

Describe the Moon.





Moon Week

Questions to think about during the video:



1. What is the far side and near side?
2. Describe some of the features of the Moon.
3. What is one hypothesis of how we got the Moon?

12

THE MOON



Video Questions:



1. What is the far side and near side?
2. Describe some of the features of the Moon.
3. What is one hypothesis of how we got the Moon?

Vocab

Rotation - turning around its axis



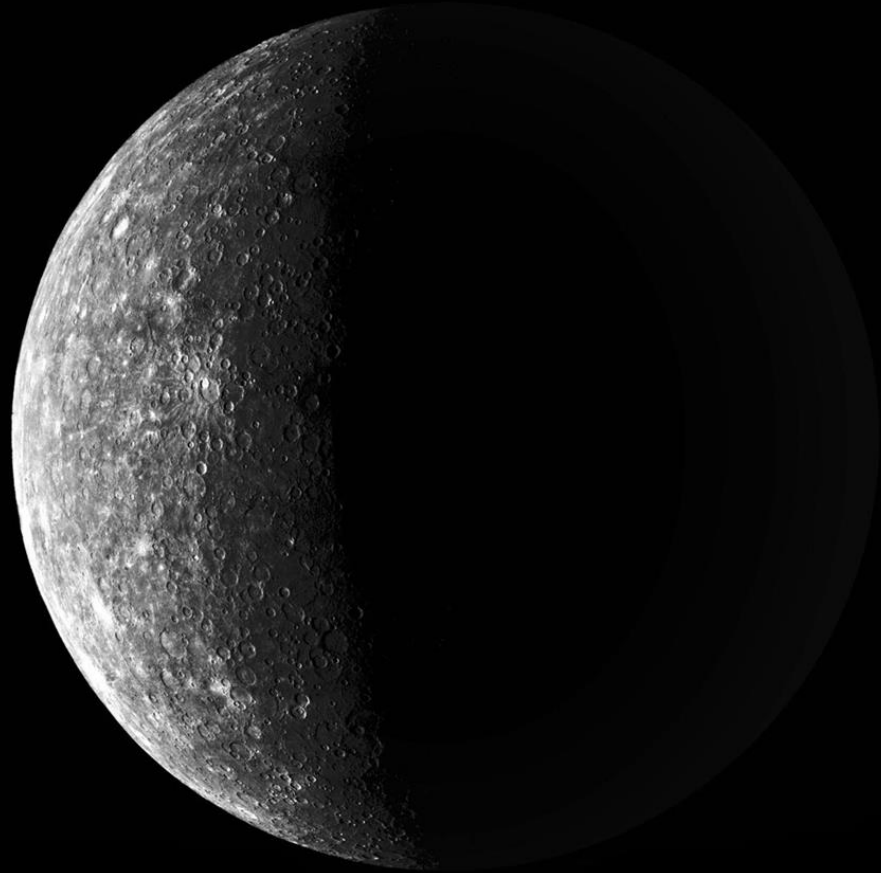
Revolution - moving through its orbit



Why does the Moon
change shapes?

Moon phases!

Pop Quiz:
What moon phase is this?
How do you know?



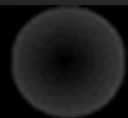


MOON PHASES

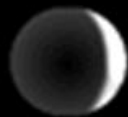
Video Questions:



1. Why does the Moon change shapes?
2. The Moon goes through all of its phases every _____ days.
3. Why can we see the Moon during the day sometimes?



