Teacher notes:

Here are examples of the sort of responses students may give to the questions included within the PPT.

Slide 3:

What human activities are increasing the transfer of CO^2 from the stores?

The main human activities are burning fossil fuels, industrial processes emissions (cement production, carbonate use of limestone and dolomite, non-energy use of fuels and other combustion, chemical and metal processes, solvents, agricultural liming and urea, waste and fossil fuel fires).

Slide 4:

Assess the view that climate change is a natural process.

The history of the Quaternary period shows us that the earth has experienced periods of lower temperatures than now, most notably during the last Ice Age, 15000 years ago. After the Ice Age temperatures rose again but warmer periods have been followed by cooler periods. These occurred before human activity would have had any impact on climate change.

Slide 5:

To what extent do you agree with the view that the evidence indicates that global warming is occurring?

I agree to some extent that global warming is occurring. There certainly are more extreme weather events and 2011-2015 was the hottest period on record. However, there is evidence that ocean surface temperatures have decreased off the coast of western and southern Africa, Florida, and in the ocean north of Antarctica. More data over a longer period needs to be collected and analysed before a definitive answer can be given.

Slide 6:

Outline the evidence that carbon dioxide levels are rising at a faster rate than the Earth can naturally deal with.

Carbon dioxide concentrations in the atmosphere have risen from 280 parts per million to 387 parts per million, a 39% increase and are now at the highest concentration in two million years. We know that 2011-2015 was the hottest period on record and that 2016 was the first full year in which atmospheric CO^2 concentration stayed above the 400 ppm milestone.

Slide 8:

Describe the pattern shown by the graph.

The graph shows that over the period 1970 to 2015, global carbon emissions have increased steadily from 15800000 Gg in 1970 to 36000000 Gg in 2015.