

Space Invaders



Unit 4

6.E.1.1

Explain how the relative motion and relative position of the **SUN**, **Earth** and **moon** affect the **seasons**, **tides**, **phases of the moon**, and **eclipses**.

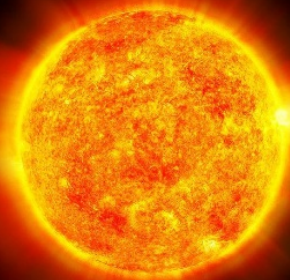
Part 1: We will learn about the...

(not to scale!)

The Earth!

The Moon!

The Sun!



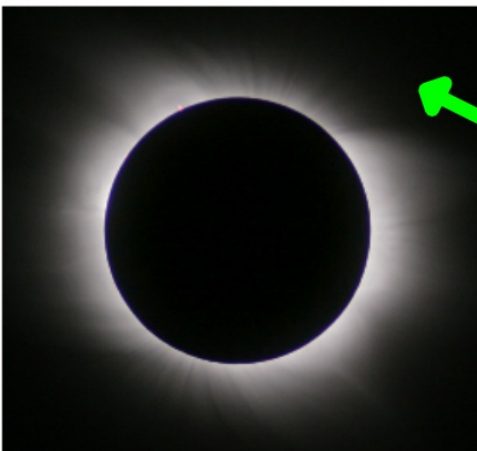
And how they effect...

Seasons



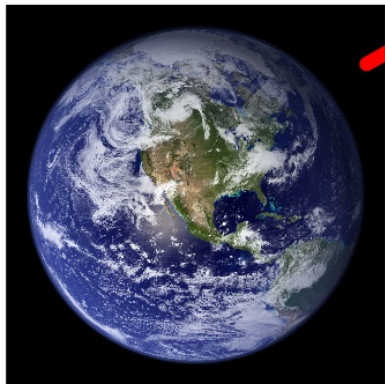
Tides

Phases of the moon



Eclipses

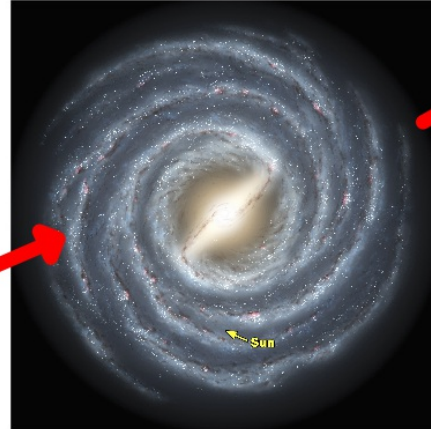
Small to BIG



Earth



Our Solar System



Galaxies:
Includes stars, planets,
dust, gas
More than
170 billion...
Milky Way



The
Universe:
Everything!

Flipbook

- 1. Fold in half - Hamburger**
- 2. Cut along FRONT lines, 2 cuts.**
- 3. We will glue in AFTER notes.**

