

Planets

Earth is just one of the planets in our solar system. Planets are large bodies that rotate around the sun. They reflect its light and warmth. The planets that are located closest to the sun, inner planets, are made out of rocky material. They are relatively small and heavy. The inner planets, or those closest to the sun, are Mercury, Venus, Earth and Mars. In contrast, the planets that are farther away from the sun, or the outer planets, are much larger. They are formed of light gases. The outer planets are Jupiter, Saturn, Uranus, Neptune. All planets follow a certain path around the sun. They are held a specific distance from the sun by the sun's strong gravitational force.

Mercury is the smallest terrestrial planet and the planet closest to the sun. The side that faces the sun gets as hot as 800°F. At the same time, the side that faces away from the sun is a freezing -279 °F. Days and nights on Mercury are much longer than ours on Earth. The extreme temperatures alone make it a very unlikely place for life. With an atmosphere too thin for human breathing, it's obvious that people won't be living on Mercury any time soon.

The next planet from the sun is Venus. Below clouds of sulfuric gas lies its 96% carbon dioxide atmosphere. The pressure of the air is strong enough to crush you. If you managed to survive the atmosphere, the surface of the planet is hot enough to melt solid metal. Its surface has many volcanoes and many flat areas due to lava flows.

Earth has the perfect conditions for life. Earth's atmosphere and oceans help control the trickiest part of making a planet life-friendly: temperature. Earth is also the only planet known to have liquid water. Earth is the only atmosphere containing 20 percent oxygen and 78 percent nitrogen. The three layers of the Earth are called the Core, Mantle and the outermost layer is the Crust.

Mars is the fourth farthest from the sun and is known as the red planet. It has seasons just like Earth because of its tilted axis. Astronomers have also discovered giant inactive volcanoes. Mars has been studied and photographed more than any other planet besides Earth. Some people think it may be possible for life to exist there. Although scientists have not been able to find actual water on Mars, there is evidence of water erosion on its surface. Its canyons and mountains are very similar to those found on Earth. The main difference is that there is no plant life. Some scientists believe that Mars may have been very much like Earth until something happened that made the water supply evaporate.

There is a very great distance between the inner and outer planets. This region is called the Asteroid Belt and large chunks of rock swarm around and around in it. The outer planets are much larger and are known as the gas giants, because they are made mostly of hydrogen and helium. Each of these huge planets has its own system of moons. Rings around Jupiter, Saturn, Uranus, and Neptune are made mostly of water, ice, and other particles.

Jupiter, the first of the outer planets, is the largest of all the planets. Jupiter's outer atmosphere is very cold. But inside the planet, it gets hotter and hotter closer to the center. There is also a magnetic field around Jupiter 10,000 times more powerful than Earth's. There is a tremendous oval called the Great Red Spot. It is three times as big as Earth. In this

Great Red Spot a storm is forever raging with swirling winds and lightning bolts. For years astronomers believed Jupiter had 17 moons, now we know of 49 moons.

Saturn is the second largest planet in our solar system. Saturn is almost 10 times bigger than Earth. It takes almost 30 of our years for Saturn to go once around the sun. From far away, Saturn looks yellowish. But close-up photographs reveal it has bands of different colors — pale yellow, golden brown, and reddish brown. Twenty-two moons have been discovered already. This is the only planet whose average density is less than that of water.

All the planets described so far have been known for a long, long time. Uranus was discovered only about 200 years ago by a scientist looking through a telescope. The planet is tipped over so that it rotates like a top spinning almost on its side. Uranus also has rings, but they are narrow, dark, and hard to see. Uranus's moons have lava flows on their surfaces, suggesting material was erupted from inside each moon. When scientists studied Uranus, they found that its orbit was slightly different from what they thought it would be. They thought the difference might be due to the gravitational pull of another planet. So they looked for another planet, they discovered Neptune.

Of the four giant planets, Neptune is farthest away from the sun making it the coldest planet. Its winds are nine times stronger than Earth's. It takes 165 Earth years for Neptune to make one orbit around the sun. Neptune contains visible clouds and is slowly shrinking which causes its interior to heat up. Neptune's blue color is the result of methane in the atmosphere. Uranus' blue-green color is also the result of atmospheric methane, but Neptune is a more vivid, brighter blue, so there must be an unknown component that causes the more intense color.

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) What keeps planets rotating a specific distance from the sun? _____

2) What is one difference between the inner planets and the outer planets? _____

3) Which planet is closest to the sun? _____

4) Earth is the only known planet to have what important feature? _____

3) Why is the atmosphere of Venus more friendly to plants than humans? _____

4) Why do astronomers believe there once was water on Mars? _____

5) Which planet is the largest of them all? _____

6) Which planet is so light, it could float in water? _____

7) Why are Uranus and Neptune blue? _____

8) Which planet is the coldest? Why? _____

9) Do you think that people will ever be able to colonize other planets in the future? Why or why not? _____
