

Study Guide for the Australian Collaboration Fact and Issue Sheet

COMMON MISCONCEPTIONS ABOUT CLIMATE CHANGE

FOR REVIEW

Misconception 1: The Climate is changing due to natural variability rather than human activity.

- 1a. Name three examples of short-term changes in the earth's climate that arise from natural causes.
- 1b. What do air bubbles trapped in ice in Antarctica allow us to measure? What do these measurements show?
- 1c. Do you know what 'anthropogenic' means? Can you work it out from its context in the sentence? If not, look it up in the dictionary.
- 1d. What are the main human activities that lead to increasing levels of greenhouse gases?

Misconception 2: Climate change is a deeply contested issue among scientists.

- 2a. What are the four fundamental features of climate change on which scientists agree?
- 2b. To what degree is the Intergovernmental Panel on Climate Change (IPCC) considered an important source of information at a global level?
- 2c. Why do the small number of scientists who challenge the views of the IPCC receive a lot of attention?

Misconception 3: Climate change will bring many benefits

- 3a. Why do some people believe climate change will mean more plants can grow?
- 3b. Is this potential benefit significant or is it outweighed by the negative impacts of climate change?
- 3c. Is climate change likely to affect mainly plants and animals or will it affect people too? What sorts of effects will it have on human populations?

Misconception 4: There are discrepancies in the measurement of climate change.

- 4a. How do scientists go about measuring climate change?
- 4b. Does observational evidence across the board generally indicate global warming or not?

Misconception 5: Predictions of climate change are based on super computer modelling of very complex sets of data. This kind of modelling is well known to have serious flaws.

- 5a. What does super modelling measure?
- 5b. Describe the different climate change models. What do they collectively predict?

Misconception 6: We should wait and see who is right and then act.

- 6a. Describe the most extreme and the most hopeful scenarios developed by the IPCC regarding human behaviour and its impacts on climate change.
- 6b. Greenhouse gases stay in the atmosphere a long time. How does this influence predictions for climate change?
- 6c. Is there time to 'wait and see'?

Misconception 7: If we take premature action we will disrupt the global economy.

- 7a. What did the Australian Business Roundtable on Climate Change aim to assess?
- 7b. What conclusion did the study come to?
- 7c. Did the Stern report come to a different or a similar conclusion? What were the main findings of the Stern report?
- 7d. What were the two main findings of the Garnaut Review?

Misconception 8: Climate change won't affect Australia greatly.

- 8a. Why is Australia the most vulnerable of all developed countries when it comes to climate change?
- 8b. By how much has Australia's temperature risen over the last century?
- 8c. Aside from dramatic changes in rainfall, what are the likely effects of climate change on Australia's environment?

Misconception 9: It is governments and business that need to act. There is little an ordinary citizen can do.

9a. What are the two main principles by which individuals and households can reduce their greenhouse emissions?

9b. Name five examples of energy efficiency in the home. Which of these measures could be carried out in your home?

Misconception 10: We should take action on climate change only when China and India commit to international emission reduction targets.

10a. Why does the United States refuse to ratify the Kyoto Protocol?

10b. Do you know what the difference is between a country's total emissions and its *per capita* emissions? If not, look it up on the web or ask your geography teacher.

10c. Are the developed or the developing countries responsible for the majority of past and current global emissions? What about *per capita* emissions?

10d. Why is it important to bear in mind which countries have contributed heavily to greenhouse gas emissions in past centuries, even as far back as 1850? (hint: remember the life-cycle of greenhouse gases, mentioned in Misconception 6).

10e. What leadership has New Zealand shown?

11. General revision question.

11a. Scan the Fact and Issue sheet for information on the results of making no changes to global emissions versus making significant changes to stabilise global emissions. Draw a mind map or flow chart showing the effects of each stance, including details on the effect on the economy, temperatures etc.

FOR DISCUSSION

1. Question for general debate:

Is Australia doing enough to combat climate change or should we do more? Consider the following:

i) What actions are occurring in your school or local community? Are these actions sufficient?

ii) Are Australians sufficiently informed about climate change?

iii) Do people care enough? Why or why not?

iv) Is enough action being taken by state and federal governments?

2. Question for a "Think / Pair / Share" activity followed by general discussion:

i) Have a think about the following questions individually: Why are there so many misconceptions about climate change? Did you have any misconceptions that were challenged by reading the Fact and Issue sheet? If so, where do you think those misconceptions came from? What do you think of the argument that people might not want to accept information that might require them to change aspects of their lives? How can we best dispel the myths about climate change?

ii) Share your answers with a partner and listen to their views.

iii) Share your answers with the class.

3. Question for general discussion:

Considering that the 2011 Garnaut report (see separate fact sheet) emphasized the importance of needing to find global solutions to climate change as well as taking local action, what role should Australia play in the international field? What should our policy be towards developing nations such as China? What is the relationship between what we do within our own country and what we try to do internationally?

FOR RESEARCH

1. For younger students:

What actions can you take in your daily life to reduce your carbon imprint? Start your research by having a look at the Federal Government Department of Climate Change's information for individuals.

What things is your household doing well? Which areas need more attention? What strategies could you develop to help reduce the overall greenhouse gas emissions of your home?

2. For intermediate students:

What are Emissions Trading Schemes? What do these schemes try to achieve and how do they do it? Do we have one in Australia? Where do they exist in the world?

3. For advanced students:

Read the summary of the Garnaut report.

A strong emphasis in the report is on the need to end the linkage between economic growth and emissions of greenhouse gases. What does this mean and how can it be achieved?