The Sun

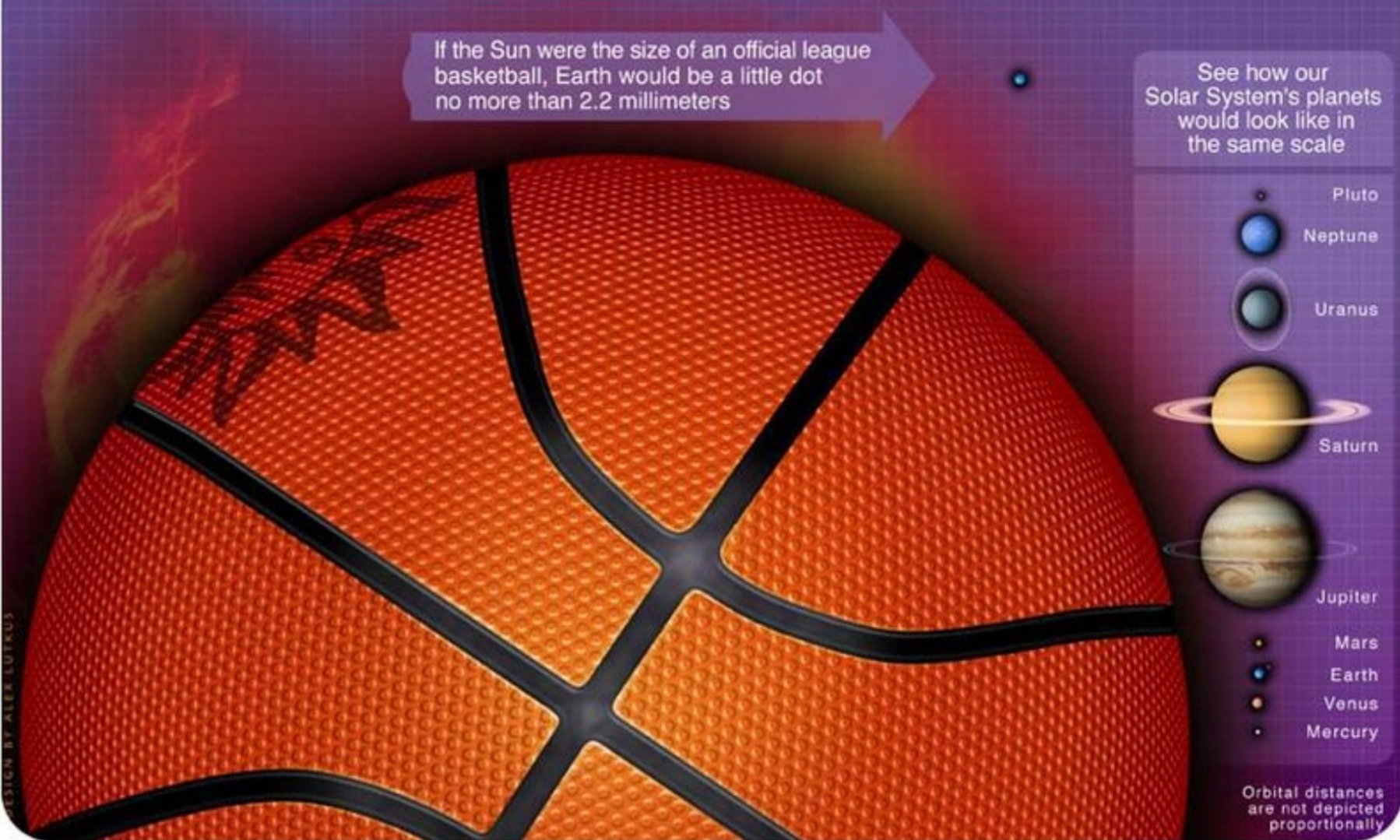
- Made of mostly 2 gases:
Helium and Hydrogen
 - Plasma molecules
- A million times bigger than earth
 - Every planet revolves around the sun = "center"

How Big is the SUN?

Our Sun has a diameter of 1.4 million km and Earth a diameter of almost 13,000 km

If the Sun were the size of an official league basketball, Earth would be a little dot no more than 2.2 millimeters

