



**The natural Greenhouse Effect**

- A natural function of the Earth's atmosphere is to keep in some of the heat that is lost from the Earth.
- The atmosphere allows the heat from the Sun (short-wave radiation) to pass through to heat the Earth's surface.
- The Earth's surface then gives off heat (long-wave radiation).
- This heat is trapped by greenhouse gases (eg. methane, carbon dioxide and nitrous oxide), which radiate the heat back towards Earth.
- This process heats up the Earth.

Impacts on people	Impacts on the environment
<ul style="list-style-type: none"> <li>• Loss of homes due to flooding</li> <li>• More heat stroke</li> <li>• New diseases like malaria</li> <li>• Loss of crops</li> <li>• Loss of life due to everything above</li> </ul>	<ul style="list-style-type: none"> <li>• Desertification (the spread of the desert) into new areas</li> <li>• More forest fires due to increased temperatures, destroys habitats</li> <li>• Coastal flooding of habitats</li> <li>• Loss of land to sea-level rise</li> </ul>

Key term	Definition
Climate change	A long term change in the average weather that a region experiences
Greenhouse gases	The gases present in the atmosphere – carbon dioxide (CO <sub>2</sub> ), methane and nitrous oxide
Fossil fuels	Coal, oil and gas – non-renewable energy sources that release CO <sub>2</sub> when burnt.
Global warming	The slow increase average in the Earth's average temperature
Carbon footprint	The total amount of CO <sub>2</sub> produced by a person
Government s	The people that run the country and make decisions around climate policy
Consumers	People buying/using something. In this case the people using energy
Food miles	The distance travelled by food from farm to plate.
Sea level rise	Increase in amount of water in the seas and oceans caused by melting polar ice caps
Extinction	When a plant/animal cannot survive and is completely wiped out

**What are the impacts of climate change?**

The big global impacts are:

- Melting glaciers and ice caps
- Sea level rise
- More extreme weather events and storms
- Droughts (lack of water)
- Extreme heat



**Fossil Fuels**

Fossil fuels are natural resources that we get from the earth. They have formed over thousands of years. Fossil fuels are finite – this means they are non-renewable – once they are gone, they are gone – we can't use them again.

The 3 fossil fuels are:

- **Oil** This is the black liquid we dig out of the ground that we use for petrol, plastic along with many other things.
- **Coal** - This is the black rocks we get out of the ground that we can burn to generate energy and electricity.
- **Natural Gas** - This is gas we get out of the ground that we use for cooking and generating electricity.

**How humans contribute (add) to climate change**

Burning fossil fuels - These give off carbon dioxide (CO<sub>2</sub>)

Deforestation - Trees that would be taking in carbon dioxide (photosynthesis) are chopped down and cannot do this.

Cattle farming - Intensive cattle farming increases the global number of cows that burp out methane (CH<sub>4</sub>)

**How does all this look?**

Food miles - Food miles show the total distance travelled from farm to plate. This is often seen as an indicator of carbon footprint.

Using electricity - mostly uses fossil fuels to produce electricity.

**Individual actions**

- Buying less goods
- Reusing and reselling unwanted products
- Turning the heating down a bit
- Turning off the lights and using less appliances
- Turn the TV off at the wall - not on standby
- Walk or cycle to work/school
- Take public transport



**Homework 1:**

1. Write a step by step explanation for how greenhouse gases help keep the Earth warm
2. List all the human actions which add greenhouse gases to the atmosphere
3. Write a short argument to persuade someone not to use fossil fuels.

**Homework 2:**

- Learn the key terms from the sheet you were given in class.
- Practice recalling both the definition and key term.
- Get someone to test you
- Write up 4-6 sentences including the key words

**Homework 3:**

1. Write a paragraph explaining why climate change is so bad for people OR the environment
2. Which is the worst global impact (purple box)? Explain why, referring to impacts on people and the environment
3. Explain what the school should do to reduce its carbon footprint

	I can...	Tick
How does the Greenhouse Effect work?	Define some key terms: <ul style="list-style-type: none"> <li>• Atmosphere</li> <li>• Greenhouse gases</li> <li>• Fossil fuels</li> </ul>	
	Explain how greenhouse gases act like a blanket or greenhouse	
	Explain how an increase in greenhouse gases will cause climate change	
How are humans contributing to the greenhouse effect and what can we do about it?	Explain how <u>three</u> human actions add to the layer of greenhouse gases <ul style="list-style-type: none"> <li>• Burning fossil fuels</li> <li>• Intensive farming</li> <li>• Deforestation</li> </ul>	
	Define food miles	
	Explain three ways that food produces greenhouse gases: <ul style="list-style-type: none"> <li>• Production</li> <li>• Manufacture</li> <li>• Transport</li> </ul>	
	Discuss my own carbon footprint	
	List at least <u>four</u> actions that could reduce my carbon footprint	
Why do the impacts of Climate Change on people and the environment?	Explain <u>three</u> environmental impacts of global warming <ul style="list-style-type: none"> <li>• draught</li> <li>• sea level rise</li> <li>• flooding</li> </ul>	
	Explain at least <u>three</u> human impacts of global warming <ul style="list-style-type: none"> <li>• Food shortages</li> <li>• Famine</li> <li>• Pests</li> <li>• Extreme weather</li> <li>• Flooding</li> </ul>	