New



Waxing Crescent



First Quarter



Waxing Gibbous



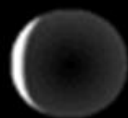
Full



Waning Gibbous



Last Quarter



Waning Crescent

Vocab

Phases of the Moon - changing apparent shape of the moon every 29.5 days

Gibbous - more than half of the Moon is lit by the Sun

Crescent - less than half of the Moon is lit by the Sun

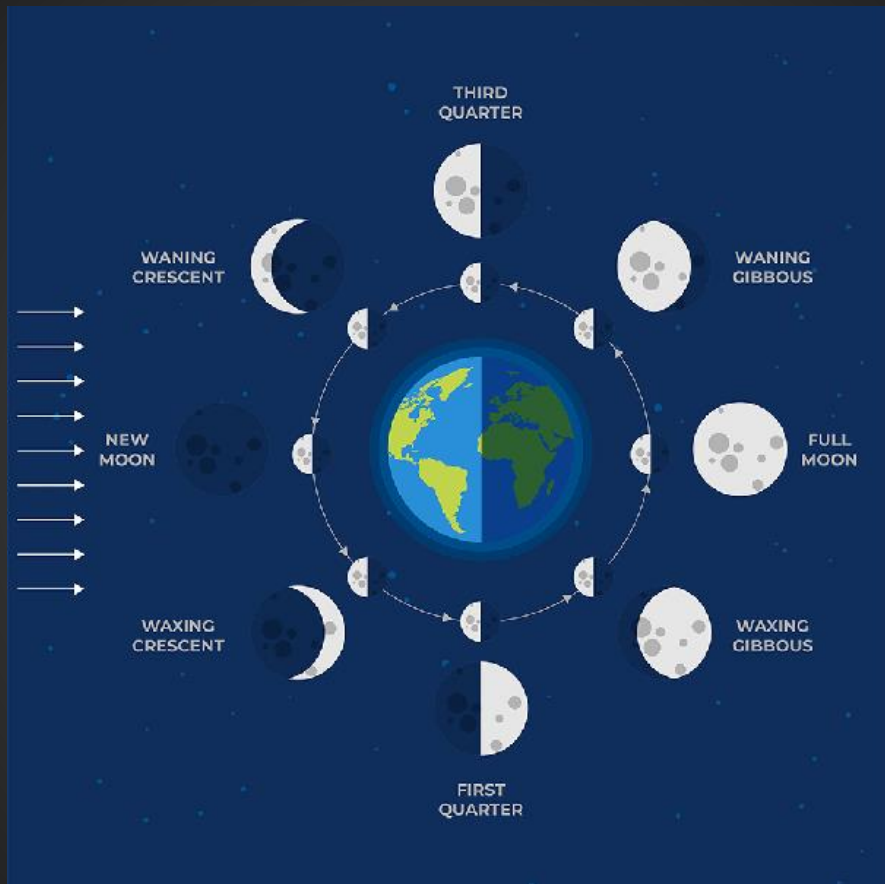
Vocab

Waxing - the lit portion is growing larger

Waning - the lit portion is growing smaller

Quarter - half the Moon is lit by the Sun









Sites to Explore

Moon phases of today [link](#)

Moon phases interactive [link](#)

Moon phases simulation [link](#)

NASA's Moon site [link](#)

Phases of the Moon game [link](#)



Videos

<https://www.youtube.com/watch?v=mCzchPx3yF8&authuser=0>

<https://www.youtube.com/watch?v=AQ5vty8f9Xc&authuser=0>

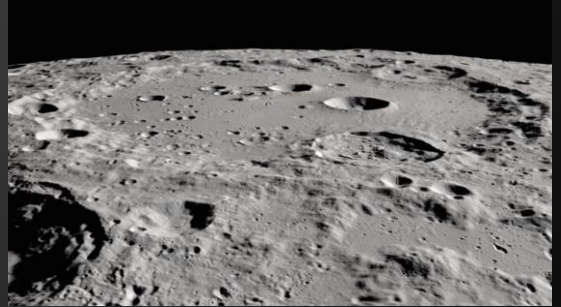
<https://www.youtube.com/watch?v=6AviDjR9mmo&authuser=0>

<https://www.youtube.com/watch?v=6jUpX7J7ySo&authuser=0>

<https://www.youtube.com/watch?v=nA11N96t8>



True or False: The Moon
makes its own light and
that is why we see it.





Tides

What is a tide?



How do they happen?



What Causes

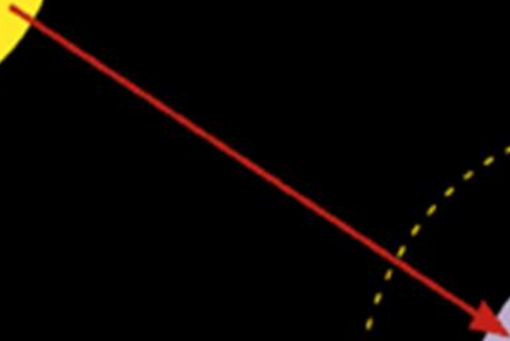
TIDES?

