

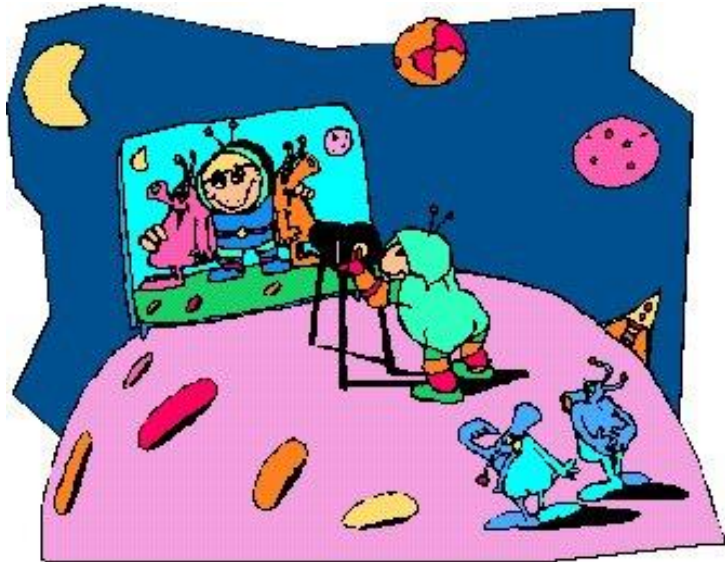
# THE THE SOLAR SYSTEM



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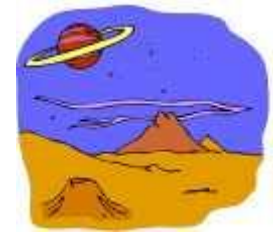
## PLUTO: (The Ice Planet)

Pluto is smaller than one of Neptune's moons, Triton. Pluto is usually the farthest known planet from the Sun. It has a very unusual orbit. Once every 248 Earth years, Pluto swings inside the orbit of Neptune. It stays there for twenty years. During those twenty years, Pluto is nearer to the Sun than Neptune. While it is nearer to the Sun, Pluto has an atmosphere. The methane and nitrogen frozen at the poles form an atmosphere. Pluto has only one known moon. Pluto's moon, Charon, is half the size of Pluto.



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### **URANUS:** (Neptune's twin)

Uranus is one of the smaller gas giants in our solar system, but it is still large enough to hold 64 planets the size of Earth

Uranus' atmosphere is made up of hydrogen, helium, and methane.

It's very cold. The cold methane gas is what gives Uranus its blue-green color.

Uranus has eleven known rings.

Uranus has 18 known moons. Some of these moons are less than 90 miles wide and black as coal.



### **NEPTUNE:** (The Blue Planet)

It is so cold on Neptune that you would need skin thicker than a polar bear's to stay warm

Like Uranus is a large gas planet that look like a big blue-green ball in the sky.

Neptune has winds in its atmosphere which blow at over 2000 kilometres per hour!

Neptune has two thick and two thin rings.

Neptune also has eight moons. Four of these moons orbit the planet within the rings. One of Neptune's moons, Triton, orbits the planet in a direction opposite that of the seven other moons.

Due to Pluto's unusual elliptical shaped orbit, Neptune is actually the farthest planet from the Sun for a 20 year period out of every 248 Earth years

### **JUPITER:** (The Largest Planet)

Jupiter is so large that all of the other planets in the solar system could fit inside of it.

Jupiter is a large gas planet whose clouds change colours daily. This planet is made mostly of hydrogen and helium gases.

Jupiter gives off two times more heat than it gets from the Sun. It shines very brightly in the night sky for nine months of the year when it is closest to Earth.

Jupiter has sixteen known moons. One of Jupiter's moons, Io, has active volcanoes on it.



### **SATURN:** (The Ringed Planet)

It looks like a big ball inside of rings.

Saturn's atmosphere has winds which can blow at over 1800 kilometres per hour! The white spots on Saturn are believed to be powerful storms.

