



Eclipses

Review the phases of the Moon and how the Earth, Moon, and Sun are aligned to get phases of the Moon.

The moon's endless dance

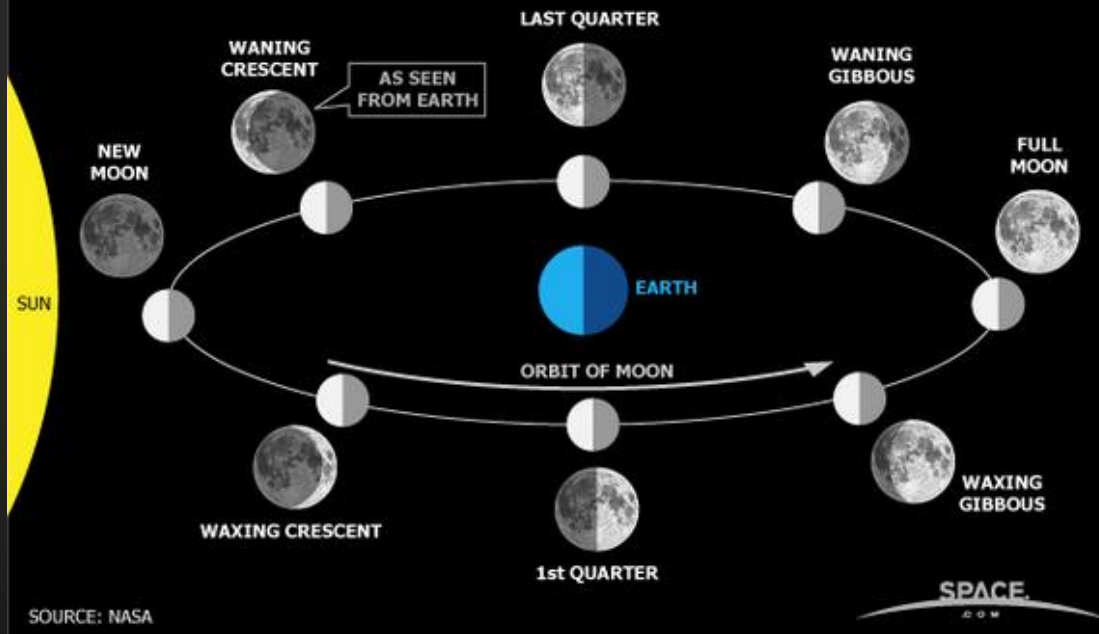
As the Earth and moon orbit the sun together, the pattern of day and night on the lunar surface constantly changes. We refer to the percentage of illumination on the visible face of the moon as the moon's "phase." There are 8 major named phases that have been known throughout human history.



MOON'S "NEAR" SIDE,
VISIBLE FROM EARTH



MOON'S "FAR" SIDE,
HIDDEN FROM EARTH



SOURCE: NASA

SPACE.
COM

Now watch this video about eclipses.

Science **ABC**

**ALL ABOUT
SOLAR AND
LUNAR ECLIPSE**



Review the vocab from the video.

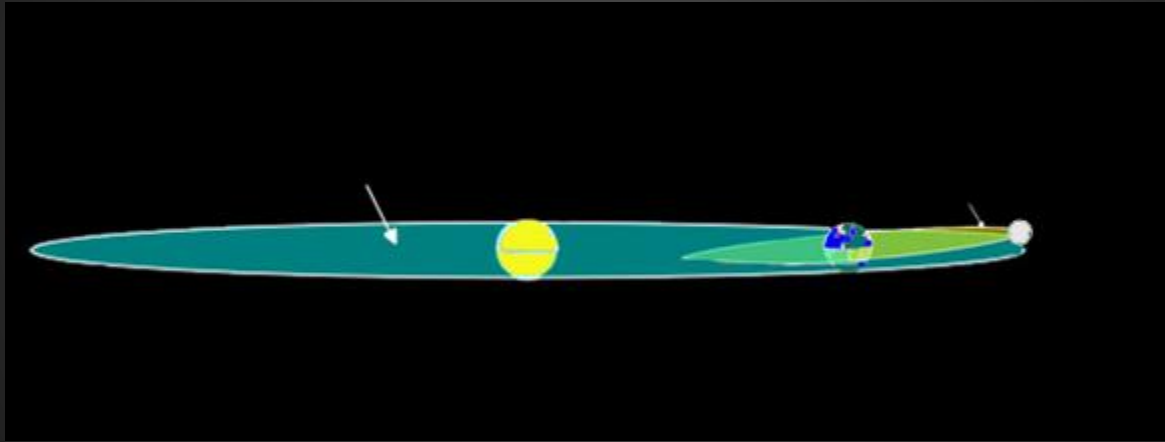
Vocab

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?



