

Lesson three: Weather and Climate

Lesson Plan

In this lesson pupils learn the important distinction between the geographical terms 'weather' and 'climate'. They discover Australia has different climate zones, and different parts of the country experience different daily weather conditions. They learn Australia does experience some periods of extreme weather causing cyclones, bushfires, and water shortages. In the main activity pupils can use the lesson resources to locate areas at-risk of bushfires and write a report on this issue facing Australians. Alternatively, pupils can do independent internet research to learn more about cyclones and water shortages and write their report on one of these extreme weather issues.

Key Questions

- What is the difference between the terms 'weather' and 'climate'?
- What are the different climate zones in Australia and what types of weather do these regions experience?
- What examples of extreme weather conditions are there affecting Australia?

Key Ideas

- Weather reflects short-term conditions of the atmosphere and climate is the average daily weather for an extended period of time at a certain location.
- Australia's large size means it spans a relatively large area of the earth. Climate is affected by proximity to the equator, and therefore some areas of Australia experience higher temperatures and more hours of sunlight than others.
- Australia is in three different climate zones (tropical, temperate and arid).
- Australia does experience some extreme weather conditions, for example cyclones, bushfires, and drought.

Subject content areas

- Locational knowledge: Pupils use maps to identify and locate the climate zones of Australia. They learn how and why climate is affected by proximity to the Equator and latitude. Pupils also locate regions affected by extreme weather.
- Place knowledge: Pupils learn that climate affects where people live and the characteristics of places in Australia.
- Physical Geography: Focus on weather and climate. Consider the factors that influence weather patterns in Australia: proximity to the coast, altitude, latitude and proximity to the equator.
- Geographical Skills and Fieldwork: Using maps, locate areas affected by extreme weather. Older or more able pupils also carry out independent research into weather events in Australia.

Downloads

Lesson Plan PDF | MSWORD

Weather and Climate (PPT)

Bushfires Video (Windows Media Player)

Extreme Weather Report template PDF | MSWORD

Bushfires Report Example PDF | MSWORD

Extreme Weather Maps PDF | MSWORD

Additional resources

Speakers and Interactive Whiteboard to play Bushfires Video
Computer access (if pupils carry out independent internet research)
Metre sticks
Football

Web links

Go to YouTube to watch an informative video about the climate-related issue of bushfires in Australia https://www.youtube.com/watch?v=C4_LhvqgGuo

Starter

Remind pupils of last lesson's learning: the large size of Australia means it has a diverse landscape, as explored last lesson. Explain that climate and landscape are related (e.g. deserts experience a hot and dry climate; rainforests experience a hot and humid tropical climate).

Pose the question: how do you think Australia's large size affects the climate there? Remind pupils the location of a place on the surface of the Earth determines its climate. (Australia's large size means it does not just lie within one climate zone like the UK, but three climate zones).

Define the terms 'weather' and 'climate' using the *Weather and Climate* PowerPoint presentation (see downloadable resources). (Weather reflects short-term conditions of the atmosphere and climate is the average daily weather for an extended period of time at a certain location. Climate is what we predict and weather is what we get.)

Main teaching

Using the map on the *Weather and Climate* PowerPoint presentation (see downloadable resources), highlight how to use the map key to discover the location of each climate zone. It may also be useful to locate Australia on a globe, and model which areas of Australia are closest to the Equator and are therefore hit by the sun's rays straight on, as opposed to at an angle.

The three climate zones of Australia are: temperate, arid, and tropical. Describe the characteristics of these climates:

- A tropical climate has two seasons: wet and dry. The weather is hot and humid. The tropical climate zone of Australia falls within the 'tropics' (the area of the Earth between the Equator and Tropic of Capricorn latitudes).
- An arid climate is hot and dry. Rainfall is at a low level, often resulting in drought.
- A temperate climate is milder in temperature and rainfall and experiences all four seasons (spring, summer, autumn and winter).

Explain to pupils that because Australia is in the Southern Hemisphere, the seasons fall at opposite ends of the calendar year to the UK, which is in the Northern Hemisphere. During our summer, Australian's experience their winter.

Touch upon the issue of climate change and how this is affecting the Great Barrier Reef in Australia: the warming waters are bleaching the coral and also increasingly the number of the deadly Box Jellyfish. Pupils carry out an activity outlined on the *Weather and Climate* PowerPoint presentation to put the size of this jellyfish into context using metre sticks and a football. Also explain that scientists have found climate change to be increasing the frequency of extreme weather episodes.

Explain Australia experiences episodes of extreme weather: bushfires, cyclones, and drought. This poses a risk to people and can damage human (man-made) and physical (natural) features of the environment. Buildings and homes can be destroyed, as well as forests and trees.

Play the informative *Bushfires Video* about the issue of bushfires in Australia (see downloadable resources). Go to YouTube to watch an informative video about the climate-related issue of bushfires in Australia https://www.youtube.com/watch?v=C4_LhvqgGuo (Weather and Climate PowerPoint presentation slides 11 and 12).

Main activity

Using *Extreme Weather Report Template* (see downloadable resources) pupils write a report on bushfires (or another type of extreme weather) in Australia. The factual report should include a map, either one of the maps on the *Extreme Weather Maps* handout (see downloadable resources) or one the pupil has found online. It should also include the following details and success criteria:

- The weather conditions associated with this type of event.
- The areas of the country most affected (pupils to include a map).
- The impact this event can have on the human and physical environment.
- Ways people can protect the human and physical environment.
- How people and emergency services react and handle these episodes.

The above success criteria are also written on page two of the *Extreme Weather Report Template* (see *downloadable resources*) for the pupils to refer back to.

Note: there is a *Bushfires Report Example* (see downloadable resources) for your reference.

Older or more able pupils can do their own independent research on a child-friendly search engine such as Kids Britannica to extend their knowledge of bushfires in Australia, or alternatively can choose to write their report on either cyclones or drought.

Extension: Carry out online research into your type of extreme weather event. Search for a recent case study example and add details of this particular episode to your report. Consider the impact it had on people and the environment, and report on the location of the event.

Plenary

Pupils peer-teach their findings, present their reports, and take questions from other members of the class. Compare the presentations to the success criteria and pupils do peer-assessment such as 'two stars and a wish'.