

Investigation: The Carbon Cycle and Climate

Introduction

The combustion (burning) of fossil fuels releases a number of gases, including carbon dioxide. From 1850 to 1990, the production of carbon dioxide from the combustion of fossil fuels increased about 500 times.

In this investigation, you will compare changes in the production of carbon dioxide by combustion with changes in concentration of carbon dioxide in the atmosphere, and with changes in the average global temperature.



Procedure

1. Humans are using more and more fossil fuels all the time. **(1 mark)**

a) What effect do you think this will have on levels of carbon dioxide in the atmosphere?

b) What effect do you think this will have on the average global temperature?

2. Using the data table below, plot a line graph showing the relationship between year and carbon dioxide production. (2 marks)

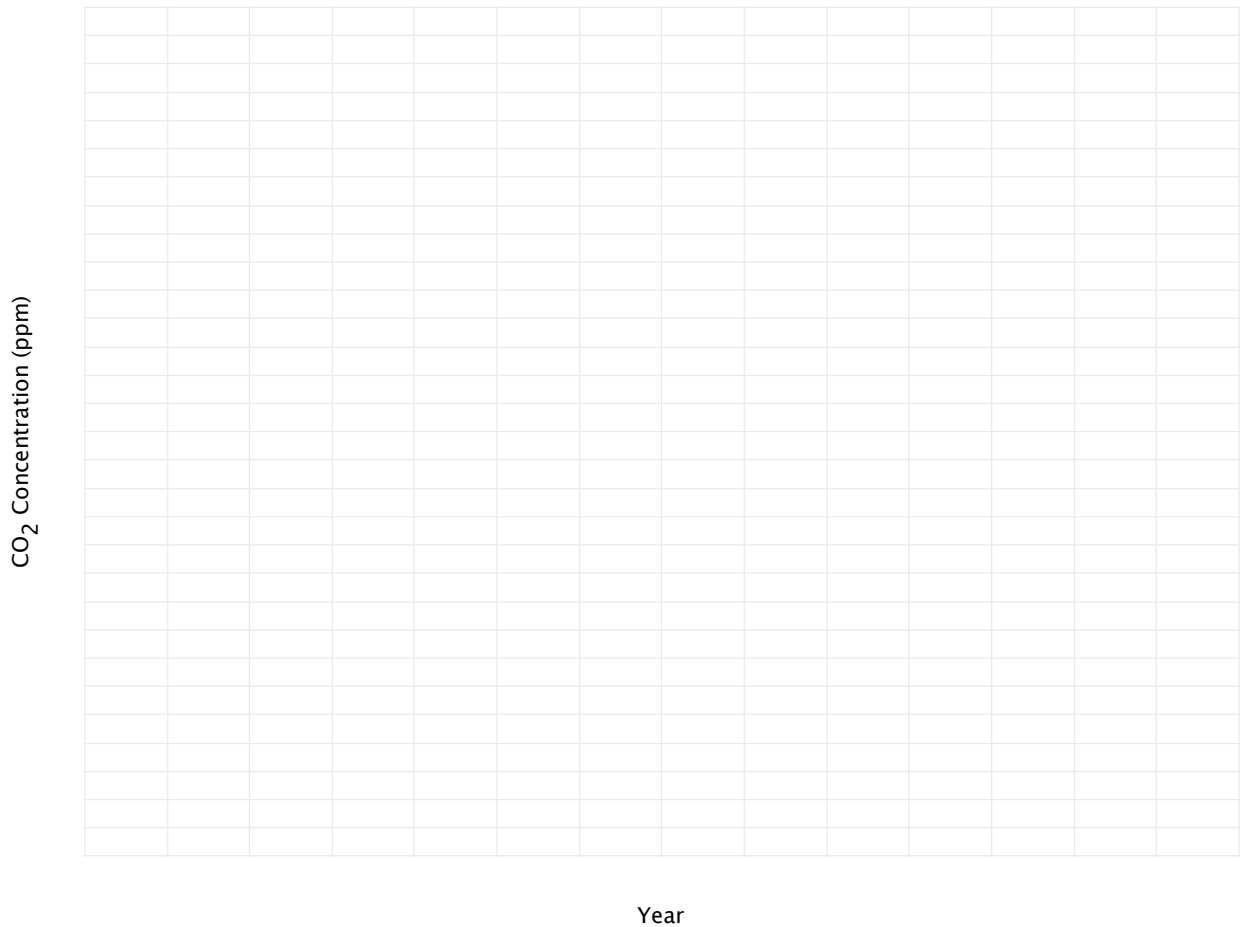
Year	Carbon Dioxide Production (in billions of tons)
1850	0.01
1870	0.02
1890	0.04
1910	0.09
1930	1.20
1950	1.80
1970	4.10
1990	5.00