Brought to you by NOAA's
Geostationary Operational
Environmental Satellites – R Series

That's cool, but does the
Sun affect tides as well?

Spring Tide





Neap Tide

Vocab

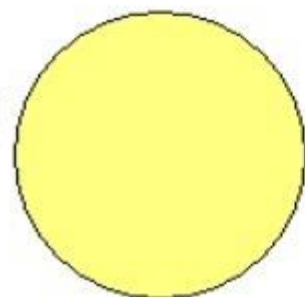
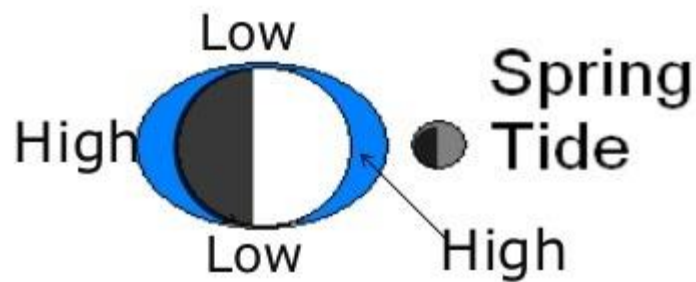
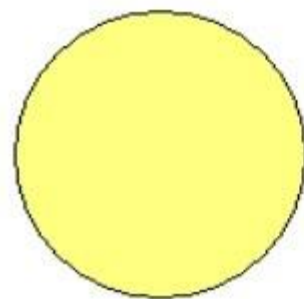
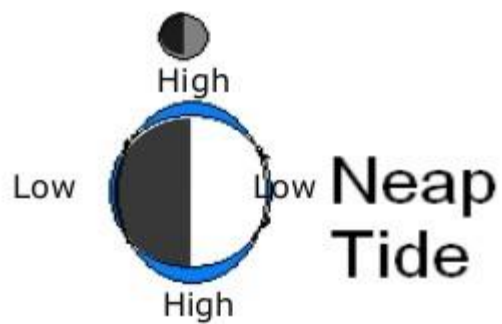


Tides - The rise and fall of Earth's waters due to changes in gravity

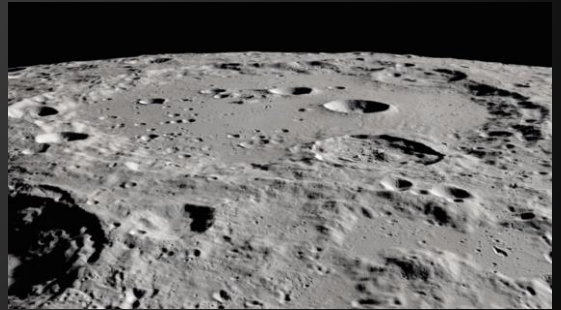
Spring Tide - The largest difference between low and high tides
(caused by combined gravitational pull of the Sun and Moon)

Neap Tide - The smallest difference between low and high tides
(caused by the Sun and Moon being at 90°)





True or False: Only the Moon causes the tides.





