Science 4-5

**Elementary Home** 

### SOL 4.5 -- OUR SOLAR SYSTEM

## 2018 standards

The student will investigate and understand that the planets have characteristics and a specific place in the solar system. Key ideas include

- a. planets rotate on their axes and revolve around the sun;
- b. planets have characteristics and a specific order in the solar system; and
- c. the sizes of the sun and planets can be compared to one another.

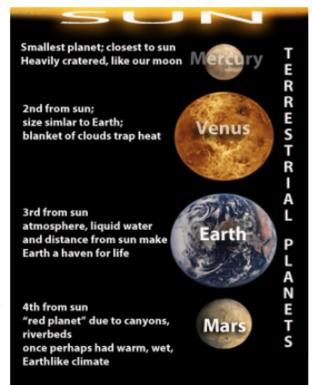
Central Idea: Our solar system is composed of planets with unique characteristics, primarily due to their locations within the system. Earth is unique in that its characteristics and location allow for life to exist.

#### OUR SOLAR SYSTEM

- · Our solar system is ancient. Early astronomers believed that Earth was the center of the universe and all other heavenly bodies orbited around Earth.
- We now know that our sun is the center of our solar. system and the planets revolve around the sun

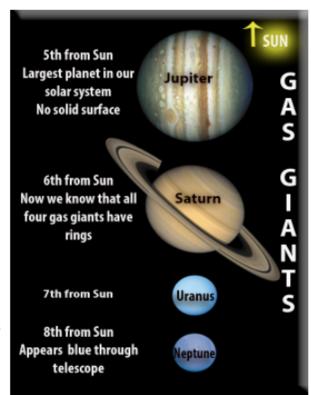
#### **PLANETS**

- Our solar system is made up of eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.
- · Mercury, Venus, Earth, and Mars are considered terrestrial planets.
- Jupiter, Saturn, Uranus, and Neptune are called gas giants.
- · Mercury is closest to the sun and is a small, heavily cratered planet.
  - Mercury looks like our moon.
  - · Mercury is the smallest planet in our solar system and its atmosphere is very thin.



# SOL 4.5 Space - 2018 standards

- · Venus is the second planet from the sun.
  - Similar to Earth in size and mass, Venus has a permanent blanket of clouds that traps thermal energy
    which causes high surface temperatures.
- · Earth is the third planet from the sun.
  - Earth's atmosphere, its liquid water, and its distance from the sun (among other factors) make Earth
    ideal for life.
- Mars is the fourth planet from the sun and is sometimes called the red planet.
  - · The atmosphere on Mars is thin.
  - Mars has a vast network of canyons and riverbeds.
  - Mars is roughly half the size of Earth.
- Jupiter is the fifth planet from the sun, the largest planet in the solar system (eleven times larger than Earth), and it is considered a gas giant.
  - Jupiter has no solid surface.
  - Its colored cloud patterns are caused by enormous storms in its atmosphere.
- · Saturn is the sixth planet from the sun.
  - Early scientists thought Saturn was the only planet with rings, but we now know that all four gas giants (Jupiter, Saturn, Uranus, and Neptune) have rings.
  - · Saturn's atmosphere is similar to that of Jupiter.
  - Saturn is almost ten times the size of Earth.
- · Uranus is the seventh planet from the sun.
  - Uranus is a gas giant and is unique in that it spins on its side.
  - It has a large atmosphere and is a cold planet that is four times the size of Earth.
- · Neptune, a very cold planet, is eighth from the sun.
  - · Neptune appears blue because of its atmosphere.
  - It is roughly four times the size of Earth.
- · Pluto is no longer included in the list of planets in our solar system due to its small size and irregular orbit .



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