

Landscapes and their distinctive landform features

Lesson Map: <http://esriaustralia.com.au/education/SpatialActivity92>

Engage

What are landscapes? What types of landscapes are there?

- Click on the map URL above to open the StoryMap. The title page will be displayed. Scroll down to the section titled *Different types of landscapes* to begin.
- This StoryMap also has a navigation panel at the top of the page, which allows users to quickly jump to specific aspects of the Story Map.
- Read the information. Take notes if required and stop to discuss if necessary.
- ? In your own words, record a definition for **landscape**. *[Student answers will vary but will synthesise the information they have read in this first section.]*
- Scroll down to the section titled *Coastal landscapes*. Read the information and take notes if required. Stop to discuss as necessary.
- **Engage with the swipe map.** Drag the slider across the map to see how the northern beaches of the Gold Coast have changed over time.
- ? What geomorphic process is largely evident on the beach and the river mouth in 1955? *[Deposition. This is evident because large amounts of sand are present in the river's mouth, having formed sand bars or small islands. The beach is also almost entirely sand or sand dune. Both the river's current and the ocean's waves would have contributed to this deposition.]*
- Scroll down to the *Map Tour* section. The map shows four locations across Australia. Click on *Gulf Coast, NT* to begin. Read the information and take notes if required. Stop to discuss as necessary.
- ? As you read through each coastal landscape, complete the table below. The first coastal landscape has been completed for you.

Download student worksheet [here](#).

Time

70 – 80 minutes

Activity

Investigate Earth's landscapes and their distinctive landform features.

Learning Outcome

Students will be able to:

- Identify different landscapes and their unique characteristics
- Identify landforms that are characteristic of certain landscapes
- Understand basic geomorphic processes that work to shape landscapes and landforms

ACARA Curriculum Link

[Year 8 Geography: Landforms and landscapes](#)

[ACHGK048](#) | [ACHGK050](#) | [ACHGK051](#) | [ACHGS059](#)

Teacher Feedback:

To share your feedback on this, or any Spatial Activity, please contact education@esriaustralia.com.au

Coastal landscape	Geomorphic processes at work	Landforms or landscape characteristics
<i>Gulf Coast, NT</i>	<i>Depositional processes (Rivers transport sediment downstream via current; current slows at river's mouth and is deposited on coastline)</i>	<i>River deltas, mangroves</i>
<i>Noosa Heads, QLD</i>	<i>Eastern side: landforms protect the beach from damaging geomorphic forces; some erosion and deposition take place but not damaging.</i> <i>Northern side: Depositional processes (Noosa River deposits sediment at river's mouth and near the coastline)</i>	<i>Eastern side: headlands, rock formations, cliffs</i> <i>Northern side: river delta, sand bars</i>
<i>Kimberley Coast, WA</i>	<i>Reefs largely protect the coastline from erosional processes of waves; calm waters on the coastline</i>	<i>Cliff faces, reefs, rock formations</i>
<i>Twelve apostles, VIC</i>	<i>Strong erosional forces (powerful and destructive waves; strong winds) impose upon this coastal landscape, eating away at the limestone cliffs.</i>	<i>Caves, arches, rock stacks, cliffs</i>

→ Scroll down to progress through the coastal landscapes. Remember to complete the table above for each coastal landscape.

- Noosa Heads, QLD
- Kimberley Coast, WA
- Twelve Apostles, VIC

Explore

Riverine landscapes and desert landscapes

→ Scroll down to the major heading titled *Riverine landscapes*. Read the information and take notes if required. Stop to discuss as necessary.

→ Scroll down to the section titled *Murray-Darling Basin*. Read the information and take notes if required. Stop to discuss as necessary.

? As you read about the Murray-Darling Basin, complete the table below in order to

identify how this riverine area provides economically, environmentally and socially.

