Geography (Stage 4) – sample program of learning

Landscapes and landforms – Geography 7–10 Syllabus (2024)

Contents

[Overview 2](#_Toc189548992)

[Planning considerations 2](#_Toc189548993)

[Suggested timeframe 3](#_Toc189548994)

[Outcomes 3](#_Toc189548995)

[Learning sequence 1 – dynamic landscapes and landforms 5](#_Toc189548996)

[Learning sequence 2 – human impacts on landscapes and landforms 25](#_Toc189548997)

[Learning sequence 3 – value and protection of landscapes and landforms 31](#_Toc189548998)

[Learning sequence 4 – the importance of landscapes and landforms as Country 63](#_Toc189548999)

[Learning sequence 5 – geomorphic hazards 77](#_Toc189549000)

[Appendix 1 – sample report scaffold 95](#_Toc189549001)

[Appendix 2 – sample report marking criteria [chosen study] 96](#_Toc189549002)

[Appendix 3 – peer assessment template 97](#_Toc189549003)

[Appendix 4 – marking criteria long response – Cultural significance of a chosen landscape or landform 98](#_Toc189549004)

[Overall program evaluation 100](#_Toc189549005)

[References 101](#_Toc189549006)

# Overview

This sample program of learning addresses Landscapes and landforms. The activities are designed to allow students to apply geographical concepts and use relevant geographical tools to engage in geographical inquiry to explain geographical processes relating to landscapes and landforms. Additional support for this program, including sample teaching resources, is available on [Planning, programming and assessing geography 7–10 (2024)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10). Throughout the program, reference has been made to the use of specific geographical skills and tools (videos and resources) found on the department’s webpage. These skills have varying levels of complexity and teachers should ensure they are using [explicit teaching](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching) strategies, such as check for understanding and gradual release of responsibility, to support student understanding and application when thinking and working geographically.

## Planning considerations

Consider the [Universal Design for Learning](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/about-universal-design-for-learning) principles of [engagement](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/about-universal-design-for-learning/strategies-and-resources-for-curriculum-planning-engagement), [representation](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/about-universal-design-for-learning/strategies-and-resources-for-curriculum-planning-representation) and [expression](https://education.nsw.gov.au/teaching-and-learning/curriculum/planning-programming-and-assessing-k-12/about-universal-design-for-learning/strategies-and-resources-for-curriculum-planning-expression) in conjunction with this sample program of learning when planning for teaching and learning.

Suggested [learning intentions](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/sharing-learning-intentions) and [success criteria](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/sharing-success-criteria) have been provided to demonstrate how they may be written. Learning intentions and success criteria are most effective when they are contextualised to meet the needs of students. Teachers may edit those provided and can write and use additional learning intentions and success criteria. Learning intentions and success criteria are both an [explicit teaching](https://aus01.safelinks.protection.outlook.com/?url=https%3A%2F%2Feducation.nsw.gov.au%2Fteaching-and-learning%2Fcurriculum%2Fexplicit-teaching&data=05%7C02%7CElizabeth.Clifford4%40det.nsw.edu.au%7Cfeb7b021e1d041b6ed9908dc89c13146%7C05a0e69a418a47c19c259387261bf991%7C0%7C0%7C638536710066219387%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C0%7C%7C%7C&sdata=RJgOnXpF4KuMXMGINqB66I77nmzgz%2FleA5014uJ18sk%3D&reserved=0) and formative assessment strategy.

Program registration and evaluation supports enhanced student outcomes. Evaluation is an important, ongoing part of the programming cycle and must be considered before program implementation. [Evaluating teaching and learning programs for HSIE 7–12](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/leading-hsie-k-12/leading-hsie-7-12/hsie-7-12-evaluating-teaching-and-learning-programs) provides advice to support this process. Ensure registrations and evaluations are in line with school procedures, department policies and NESA requirements.

Throughout the program, reference has been made regarding engaging with local landscapes and landforms. When selecting a culturally significant local landscape or landform, teachers should work in partnership with Elders, Community members, Cultural Knowledge Holders, or the local Aboriginal Education Consultative Group (AECG). Respect for Elders and the roles of men and women should be shown, especially when engaging with landscapes and landforms that have specific protocols.

The program consists of suggested digital resources and interactive maps. Where appropriate, teachers are reminded to turn closed captions on and to adjust the volume according to student sensory needs. Teachers will need to consider student accessibility needs when providing maps, graphs and stimulus material.

## Suggested timeframe

This sample program of learning is designed to be completed over a period of approximately 10 weeks in 60-minute lesson sequences. This duration can be adapted to suit the school context.

