

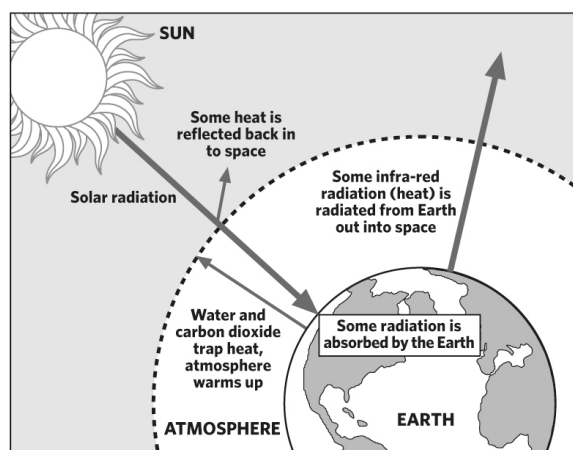
JJ needs your help

Information sheet B – The greenhouse effect

Many scientists **predict** that the world will become warmer. They say this is due to more **carbon dioxide** in the atmosphere and the **greenhouse effect**.

Life on Earth depends on **energy**. Energy from the Sun passes through the atmosphere to the Earth's surface. Some of the energy warms the land and oceans. Some of the energy is **reflected** straight back into space as **heat**.

Greenhouse gases such as water vapour, carbon dioxide and **methane** in the atmosphere trap this heat energy. This is called the greenhouse effect because, as in a greenhouse, the heat can get in but then some of it is trapped, making the air warm up. The greenhouse effect keeps the surface of the Earth about 33 °C warmer than it otherwise would be. Without it, life as we know it would be impossible.



The increases in levels of greenhouse gases in the atmosphere are due to human activities such as burning **fossil fuels**, cutting down forests and increasing use of **landfill sites**, keeping cattle and growing rice.

The atmosphere contains very little carbon dioxide, but the amount is slowly rising. With more carbon dioxide in the atmosphere, more energy is trapped than is reflected into space. As a result, the atmosphere, the Earth's surface and the oceans will gradually get hotter. Climate scientists are telling us to expect an average temperature increase of between 1 °C and 6 °C over the next 100 years.

As the temperature rises, sea levels will rise, and more water will **evaporate** from the oceans. Certainly the climate will be different.

Scientists study **climate change** using computers. They predict that global warming will not affect all parts of the Earth equally. Some areas will become wetter while more droughts will occur elsewhere. The number of extreme weather events such as **hurricanes** has risen rapidly since 1950. Rising sea levels will threaten the homes and livelihoods of millions of people, for example in parts of Bangladesh, Britain and Holland.

Britain in the twenty-first century may be too warm for many of its native trees (e.g. oak) or for the conifers planted by foresters. **Crops** that are grown now may not survive with the increased warmth and dryness. Insect **pests** normally killed by cold winters could thrive. If temperatures rise as predicted, **diseases** like **malaria**, which is spread by mosquitoes, may become more widespread.