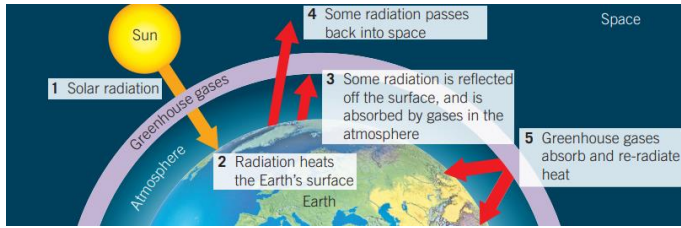
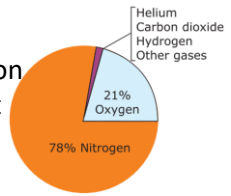


The Atmosphere

- The air around us is known as the atmosphere, it is made up of a mixture of gases
- When the Sun heats the Earth’s surface, some of the gases in the atmosphere absorb radiation that is about to be reflected into space, this keeps the Earth at a warmer temperature than it would be without the atmosphere; this is needed as otherwise it would be too cold for life.



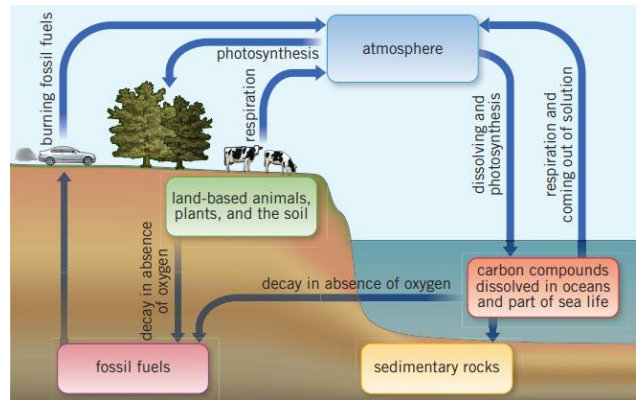
- The gases in the atmosphere which absorb and trap this radiation are known as greenhouse gases; the most commonly known greenhouse gases are carbon dioxide and methane.

The Carbon Cycle

Global Warming

Global warming is the gradual increase in temperature of the Earth. This is closely linked to the rise in carbon dioxide levels in the atmosphere.

- The **carbon cycle** is the processes by which carbon is naturally transferred to different stores through a range of natural processes
- Carbon is released into the atmosphere through **combustion of fossil fuels**, and animal **respiration**
- It is then reabsorbed by plants during **photosynthesis**



Climate Change

- Long term changes to weather patterns are known as climate change
- This can cause the ice caps to melt, leading to sea levels rising and flooding of low level land
- Graphs alone cannot confirm that humans are the cause, but the majority of scientists now believe that human activity is a very likely cause



- We can help to prevent climate change by:
 - Using renewable energy resources
 - Using cars less
 - Buying and wasting less resource

Key words and Vocabulary

Make sure you can write definitions for these key terms:

Atmosphere, carbon cycle, climate change, combustion, electrolysis, fossil fuels, global warming, greenhouse gas, mineral, natural resource, ore photosynthesis, recycling, respiration.



Metals as a Resource

- Metals are a **natural resource**, with most being found joined with other elements in compounds, known as **minerals**
- An **ore** is a naturally occurring rock which contains enough of a mineral to be worth extracting
- An example of an ore is Bauxite, which contains aluminium hydroxide
- Metals are a **finite resource**. This means they will run out if we continue to extract them at the current rate.



Recycling Resources

- Recycling is the collecting and processing of materials that have been used so that the resources can be used again
- Recycling can have both advantages and disadvantages:

Advantages	Disadvantages
<ul style="list-style-type: none"> • Resources will last longer • It uses less energy than extracting new materials • It reduces waste and pollution 	<ul style="list-style-type: none"> • Separating rubbish can be seen as a nuisance • The lorries collecting recycling produce pollution • Some materials are easier to recycle than others



Extracting Metals

- When metals are extracted they first have to be separated from other **minerals** in the **ore**. Then they need to undergo a chemical reaction to separate them from the other element that they are joined to in a compound
- If a metal is below carbon in the reactivity series, it can be extracted by reacting it with **carbon** in a **displacement reaction**
- As carbon is more reactive it will take the place of the metal in the compound, leaving the metal on its own:
 - e.g. 1 carbon + metal oxide → metal + carbon dioxide
 - e.g. 2 carbon + copper oxide → copper + carbon dioxide
- If the metal is above carbon in the reactivity series, electrolysis can be used; this involves separating the metal by using electricity.

Reactivity series

magnesium
aluminium
carbon
zinc
iron
lead
copper

Key words and Vocabulary

Make sure you can write definitions for these key terms:

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