

Lesson 3: Green Energy



- I can explain how the human enhanced greenhouse effect affects climate change.



Matching Game!

Which fossil is used to power the appliances in the pictures?

Oil

Coal

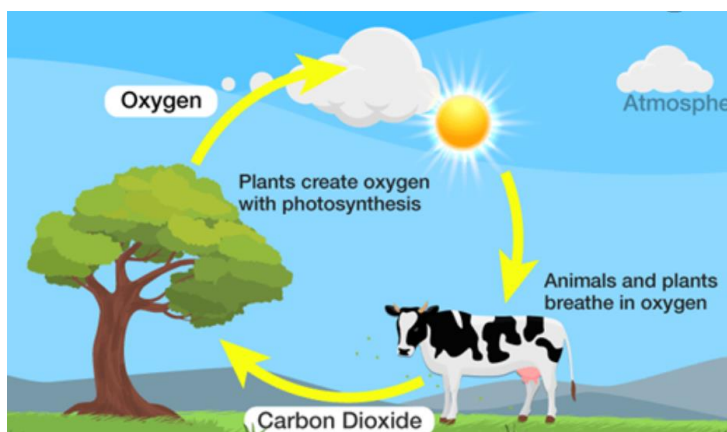
Gas



Fossil Fuels – Limits and Disadvantages

Fossil fuels are a valuable source of energy. They are inexpensive and easily transported around the world. Hence, they have been so popular to use. However, they will not go on forever and they damage our environment.

Fossil fuels are burnt to generate energy. This burning is harmful to the Earth and its environment because the coal or oil which is burnt releases polluting particles into the air. When fossil fuels are burnt, carbon dioxide is released into the atmosphere and heats it, so it is not a bad thing.



There is a balance between oxygen and carbon dioxide. Animals absorb oxygen and release carbon dioxide, whereas plants absorb carbon dioxide and release oxygen.

However, we have caused an imbalance by adding more carbon dioxide from the burning of fossil fuels. It traps more infrared radiation in the atmosphere, which heats up and leads to global warming.

This line graph illustrates the relationship between atmospheric CO₂ concentration and global temperature anomaly from 1960 to 2015. The left y-axis represents CO₂ concentration in parts per million (ppm), ranging from 300 to 420. The right y-axis represents the temperature anomaly in degrees Celsius (°C), ranging from -0.2 to 1.0. The x-axis shows the year in 5-year increments. Two data series are plotted: CO₂ (purple line with circular markers) and Temperature anomaly (teal line with circular markers). Both series show a clear upward trend over the period, with CO₂ rising from approximately 316 ppm in 1960 to 401 ppm in 2015, and the temperature anomaly increasing from near 0°C in 1960 to about 0.85°C in 2015. The graph includes a light gray grid for easier data reading.

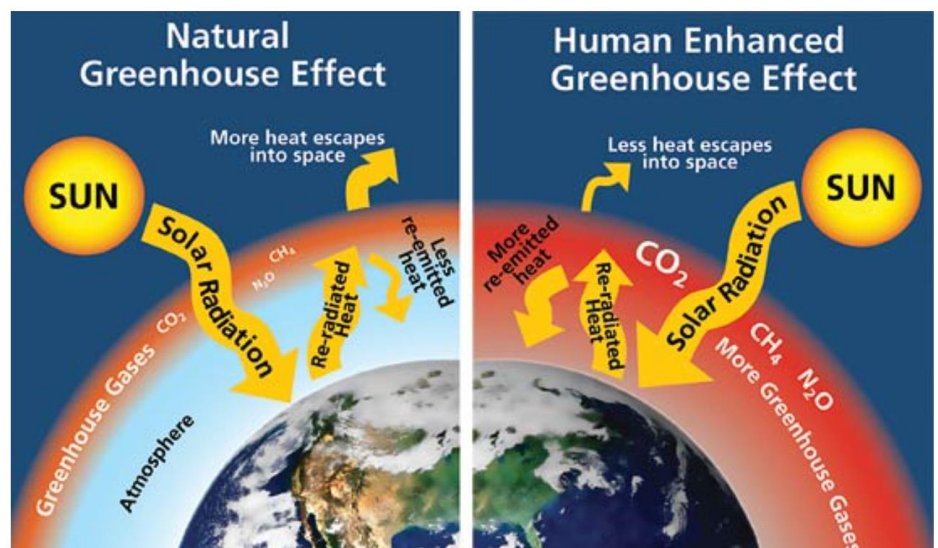
Year	CO ₂ (ppm)	Temperature anomaly (°C)
1960	316	0.0
1965	320	-0.1
1970	326	0.0
1975	332	-0.05
1980	339	0.25
1985	346	0.1
1990	354	0.45
1995	361	0.45
2000	370	0.4
2005	380	0.7
2010	390	0.75
2015	401	0.85



Since the Industrial Revolution, we have had a massive impact on the planet. Here is how:
<https://developingexperts.com/s/missions/431>

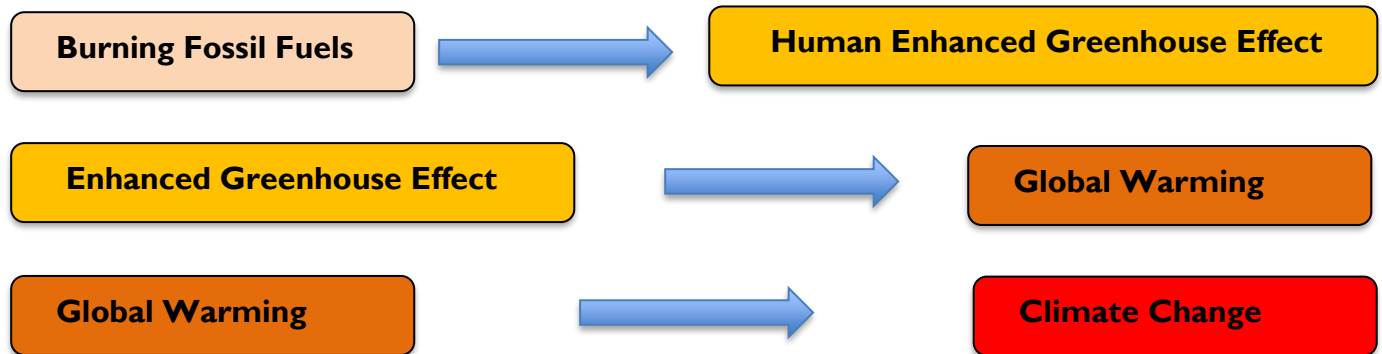


What are the differences between the two diagrams?

This image shows a single sheet of white paper with rounded corners. It features ten horizontal black lines spaced evenly apart, providing a template for handwriting practice or note-taking. The paper is set against a dark background.

**Cause and Consequence**

Look at the following examples. A cause leads to a consequence, which becomes a cause for another consequence.



What are the consequences of the human enhanced greenhouse effect on the climate?

Use the pictures to help you explain the causal link between the two.

A large rounded rectangular box containing 15 horizontal lines for writing.