## Outcomes

A student:

* **GE4-DFC-01** locates the diverse features and describes the characteristics of a range of places and environments
* **GE4-PRI-01** explains the processes and interactions that change people, places and environments
* **GE4-PER-01** examines and describes the perspectives of people and organisations on a range of geographical issues
* **GE4-MAN-01** explains the management and protection of places and environments
* **GE4-APC-01** explains Aboriginal Peoples’ Custodianship, care and management of Country
* **GE4-TAP-01** selects and uses geographical tools to acquire and process geographical information
* **GE4-COM-01** uses concepts and terminology to communicate geographical information for a range of purposes, audiences and contexts

[Geography 7–10 Syllabus](https://curriculum.nsw.edu.au/learning-areas/hsie/geography-7-10-2024/overview/course) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2024.

# Learning sequence 1 – dynamic landscapes and landforms

The following learning sequence is designed to be completed in approximately 7 hours. It aligns to Term 1 Weeks 1–3 in the [Geography Stage 4 scope and sequence](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10).

Table 1 – Learning sequence 1 details

|  |  |  |
| --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Registration |
| **Outcome**  **GE4-DFC-01, GE4-PRI-01, GE4-PER-01, GE4-MAN-01, GE4-APC-01, GE4-TAP-01, GE4-COM-01**  **Content**  Dynamic landscapes and landforms:   * Location and features of a variety of landscapes and landforms * Geomorphic processes of tectonic activity, weathering, erosion and deposition that create and shape landscapes and landforms   **Geographical tools**  **Maps:**  Identify key features on a map using cartographic conventions  Identify physical and human features on a map  Identify spatial patterns using a range of maps  Use a range of large-scale and small-scale maps  Locate features on a map using latitude and longitude coordinates in degrees  Identify contour lines  **Fieldwork:**  Identify, collect and record geographical information  **Data and graphs:**  Construct and interpret data tables and graphs  Use a range of graphs and tables  Identify maximum, minimum, total, mean, range and rank order  **Spatial technologies:**  Interpret geographical information using a range of spatial technologies  Describe land use of an area using virtual or digital maps  Identify the latitude, longitude and altitude of locations using relevant spatial technologies  **Additional geographical representations:**  Identify different types of photographs from the location they were taken  Diagrams, infographics, mind maps, flowcharts, sketches such as field sketches  **Geographical concepts**   * Place * Space * Environment * Interconnection * Scale * Change | **Learning intention**  Students learn about the differences between landscapes and landforms, key geological processes, and the various types of mountains. Students will complete geographical skills related to photo sketches, field sketches, locating on maps, latitude and longitude and interpreting climate graphs.  **Success criteria**  **I can:**   * distinguish between landscapes and landforms by identifying and describing different examples * explain key processes that shape landscapes and landforms, such as tectonic activity, erosion and weathering * identify and describe different types of mountains, explaining how they are formed * create accurate photo and field sketches of various landscapes and landforms, labelling key features * locate specific landscapes and landforms using latitude and longitude coordinates * interpret climatic graphs to explain the impact of altitude on climate.   **Teaching and learning activity – Lesson 1**  **Student resource booklet activities 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6.**  Teacher defines landscapes and landforms and clarifies characteristics and differences of both.  Students use [Google Earth](https://app.education.nsw.gov.au/digital-learning-selector/LearningTool/Card/620) and map of Australia [Miscellaneous templates](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/641) to record the location of major landscapes. For example, deserts, mountains and coastal plains.  Students use [Great Ocean Walk](https://www.greatoceanwalk.info/geology/), [Famous Volcanoes: List Of Volcanic Eruptions With Pictures & Facts](https://environment.org/famous-volcanoes-list-of-volcanic-eruptions-with-pictures-facts/) and further research to conduct a landform image scavenger hunt that illustrates dynamic landscapes around the world.  Students engage with [Geography: Landscapes and Landforms – Chapter 2 Landscape types (4:30)](https://www.abc.net.au/education/digibooks/geography-landscapes-and-landforms/102231488?vcOpensOnLoad=true&vcPageId=102641884) to inform responses to multiple-choice questions (Activity 1.1.4).  Students [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645) the following:   1. Describe the main features of a coastal landscape. 2. What is the difference between a stalactite and a stalagmite? 3. How do tectonic plates contribute to the formation of landscapes and landforms? 4. Why is a riverine landscape important for human settlement? 5. Explain how erosion can change the shape of a landscape over time.   [Connecting learning](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/connecting-learning) by activating prior knowledge: students use the capacity matrix for ‘Landscapes and landforms’ to identify their extent of information, knowledge, know-how and wisdom for each glossary term relevant to the focus area.  **Evidence of learning:** student resource booklet activities 1.1.1, 1.1.2, 1.1.3, 1.1.4, 1.1.5, 1.1.6.  **Activity 1.1.4 answers**: 1b, 2c, 3a, 4a, 5d  **Activity 1.1.5 answers**:  Q1: A coastal landscape includes landforms such as beaches and cliffs. These features are formed and shaped by the interaction of the ocean and the land.  Q2: A stalactite hangs from the ceiling of a cave, while a stalagmite rises from the floor. Both are formed by the dripping of mineral-rich water over time.  