**Year 7/8 Introduction**

The [Australian Curriculum: Geography](http://www.australiancurriculum.edu.au/Geography/Rationale) has themes for each stage of schooling.

Year 7 includes two themes.

The first theme is '[Water in the world'](http://www.australiancurriculum.edu.au/Geography/Curriculum/F-10#level=7) which focuses on how water is used and valued as a renewable environmental resource. The interaction and interconnections between the environment and people is explored.

The second theme is '[Place and liveability'](http://www.australiancurriculum.edu.au/Geography/Curriculum/F-10#level=7) which focuses on the concept of liveability by looking at how it is perceived and measured, and the responsibilities and impacts of people on the sustainability of liveable places.

**Overview**

**Geographical inquiry**

A key feature of the [Australian Curriculum: Geography](http://www.australiancurriculum.edu.au/Geography/Rationale) is the emphasis assigned to the geographical inquiry process. The inquiry process provides a scaffold on which to structure geographical investigations. It also encourages the use of a range of pedagogies, from short classroom activities through to entire units of work. While these approaches might include teacher-directed forms of instruction, they are particularly suited to more collaborative approaches to teaching and learning, especially as students get older and develop the requisite skills.

The stages of the inquiry process are:

* observing, questioning and planning
* collecting, recording, evaluating and representing
* analysing and concluding
* communicating
* reflecting and responding.

A more detailed explanation of these stages can be found in the Australian Curriculum: Geography. Also of relevance is the Curriculum's scope and sequence of inquiry and skills and the achievement standards for Year 7 and Year 8.

Through the use of the inquiry process, students master and deploy a wide range of skills to help plan and implement geographical investigations. These include those related to the interpretation, collection, analysis and evaluation of information. Also included are the skills related to the recording and representation of data.

The illustrations presented here focus on the skills of interpreting, analysing and presenting of information.

**Geographical skills**

Geographical skills are the abilities to use methods and tools that geographers use when undertaking an inquiry. These skills are evident when planning and undertaking an investigation, collecting, manipulating and interpreting data, and when responding and reflecting on the investigation.

Geographical skills can be broadly grouped using the same structure as a geographical inquiry. Geographical skills are typically relevant in the context of a geographical inquiry but they may also be used in an unconnected manner or stand-alone activity to develop understanding around an issue of study.

In Years 7–8 students collaborate to develop questions that frame geographical inquiries. They collect, interpret and analyse geographical information from primary and secondary sources, and use it to support conclusions. Using appropriate geographical terminology, students accurately represent data in a range of forms and construct graphic representations and communicate information.

**About the illustrations**

[Illustration 1: Weather maps and climate graphs – Year 7](http://www.geogspace.edu.au/core-units/years-7-8/inquiry-and-skills/years-7-8/y78-is-illus1.html). This illustration focuses on the distinction between weather and climate within the context of a study of hydrological hazards. Students learn to interpret weather maps as a means of understanding the occurrence and spatial distribution of these hazards. Skills in weather map interpretation are developed along with the skills of climate graph construction and interpretation.

[Illustration 2: Using Google Earth to investigate landscapes and landforms – Year 8](http://www.geogspace.edu.au/core-units/years-7-8/inquiry-and-skills/years-7-8/y78-is-illus2.html). In this illustration, students use Google Earth to investigate the world's significant landform features and landscapes. They develop skills in landform identification and analysis using aerial photographic representations available via Google Earth. Students develop skills in locating and describing landforms. They also learn to apply their geographical knowledge to determine the geomorphic processes responsible for their formation.

**Weather maps and climate graphs (Yr 7)**

**Curriculum overview**

The [Australian Curriculum: Geography](http://www.australiancurriculum.edu.au/Geography/Rationale) content description addressed in the illustration is:

* The causes, impacts and responses to an atmospheric or hydrological hazard ([ACHGK042](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACHGK042))

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA).

**Learning goals**

The illustration-specific learning goals are:

* differentiating between weather and climate
* using the Internet to access data related to weather and climate
* interpreting weather maps
* constructing and interpreting climate graphs
* applying these skills to the study of hydrological hazards.

**Geographical understanding and context**

Students should not be taught geographical skills as discrete entities. They are best developed within the study of the relevant curriculum content. When done this way, students more readily grasp their significance and utility, and demonstrate a higher level of mastery.

In Year 7 students study the causes, impacts of and responses to hydrological hazards. In doing so, they apply their knowledge and understanding of weather and climate, a key element of which is the ability to interpret weather maps and climate graphs.

Within the context of their study of hydrological hazards, it is important for students to appreciate that ‘weather’ and ‘climate’ do not mean the same thing.

Weather is the day-to-day condition of the atmosphere at a particular place. It includes all the daily changes in temperature, precipitation, wind, sunshine, humidity and atmospheric pressure.

Climate, on the other hand, is the long-term weather pattern for a place or region. The climate of a place depends on its latitude, the season, its aspect, how close it is to the sea, ocean currents and its height above sea level (elevation). While hydrological hazards are weather-related phenomenon, climate plays an important role in determining the spatial and temporal pattern.

In Australian Curriculum: Geography students are expected to:

* interpret and analyse geographical information and representations to identify spatial associations
* explain patterns, trends and relationships
* develop reasoned arguments, based on evidence, to support conclusions.

The ability to use climate graphs, weather maps and satellite images to examine the temporal and spatial patterns of a selected hazard in Australia and another region of the world is an example of such an expectation.

**Teaching approaches**

**1. Introduction**

Begin the activity by introducing your students to the Australian Bureau of Meteorology's website. Highlight its key features, including:

* weather (synoptic) maps
* weather forecasts, warnings and observations
* radar images showing the intensity of rainfall
* satellite images
* rain and temperature maps
* climate averages and long term climate data for communities across Australia.

**2. Using weather maps**

With the aid of the resource sheet [Weather maps](http://www.geogspace.edu.au/verve/_resources/2.3.2.2_1_weather_maps.pdf) (PDF, 993 KB) explain to students that a weather map (or synoptic chart) is a record of the weather conditions being experienced across part of the earth’s surface at a particular point in time. Also, that they typically use symbols to communicate information about air pressure, frontal activity, the distribution of rainfall and, in some cases, wind speed and direction. Explain to students that this information enables us to predict the weather we are likely to receive over the next two to three days.

The [Weather maps](http://www.geogspace.edu.au/verve/_resources/2.3.2.2_1_weather_maps.pdf) (PDF, 993 KB) resource sheet includes a series of activities designed to consolidate this knowledge and develop students' skills in weather map interpretation.

**3. Using climate graphs**

Use the second resource sheet [Climate graphs](http://www.geogspace.edu.au/verve/_resources/2.3.2.2_2_climate_graphs.pdf) (PDF, 560 KB) to introduce students to this important form of graphic representation. Note that these graphs show the average temperature and rainfall experienced at a particular place over the course of the year. Also explain to your students that the graphs typically consist of a red line graph showing average monthly temperature and a simple column graph showing average monthly rainfall figures. State that rainfall is, by convention, shown in blue.

It may also be useful, at this stage of the lesson, to explain to students that some climate graphs show both the average daily maximum and minimum temperatures for each month. They do this by using a red line graph for the average monthly maximum temperatures and a blue line for the average monthly minimum temperatures.

The [Climate graphs](http://www.geogspace.edu.au/verve/_resources/2.3.2.2_2_climate_graphs.pdf) (PDF, 560 KB) resource sheet includes as series of activities designed to consolidate this learning and develop your students' skills in climate graph construction and interpretation. A [Climate graph template](http://www.geogspace.edu.au/verve/_resources/2.3.2.2_3_climate_graph_temp_pdf.pdf) (PDF, 290 KB) is provided to facilitate the completion of these activities.

**What you need**

Access to the Internet

Interactive whiteboard or data projector.

[Weather maps](http://www.geogspace.edu.au/verve/_resources/2.3.2.2_1_weather_maps.pdf) (PDF, 993 KB)

[Climate graphs](http://www.geogspace.edu.au/verve/_resources/2.3.2.2_2_climate_graphs.pdf) (PDF, 560 KB)

[Climate graph template](http://www.geogspace.edu.au/verve/_resources/2.3.2.2_3_climate_graph_temp_pdf.pdf) (PDF, 290 KB)

Time allocation: 2–3 lessons.

**Resources**

**Websites:**

Australian Curriculum Assessment and Reporting Authority (ACARA). [Australian Curriculum: Geography](http://www.australiancurriculum.edu.au/Geography/Rationale). Retrieved May 2013, from: [www.australiancurriculum.edu.au/Geography/Rationale](http://www.australiancurriculum.edu.au/Geography/Rationale)

Australian Government. [Bureau of Meteorology](http://www.bom.gov.au). Retrieved January 2012, from: <http://www.bom.gov.au>.

BBC. [Weather](http://www.bbc.co.uk/weather/). Retrieved January 2012, from: <http://www.bbc.co.uk/weather/>.

The Weather Company [Weatherzone](http://www.weatherzone.com.au/world/). Retrieved January 2012, from: <http://www.weatherzone.com.au/world/>.

UK National Weather Service. [Met office](http://www.metoffice.gov.uk/). Retrieved January 2012, from: <http://www.metoffice.gov.uk/>.

