Materials and the Earth
Lesson 8: The Earth’s Atmosphere

Science

Chemistry - Key Stage 3

Miss Willett

What have you learnt already?

1. What is the inner core of the earth made from?

2. What charge does an electron have?

3. Who developed the modern periodic table?

The Early Atmosphere

Quick fire!

What was the surface of the Earth originally covered in?

Which harmful gas was there LOTS of in the atmosphere?

Which planets have a similar atmosphere to early Earth?

The Early Atmosphere

Answer the following questions:

1. What released gases into the atmosphere?
2. Which were the two most abundant gases in the early atmosphere?
3. Suggest a planet that has a similar atmosphere to our early atmosphere.
4. Why can’t we be certain what the early atmosphere was like?

The Early Atmosphere

Answer space:

1.

2.

3.

4.

What caused these changes?

Match up!

Earth cooled

Green plants evolved

Volcanic eruption

Dissolved into ocean

Increase oxygen

Increase nitrogen

Decrease carbon dioxide

Decrease water vapour

The changing atmosphere

Describe and explain the change in the earth's atmosphere over the past 4.5bn years.

- Over time, water vapour in the atmosphere has..
- This is because it....
- Some carbon dioxide then ..... into .....
- Also, carbon dioxide levels have.... due to....
- ..... also affected oxygen levels, which .....
- Nitrogen entered the atmosphere by.....
- Levels of nitrogen have..... because.....

The changing atmosphere

Answer space:

Bringing it together..

Compare the composition of the early and current atmosphere:

Gas	Levels in Earth's early atmosphere	Percentage in air today
Nitrogen	None	78
Oxygen	None	21
Others – CO2 and argon	Very High	1
Water vapour	Very high	Varies – but usually only around 10%
Ammonia	High	None

STRETCH: why aren't there any values for the early atmosphere?

Bringing it together..

Compare the composition of the early and current atmosphere: