

The Earth—Our Timekeeper

Time rules our lives. Time to get up, time to go to school, time to go to bed. But why is a minute sixty seconds long, an hour sixty minutes long, or a year 365 days long? Who decided what time is, and how?



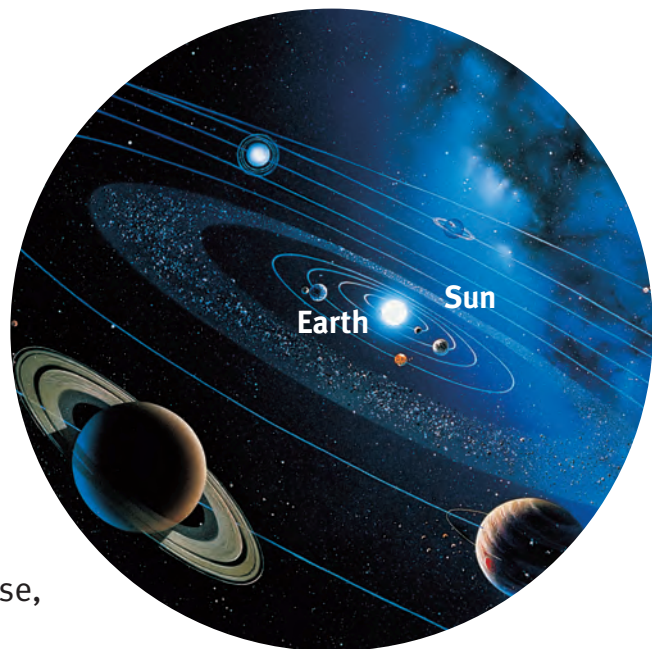
Year 2000 celebrations at the Washington Monument, USA.

Hundreds and thousands of years

A period of a hundred years is called a **century**, while a period of 1000 years is called a **millennium**. Very few people who are alive today will live long enough to celebrate their hundredth birthday, but most joined in the celebrations welcoming the new millennium in the year 2000.

The length of a year

Our year is based on the length of time it takes for the Earth to go around, or **orbit**, the Sun once. The further a planet is from the Sun, the longer it takes to complete one orbit. If the Earth was as close to the Sun as the planet Mercury, each of our years would be about a quarter as long. But if we were as far away as the most distant planet, Pluto, each of our years would be about 250 times as long. If that were the case, you wouldn't live to see your first birthday!



Day and night

At the same time as the Earth orbits the Sun, it is also spinning on its **axis**. When the part of the Earth we are on is facing towards the Sun, we receive light and energy and call it day time. As the Earth spins, we eventually end up facing away from the Sun. When this happens, light and energy from the Sun can no longer reach us and night begins. Half the Earth is always in darkness.



The Earth photographed from space—the left-hand side is facing away from the Sun and is in darkness.

The number of days in a year

The length of time that we call a day is just about the same as the time it takes for the Earth to spin around once on its axis. Each day is divided into twenty-four hours, each hour into sixty minutes and each minute into sixty seconds. In the time that the Earth takes to orbit the Sun once, the Earth spins on its axis just over 365 times. To cope with the fact that the length of a year is really about $365\frac{1}{4}$ days, some calendar years are given 365 days, while others, called **leap years**, are given 366. These normally occur every four years.

The Earth spins round on its axis just over 365 times in the time that it takes to orbit the Sun once.

