

**Read the following information carefully:**

Climate is different from weather because climate refers to the average temperature and cycles of weather over long periods of time - decades at least. You might talk about the **weather** being windy last week, or hotter last year than the year before. But unless you compare data for many years you cannot make a judgment about whether the **climate** is changing.

**Climate change**

The Earth's climate has been constantly changing since the Earth was formed 4.6 billion years ago. This includes several ice ages and periods of much warmer global temperatures. Until 200 years ago, these changes were all caused by natural changes such as volcanic eruptions and changes in the energy that reaches the Earth from the Sun.

**Global warming**

Global warming is not the same as climate change. Global warming is usually used to describe the warming of the climate in the past 200 years, which the vast majority of scientists are almost certain has been caused by human activities.

**The correlation between carbon dioxide and global warming**

One of the commonly used pieces of evidence that humans are causing global warming is that there is a strong correlation between the increase in global carbon dioxide levels caused by human activities and the increase in global temperatures over the same timescale.

**The effects of global warming**

The effects of global warming include:

- glaciers and polar ice melting
- sea levels rising
- patterns of rainfall changing, producing floods or droughts
- habitats changing

We are already experiencing some of these effects. The consequences of global warming will affect billions of people, all around the world.

(Source: [www.bbc.co.uk/bitesize/guides/zxy4xfr/revision/3](http://www.bbc.co.uk/bitesize/guides/zxy4xfr/revision/3))



# Climate Change (Science)

## KS3 / KS4



### Task 1:

Use the following data and draw two large line graphs.

Year	Carbon dioxide levels (ppm)	Global average temperature change (degrees C)
1980	338.7	0.028
1981	339.9	0.129
1982	341.1	0.204
1983	342.8	0.112
1984	344.4	0.159
1985	345.9	0.117
1886	347.2	0.109
1987	348.9	0.010
1988	351.5	0.122
1989	352.9	0.299
1990	354.2	0.244
1991	355.6	0.260
1992	356.4	0.331
1993	357.0	0.316
1994	358.9	0.284
1995	360.9	0.235
1996	362.6	0.250
1997	363.8	0.115
1998	366.6	0.084
1999	368.3	0.106
2000	369.4	0.153

Conclusion – what do you notice about the patterns of the two graphs? Using the information above, can you explain the patterns?

**Task 2:**

The effects of global warming.

Using the information above, make a list of all the advantages and disadvantages of the affects you can think of.

Can you think of what the consequences will be if the effects of global warming increase?