Saturn is surrounded by over 1000 rings made of ice and dust. Some of the rings are very thin and some are very thick. The size of the particles in the rings range from pebble-size to house-size.

Saturn has at least 18 known moons. Some of these moons orbit the planet within the rings.



### AN INTRODUCTION...

In our solar system, nine planets circle around our Sun. The Sun sits in the middle while the planets travel in circular paths (called orbits) around it. These nine planets travel in the same direction (counter- clockwise).

The Sun is the heaviest, largest, and hottest body in the Solar System.

The solar system is made up of two parts:

- ♦ The inner solar system contains Mercury, Venus, Earth and Mars. These four planets are closest to the Sun
- ♦ The outer solar system contains Jupiter, Saturn, Uranus, Neptune and Pluto

The inner planets are separated from the outer planets by the Asteroid Belt



## COMPOSITION

- ♦ **ROCKY PLANETS** (Mercury - Venus - Earth - Mars - Pluto)

The **rocky planets** are mostly made up of rock and metal. These planets are very heavy and move slowly. They also do not have rings and very few moons.

- ♦ **GAS PLANETS** (Jupiter - Saturn - Uranus - Neptune)

The **gas planets** are mostly made up of gases (hydrogen and helium). These planets are light for their sizes (just like a big air balloon) and move quickly. They have rings and lots of moons



## SIZE

- ♦ **SMALL PLANETS** (Mercury - Venus - Earth - Mars - Pluto)

The **small planets** have diameters less than 13000 km across. Mercury and Pluto are sometimes referred to as *lesser planets* because they are so tiny.

- ♦ **GIANT PLANETS** (Jupiter - Saturn - Uranus - Neptune)

The **giant planets** have diameters greater than 48000 kilometres. The giant planets are sometimes also referred to as *gas giants*

## **EARTH:** (The Water Planet)

Seventy percent of the Earth's surface is covered by water. The remaining 30 percent is covered by mountains, volcanoes, deserts, plains, and valleys



Earth is the third closest planet to the Sun.

It has an atmosphere made up of many different gases, but mainly it is nitrogen and oxygen. The atmosphere gives us air to breathe. We live on the planet Earth.

The Earth orbits around the Sun. It takes one year to go around the Sun one complete time. The Earth also rotates, or spins, on its axis. It takes one day to spin around one complete time. The Earth's axis is not straight up and down, but tilted a little bit. This tilt is responsible for us having seasons. Otherwise, the temperature would be the same all year long.

## **MARS:** (The red planet)

The temperature on Mars can be very, very cold.

The iron is what gives Mars its red colour.

Mars has many craters which were formed by meteorites or asteroids hitting it. Mars also has some of the tallest volcanoes and some of the deepest valleys in our solar system.

Mars has two moons, Phobos and Deimos.



## VENUS: (Earth's Twin)

Venus is the second planet from the Sun, and the sixth largest of all the nine planets

Venus and Earth are similar in size, composition, and mass.

Its temperature during the day reaches 484 degrees Celsius. It's so hot it could melt lead cannonballs.

The dense atmosphere is composed of carbon dioxide and sulphuric acid, which acts as a greenhouse.

Venus is usually visible with the naked eye. Venus is sometimes called the "morning star" or the "evening star." It's the brightest "star" in the sky. That's the reason why the ancient people called it Venus, the Roman goddess of love and beauty.

Venus is the closest planet to Earth, but it does not have oceans or human life like Earth.

The surface of Venus has many craters which were made by meteorites and asteroids crashing into the planet.

Venus also has volcanoes.

This planet is unusual because it rotates in a direction opposite that of all of the other planets. Venus spins very slowly as it orbits the Sun. A rotation takes 243 Earth days. Venus revolves around the Sun in a circular orbit once every 225 Earth days, so a Venusian day is longer than a Venusian year.



## MOVEMENTS

Each of the nine planets has two ways of moving.

- ◆ Every planet spins, or **rotates**, on its own axis.