Eclipses

The moon's endless dance

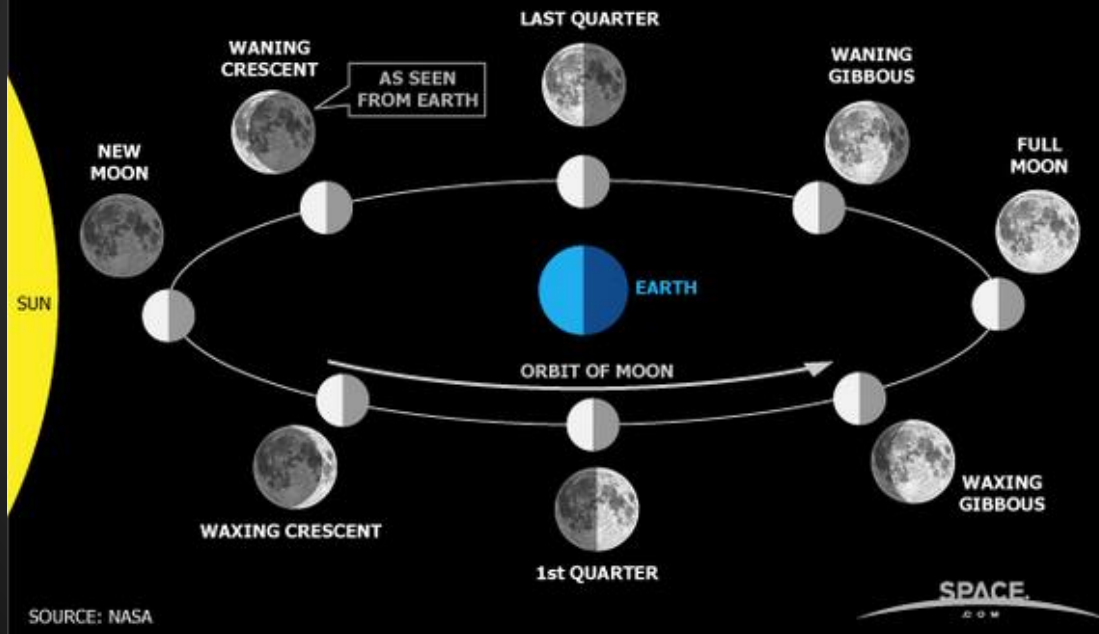
As the Earth and moon orbit the sun together, the pattern of day and night on the lunar surface constantly changes. We refer to the percentage of illumination on the visible face of the moon as the moon's "phase." There are 8 major named phases that have been known throughout human history.



MOON'S "NEAR" SIDE,
VISIBLE FROM EARTH



MOON'S "FAR" SIDE,
HIDDEN FROM EARTH



SOURCE: NASA

SPACE
COM

Science **ABC**

**ALL ABOUT
SOLAR AND
LUNAR ECLIPSE**



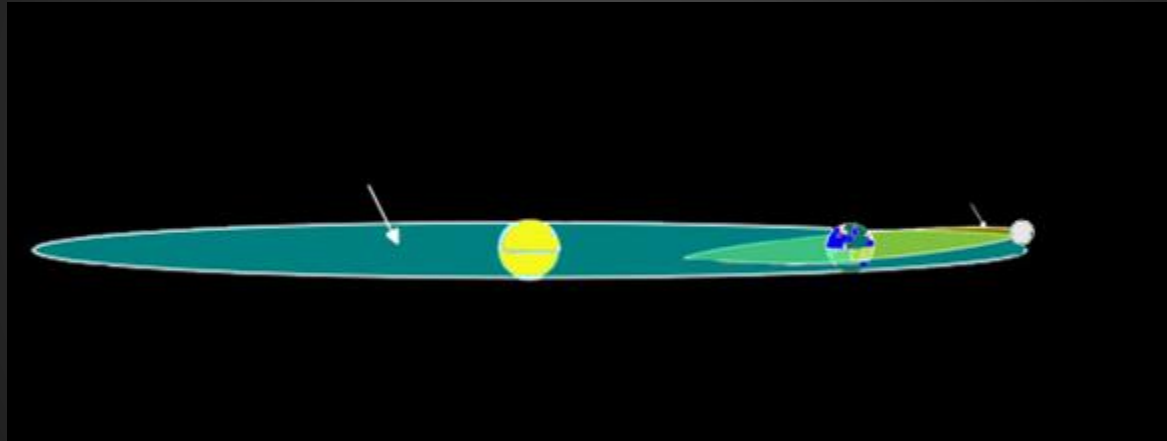
Vocab

Eclipse - Occurs when one celestial body goes in the shadow of another celestial body

Lunar Eclipse - Occurs when the Earth's shadow covers the Moon

Solar Eclipse - Occurs when the Moon's shadow falls on the Earth

Why don't we get eclipses every month?