Economic	Environmental	Social
<ul style="list-style-type: none"> - agriculturally significant for Australian produce (40% of total produce) - 100% rice produce - 80% grape produce - 28% dairy produce - significant to tourism industry; \$8 billion each year 	<ul style="list-style-type: none"> - 16 internationally significant wetlands - provides habitats to 35 endangered species - habitats for 98 water bird species 	<ul style="list-style-type: none"> - More than 2.2 million people live within the Murray-Darling Basin - Cultural and spiritual significance for First Nations peoples

- Scroll down to the next section titled *River flooding*. Read the information. Take notes if required and stop to discuss as necessary.
- **Engage with the swipe map.** Drag the slider across the map to see how the Brisbane River, and the surrounding landscape, was impacted by floods in 2010-11.
- Scroll down to the major heading titled *Desert landscapes*. Read the information. Take notes if required and stop to discuss as necessary.
- Scroll down to the *Map Tour*. The map features four of Earth's deserts. Click on *Sahara Desert, North Africa* to begin. Read the information. Take notes if required and stop to discuss as necessary.
- ? Google search the following landforms and copy and paste an image of each into this worksheet. If you are working from a physical or printed copy, make a quick sketch of each:
 - Sand dune
 - Sand sea
 - Sand sheet
- Scroll down to make your way through the other desert landscapes. As you read the information, take notes if required. There are also multiple photos of each desert and you can click through these by pressing the right or left arrows that appear on either side of the image at the top of each section.
- ? Define the term **rain-shadow region**. [*A rain-shadow region is an area that receives little to no rainfall because it is sheltered from rain-bearing winds and clouds by a range of hills or mountains.*]

Explain

Karst landscapes and Mountain landscapes

- ➔ Scroll down to the major heading titled *Karst landscapes*. Read the information and take notes if required. Stop to discuss as necessary.
- ➔ Scroll down to the sections titled *Shilin Forest, China* and *Sinkholes*. Read the information and take notes if required. Stop to discuss as necessary.
- ➔ Scroll down to the major heading titled *Mountain landscapes*. Read the information and take notes if required. Stop to discuss as necessary.
- ➔ Scroll down to the *Slideshow* section that begins with the slide titled *The world's major mountain ranges*. Read the information and take notes if required. Stop to discuss as necessary.
- ? Describe the **prevailing** relationship between mountain ranges and tectonic plate boundaries. [*Mountain ranges are mostly prevalent along tectonic plate boundaries. Converging plate boundaries are responsible for the formation of mountains.*]
- ? Identify two mountain ranges that do not demonstrate this relationship. [*The Great Dividing Range in Australia and Ural mountain range in Russia are both set in the middle of a tectonic plate and do not demonstrate the prevailing relationship, unpacked in the question above.*]
- ? Locate and record the locations of the Himalayas, Rocky and Andes mountain ranges. [*Himalayas: immediately north of India, along a converging boundary. Rockies: close to the western coast of the North American continent, spanning across the United States and Canada. Andes: spanning the entire western coast of the South American continent, near a converging boundary.*]
- ➔ On the slideshow, click on the **right arrow** to progress through the different slides. Explore world elevation and learn about the Himalayas, Andes and Rockies. Read the information and take notes if required. Stop to discuss as necessary.

Extend

Closing task

- ➔ Scroll down to the major heading titled *Closing task*. This is an extension activity designed for schools with the free ArcGIS schools bundle.
- ? Locate three unique Australian landscapes using ArcGIS Online. Once you have located each landscape, briefly research it to identify what landforms are

characteristic of the location. In ArcGIS Online, create a 'Map note' layer for each landscape and write a short paragraph on how the landscape's landforms are created or shaped. *[Student locations may vary but students should select different types of landscapes - i.e., coastal, desert, mountain – in order to unpack different types of landforms. Some notable landscapes and landforms have been included below as guidance.]*

- Desert landscapes: Uluru, Kata-Tjuta, Wave rock
- Karst landscapes: Jenolan caves near Oberon, Borenore Karst Conservation Reserve near Orange, Cutta Cutta Caves near Katherine
- Mountain landscapes: Blue mountains, Glasshouse mountains, Snowy Mountains, Cradle Mountain, Great Dividing Ranges

Next Steps:

Request a free ArcGIS Online Account for your school:

Australian schools can request a free ArcGIS Online account as part of Esri Australia's Classroom GIS Initiative. A school subscription provides additional map layers, content, features and privacy.

Learn more about ArcGIS Online, and apply for your ArcGIS Online School subscription at <http://esriaustralia.com.au/education>