US National Oceanic and Atmospheric Administration. [National Weather Service](http://www.weather.gov/). Retrieved January 2012, from: <http://www.weather.gov/>.

[World climate](http://www.climate-charts.com/). Retrieved January 2012, from: <http://www.climate-charts.com/>.

World Meteorological Organisation. [Weather, climate, water](http://www.wmo.int/pages/index_en.html). Retrieved January 2012, from: <http://www.wmo.int/pages/index_en.html>.

All other required resources are listed in the 'What you need' section above.

**Using Google Earth to investigate landscapes and landforms (Yr 8)**

**Curriculum overview**

The [Australian Curriculum: Geography](http://www.australiancurriculum.edu.au/Geography/Rationale) content descriptions addressed in the illustration are:

* The different types of landscapes and their distinctive landform features ([ACHGK048](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACHGK048))
* The geomorphic processes that produce landforms, including a case study of at least one landform ([ACHGK050](http://www.australiancurriculum.edu.au/Curriculum/ContentDescription/ACHGK050))

Source: Australian Curriculum, Assessment and Reporting Authority (ACARA).

**Learning goals**

The illustration-specific learning goals are:

* locating, observing and describing world famous landform features using Google Earth
* identifying the principal geomorphic processes that produced the landforms located.

**Geographical understanding and context**

This illustration focuses on the Year 8 content area of landforms and landscapes. In doing so, it uses a readily accessible spatial technology (Google Earth) to facilitate student observation of some of the world's most famous landform features.

The term 'landscape' is used to describe:

* visible features of our surroundings, including natural elements (such as mountains, valleys and coastlines) and water bodies (such as oceans, seas, lakes and rivers)
* living elements of land cover (including vegetation and wildlife) and the human elements (including different forms of land use, buildings and structures)
* changeable elements (such as weather conditions and the intensity and angle of light).

'Landform' is the term typically applied to the natural physical features of the earth's surface, for example:

* valleys
* plateaus
* mountains
* cliffs
* plains
* hills
* dunes
* glaciers.

For the most part, landscapes combine natural features with a 'cultural overlay' of human activity. In some instances this cultural overlay has accumulated over thousands of years. This overlay is often easily identified, as in the case of the human elements of managed and constructed environments. Sometimes, however, the cultural overlay is more difficult to distinguish. Geographers often seek to strip back this cultural overlay to study how places have changed over time.

Landscapes are, in short, the product of the interaction of people and place. They play an important role in creating what geographers refer to as 'sense of place' – the qualities that distinguish one place from another.

In this illustration we focus on locating, observing and describing some of the world's most famous landform features. Students are required to apply their knowledge and understanding of geomorphological processes to identify the principal agents responsible for the formation of the landform features.

**Teaching approaches**

To implement the activities featured in this illustration you will need access to computers loaded with [Google Earth](http://www.google.com/earth/index.html) software. If the computers don't have the software required you can download Google Earth from the Internet and install the program.

On launching the Google Earth software a screen will appear that is split into two parts. On the left side is the navigation panel. On the right side is the main image window.

Activities you can undertake with your students are described below.

**1. Introducing Google Earth**

If your students are not already familiar with Google Earth, introduce them to its basic functions. Google Earth's [Navigating on the Earth](http://support.google.com/earth/bin/answer.py?hl=en&answer=176674%20) provides a web-based introduction to the basic Google Earth functions.

**2. Locating landforms**

Working in small groups or individually, ask your students to locate each of the world famous landforms found at the coordinates listed on the [Global landform explorer](http://www.geogspace.edu.au/verve/_resources/2.3.2.3_1_global_landform_explorer_pdf.pdf) (PDF, 267 KB) worksheet using the Google Earth search facility. The easiest way to do this is to 'copy' the coordinates from the worksheet and 'paste' them into the search bar.

As each site is located students should:

* identify the country in which the landform is located
* provide a written description of each of the landforms
* identify the principal geomorphic, erosional or biotic process responsible for the landform feature located – wind, ice, running water, wave action, tectonic uplift, volcanism, coral-reef building.

**3. Extension activity**

Working in small groups or individually, ask your students to select a landform from those that have been located that they find interesting. Direct them to undertake research into the processes responsible for its formation. Students are to prepare an oral report, supported by a PowerPoint presentation, to communicate their findings to the class.

**What you need**

Computer loaded with Google Earth software.

Access to the Internet.

[Global landform explorer](http://www.geogspace.edu.au/verve/_resources/2.3.2.3_1_global_landform_explorer_pdf.pdf) (PDF, 267 KB) worksheet.

Time allocation: 2–3 lessons.

**Resources**

All resources required for this illustration are listed in the 'What you need' section above.