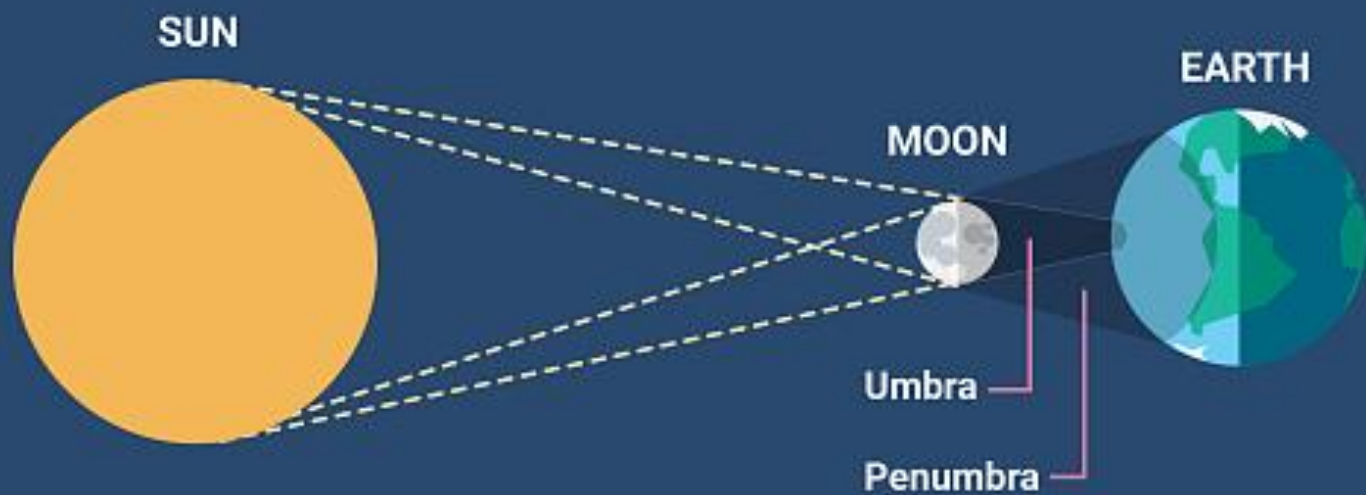


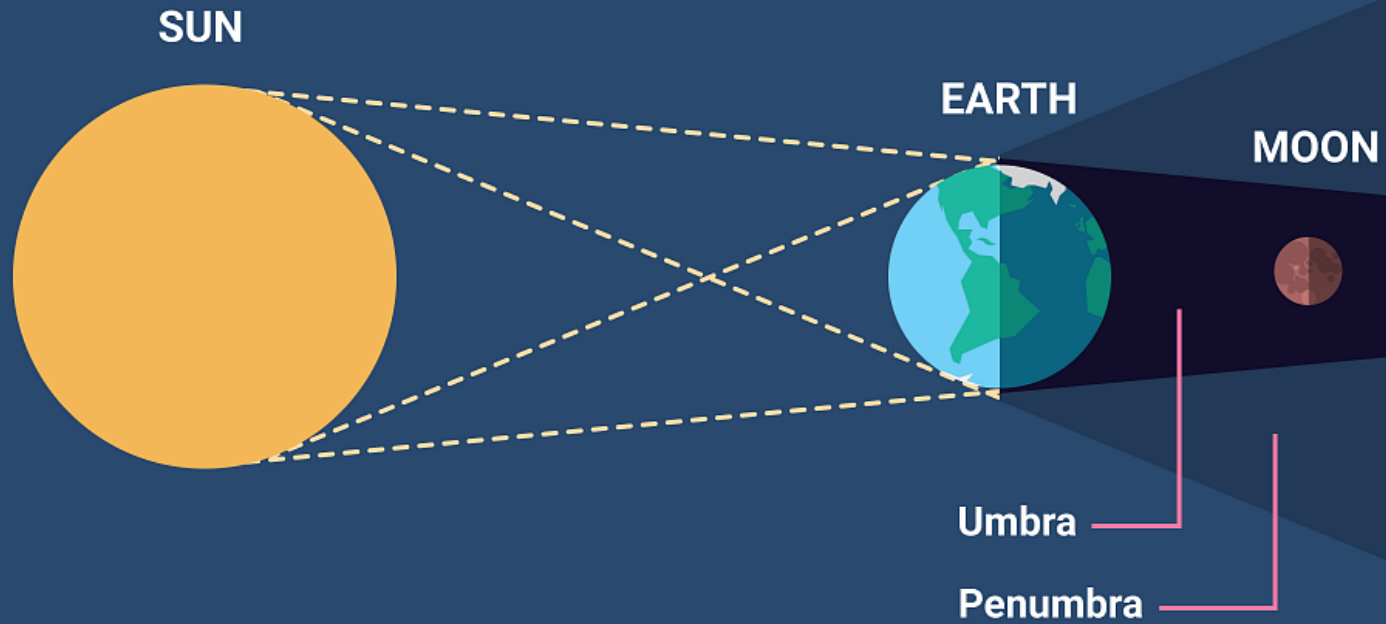
Because the orbits aren't exactly even, we can't have one every month.

