

## Sustainability

Sustainability:

meeting the needs of the present without sacrificing the ability of future generations to meet their needs

The 'three Rs' of sustainability:

1. Reduce the amount of waste we are producing
2. Reuse goods before throwing them away
3. Recycle goods that are no longer used

## Life Cycle Assessment

Scientists complete a life cycle assessment to decide which materials are best for different uses.

They consider:

1. how it was made
2. how it is used
3. how it is disposed of.

For example, are coated paper cups or reusable travel mugs better for the environment?



## Examples of Natural Resources



In combustion reactions, a fuel is burned. This means it has a chemical reaction with the oxygen in the air to produce water and carbon dioxide.



Fuel + Oxygen → Carbon Dioxide + Water

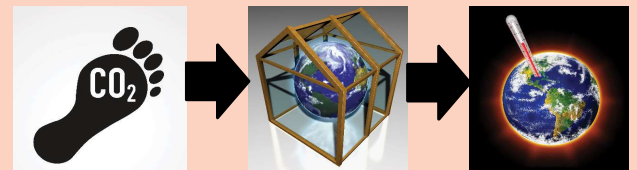
e.g. wood + oxygen → carbon dioxide + water

## Global Warming and Climate Change

More and more CO<sub>2</sub> is produced

Creating a greenhouse effect

The Earth is warming up



This leads to:

Ocean acidification	Extreme weather events	Melting ice caps	Rising sea levels

Material	Transparent or Opaque?	Brittle or malleable?	Low or high melting point?	Good conductor or poor conductor?
	Transparent	Brittle	High	Poor conductor
	Opaque	Brittle	High	Poor conductor
	Can be both	Malleable	Low	Poor conductor