See how our Solar System's planets would look like in the same scale



Orbital distances are not depicted proportionally

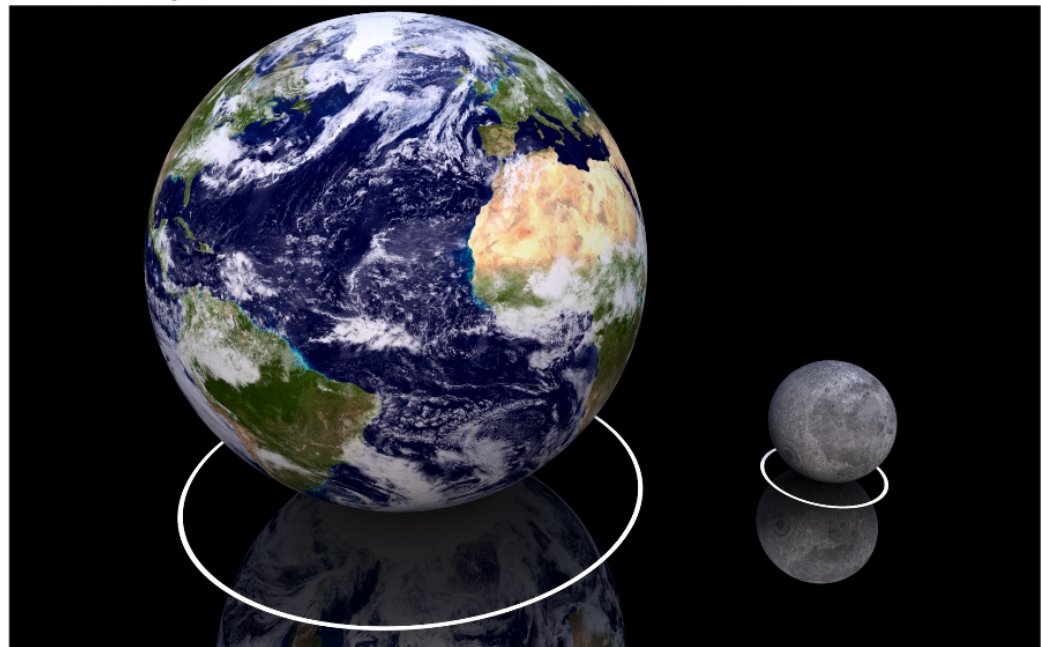
DESIGN BY ALEX LOTKUS

The Moon

- Craters in the moon caused by asteroids

- No wind, water, or weather

- No LIFE!



The Earth

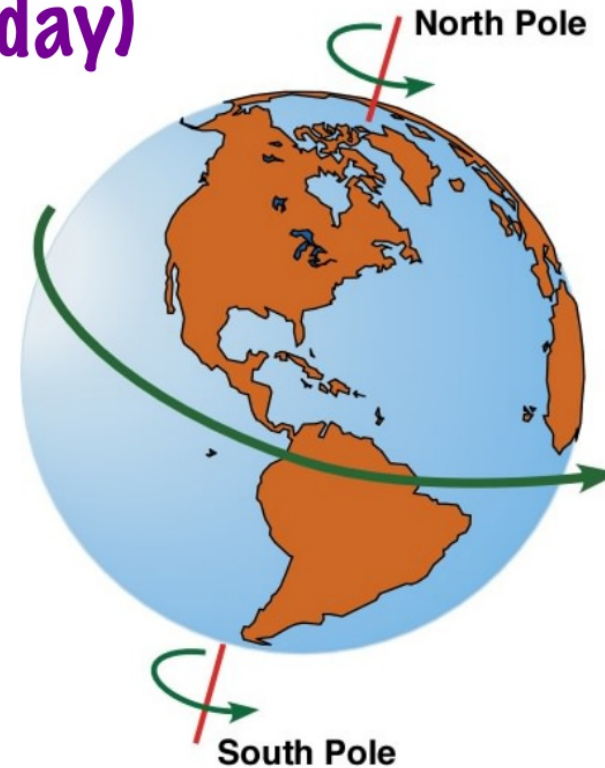
Tilted at a
23.5 degree
angle



How does the Earth move....?

1. The earth rotates on its axis.

One rotation = 24 hours (1 day)



