

Climate Change – The cold hard facts

PART 1

Weather is measured all around the world and from these measurements averages are calculated. The average weather condition of rainfall, maximum and minimum temperatures, humidity and wind within a region over a long period of time is known as the climate of that region. Climate Change is a significant change to those average weather conditions.

Climate Change and especially the causes of it is a much debated topic with opinions varying widely. In this unit of work you are required to watch carefully the **Climate Change – The cold hard facts** DVD. It provides comprehensive and extremely well substantiated information rather than an emotive argument.

You will need to pause the DVD while you take down information to answer the following questions and you may need to watch this documentary more than once to take in all the relevant information. It is suggested that the documentary will need to be broken into 3 parts and hence the questions are divided accordingly.

1. What is the main source of information (the major report) used in this documentary? How many authors and reviewers contributed to this report, and how well accepted is this report around the world?

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2. Check the tables showing what temperatures we should be experiencing allowing for natural cycles compared with the actual temperatures (that we have caused) for 1900 to 2000. What do the tables show?

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3. Explain how the earth is heated and the role of greenhouse gases. Draw and label a diagram to illustrate this.

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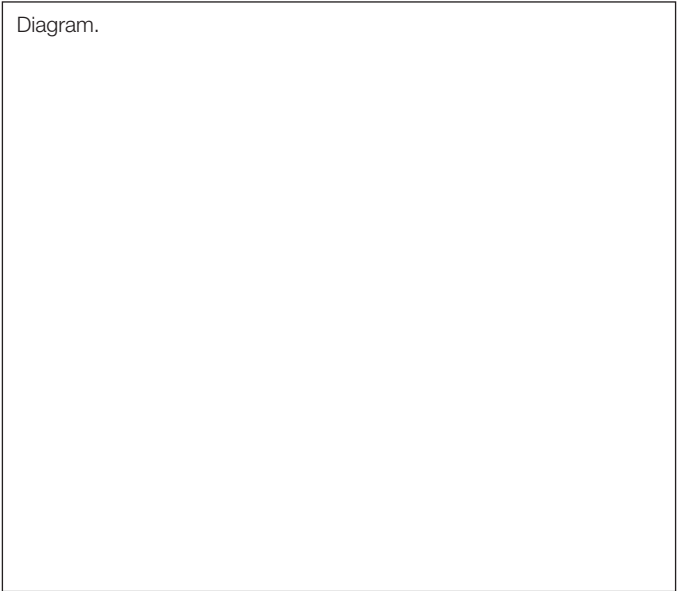
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9. What has been the most obvious visual effect of global warming?

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10. How important is the ice in glaciers as a source of water to people and how important for example are the glaciers in the Himalayas?

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11. Explain how global warming could affect sea levels and the significance of this?

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Further information

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PART 2

12. List the climatic effects of even a small increase in global temperature.

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13. How much carbon dioxide is released by the burning of fossil fuels and how much does each fossil fuel contribute?
There is one major purpose for the burning of fossil fuels that emit so much CO₂. What is that purpose?

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14. In Australia power is generated mainly from which fossil fuel and how much power is generated from this source?

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15. Which industries in Australia are the major emitters of CO₂ and which of these could be the main one targeted to achieve a reduction in CO₂ emissions?

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16. Globally from where are most CO₂ emissions derived and how will this change in the not too distant future?

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17. On a per person basis CO₂ emissions vary widely. Where does Australia rank and what is the difference between those from developed countries and undeveloped countries?

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18. What will be a determining feature in the expected “second wave” of greenhouse gas emission increases between now and 2050?

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19. To what extent has human activity contributed to global warming so far and how current is this recognised contribution?

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20. The International Panel on Climate Change (IPCC) has developed 6 scenarios (or “doorways”) that describe global temperature increases and greenhouse gas emission levels. For each scenario state wherever possible the temperature increase, the reduction in greenhouse gas emissions to be achieved and the resultant amount of greenhouse gas in the atmosphere.

Doorway 1:

Doorway 2:

Doorway 3:

Doorway 4:

Doorway 5:

Doorway 6:

21. Describe the rise in temperatures during the 2003 European summer and the effects of the heat wave conditions experienced.

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22. What amount of greenhouse gases do scientists believe we should not exceed to maintain life as we currently know it, and approximately what level of cuts to greenhouse gas emissions are needed to achieve this?

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23. If the concentration of greenhouse gases is allowed to increase and scenario (or “doorway”) 4 or 5 is achieved what will some of the effects on life on earth be?

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PART 3

24. What are the weather systems that regulate and distribute heat dependant on? What is described as the mightiest of these and how does it distribute heat?

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25. Describe what happens after this current moves beyond the north of Scotland?

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26. What major event could dilute this current and is this at all feasible?

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27. What area is described as “the lungs of the Earth”? Why? How does this area create just about all its own rainfall?

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28. What would be the effect if there was more CO₂ in the atmosphere over the Amazon?

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29. If a forest canopy allows sunlight through what detrimental effect can this have?

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30. In the Arctic regions where is carbon dioxide trapped? How is it being released and with what harmful effect?

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31. What was Sir Nicholas Stern's advice (in October 2006) to the UK government?

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32. Nicholas Stern is an economist – how much did he calculate needs to be spent so the worst impacts of climate change can be avoided?

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33. It seems that organisations, businesses, individuals, indeed everyone needs to tackle the challenge of climate change and take appropriate action. Make a list of some of the things you as an individual can do. List at least five.

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