

## Sunshine

The sun supports all life on this planet. If the sun didn't exist, neither would we!

Without the sun, all the water on earth would freeze and the earth would be a giant ball of ice.

### Did you know?



The sun is a star, one of more than 100 billion stars in our galaxy.

The sun is by far the largest object in the Solar System. In fact it is so big that over one million earths could fit inside it!

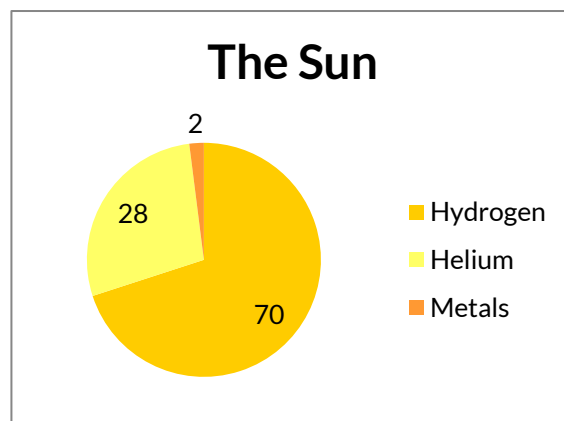
The sun is 93 million miles away, but we receive just the right amount of sunlight to keep our planet habitable.

The sun is made up of:

70% hydrogen gas

28% helium gas

2% metals



### How does sunlight get to Earth?

It takes sunlight just over 8 minutes to reach Earth.

Light travels to the earth in many forms, but primarily in the form of light beams or ultraviolet radiation.

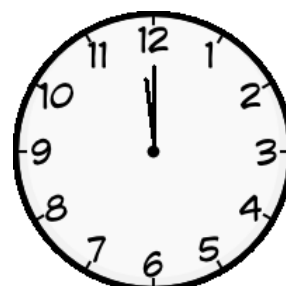
Some of the light beams are visible to the human eye, other beams are not.

Insects see more of this ultraviolet radiation than humans!

### What determines the strength of the sun?

- The position of the sun in the sky.
- The amount of cloud cover.
- The time of the year

The position of the sun changes through the day, reaching its highest point around midday.



This means that ultraviolet radiation is strongest at that point of the day.  
The daily UV radiation level changes over the year.

It is strongest around the time of the summer Solstice (21<sup>st</sup> June) and weakest around the winter Solstice (21<sup>st</sup> December).

## Danger of the sun

During the summer months the ultraviolet rays (UVR) can damage our skin.

In the short-term, this results in sunburn.

In the long-term, this can cause premature ageing of the skin. In severe cases, it may cause skin cancer.

## How to stay safe in the sun

Drink plenty of water.

Cover up and use a sunscreen lotion SPF 15+ at least.

Stay out of direct sunlight and seek shade especially during the hottest part of the day (from 10am to 2pm).

Don't do any extreme exercise in serious heat.

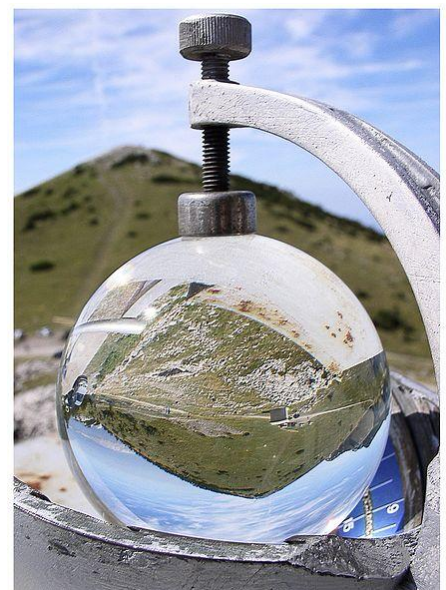


## How do we record sunshine?

We use an instrument called a **Campbell-Stokes Recorder** to record sunshine.

It consists of a spherical lens – a bit like a crystal ball.

This glass ball focuses the sun's rays onto a cardboard strip.



The sun's rays burn a track in the cardboard strip.

Using the burnt section, we measure the number of hours of sunshine.