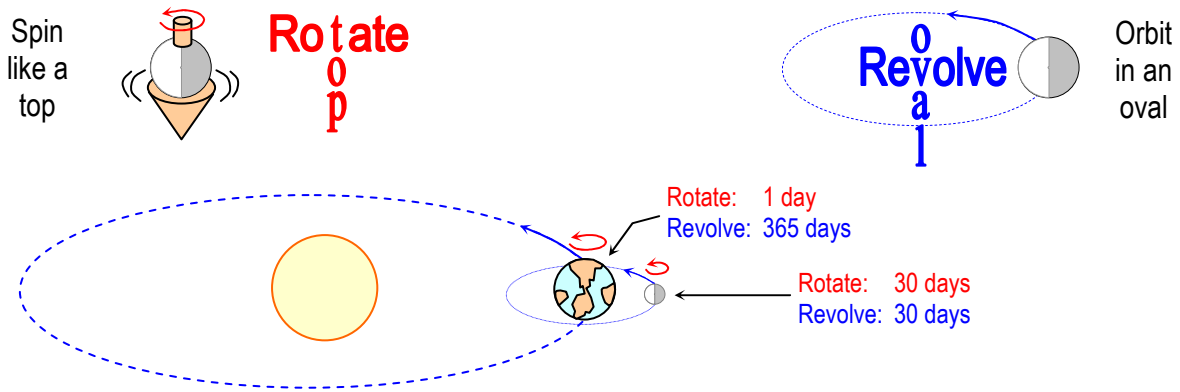
White part is greater than half.
"G = Greater"
Imagine a letter G.



Waning Moon

White part is getting smaller. Imagine it is raining (waning) which washes off the white wax.

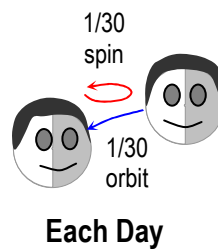
Rotate vs. Revolve



The Far Side

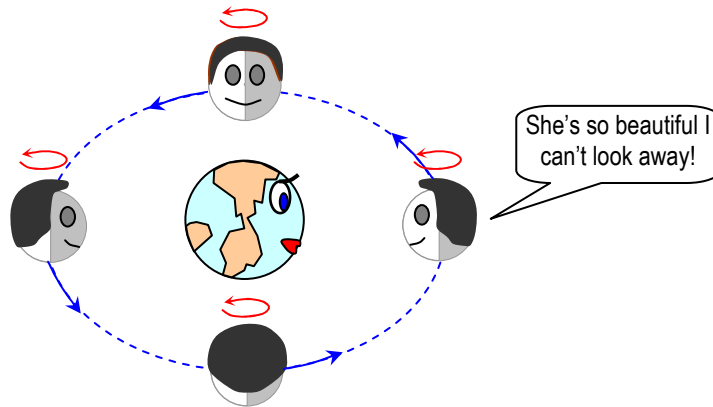
Why can't we see the Far Side of the Moon?

Over time, Earth's gravity has slowed the Moon's spin so that it currently (coincidentally) rotates 1/30 of its circumference each day of its 30-day orbit.



This causes the same side of the Moon to always face Earth. The only way to see the Moon's Far Side is from an orbiting space vehicle.

Imagine that the Man in the Moon is so in love with Mother Earth, he always turns to face her.

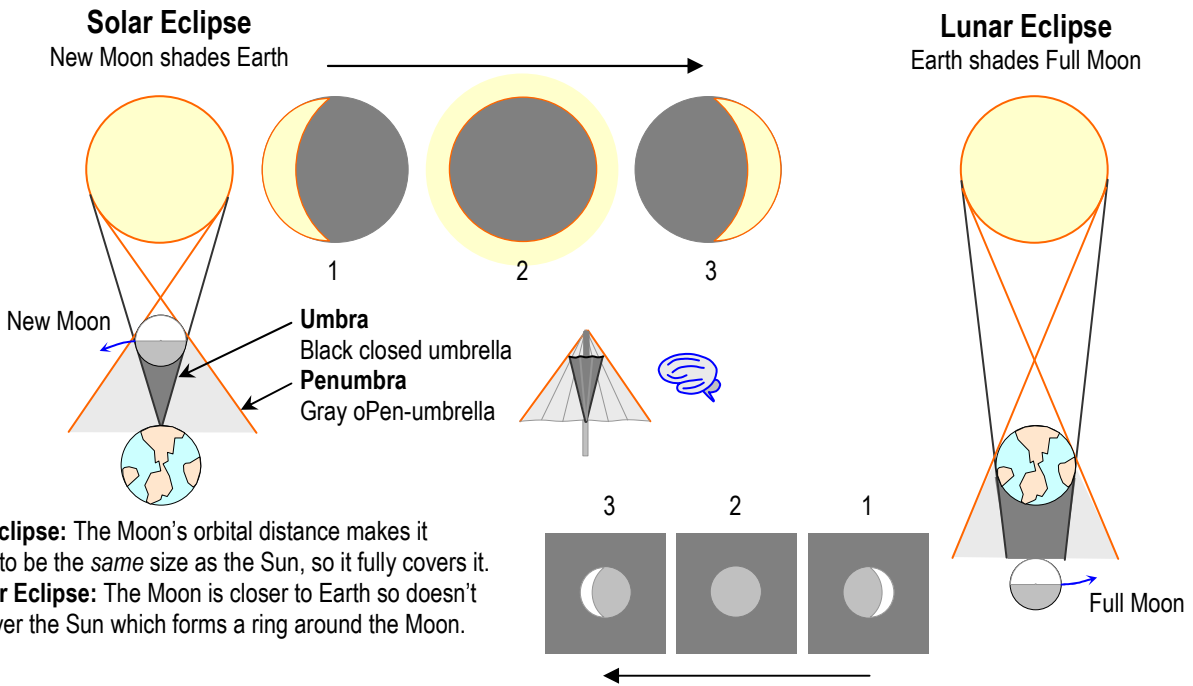


TRAP!

The far side of the Moon is sometimes called the "dark side," but that's inaccurate, because the far side is lit by the Sun as often as the near side.

Solar vs. Lunar Eclipses

When the Earth & Moon align, their shadows cause eclipses.



Why Are Eclipses Rare?

The Moon's orbit around the Earth is tilted about 5° compared to the Earth's orbit around the Sun. Therefore, the Earth and Moon cast shadows on one another *only* when the Sun shines on the *edge* of the lunar orbital (plate) plane every 6 months.

Imagine shining a light on the *face* of a tilted, beaded, glass plate. No shadows align.

Now shine a light on the *edge* of the tilted, beaded, glass plate. The middle shadows align.