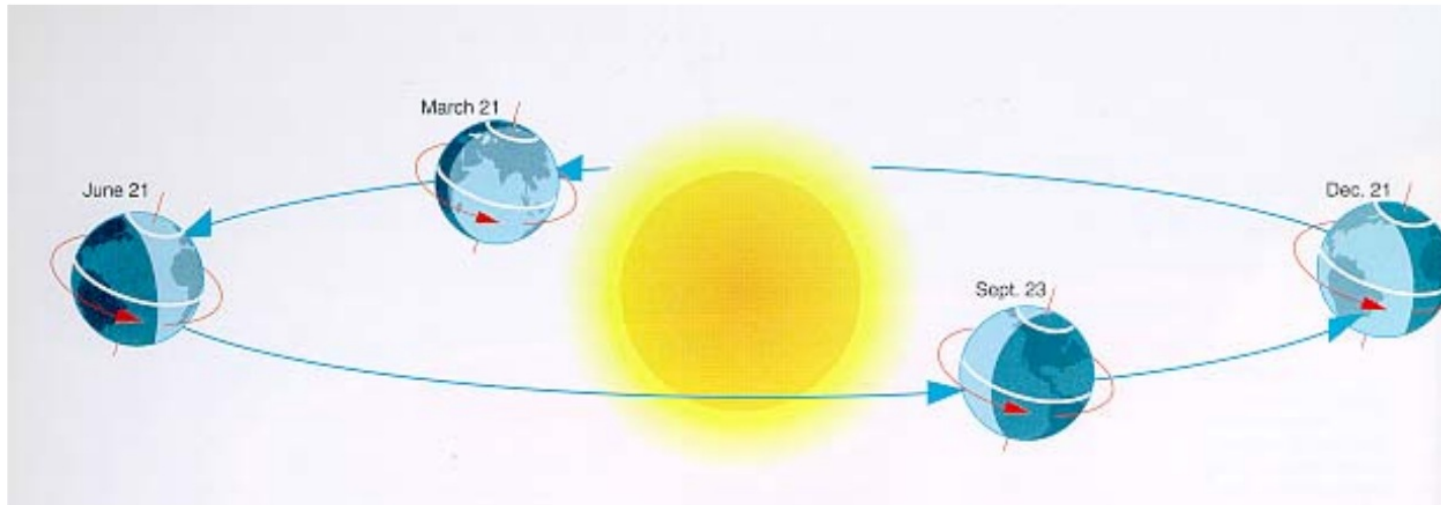
What causes night and day?

- As earth rotates on its axis, it turns towards and away from the sun.
- DAY TIME is when your half of the earth is facing the sun.
- NIGHTIME is when your half of the earth is turned away from the sun.



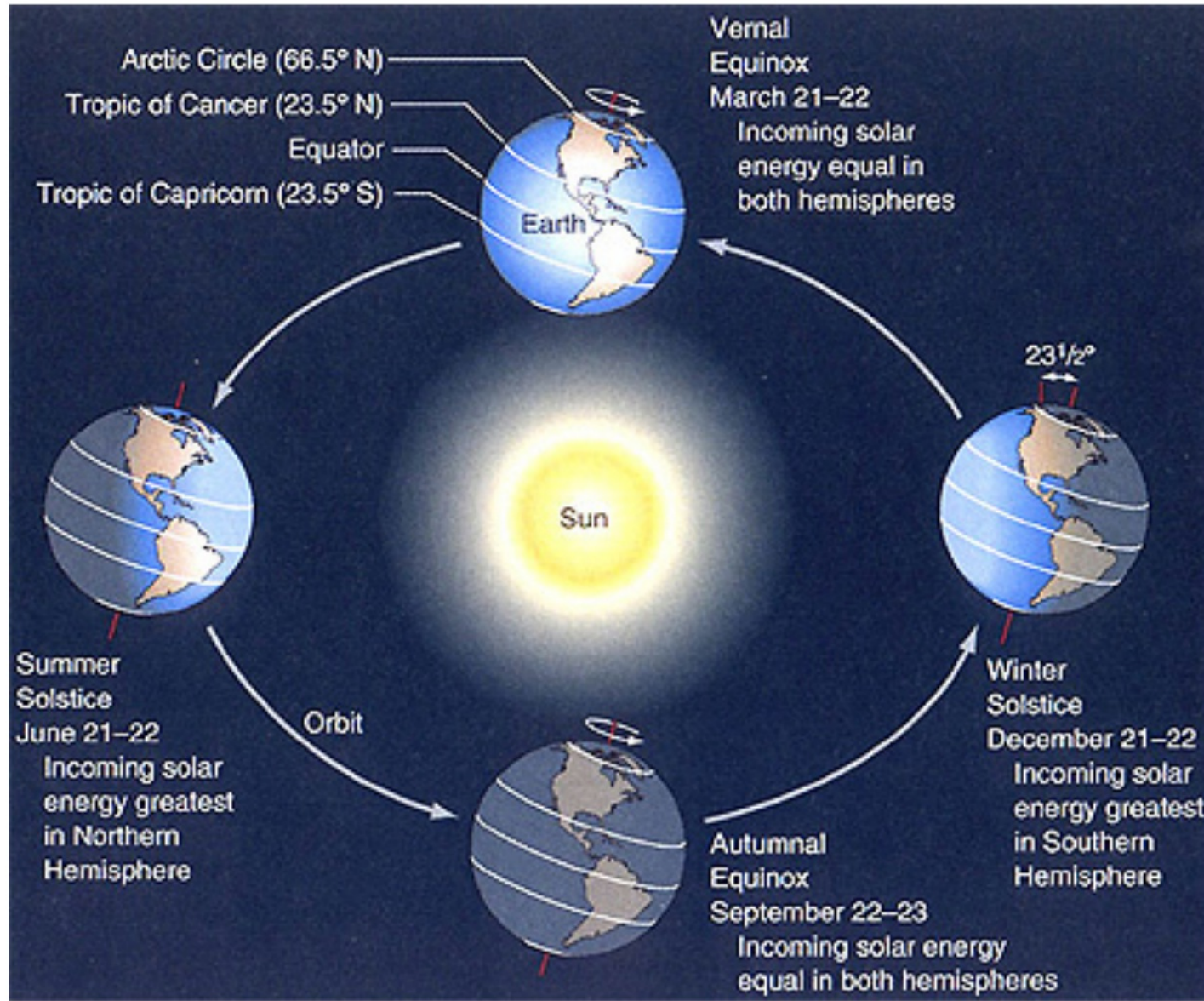
How does the Earth move....?

