
Writing a two-sided argument essay

Topic: Climate Change

Argument: *'Is Climate Change a result of human activities?'*

Type: Academic [7 sources]

Level: *****[B2/C1]

Lesson Plan

Aim: to develop the students' ability to generate main ideas with support and write a two-sided argument.

3 types of lessons (writing x2 / reading)

1. Writing

- Ask Students to discuss *'Is Climate Change a result of human activities?'*
- Write down the reasons for 'yes' and 'no'
- Feed in / check key vocabulary (next page)

Free Writing #1: [give out [Outline #1](#)] Students choose 2/3 of the positives / negatives discussed and add support. Go to introduction and fill the ideas of general, specific, outline, thesis, then to conclusion. Write the essay and students check ideas against the text [they could do the Reading Exercise]

Guided Writing #2: [give out [Outline #2](#)] Students read the outline with the basic points and then write the essay around these ideas. Then compare to the text.

Marking Student's work:

Use marking code: www.academic-englishuk.com/error-correction

2. Reading

1. Give out text and [Outline #3](#). Students read the essay and write down the key points and support in the structured outline [the bullet points relate to each piece of support]. Students check answers with [Outline #4](#).

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Is Climate Change a result of human activities?

C. Wilson (2017)

Key vocabulary

1. Persuasive
2. Climate Change
3. Atmospheric levels
4. Greenhouse Gases (GHGs) / Carbon Dioxide (CO₂) / Methane (CH₄)
5. Sceptics
6. Phenomenon
7. Over-whelming consensus
8. Prominent
9. Measuring temperature changes: Tree rings / ice cores / corals
10. Preceding
11. Unprecedented
12. 460ppm
13. Climatologists
14. Unique
15. Northern hemisphere
16. millennium
17. Climate model
18. Exaggeration
19. Sensitivity
20. Disparity
21. Controversial
22. A correlation
23. Credible
24. Aviation industry

Is Climate Change a result of human activities?

C. Wilson (2017)

Temperatures on earth have increased approximately 1.4°F since the early 20th century. Over this time period, atmospheric levels of greenhouse gases such as carbon dioxide (CO₂) and methane (CH₄) have notably increased. Many scientists believe this is a direct result of human activities, while sceptics claim that these gas and temperature increases are a natural phenomenon. This essay will investigate both sides of the argument and suggest that the causes of Climate Change are unnatural and immediate international action is needed to reduce emissions of Greenhouse gases.

There is an overwhelming consensus that human activity is responsible for climate change. The first main argument is that there is an overwhelming consensus within the academic community and research that supports the notion that Climate Change is man-made. One prominent example the 2013 Cook Review of 11,944 peer-reviewed studies on climate change found that only 78 studies (0.7%) explicitly rejected the position that humans are responsible for global warming (Cook et al, 2012). The second argument, again closely connected to research, is that the rise in temperature is faster than the natural climate change. Mann et al (2008) has found that through comparing data from tree rings, ice cores, and corals over the past millennium with recent temperature records, the rise over the preceding decade had occurred at a rate faster than any warming period over the last 1,700 years. In addition, the Arctic Sea ice is melting at an unprecedented rate of 13.9% per decade with predictions that it will have melted by 2020 (Stroeve et al, 2007). The final argument is atmospheric gases that cause global warming are manmade. Recent ice core research has revealed that gases CO₂, CH₄ and NO₂ started to increase in 1751, around the time of the industrial revolution and since then atmospheric levels have increased from 220ppm to 460ppm in 2013 (NOAA, 2013). Overall, there seems to be conclusive scientific evidence that Climate Change is from human activities.

There are a number of counter arguments that try to discredit the argument that Climate Change is man-made. The first of these counter arguments is against the published research. Some scientists disagree with the Cook report (discussed in previous paragraph) due to 32.6% of the studies gave no position of for or against (Tol, 2016). In fact, a Berkley University survey found that 47% of climatologists believe that climate change is caused by an equal combination of humans and the environment. A second counter argument is that the climate has always warmed and cooled and these current temperatures are within natural temperature fluctuations. Soon and Baliunas (2003) claim that 'many records reveal that the 20th century is probably not the warmest nor a uniquely extreme climatic period of the last millennium.' Furthermore, a later study (ibid) found that 'high temperatures - similar to those observed in the twentieth century before 1990 occurred around AD 1000 to 1100' in the Northern Hemisphere. A final counter argument is that the research into Climate Change is often based on computerised Climate models, which are inadequate and inaccurate. According to Lewis and Curry (2014), a comparison between observational data rather than computer climate models concluded that "the models are exaggerating climate sensitivity" and overestimate how fast the earth will warm as CO₂ levels increase. In sum, there seems to be disparity within the results and conclusions drawn.

