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# THE SOLAR SYSTEM

The term "solar" is simply a word that means "of the Sun." Secondly, a system is just a collection of objects that interact to form a whole. Thus, putting the two words together it can be referred to that the solar system is a group of objects that interact with one another, the fundamental interaction for each object being the one it has with the Sun. Our solar system has eight planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune. There are many different types of objects found in the solar system: a star, planets, moons, dwarf planets, comets, asteroids, gas, and dust. Figure 2.1 gives a clear understanding of some of the object found in the solar system. In terms of the numbers of each of these objects, our current knowledge is as follows:

1. 1 star (The Sun)
2. 8 planets (Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune)
3. 5 dwarf planets (Pluto, Ceres, Haumea, Makemake, and Eris)
4. 181 moons
5. 566,000 asteroids
6. 3,100 comets

# Planets

There are **eight planets** currently in the solar system which includes: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune. Pluto is no longer considered as a planet but a **dwarf planet**.

### Types of Planets

Generally, there are two categories of planets based on their physical characteristics: the terrestrial planets and the gas giants.

### Terrestrial Planets (Inner Planets)

There are four terrestrial planets: Mercury, Venus, Earth, and Mars. These planets are those closest to the Sun. They are characterized by their dense, rocky composition.

### Gas Giants (Outer Planets)

There are also four gas giant planets: Jupiter, Saturn, Uranus, and Neptune. These planets are found in the outer solar system. They are characterized by their massiveness and gaseous composition

Here are a few notes on the planets;

# 1. Mercury

Mercury is the closest planet to the Sun and is also the smallest of the eight planets in our solar system. It completes its orbit in a shorter space of time than earth. A year in mercury is only 88 days, thus, it has the shortest orbit around the sun. It is the hottest of the entire planet because it’s the closest to the sun; therefore, mercury does not support the existence of any living organism (plant and animal) as a result of its attendant high temperature.

# 2. Venus

Venus is the second planet from the Sun and the third brightest object in Earth's sky after the Sun and Moon. It is sometimes referred to as the sister planet to Earth, because their size and mass are so similar. Venus is also the closest planet to Earth. The surface of Venus is hidden by an opaque layer of clouds which are formed from sulphuric acid. The planet is named for Venus, the Roman goddess of love and beauty and is the second largest terrestrial planet.

# 3. Earth

Earth is the third planet from the Sun and largest of the terrestrial planets. Surprisingly, while it is only the fifth largest planet in terms of size and mass, it is the densest (5,513 kg/m3) of all the planets. The word “Earth” comes from the Old English word “ertha” meaning ground or land. Earth is the only planet not named for a mythological god or goddess. The other seven planets in the solar system were named after Roman gods or goddesses. The Earth which is the only planet that support and also conducive for the existence of both plant and animals; like many other planets, the earth has a natural satellite which is known as the moon which revolves eastward around the earth once twenty-seven days.

# 4. Mars

Mars is the fourth planet from the Sun and last of the terrestrial planets. Like the rest of the planets in the solar system (except Earth), Mars is named after a mythological figure - the Roman god of war. In addition to its official name, Mars is sometimes called the Red Planet because of the brownish-red colour of its surface. Mars is the second smallest planet in the solar system behind Mercury.

# 5. Jupiter

Jupiter is the largest and most massive planet in the Solar System. Jupiter has 67 confirmed moons orbiting the planet. These moons are separated into three groups: Inner moons; Galilean moons; and Outer moons. Jupiter has the shortest day of the eight planets. The planet rotates very quickly, turning on its axis once every 9 hours and 55 minutes.

# 6. Saturn

Saturn is the sixth planet from the Sun and second largest planet of the Solar System in terms of diameter and mass. Saturn is known as a gas giant, but scientists believe it has a solid rocky core surrounded by hydrogen and helium. Saturn and Jupiter combined account for 92% of the entire planetary mass in the solar system.

# 7. Uranus

Uranus, named after the father of the Roman god Saturn, is the seventh planet in the Solar System and third of the gas giants. It is the third largest planet by diameter, yet fourth most massive. Unlike others planets, Uranus orbits around the sun in a clockwise direction from east to west with five satellites revolving round it. Uranus is the coldest planet in the solar system. The minimum surface temperature on Uranus is -224°C – making it the coldest of the eight planets.

# 8. Neptune

Neptune is the eighth planet from the Sun and last of the known planets. While it is the third largest planet with respect to mass of 102,410,000,000,000,000 billion kg, it is only the fourth largest in terms of diameter. Due to its blue coloration, Neptune was named after the Roman god of the Sea.

# The sun

The sun is the centre of the solar system, all objects (Planets) in the solar system orbit the sun; that is, they move around the sun in elliptical paths. Moreover, the orbits of these objects lie roughly in the same plane, called the ecliptic plane. The sun does not in itself move. It is stationary while all other planet moves or revolves around it. The sun is the largest star and has a surface temperature of 60000C.