



Weather in Our Lives



Background Information for Teachers



Talk about the Weather

The weather affects just about every individual person, every day of their lives – whether it is what we wear, what we eat, how we travel or even how we feel. Similarly, it has an impact on almost every industry and leisure activity – even if only through traffic conditions.

In the U.K. we are stereotyped for talking about the weather a lot, as our weather can be quite changeable – but it is usually changing within relatively small parameters. It is rarely extremely cold or extremely hot. Our summer weather can be really quite similar to our winter weather.

When Does Normal Weather Become Extreme Weather?

Extreme weather is usually defined as the most unusual weather, which is significantly different to average or ‘normal’ conditions . It occurs less than 10% of the time – so extreme temperatures would be the 5% of coldest temperatures and 5% of warmest temperatures. Some other thresholds for extreme weather are hard to define, as they will

vary from place to place and with the time of year. For precipitation, the definition of 'extreme' could be based on impact, on return period ('a one in 100 year event') or on a percentage based threshold such as rainfall that occurs less than 5% of the time.

Further Information:

http://www.wmo.int/pages/prog/wcp/ccl/documents/GUIDELINESONTHEDEFINTIONANDMONITORINGOFTREMEWEATHERANDCLIMATEEVENTS_09032018.pdf

Weather Variables

Temperature

- Air temperature (measured out of direct sunlight in a well-ventilated place)
- Daily maximum temperature
- Daily minimum temperature
- Soil temperature

Further Information: <https://www.metoffice.gov.uk/weather/guides/observations/how-we-measure-temperature>

Atmospheric Pressure

- The local atmospheric pressure, in millibars (mb) or hectoPascals (hPa) is converted to sea level pressure based on the height of the observation.

Further Information: <https://www.metoffice.gov.uk/weather/guides/observations/how-we-measure-atmospheric-pressure>

Precipitation

- Daily rainfall total
- Snow depth

Further Information: <https://www.metoffice.gov.uk/weather/guides/observations/how-we-measure-rainfall>

<https://www.metoffice.gov.uk/weather/guides/observations/snow-depth>

Wind Speed and Direction

- Officially measured at 10m height and well away from any obstacle. Measurements made with a hand-held anemometer about 2m above the ground should be increased by a third to get the equivalent speed at 10m.
- The reported wind speed is the average wind speed, typically averaged over a 10 minute period.
- Gust speeds can be much higher, and reflect a shorter term wind speed.
- Wind direction is reported as the direction *from* which the wind is blowing – a westerly wind is a wind blowing from the west to the east.

When no instrument is available to measure wind speed, the Beaufort Scale over land (<https://www.metlink.org/observations-and-data/beaufort-scale/>) and sea (https://en.wikipedia.org/wiki/Beaufort_scale) can be used.

Further Information: <https://www.metoffice.gov.uk/weather/guides/observations/how-we-measure-wind>

Humidity

- Relative humidity is the amount of water vapour in the air (the absolute humidity) as a percentage of that required to saturate it. 100% relative humidity is saturated air. The relative humidity will decrease as the air warms, even if the *absolute humidity* – the actual mass of water vapour in the air – stays the same.
- Dew point is the temperature at which the relative humidity is 100% and there is more condensation than evaporation occurring. If the air is cooled to or below its dew point, cloud droplets will form.

Visibility

Fog reduces visibility to less than 1km. The definition of mist is less clear, but for aviation purposes in the UK, it refers to visibility of less than 5km.

Further Information: <https://www.metoffice.gov.uk/weather/guides/observations/how-we-measure-visibility>

Cloud

- Cloud Type reflects the altitude and structure of the cloud. Cloud types include cumulus, stratus and cirrus clouds. A more complete guide is linked below and included in Chapter 2.
- Cloud base height is the altitude above which cloud is found.
- Cloud cover reflects the proportion of the sky covered in cloud and is traditionally reported in oktas (eighths).

Further Information: <https://www.metoffice.gov.uk/weather/guides/observations/how-we-measure-cloud>

<https://www.rmets.org/resource/cloud-names-and-cloud-classifications>

Sources of Information

<https://www.weatherobs.com> – current weather observations from around the world

<https://svs.gsfc.nasa.gov/4285> - current precipitation from around the world

<http://www.raintoday.co.uk/> - current precipitation for the UK

www.blitzortung.org – current lightning strikes around the world

<https://earth.nullschool.net> – current atmospheric and oceanic conditions around the world

<http://www.metoffice.gov.uk> – current local weather conditions