The time it takes for a planet to rotate is known as a "**day**". Since the Earth spins on its axis every 24 hours, OUR day is 24 hours long. A day on Jupiter is the shortest - a little less than 10 hours. However, the planet Venus travels very slowly. One day on Venus would last for 243 of our Earth days!

- ◆ The planets also revolve around the Sun. The path that each planet follows around the Sun is called its **orbit**.

The time needed for a planet to make one trip around the Sun is called a "**year**". You know that a year on Earth is about 365 and one-fourth days. Since Pluto's orbit is so far from the Sun, its year lasts for 247 of our years.

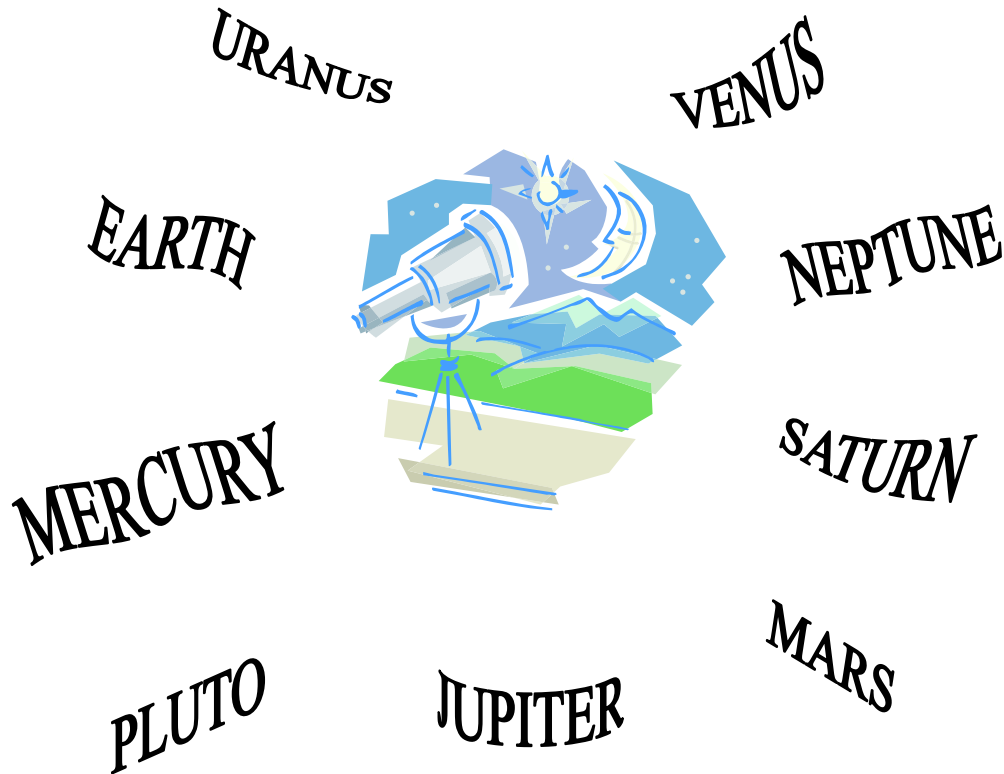
Besides the planets, there are countless smaller bodies that are part of our Solar System.

- ◆ **Asteroids**, which are minor planets.
- ◆ **Comets**, which are frozen balls of ice
- ◆ **Meteors**, which are solid particles





# THE PLANETS



**MERCURY:** ( Planet Closest to the Sun )

The temperature on Mercury gets so hot it could melt a tin pan.

Mercury is the second smallest planet in our solar system. Only the planet Pluto is smaller.

Mercury is about the same size as our Moon.

It is very close to the Sun.

Mercury travels around the Sun faster than any other planet. That is how it got its name. It was named after Mercury, the swift messenger of the gods in ancient Roman mythology. Mercury can only be seen from Earth just before sunrise or just after sunset, but not in the middle of the night. That is because Mercury always appears near the Sun when viewed from Earth.

Mercury has a very thin atmosphere.

The surface of Mercury has holes in it where objects such as meteorites and asteroids crashed into it.

