

# Materials and the Earth

## Lesson 10: The Greenhouse Effect

Science

Chemistry - Key Stage 3

Miss Willett



# **What have you learnt already?**

- 1. State two processes that add carbon dioxide to the atmosphere.**
- 2. How do green plants remove carbon dioxide from the atmosphere?**
- 3. Where do you find magma, in the Earth?**



# Our atmosphere

Match up!

It acts as a shield..

It traps the Sun's energy..

It allows water to exist..

..for a constant temperature

..in all states of matter

..against radiation



# Our atmosphere

## **Answer the following questions:**

1. Where does the energy for Earth's heat originally come from?
2. How does the atmosphere regulate temperature?
3. What does the atmosphere provide a shield against?
4. What might happen if this shield wasn't there?
5. What would happen to the Earth's water if there wasn't an atmosphere?
6. What is this overall effect called?



# Our atmosphere

Answer space:

1.

2.

3.

4.

5.

6.



# What causes the greenhouse effect?

## What's missing?!

The Sun's energy reaches the Earth and is ..... by the surface

The energy is emitted as ..... (heat) radiation

..... and carbon dioxide are naturally occurring greenhouse gases

Infrared radiation is ..... by greenhouse gases in the atmosphere.



# The greenhouse effect

**Put the stages in the correct order:**

The Sun's energy passes in through the greenhouse gases and hits the surface of the Earth.	
Most infrared cannot pass through the greenhouse gases, and to the earth warms up	
Some infrared passes out of the atmosphere	
Greenhouse gases like carbon dioxide and water vapour are naturally in the atmosphere	1
The Sun's energy is absorbed and then emitted from the surface of the Earth as infrared (heat) energy	



# Human impact + greenhouse gases

**Complete the sentences:**

- Increased farming means.....
- Deforestation reduces.....
- This means less.....
- More cars and factories means....





# Bringing it together..

Answer the following questions:

1. Describe how the greenhouse effect affects the Earth's temperature.
2. Describe how humans are increasing greenhouse gas levels.

**Describe** = say what you see!

3. Explain the problem that is caused by the additional carbon dioxide released into the atmosphere.

**Explain** = 'so' or 'because'



# Bringing it together..

Answer space:

