

# CLIMATE COPS

**BRIGHT IDEAS FOR  
SUSTAINABLE LIVING**

A TEACHING TOOLKIT ON SUSTAINABLE DEVELOPMENT  
AND CLIMATE CHANGE FOR STUDENTS AGED 11-14



## Lesson 3

Global environmental  
change



# After completing this lesson you will...

- know that resource use has an impact on the environment
- be able to explain the concept of climate change, its causes and potential impacts
- know that different people have different opinions on the subject of energy
- be able to explain the greenhouse effect and global warming.



# What is climate change?

- Climate change is the process by which emissions of greenhouse gases, caused largely by human activity, are believed to be causing changes in the Earth's climate system.



# Our world is changing

- In its 3<sup>rd</sup> report, published in 2001, the Intergovernmental Panel on Climate Change (IPCC), an organisation set up by the United Nations to examine the evidence for climate change, stated that human-induced climate change is, without question, taking place.



# Mystery

- How might Daniel's daily routine in Manchester affect Amina's in Bangladesh?





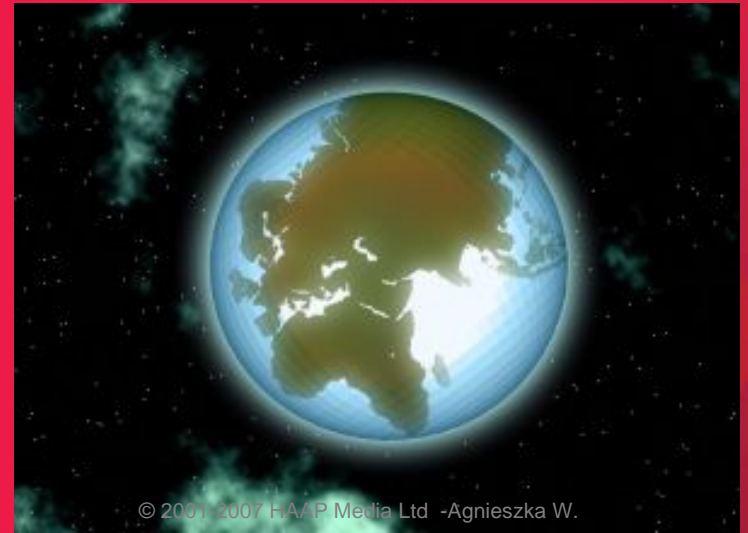
# Mystery

- Answer the mystery question using the information on the mystery cards.
- You should answer in as much detail as possible.
- Make sure you can explain your answer and that you can show your thinking.



# What is the greenhouse effect?

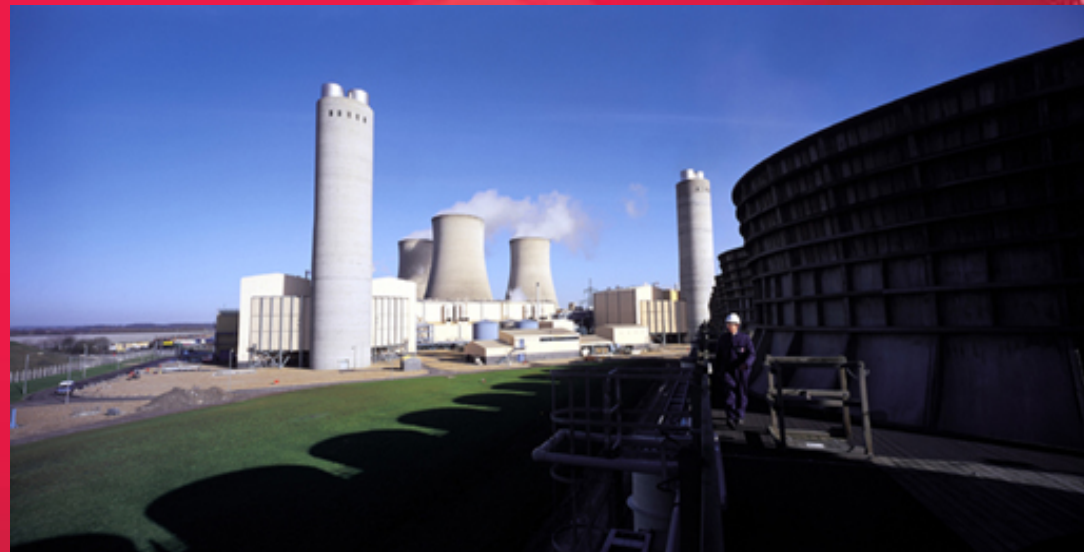
- The warming of the Earth due to a build up of greenhouse gases that form a 'blanket' in the Earth's atmosphere, that traps heat which would otherwise be lost to space.





# What is the greenhouse effect?

- The greenhouse effect happens naturally, but it is believed that it is being sped up by human activity, much of which produces greenhouse gases such as carbon dioxide and methane.





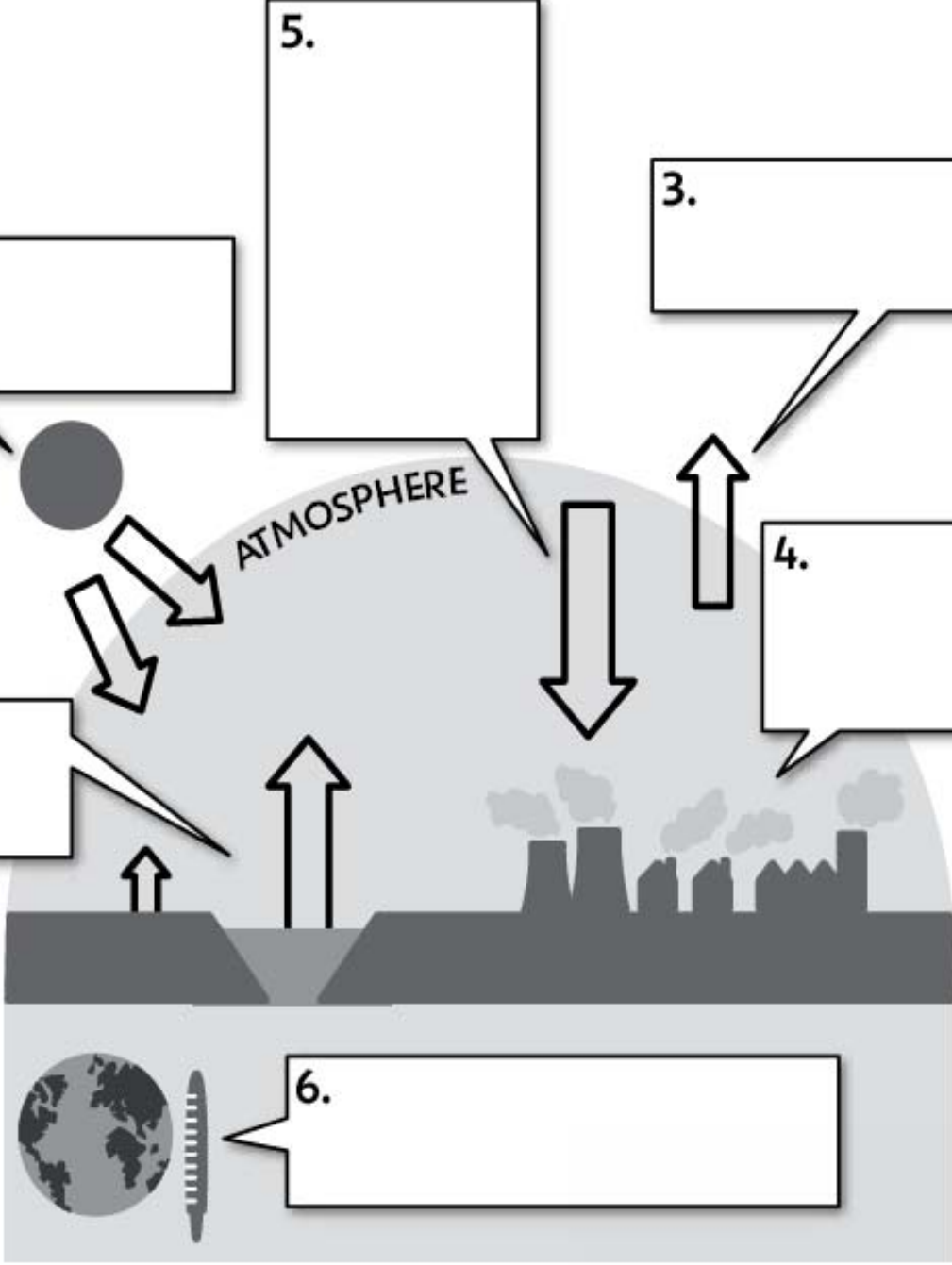
1.

5.

3.

2.

4.



6.



# Did you know?

- Increased levels of greenhouse gases in the atmosphere have already caused the world to warm by 0.74°C in the last century and will lead to at least a further half degree of warming in the next few decades, regardless of what we do now to reduce emissions.<sup>1</sup>

• 1. Government White Paper on Energy, May 2007, page 29



# What are the impacts of global warming?

- Global warming is predicted to change global climates dramatically in the future.



© 2001-2007 HAAP Media Ltd - Pietro Ricciardi



© 2001-2007 HAAP Media Ltd - Samuel Rosa



© 2001-2007 HAAP Media Ltd - Gavin Spencer



# Is global warming affecting us already?

- Some people believe that we are already being affected by global warming and that a number of extreme events in recent years are a result of it.



© 2001-2007 HAAP Media Ltd Saiuri



© 2001-2007 HAAP Media Ltd alleryire



© 2001-2007 HAAP Media Ltd Valentin Santarosa



# Was climate change responsible?\*

- 2004 tsunami in South East Asia
- 2005 Earthquake in Pakistan-administered Kashmir
- 2005 flooding New Orleans, USA
- 2005 Birmingham tornado
- 2006 drought in Australia
- 2006 eruption of the Tungurahua volcano in Ecuador
- 2007 flooding in the UK
- 2007 flooding in South East Asia
- 2007 forest fires in Greece

\*This activity is speculative. It is not currently possible to provide concrete scientific evidence to suggest that climate change is responsible for any of these events.