

MODULE 1: WHAT IS CLIMATE CHANGE?

STUDENT ACTIVITY 1-5

WHAT IS CLIMATE?

It's easy to mix up climate and weather. Here's a simple way to think about it: climate is what we expect at any given time of year (e.g. cold winters) and weather is what we get (e.g. rain).

ACTIVITY ONE

What is the weather like today?

1. Look outside the window of your classroom, what is the weather like?
2. Is it raining? What is the temperature? What other elements of the weather could be measured?
3. Is the weather always like this? What was the weather like last week? If possible find out what the weather was like this time last year, was it the same? What do you expect the weather to be like in six months time?

ACTIVITY TWO

What is the difference between climate and weather?

1. Climate is the long term average of daily weather conditions allowing for seasonal variations and viewed on a regional scale.
2. Compare the climate graph of your nearest town with the weather you are experiencing today. Is the weather you are having the average for the time of year?

ACTIVITY THREE

Why is the climate like this, what are the global influences that affect the climate?

The climate system includes and is influenced by complex interactions between the atmosphere, oceans, land, ice and ecosystems.

1. Look at the climate zone's interactive (http://www.geographyteachingtoday.org.uk/images/activities/climate_system.html) or downloadable information sheet (http://www.geographyteachingtoday.org.uk/images/text/KS3_CC_ClimateSystem.doc) to find out some of the reasons why the world's climate changes from place to place and has different zones.
2. Identify these major influences these sources illustrate on the development of a particular climate in a particular place. Explain how these work.
3. The interactive and downloadable information sheet also illustrate the effect of greenhouse gases and the global heat conveyor. Summarise these effects.

ACTIVITY FOUR

Why is the climate like this, local influences? As well as major global influences there are also more local ones.

1. How does temperature and precipitation change with altitude?
2. What effect does the way a slope is facing (aspect) have on the climate?
3. What is the effect of the distance from the sea on the climate of a place?
4. What is the effect of a large urban area?
5. What happens to the climate of a place if forests are cut down over a large area of land?



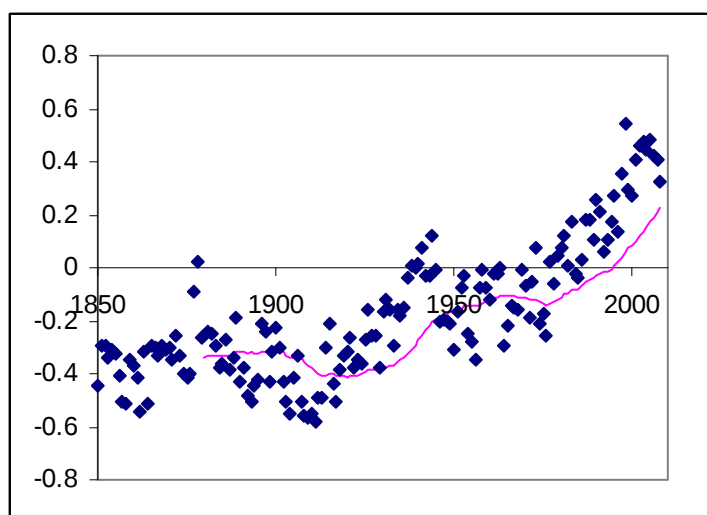
PERSONAL ACTIVITY

Which influences do you think are more important in explaining the climate of the place you live in, global or local?

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WHAT IS MEANT BY CLIMATE CHANGE?

Weather is what is happening in the atmosphere at any one time: how warm, windy, sunny or humid it is. Climate is the description of the average weather we might expect at a given time, usually taken over a 30 year period to average out year to year variability perhaps due to a particularly hot summer or very cold winter, and it also includes information about variability (e.g. what the usual difference is between hot years and cold years) and extremes (e.g. how often an extremely wet day happens). If the climate is changing, then the 30 year average temperature, or rainfall, or number of sunny days, is changing.



The blue squares in this graphic show global yearly air temperature anomalies ($^{\circ}\text{C}$) from 1850 to 2008. The year average is shown by the pink line. Even though the year to year 'weather' can vary a lot, we can only say that the temperature of the climate is changing if the pink 'climate' line also changes with time.

ACTIVITY FIVE

1. What do you notice about the blue squares 1850 – 1950? Are they mostly above or below the pink line?
2. What happens to the blue squares after 1975?
3. Describe what happens to the pink line.
4. What is happening to the global temperature from around 1975?
5. How will this affect other elements of the climate such as precipitation and pressure?

➔ **PERSONAL ACTIVITY**

Undertake some internet research to find out what the predictions are for where you live. The sections in National Futures will help you.