

## Knowledge organiser



**Y8 topic:** Climate

### **I have already learned:**

**In KS2:** Recognise that environments can change and that this can sometimes pose dangers to living things. Identifying scientific evidence that has been used to support or refute ideas or arguments

**Y7:** Earth Structure, Universe

### **This topic links to:**

**Y8:** Earth's Resources

**KS4:** C7 - Organic chemistry, C9 - Chemistry of the atmosphere, C10 - Resources

### **It is important to study about Climate because...**

Climate is a description of the average weather conditions in a certain place for the past 30 or so years. Different areas of the world have different climates. Climate change refers to changes in the Earth's average temperature. These changes occur naturally over time, but most scientists think that human behaviour is increasing the amount of greenhouse gases in the atmosphere, which is causing more rapid changes to the climate. It is important to understand causes of climate change so we can come up with solutions to preserve our planet for future generations.

### **Possible careers involving climate are...**

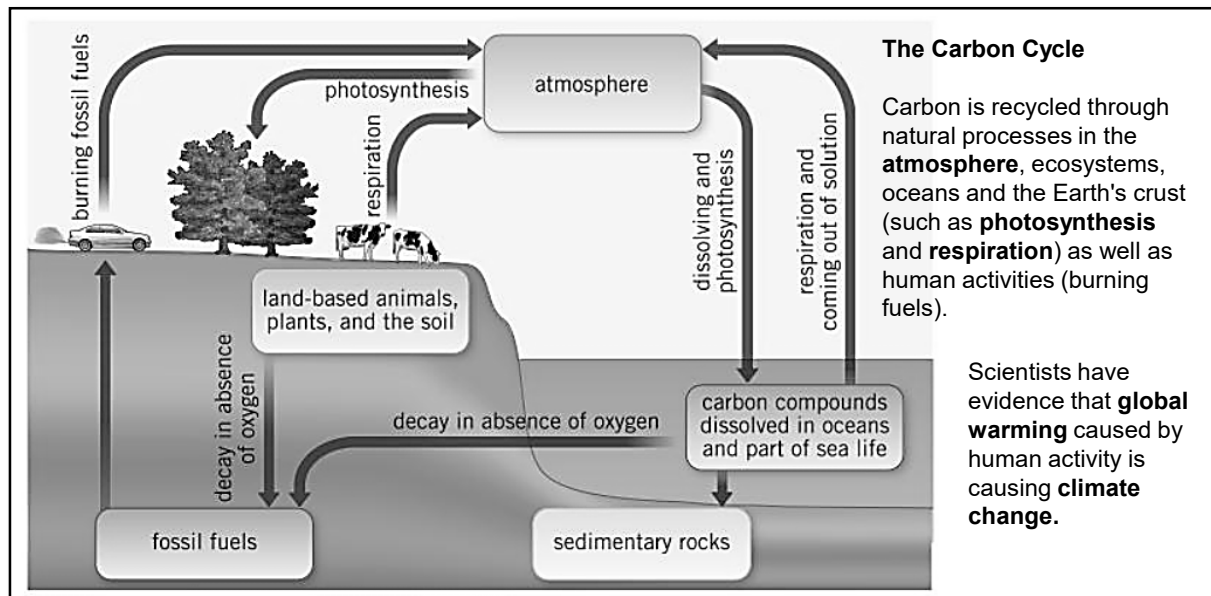
- **Environmental Lawyer**
- **Climatologist**
- **Renewable Energy Scientist**
- **Environmental Engineer**
- **Environmental Scientist**
- **Conservation Scientist**

## KNOWLEDGE ORGANISER

**BIG IDEA:** EARTH

**TOPIC:** CLIMATE

| Key Word                 | Definition   |
|--------------------------|--|
| <b>global warming</b>    | The gradual increase in surface temperature of the Earth.  |
| <b>fossil fuels</b>      | Remains of dead organisms that are burned as fuels, releasing carbon dioxide.                                  |
| <b>carbon sink</b>       | Areas of vegetation, the ocean or the soil, which absorb and store carbon.                                     |
| <b>greenhouse effect</b> | When energy from the sun is transferred to the thermal energy store of gases in Earth's atmosphere.            |
| <b>atmosphere</b>        | The mixture of gases surrounding the Earth.  |
| <b>greenhouse gas</b>    | A gas that contributes to the greenhouse effect, such as carbon dioxide.                                       |
| <b>respiration</b>       | The process that transfers energy in plants and animals.   |
| <b>combustion</b>        | A chemical reaction in which a substance reacts with oxygen and gives out light and heat. Also called burning. |
| <b>photosynthesis</b>    | The process plants and algae use to make their own food, glucose.  |
| <b>climate change</b>    | A long-term change in weather patterns.  |

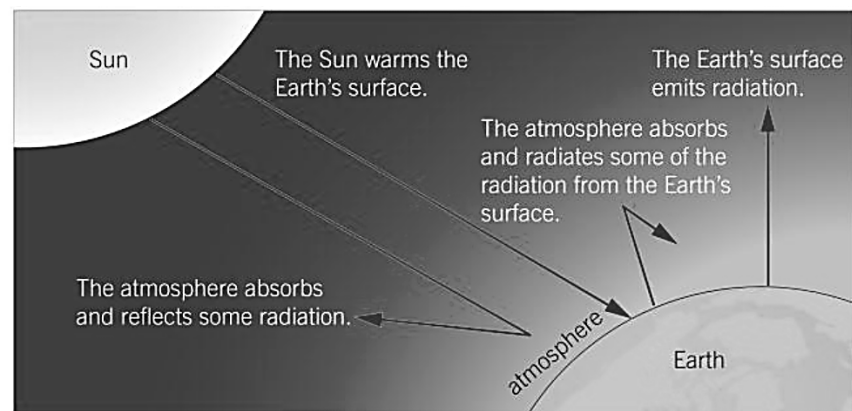


There is some disagreement between scientists and politicians about whether human activities cause **climate change**, or whether it is caused by natural events. The majority of scientists however believe that **global warming** caused by human activity is 'very likely' to be causing changes in **climate**.

**Global warming** is a concern because it changes local weather patterns. In some areas rainfall increases, leading to flooding. Other areas suffer droughts and heatwaves which may cause crop failures. It may also lead to extinction of certain species.

There are many ways of reducing emissions of **greenhouse gases** caused by human activities. These include:

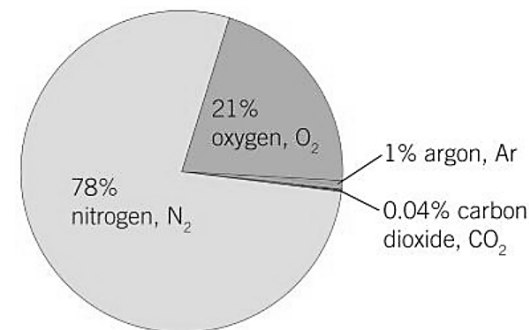
- generating electricity from solar panels and other renewable sources instead of burning **fossil fuels**.
- using cars less
- buying and wasting less



The **greenhouse effect** explains how the **atmosphere** keeps the Earth warm.

Over time there has been a gradual increase in air temperature at the surface of the Earth, this is called **global warming**.

**Greenhouse gases**, such as carbon dioxide and methane contribute to the **greenhouse effect** and certain human activities can increase the amounts of these gases in the **atmosphere**.



The atmosphere is the mixture of gases surrounding the Earth, the proportions can be shown on a pie chart.