2. The Earth revolves around the SUN.



One revolution = 365 days (1 year)

(seasons-later)

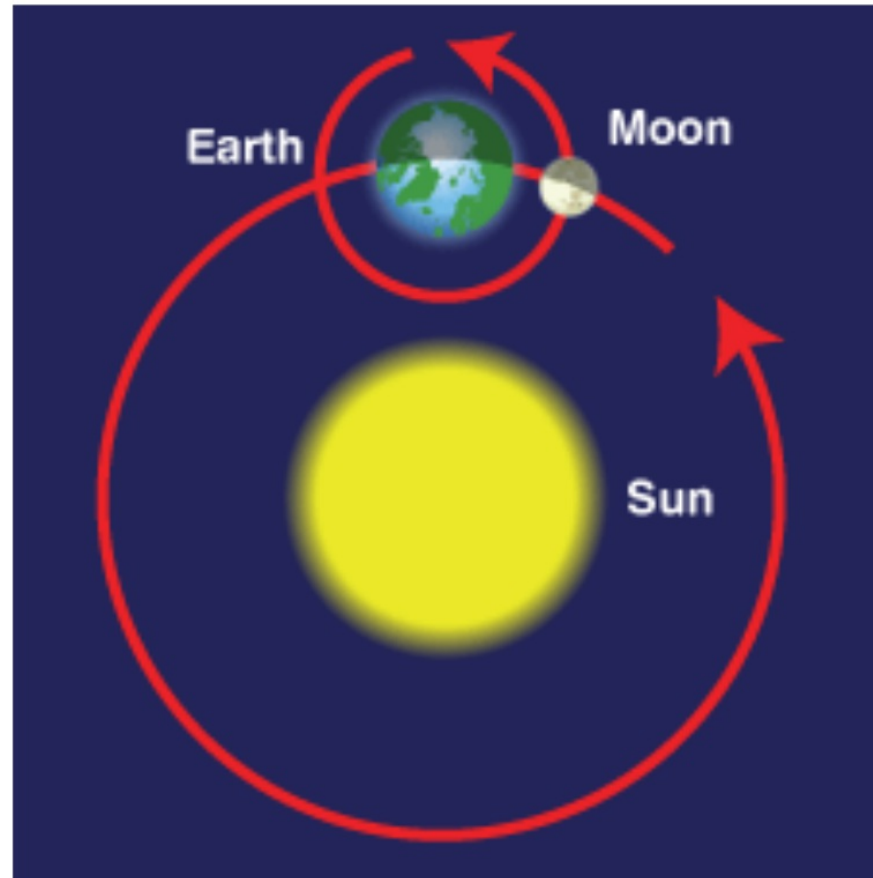


(seasons-later)

What are we missing...?