3. By examining your graph, describe how the production of carbon dioxide has changed over the last 150 years. (1 mark)

4. Using the data table below, plot a line graph showing the relationship between year and concentration of carbon dioxide in the atmosphere. **(2 marks)**

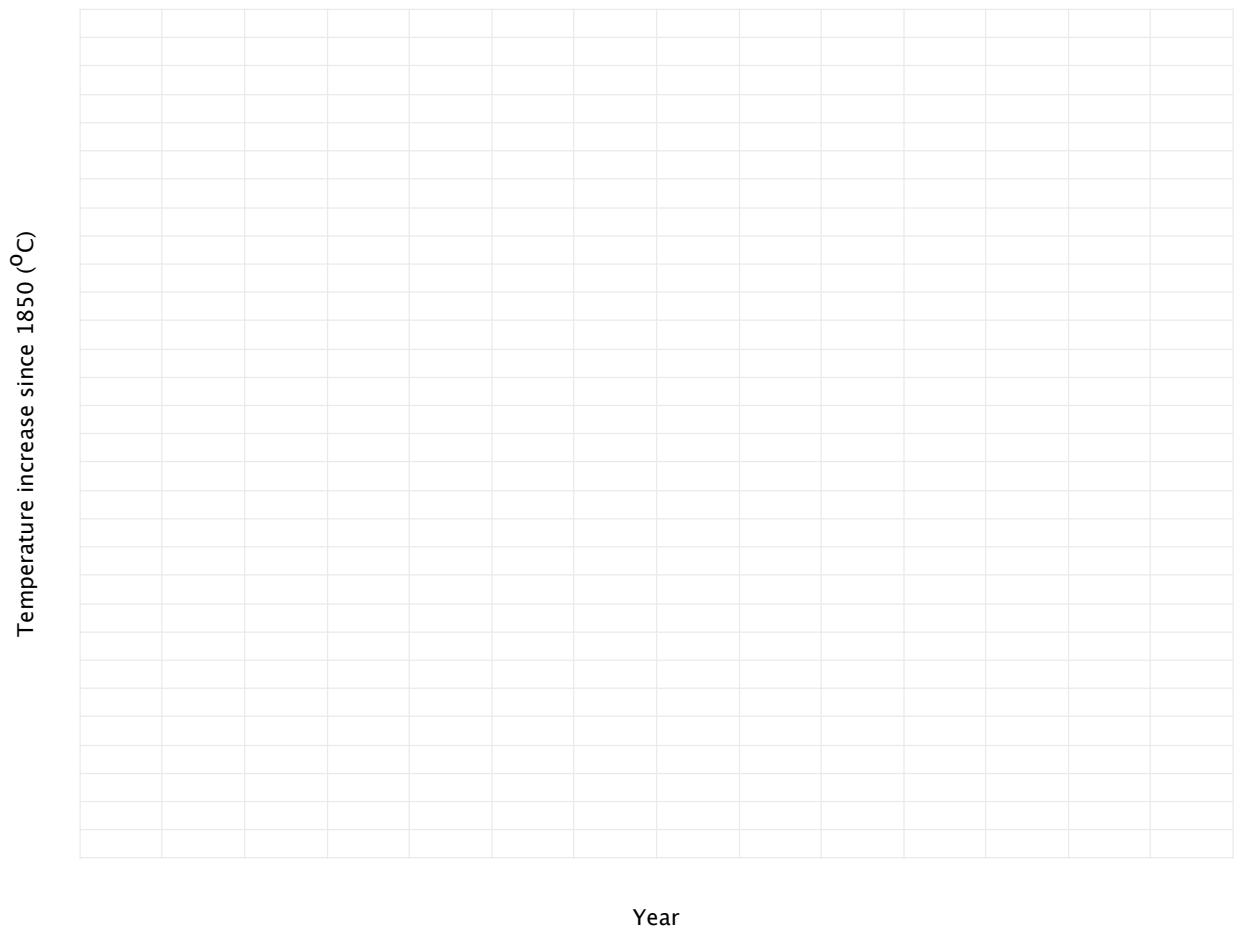
Year	Carbon Dioxide Concentration (in ppm)
1850	286
1870	292
1890	298
1910	300
1930	305
1950	310
1970	320
1990	340



5. By examining your graph, describe how the concentration of carbon dioxide in the atmosphere has changed over the last 150 years. **(1 mark)**

6. Using the data table below, plot a line graph showing the relationship between year and average global temperature change. (2 marks)

Year	Temperature Increase Since 1850 (in °C)
1850	0.00
1870	0.00
1890	0.05
1910	0.13
1930	0.46
1950	0.47
1970	0.23
1990	0.58



7. By examining your graph, describe how the average global temperature has changed over the last 150 years. (1 mark)
