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## - Marie

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## Our Solar



The Solar system is made up of the sun and other celestial bodies that orbit the sun. These bodies include 8 planets, dwarf planets, over 100 moons, and countless asteroids, comets, and meteoroids.

# Our solar system is 

 found in the Milky WayGalaxy. The sun is one of billions of stars in this spiral galaxy.


The sun is a medium sized star. It is our source of energy, light, and heat.

There have been two ways of thinking about how the Earth and other planets move in space. One is called a geocentric model and the other is called a heliocentric model.

Copernicus' view of the Universe


At one time, a scientist named Aristotle made
claims to a geocentric model. A geocentric model states that the Earth is the center of the universe and that all celestial bodies orbit the Earth.


Anstotle's Universe

It wasn't until after Aristotle's

death that a monk named Nicolaus Copernicus revealed a heliocentric model. A heliocentric model

* states that the sun is at the center of the solar system and all celestial bodies orbit it.

Planets orbit the sun because of gravity. Objects that have more mass have more gravity. Gravity also gets weaker with distance.


The sun makes up $99 \%$ of the mass of our solar system. It has more
gravitational pull than anything else in our solar system. This gravitational pull and the speed at which the planets are moving keep the planets in orbit.


An animation of gravity at work. Albert Einstein described gravity as a curve in space that wraps around an objectsuch as a star or a planet. If another object is nearby, it is pulled into the curve. Image credit: NASA

## In our solar system, each of the 8 planets revolve around the sun in elliptical orbits.



An elliptical orbit is an oval shaped path that a celestial body takes around another celestial body.

## Mercury Venus Earth Mars Jupiter Saturn Uranus Neptune



The 8 planets can be divided evenly into 2 groups, the inner planets and the outer planets.

Mercury Venus Earth Mars
Jupiter Saturn Uranus Neptune

## INNER PLANETS

OUTER PLANETS

Mercury, Venus, Earth, and Mars make up the inner planets. They are also called terrestrial planets.

Terrestrial planets have solid surfaces that are comprised mainly of rocks and metals.


EARTH


MARS

## VENUS

## Mercury



- Closest planet to the Sun
- Speediest Planet- moves 30 miles a second!
- Thinnest Atmosphere
- Planet of extreme hot and cold temperatures
- Smallest planet
- $2^{\text {nd }}$ most dense
- No satellites

> A satellite is an
> object that orbits
> a larger object. Example: Moon

## Venus



It is called Earth's twin because they are relatively the same size.

- Nicknamed "Morning Star" and "Earth's Twin"
- One of the brightest objects in the sky due to its reflective clouds
- Thickest atmosphere causes the Greenhouse Effect
- Hottest planet
- Retrograde Rotationrotates backwards
- No satellites

Venus' hot temperature is due to what we call "the Greenhouse Effect." The large amount of carbon dioxide in Venus' atmosphere acts like a blanket. The heat gets trapped underneath the thick layer of clouds. Because the heat has nowhere to go, Venus gets hotter and stays hot.


## Earth



- Most dense planet
- Has seasons
- Atmosphere with water and air
- Has life including humans, plants, and animals
- 1 Revolution= 1 year
- 1 Rotation= 1 day
- 1 satellite

A revolution is one trip around the sun.
A rotation is one complete turn on a planet's axis.

## Mars

- Nicknamed Red Planet due to the iron oxide (rust) on its surface
- Polar caps at the poles
- Seasons just like Earth
- Largest known volcano called Olympus Mons
- Huge canyon known as Valles Marineris
- 2 satellites


The icecaps are made of dry ice (frozen carbon dioxide) and small amounts of water.

## Asteroid Belt

- Asteroids are rocks and dust that are too small to be considered planets.
- Asteroids in the belt orbit the sun.
- The asteroid belt separates the inner planets from the outer planets.

- It is lies between Mars and Jupiter.

The outer planets are also called gas giants. Gas giants are much larger than terrestrial planets. They are comprised primarily of gases, liquids, and ice.


JUPITER


## URANUS



NEPTUNE

## Jupiter

- Largest Planet
- Made up mostly of hydrogen and helium
- Faint ring system
- Has more than 75 satellites
- Has a Great Red spot that is an ongoing storm


Jupiter is so BIG that all the other planets could fit inside it!

## Saturn

- Least Dense Planet
- Spectacular rings made of ice and dust
- Second largest planet
- Has more than 80 satellites



## Uranus

- Rotates on its side and east to west
- Blue color from methane in atmosphere
- 13 dark rings
- Thought to have oceans of water, ammonia, and methane above a solid core
- Has more than 27 satellites


## Neptune



- Most distant planet from the sun
- Dark, cold, and windy
- 6 Faint Rings
- 13 known satellites
- Visible Clouds
- Blue color is from methane in the atmosphere

The Bible tells us in Genesis 1:1 that on the first day of creation, God created the heavens and the earth. On day 4 of creation, God created the sun, moon, and stars.

## Check out our

 other homeschool resources at The Homeschool Daily!The heavens declare the glory of God; and the firmament sheweth his handywork. Psalm 19:1