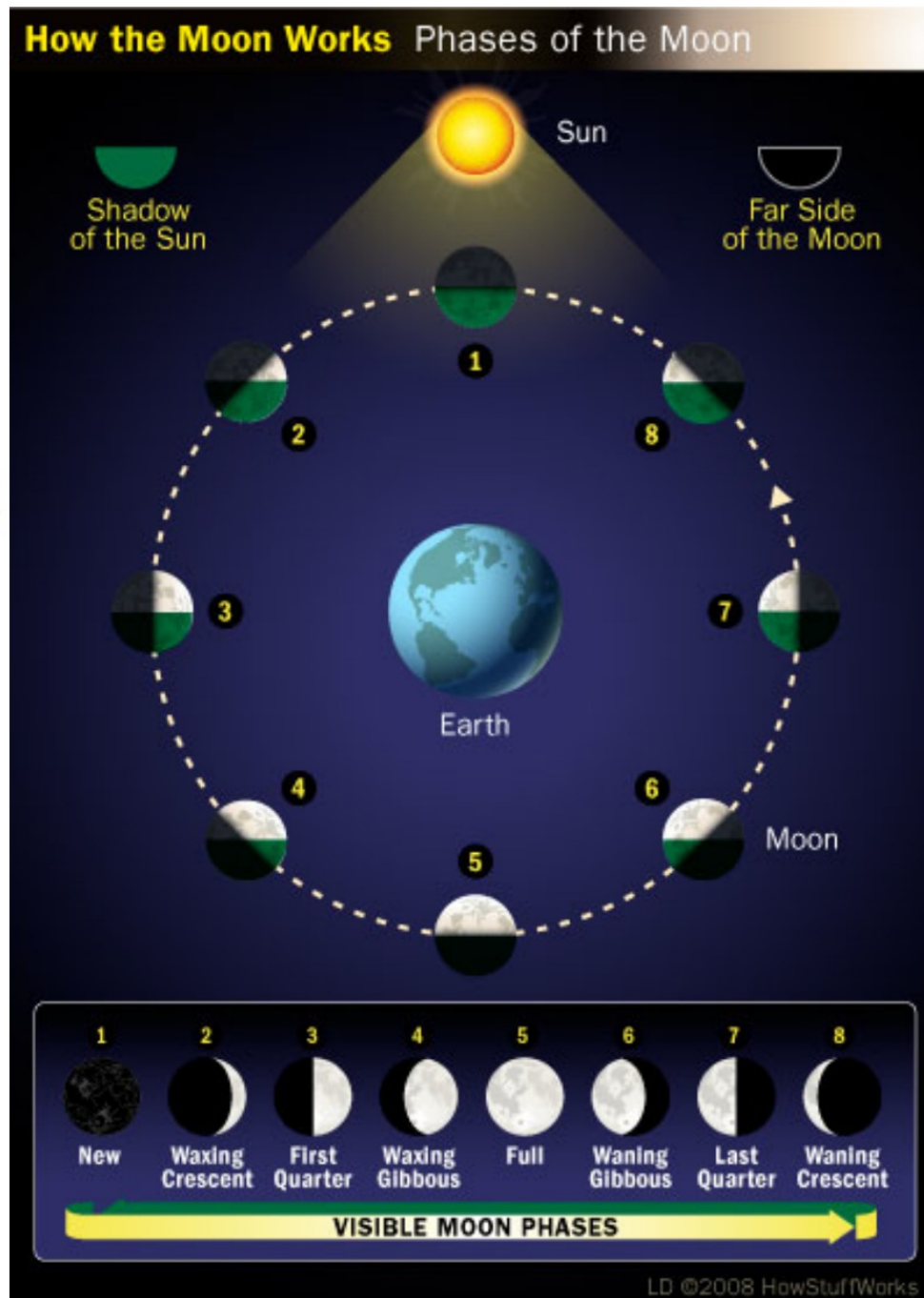


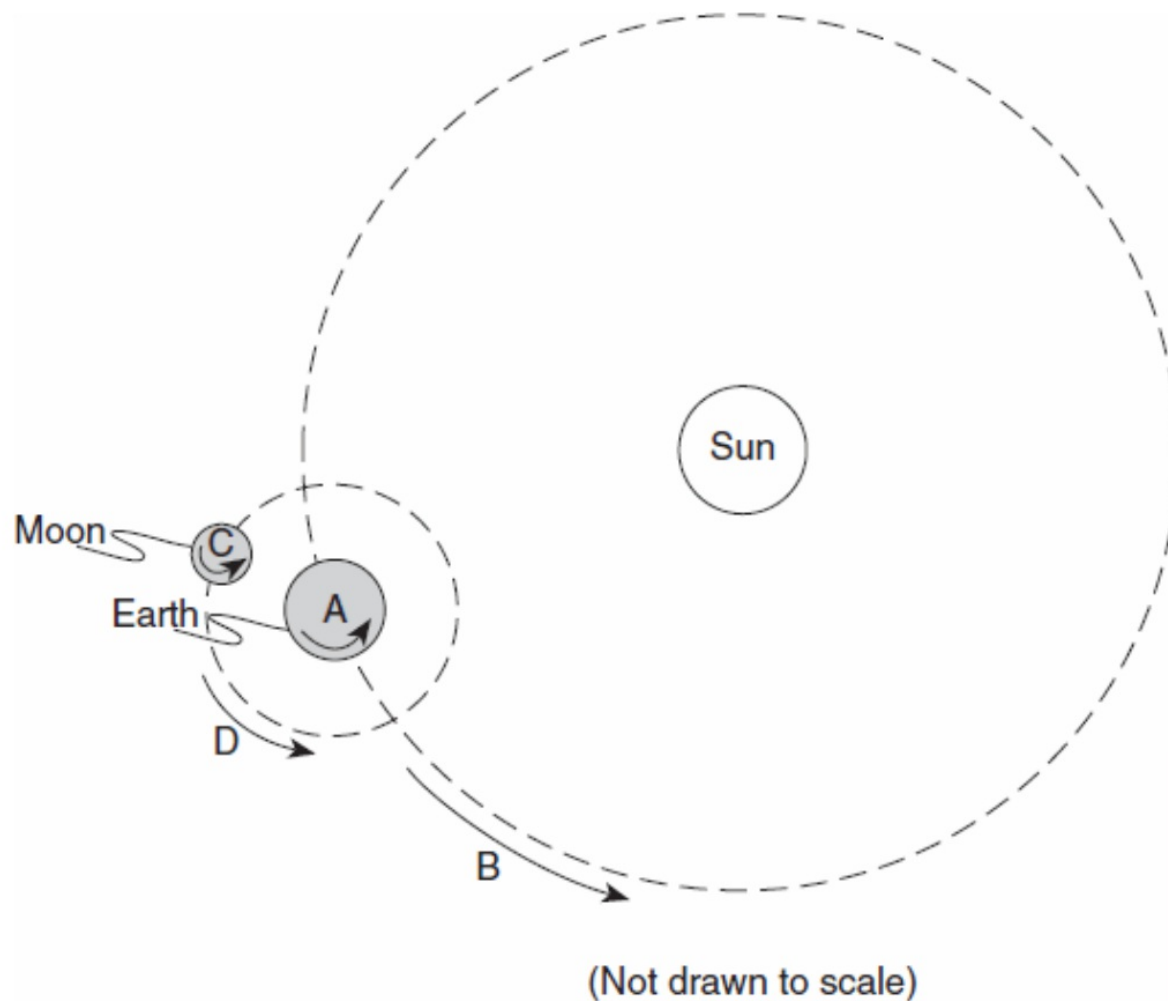
3. Earth has a moon that orbits around it.



We will discuss this more later...

(phases, tides, eclipses)





On LEFT

**-Use colors
-Include
arrows**

Key	
Arrow	Motion
A	Earth's rotation on its axis
B	Earth's revolution around the Sun
C	The Moon's rotation on its axis
D	The Moon's revolution around Earth

Who will win the competition??

Lets model this movement...

1. Need 3 volunteers: Moon, sun, and earth

2. Supplies: Golf ball, tennis ball, 2 pins, and flashlight

Posters

SUN, MOON, EARTH

Questions

Where is the (sun/moon/earth) in our solar system?

What is it (sun/moon/earth) made of?

How does it (sun/moon/earth) move in our solar system?

5 other fun facts...