Vocab

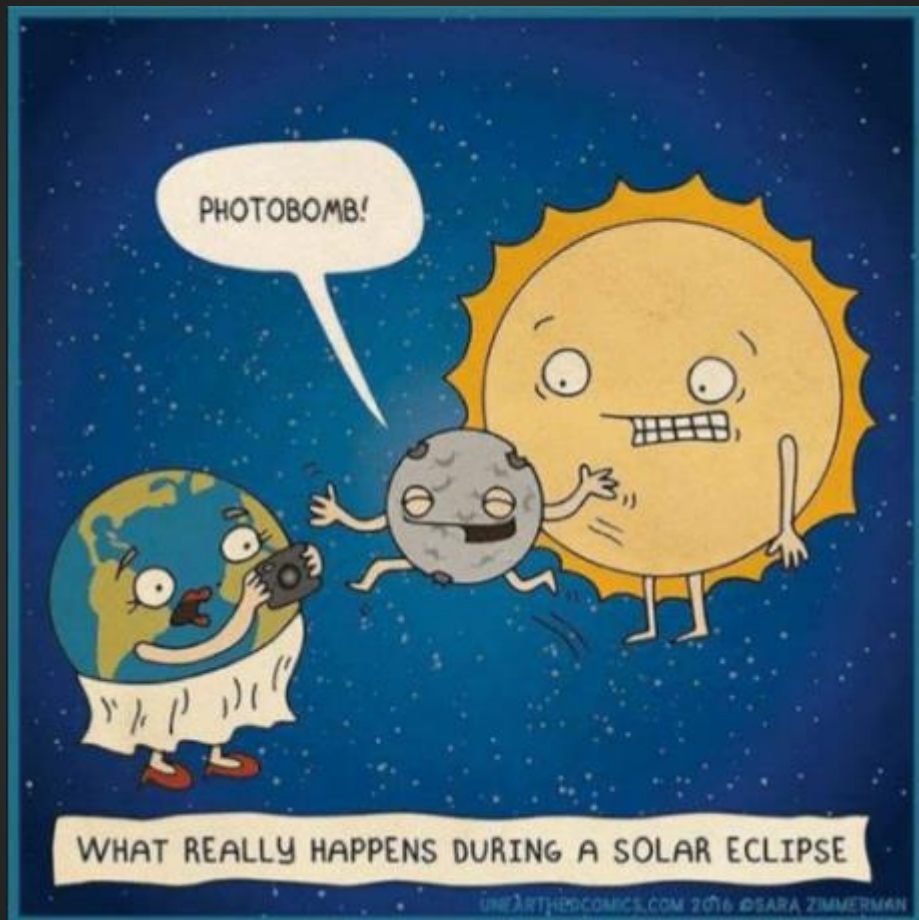
Umbra - The darkest part of a shadow where all light is blocked

Penumbra - Lighter part of the shadow where only part of the light is blocked





Go to Google Images to see what the Moon looks like during a lunar eclipse and to see what the Sun looks like during a solar eclipse.



WHAT REALLY HAPPENS DURING A SOLAR ECLIPSE

Eclipse Links

When are the next eclipses going to happen [link](#)

How eclipses were explained in the past [link](#)

Watch an Australian solar eclipse (shows pictures of totality) [link](#)

Now Draw It Out!

Using your whiteboard, draw out the placement of the Sun, Earth, and Moon for a solar eclipse, and then for a lunar eclipse.

How do you know you are right?





Does show
pictures of
totality

What about eclipse on other planets?

How does the Moon's
placement cause
eclipses?