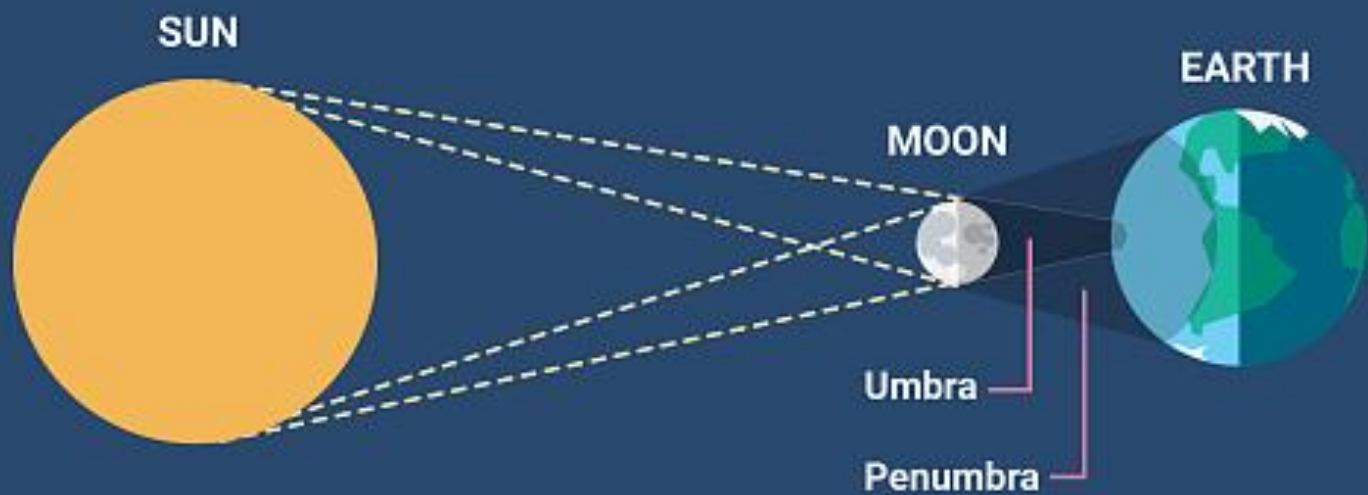
Because the orbits aren't exactly even, we can't have one every month.

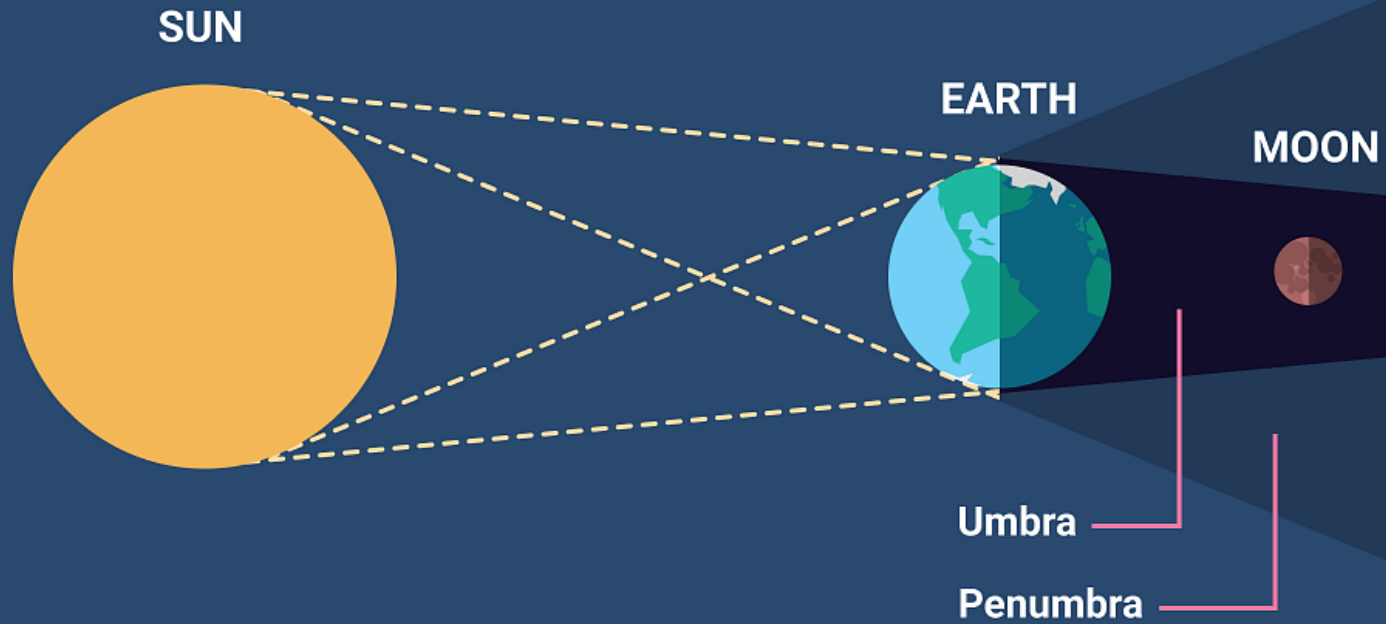
What are the different parts of the shadow called?

