

Unit 1: Measuring, recording, presenting and interpreting UK weather data

KS3 references:

- Use fieldwork in contrasting locations to collect, analyse and draw conclusions from geographical data, using multiple sources of increasingly complex information
- Interpret thematic maps and satellite photographs
- Understand, through the use of detailed place-based exemplars at a variety of scales, the key processes in weather and climate

Objectives

- To develop the skills required for conducting accurate weather fieldwork in a local area, including data measuring and recording
- To understand the reasons behind weather patterns in a local area
- To understand the relationship between weather and physical and human landscapes
- To interpret the weather shown by weather maps (synoptic charts), satellite images and different media

Weather and climate

Climate is the long-term weather conditions expected in an area or region, and usually concentrates on temperature and precipitation changes throughout a year, including seasons based on temperature (e.g. winter and summer) or precipitation (e.g. wet and dry). Climate is usually represented by a climate graph (**Figure 1**).

Students can be asked to draw a climate graph using graph paper, ruler, pencil and crayons or use Excel (an introduction can be found at <http://www.marquemywords.co.uk/stories/academic-articles/creating-a-climate-graph-in-microsoft-excel>).

Figure 1: Climate graph for Reading (altitude 62 metres) using averages for 1981 to 2010 (Annual precipitation = 635.4 mm, temperature range = 14.7 °C). (Source of data: <http://www.metoffice.gov.uk/public/weather/climate/>)

