

# Temperature and climate essay sample

[Environment](#), [Earth](#)



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BUSTER**

“ Up and down, up and down – that is how temperature and climate have always gone in the past and there is no proof they are not still doing exactly the same now. In other words, climate change is an entirely natural phenomenon, nothing to do with the burning of fossil fuels” (David Bellamy). To what extent do you agree with this statement?

The idea of climate change, for many, is an opinionated subject with much discussion of whether it is a real issue or just a natural phenomenon.

However in recent years it is clear to see that trends in the Earth’s climate and surface temperature has spiked to levels never seen before. Despite all the evidence of the high levels of greenhouses gases and the rise in temperature, many still believe that there is no connection between the two, and that the Earth is just going through its natural cycle. Over the last century global temperatures have increased rapidly, and this period has been called global warming. However many have disputed how this rapid increase in the change in the temperature have been brought about. There is a general agreement among scientists that the changes in the climate over the last century are as a result of human activities. They have reached this consensus as they have been able to link the sudden change in rate of the temperature increase to the development of industrial activities beginning with the industrial revolution.

The industrial activities that our modern civilisation depends upon have raised atmospheric carbon dioxide levels causing a rise in the amount of greenhouse gases that insulate the Earth. These extra emissions of greenhouse gases have led to a thicker layer of greenhouse gases present in the Earth’s atmosphere. The main causes of this rise in greenhouse gas

emission are fossil fuels. The burning of these fossil fuels has allowed us to develop, both economically and technologically, which in turn has enabled us to advance as a civilisation. However the use of these fossil fuels has had a damaging effect on our Earth's wellbeing, and has led to rapid climate change and global warming. Globalisation has also had an effect on the climate, as previously third world countries have been able to develop due to the cheap access to fossil fuels, and they now possess the technologies to build the power stations (coal plants).

This increase in the number of countries using fossil fuels has had a devastating effect on the amount of CO<sub>2</sub> being emitted into the atmosphere. This advancement has allowed countries such as china to become power houses in the manufacturing industry, with a majority of the good around the world being made in China. This has led to another contributing factor to climate change. The vast increase in worldwide trade also possesses a large influence on the changing climate. The increasing number of cargo ship travelling everyday has increased in the past 50 years. This is due to its low cost. Most large cargo vessels are powered by bunker fuel which contains higher sulphur levels than diesel. This level of pollution is accelerating: with bunker fuel consumption at 278 million tonnes per year in 2001, it is projected to be at 500 million tonnes per year in 2020. This, in turn, is having a deadly effect on the environment and the Earth's atmosphere contributing to the overall climate change. On the other hand, many believe that the changes can be explained but natural circumstances, arguing it is just the natural cycle of the Earth. It can be argued that over history the earth has

experienced fluctuating temperatures, and that the Earth is just going through the same process now.

There are also thoughts that orbital variations alongside with a change in solar output can lead to temperature changes and overall climate change for the Earth. Studies have shown that solar variability has played a role in past climate changes. For example, a decrease in solar activity is thought to have triggered the Little Ice Age between approximately 1650 and 1850, when Greenland was largely cut off by ice from 1410 to the 1720s and glaciers advanced in the Alps. Nevertheless several lines of evidence show that current global warming cannot be explained by changes in energy from the sun, as if the warming were caused by a more active sun, then scientists would expect to see warmer temperatures in all layers of the atmosphere. Instead, they have observed a cooling in the upper atmosphere, and a warming at the surface and in the lower parts of the atmosphere. That's because greenhouse gasses are trapping heat in the lower atmosphere. Therefore it is highly unlikely that the change in solar output has caused the climate change experienced on Earth. Volcanic activity has also been associated with climate change as volcanic eruptions release gases and particulates into the atmosphere.

Eruptions large enough to affect climate occur on average several times per century, and cause cooling, by partially blocking the transmission of solar radiation to the Earth's surface, for a period of a few years. The volcanic eruption in Iceland, Eyjafjallajökull, in 2010 is thought to have released enough ash and gas to cause a change in the Earth's climate. In spite of this,

the data shows that the change in the climate caused by volcanic activity is only short term, and therefore cannot be to blame for the trends that we are experiencing on Earth over the last century. Regardless of how climate change has been caused, there is clear evidence that it is a real issue. Earth-orbiting satellites and other technological advances have enabled scientists to see the bigger picture, collecting many different types of information about our planet and its climate on a global scale. Studying these climate data, which have been collected over many years, reveal the signals of a changing climate. The comparison of atmospheric samples contained in ice cores and more recent direct measurements, provides evidence that atmospheric CO<sub>2</sub> has increased since the Industrial Revolution.

The most visual and influential evidence and effect of climate change is the declining Arctic sea ice. The decline in Arctic sea ice, both in extent and thickness, over the last several decades is further evidence for rapid climate change. Satellite observations show that Arctic sea ice is now declining at a rate of 11.5 percent per decade, relative to the 1979 to 2000 average. This decline, along with the retreating glaciers which are considered among the most sensitive indicators of climate change, have amounted to global sea level rises. Sea levels have risen about 17 centimetres in the last century. The rate in the last decade, however, is nearly double that of the last century. The melting of polar ice sheets has added 11mm to global sea levels over the past two decades, which is causing islands such as the Kiribati Islands, will become submerged over the next few decades if current trends continue or get worse. Another piece of evidence proving that climate change is a real issue is the increased frequency of extreme weather event.

The number of record high temperature events in the United States has been increasing, while the number of record low temperature events has been decreasing, since 1950. The U. S. has also witnessed increasing numbers of intense rainfall events. This increase in extreme weather events is being brought about by the rise in the sea level temperature. The oceans have absorbed much of this increased heat, with the top 700 meters of ocean showing warming of 0.302 degrees Fahrenheit since 1969. These warmer oceans are the factor behind the growing number and increasing strength of each storm event. To conclude, I strongly disagree with the above statement, as the evidence clearly shows that the trends that we are experiencing in the climate and temperature levels in the past century surpass anything the Earth has seen for 650,000 years, with the CO<sub>2</sub> levels being the highest for over 700,000 years.

There is no doubt that this rise in CO<sub>2</sub> levels have been influenced and mainly caused by human civilisation, and in turn this has resulted in the vast increase in the Earth's temperatures and is the main factor behind the climatic changes that we are currently experiencing. Although there may be a case for some natural factors influencing the current state of the Earth's climate, the natural phenomenon do not explain the rapid increase in the temperatures and the vast changes to the climate, so the only explanation for it can be is that the human actions of burning fossil fuels at such a fast rate has caused the layer of greenhouse gases to increase significantly and cause this current state of global temperature increases and climate change.