Vocab

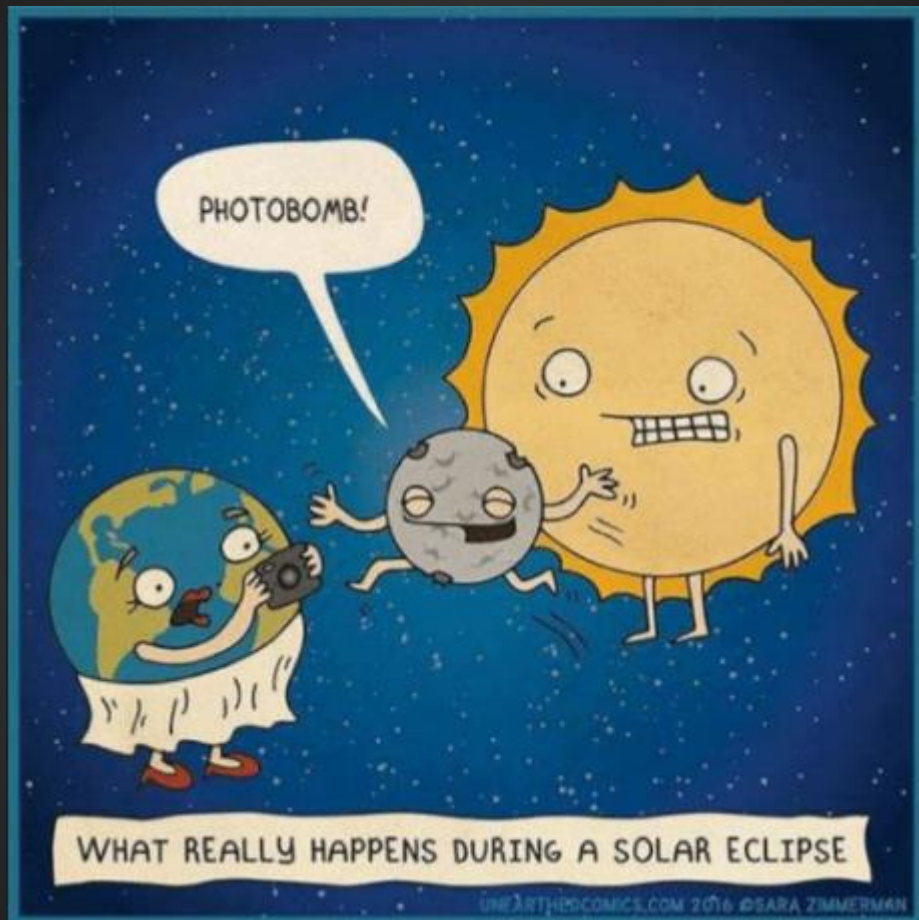
Umbra - The darkest part of a shadow where all light is blocked

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](#)

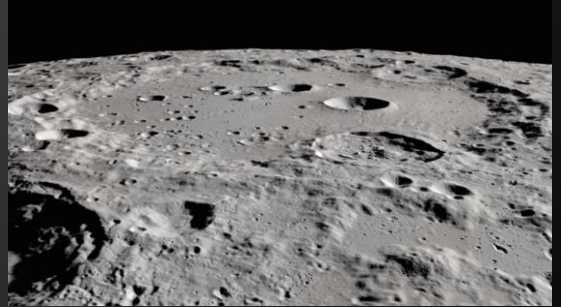
Now Draw It Out!

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?



How does the Moon's
placement cause
eclipses?





Does show
pictures of
totality

What about eclipse on other planets?