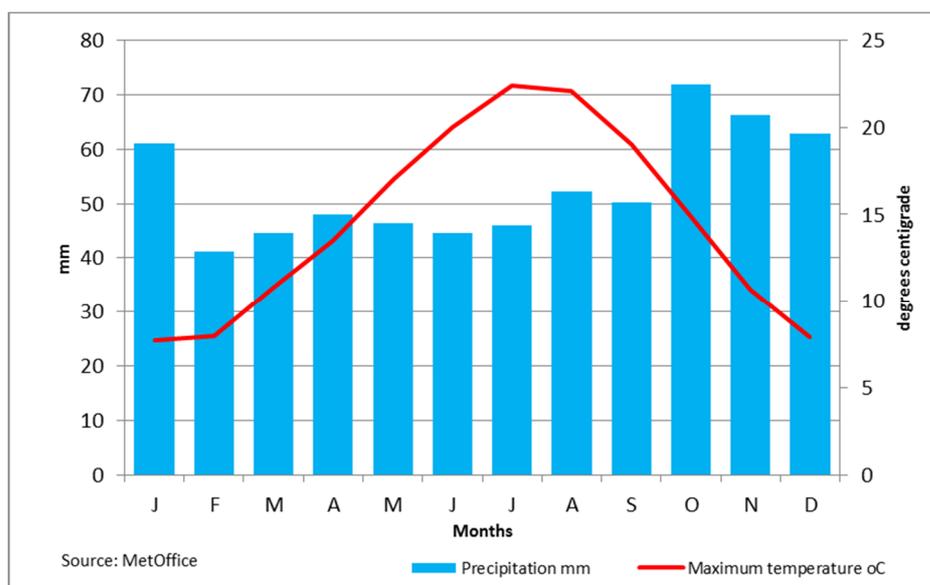


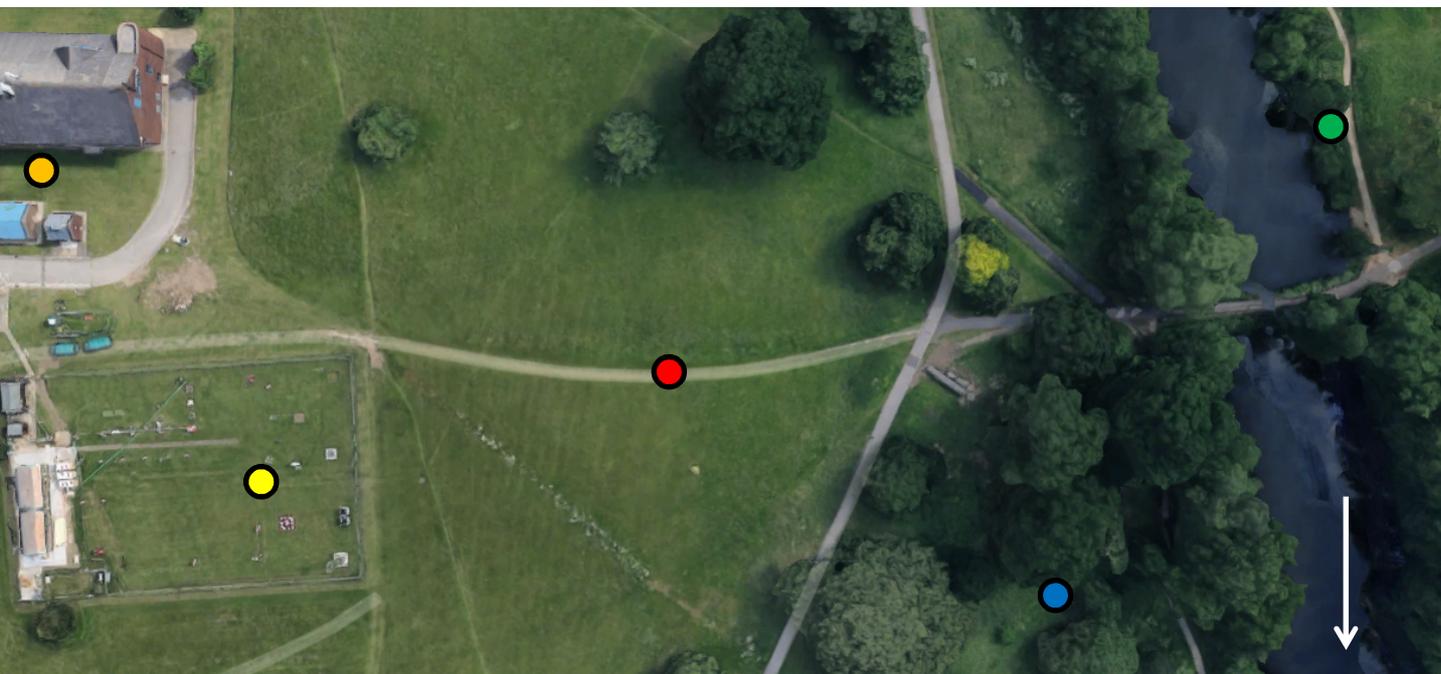
Figure 2: Climate data for Dalwhinnie (altitude 351 metres) using averages for 1981 to 2010 (Annual precipitation = 1304.0 mm, temperature range = 12.9 °C)

	J	F	M	A	M	J	J	A	S	O	N	D
Max temp (°C)	4.3	4.5	6.4	9.4	13.0	15.3	17.2	16.6	13.9	10.2	6.8	4.6
Precipitation (mm)	179.0	123.7	127.0	63.7	70.0	64.5	68.7	79.9	99.8	147.2	143.1	137.4

(Source of data: <http://www.metoffice.gov.uk/public/weather/climate/>)

Weather stations and their instruments have to be carefully located in order to ensure that accurate readings are taken. Figure 3 shows the location of the weather station in Reading University (yellow dot). A large open grassy space is best as this avoids any shade, heat from buildings or paved areas, shelter from trees or buildings or the influence of water areas on humidity. All the other sites shown in Figure 3 have weaknesses.

Figure 3: The site of Reading University weather station (yellow circle, altitude 66 metres) (white arrow points north)



Weather is the detailed conditions on a daily or perhaps weekly basis: it refers to many elements of the weather, all of which can be measured and forecasts made, such as wind direction and speed and the amount of moisture in the air (called humidity)

The latest automated weather data for Reading University can be found at http://www.met.reading.ac.uk/weatherdata/Reading_AWS_weather_report.html and http://www.met.reading.ac.uk/weatherdata/Reading_daily_AWS_graphs.html

Or <http://www.metoffice.gov.uk/public/weather/observation/gcpc9yegm>