In conclusion, the debate of whether climate change is a result of human activities is highly controversial. There is significant scientific evidence that many scientists agree, and changes in gases and temperature correlate closely to human activities. On the other side, this scientific evidence is questioned and the Earth has been through temperature changes similar in the past. However, the correlation between the increase in global warming gases and a rise in temperatures is over-whelming credible and therefore suggesting that Climate Change is caused from human activities. Even without scientific evidence, it seems obvious that the rise of industries, the aviation industry and urbanisation is polluting the atmosphere more than in the past. Overall, Climate Change is happening and societies need to take international action now.

[680 words]

Reference list

Cook, J., Nuccitelli, D., Green, S., Richardson, M., Winkler, B., Painting, R., Way, R., Jacobs, P. and Skuce, A. (2013). Quantifying the consensus on anthropogenic global warming in the scientific literature. *Environ. Res. Lett.*, 8(2), p.024024.

Lewis, N. and Curry, J. (2014). The implications for climate sensitivity of AR5 forcing and heat uptake estimates. *Climate Dynamics*, 45(3-4), pp.1009-1023.

Mann, M., Zhang, Z., Hughes, M., Bradley, R., Miller, S., Rutherford, S. and Ni, F. (2008). Proxy-based reconstructions of hemispheric and global surface temperature variations over the past two millennia. *Proceedings of the National Academy of Sciences*, 105(36), pp.13252-13257.

NOAA Earth System Research Laboratory (2013), *Trends in Atmospheric Carbon Dioxide*. [Online] Available at: <http://ersl.noaa.gov> [Accessed 22 Jul. 2016].

Soon, W. and Baliunas, S. (2003). Global warming. *Physical Geography*, 27(3), pp.448-455.

Stroeve, J., Holland, M., Meier, W., Scambos, T. and Serreze, M. (2007). Arctic sea ice decline: Faster than forecast. *Geophysics Research* 34(9).

Tol, R. (2016). Comment on 'Quantifying the consensus on anthropogenic global warming in the scientific literature'. *Environmental Research*. 11(4), p.46.

Outline #1

Make notes using this outline to plan an essay on: 'Is Climate Change a result of human activities?'

Introduction	
General	
Specific	
Outline	
Thesis	

Yes - write your ideas and support	
1) Point / idea: support	
2) Point: support	
3) Point support	

No - write your ideas and support	
1) Point / idea: support	
2) Point: support	
3) Point support	

Conclusion	
Summary:	
Thesis:	
Recommendation	

Outline #2

Use these ideas to write a two-sided argument on: 'Is Climate Change a result of human activities?'

Introduction	
General	Temperatures increase = 1.4°F since 20th century
Specific	Greenhouse gases (CO ₂) & (CH ₄) increased = Climate Change. Scientists = human activities, skeptics = natural process
Outline	This essay will investigate both sides of the argument
Thesis	unnatural = immediate international action needed

YES

1. Over-whelming academic consensus

- Climate change = man-made
- 2013 Cook review 11,944 studies = only 78 studies (0.7%) rejected

2. Temperature rise faster than natural increase

- Mann et al (2008) data from tree rings, ice cores, and corals over the past millennium rise faster than last 1,700 years.
- Arctic Sea ice melting 13.9% per decade / will have melted by 2020. (Stroeve et al, 2007).

3. Atmospheric gases are manmade

- Ice core research = CO₂, CH₄ and NO₂ increase in 1751, industrial revolution
- Atmospheric levels 220ppm to 460ppm in 2013 (NOAA, 2013).

