

THE EARTH WITHIN A SOLAR SYSTEM

What is the Solar System?

Our **solar system** is the **Sun** and the **planets** that orbit, or spin, around it. The Sun is really a star that is only about 93,000,000 miles from us. Until 2006 we had nine known planets, Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto. **Astronomers** then decided that Pluto was not actually a planet, but a dwarf planet or planetoid, so we don't list it as a planet anymore. Also orbiting the sun is a ring of **asteroids** between Mars and Jupiter. Many of the planets have natural satellites, called moons, orbiting them.



If you want to remember the eight planets in order, you can say, "My Very Educated Mother Just Served Us Noodles." Do you see how the first letter of each word is the first letter of each of the planets? Our solar system is one small part of the galaxy called the Milky Way. Let us see how the Earth, our planet, works within the solar system.

Thousands of years ago, people thought the earth was flat and the Sun traveled around it. But scientists who study the stars, astronomers, learned that earth was a huge round ball of rock and water spinning around the Sun. In 1522, one of the explorer Magellan's ships successfully sailed all around the world. In 1530, a Polish astronomer named **Copernicus** proved that the earth spins on its axis and journeys around the sun. In 1687, **Sir Isaac Newton** explained the laws of **gravity**. He said that all objects in the universe are attracted to each other with a force called gravity. The gravity of our Sun keeps the planets in orbit.

An **axis** is the imaginary line through the earth from the North Pole to the South Pole. Imagine a long stick running all the way through the middle of the earth from top to bottom. It takes our earth about 24 hours to spin around its axis one time. That is one **rotation** and we call it one **day**.



While it rotates, the earth is also **revolving**. That means it is traveling all the way around the Sun. It takes our earth about 365 days to revolve all the way around the Sun once. This is called a **year**. Every four years we have a **leap year** to our calendar.

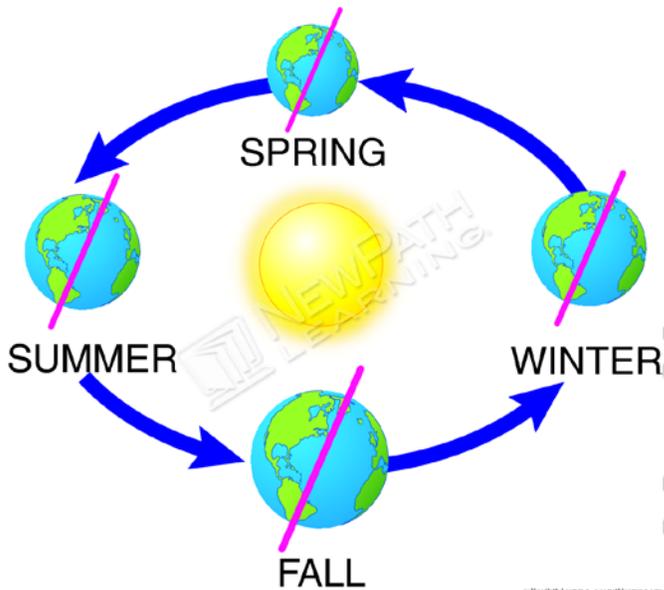
- When the Earth has gone around the Sun 10 times, we call that 10 **years**.
- When the Earth has gone around the Sun 100 times, we call that 100 years a **century**.
- When the Earth has gone around the Sun 1000 times, we call that 1000 years a **millenium**.

Each year is also counted as 12 months. It takes our natural satellite, the moon, approximately 30 days to orbit, or revolve, around the earth one time. Each orbit is called a month.

 **PREVIEW**

Please login or register to download the printable version of this study guide.

www.newpathlearning.com



Do you know why we have 4 seasons? Our Earth is slightly tilted on its axis. For about 3 months of the revolution around the Sun, the North Pole is tipped towards the Sun. We call this summer. When the North Pole is not tipped towards the sun, making the days shorter, we call it autumn. For about 3 months, the South Pole is tipped towards the sun, making the days longer, so we have winter. When the South Pole is not tipped towards the sun, the sun's rays are always direct so it is always hot there.



PREVIEW

Please login or register to download the printable version of this study guide.

www.newpathlearning.com

Try this! (with an adult to help)

Put a bright light in the middle of an empty room such as a gym. Draw a wide circle all the way around that light. Being careful not to trip on the cord as you walk all the way around on the circle. Now try it again as you turn yourself in circles! If you can make 365 circles in one trip around the lamp, you are like the earth rotating and revolving!