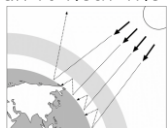


Climate Change Knowledge Organiser

Climate change is causing the earth's temperature to rise.

The **greenhouse effect** is a natural function, but is affected by human activity.

1. The atmosphere allows heat from the sun to heat the earth
2. The earth gives off heat
3. The heat is trapped by greenhouse gases e.g. methane, CO₂ and nitrous oxide



Natural causes	Human causes
• Orbital changes—the Milankovitch cycles bring the earth closer or further from the sun. • Volcanic activity—during a volcanic eruption CO₂ is released into the atmosphere. It can also block the sun causing cooling.	• Burning fossil fuels e.g. gas, coal and oil which release carbon dioxide into the atmosphere • Deforestation—trees absorb carbon dioxide during photosynthesis, if they are cut down it releases CO₂ into the atmosphere • Dumping waste in landfill—when waste decomposes it produces methane • Agriculture—releases nitrogen oxide into the atmosphere



Evidence to show climate change

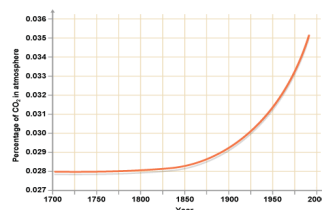
1. **Ice cores**—the snow traps air. The gas in the air can reveal what the temperature was like
2. **Rising sea levels**—between 1901 and 2010 the sea rose by 0.19m
3. **Tree rings** - the wider the ring, the warmer and more rain there was that year

Impacts of global climate change

Positive impacts	Negative impacts
• Energy consumption may decrease (because less need for heating) • Longer growing seasons for farming (agriculture) • Frozen regions such as Canada may be able to grow crops	• Sea level rise will affect 80 million people • Tropical storms will increase in strength • Diseases such as malaria increase, another 280 million people may be affected • Species in affected areas (e.g. Arctic) may become extinct



UK Positive impacts	UK negative impacts
• Crops such as oranges, grapes and peaches can be grown in the UK • Winter heating costs will be reduced • Accidents on roads in winter will be less likely	• Sea levels rise flooding low areas e.g. east England • Scottish ski resorts may have to close due to lack of snow • Drought and flooding becomes more likely as extreme weather increases • Water supplies under pressure as there is more need for water in hotter summers



The temperatures globally have begun to increase.

Always use data when you have a graph.

Climate change management

Mitigation is reducing or preventing the effects of something from happening. These strategies are:

- Alternative energy - solar, wind, tidal power reduces the use of fossil fuels, so less CO₂ is produced
- Carbon capture—storing waste gases deep underground
- Planting trees—encouraging **afforestation** reduces CO₂ levels in the atmosphere during photosynthesis
- International agreements - countries sign treaties e.g. the Paris Agreement 2015



Adaptation strategies respect the effects they have happened



- Agriculture (farming) must adapt as some crops can't grow in water temperatures. But other crops can be grown e.g. oranges and grapes
- Water supply - water can be transported
- Reducing risk from sea level rise—using sea defences

Impacts of climate change in Maldives (LIC)

Environmental	Social	Economic
Crops decrease Sea levels rise causes flooding Groundwater pollution of fresh water	Loss of jobs in tourist industry Environmental migration	Less crops to sell Farmers losing jobs Damage to infrastructure