NO

1. Disagreement with Cook report

- Scientists disagree Cook report = 32.6% of the studies gave no position a (Tol, 2016).
- Berkley University survey = 47% of climatologists believe = equal combination of humans and the environment.

2. Natural temperature fluctuations

- Climate always warmed and cooled
- Soon and Baliunas (2003) claim that "many records reveal 20th century not the warmest nor a uniquely extreme climatic period of the last millennium."
- A study (ibid) "high temperatures = AD 1000 to 1100" in the Northern Hemisphere.

3. computerised climate models inaccurate

- Lewis and Curry (2014), the models are exaggerating climate sensitivity
- Models overestimate speed earth will warm as CO₂ levels increase.

Conclusion	
Summary:	Highly controversial. Scientists = gases / temperature = human activities. This scientific evidence = questioned / Earth = temperature changes past.
Thesis	Global warming gases / temperatures = credible / true = human activities. Extra: Industry / aviation and urbanisation polluting atmosphere.
Recommendation	Need to take action now.

Outline #3

Read the essay on: 'Is Climate Change a result of human activities?' Fill in the outline (*basic notes only*)

Introduction	
General:	
Specific:	
Outline:	
Thesis:	

<u>Yes</u> – find the main points and support	
1) _____	<ul style="list-style-type: none"> • •
2) _____	<ul style="list-style-type: none"> • •
3) _____	<ul style="list-style-type: none"> • •

<u>No</u> – find the main points and support	
1) _____	<ul style="list-style-type: none"> • •
2) _____	<ul style="list-style-type: none"> • • •
3) _____	<ul style="list-style-type: none"> • •

Conclusion	
Summary:	
Thesis:	
Recommendation:	

Outline #4: ANSWERS

Introduction	
General	Temperatures on earth have increased approximately 1.4°F since the early 20th century
Specific	Atmospheric levels of greenhouse gases such as carbon dioxide (CO ₂) and methane (CH ₄) increased= Climate Change. Many scientists =human activities, skeptics = natural process
Outline	This essay will investigate both sides of the argument
Thesis	Causes of CC are unnatural and immediate international action needed

YES
<u>1. Over-whelming academic consensus</u> <ul style="list-style-type: none"> Climate change is man-made The 2013 Cook review of 11,944 peer-reviewed studies on climate change found that only 78 studies (0.7%) explicitly rejected
<u>2. Temperature rise faster than natural increase</u> <ul style="list-style-type: none"> Mann et al (2008) data from tree rings, ice cores, and corals over the past millennium with recent temp records, rise faster than last 1,700 years. Arctic Sea ice melting at a unprecedented rate of 13.9% per decade with predictions that it will have melted by 2020. (Stroeve et al, 2007).
<u>3. Atmospheric gases are manmade</u> <ul style="list-style-type: none"> Ice core research =CO₂, CH₄ and NO₂ started to increase in 1751, industrial revolution Atmospheric levels have increased from 220ppm to 460ppm in 2013 (NOAA, 2013).

NO
<u>1. Disagreement with Cook report</u> <ul style="list-style-type: none"> Scientists disagree with the Cook report due to 32.6% of the studies gave no position of for or against (Tol, 2016). Berkley University survey = 47% of climatologists believe that climate change is caused by an equal combination of humans and the environment.
<u>2. Natural temperature fluctuations</u> <ul style="list-style-type: none"> Climate has always warmed and cooled Soon and Baliunas (2003) claim that "many records reveal 20th century not the warmest nor a uniquely extreme climatic period of the last millennium." A study (ibid) found that "high temperatures - occurred around AD 1000 to 1100" in the Northern Hemisphere.
<u>3. computerised climate models inaccurate</u> <ul style="list-style-type: none"> Lewis and Curry (2014), the models are exaggerating climate sensitivity" Overestimate how fast the earth will warm as CO₂ levels increase.

Conclusion	
Summary:	Highly controversial. Scientists agree, and changes in gases and temperature correlate closely to human activities. / This scientific evidence is questioned and the Earth has been through temperature changes similar in the past.
Thesis	The correlation increases in global warming gases temperatures = credible / true that Climate Change is caused from human activities. Industry / aviation and urbanisation polluting atmosphere.
Recommendation	Climate Change is happening and societies need to take action now.