

# The Sun

The Sun is a star and is at the centre of our solar system. That is why it is called a solar system. The word solar means 'relating to the Sun'. The planets in our solar system stay together because the Sun is so big its gravity keeps us all locked in orbit around it.

## Making Energy:

The Sun provides almost all the energy, light and heat needed on Earth and it mainly uses hydrogen and helium for this. Energy is made at its core in the centre of the Sun's sphere. Around the core is the radiative zone which carries the energy to the next layer – the convection zone. It takes about 170,000 years for the energy to move from the core to the convection zone! The photosphere is at the Sun's surface and the energy gets to there from the convection zone in large bubbles. From here, the energy escapes (through the chromosphere and corona) and some of it comes to Earth. It takes about 8 minutes for heat to reach us from the Sun.



## Did you know?

Surface temperature: 5505°C

Distance to Earth: 149.6 million km

Radius: 696,342 km

Circumference: 4,366,813 km (2,713,406 miles)

Mass: 1,989,000,000,000,000,000,000,000,000kg

(About 1.3 million Earths could fit inside the Sun)

## Lifespan:

The Sun is actually a yellow dwarf star and was created about 4.6 billion years ago. The Sun will eventually run out of energy and fade, but don't worry...this won't be for another 4.5 to 5.5 billion years yet! Before the Sun eventually fades, in an unimaginable time from now, it will get bigger and turn into what is called a 'red giant'. In 1.1 billion years from now, the Sun will be 10% brighter than it is today. This will make Earth a bit like a greenhouse – hot and moist. 3.5 billion years from now, it will be even brighter than that: at 40% more than it is today. This will be so hot that the oceans will boil and the ice will melt. It's safe to say that there will be no life on Earth by then, but with space travel already making new discoveries and exploring other planets, where do you think humans will be by then?