Q3: The movement and interaction of tectonic plates create various landforms such as mountains, valleys and volcanic features. These movements can cause earthquakes and volcanic eruptions, which shape the earth's surface.  Q4: A riverine landscape provides water for drinking, agriculture and transportation. The fertile land along rivers is ideal for farming, and rivers can also be used for trade and communication.  Q5: Erosion is the process by which wind, water and other natural forces wear away rocks and soil. Over time, this can change the shape of a landscape by creating valleys, canyons and other landforms.  **Note**: it is recommended teachers provide advice on the scope of program for the focus area and assessment at the beginning of a learning sequence. [Geography (Stage 4) – sample assessment task 1 notification – Landscapes and landforms](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10) accompanies this program. The assessment consists of multiple-choice geographical tools questions and short response content-based questions. They are to be provided in a pre- and post-teaching structure to evidence student learning across the program. Teachers can choose from multiple geographical tool quizzes that are provided on the [Pre and post assessments](https://app.powerbi.com/groups/me/reports/aa404755-6414-42f6-8eb3-2bbdbcd6f9bf/a27d0f14d76dfe736d0e?ctid=05a0e69a-418a-47c1-9c25-9387261bf991&experience=power-bi) page. A total of 30 marks are dedicated to the geographical tools section of the assessment. Teachers will need to choose 3 geographical tool quizzes that best align to the focus of the teaching program in their own context.  **Teaching and learning activity – Lesson 2**  **Student resource booklet activities 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.5, 1.2.6.**  **Note: teachers may consider using the photographs at** [Pre and post assessments](https://app.powerbi.com/groups/me/reports/aa404755-6414-42f6-8eb3-2bbdbcd6f9bf/a27d0f14d76dfe736d0e?ctid=05a0e69a-418a-47c1-9c25-9387261bf991&experience=power-bi) **to assess student prior knowledge of types of photographs used in geography prior to commencing the follow activities.**  [Checking for understanding](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding) exercises such as [Mini whiteboards](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/575?clearCache=1d1dfb01-c240-59ce-bc9-d33f716be53e) allow teachers to make informed decisions when moving between modelled, guided and independent practice. **Check students’ understanding of the difference between landscapes and landforms by answering the question ‘**Uluru is a landscape’, ‘yes’ or ‘no’?  **Note:** when students demonstrate that they do not understand the difference between landscapes and landforms revisit teaching the concept. Follow with a repeat check for understanding.  **Thinking and working geographically support material:** [Photo sketch (2:06)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/photo-sketch)**,** [Types of photos (3:21)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/types-of-photos)**,** [Geography 7–10 – guide to using photographs in geography](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10)**.**  Teach the fundamentals of constructing a photo sketch (Activity 1.2.2). **Students construct a photo sketch of a landscape or landform and respond to the following using their photo sketch:**   * **What type of landscape does your photo sketch illustrate?** * **Identify any landforms illustrated in your photo sketch.** * **Describe the landscape drawn in your photo sketch.** * **Describe any human aspects illustrated in your photo sketch.**   Students discuss and consider characteristics of their local environment and answer the following questions:   1. What type of landscapes do you see in and around your home or school? 2. Are there any distinguishing features that help identify the landscape in and around your home or school? 3. Are there any unique landforms you can identify in your local area?   Students select 3 Australian landscapes. For each landscape students:   * locate on a map of Australia [Miscellaneous templates](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/641) * develop 3 key summary points about each landscape.   Students select 3 landscapes located in Asia. For each landscape students:   * locate on a map of Asia [blackline map of Asia](https://worldmapblank.com/blank-map-of-asia/) * develop 3 key summary points about each landscape.   Students complete a 3-2-1 routine using [Exit tickets](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/543): 3 things they learnt in the lesson, 2 questions they now have about landscapes and landforms, 1 thing they think was important to learn.  **Evidence of learning:** student resource booklet activities 1.2.1, 1.2.2, 1.2.3, 1.2.4, 1.2.5, 1.2.6.  **Teaching and learning activity – Lesson 3**  **Student resource booklet activities 1.3.1, 1.3.2.**  **Teacher-led class discussion addressing questions raised in previous lesson 3-2-1 exit ticket routine.** [Check for understanding](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding#What2) **using ‘Yes’ and ‘No’ response card to images collected in the previous lessons. For example, ‘Yes’ landscape, ‘No’ that is a landform.**  **Watch** [Geography fieldwork and enquiry (30:07)](https://youtu.be/-Id1Xk1Hav8) **(from 0:00–3:54) and have students engage in a** [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645) **answering the following questions:**   1. Why are geographical questions or hypothesis considered useful when preparing for fieldwork? 2. How does the inclusion of fieldwork, data and evidence strengthen your findings? 3. Construct a question or hypothesis for your local neighbourhood.   **Thinking and working geographically support material:** [Conducting a field sketch (4:50)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/conducting-a-field-sketch)**,** [Field sketches – Geography 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/geography-7-10-field-sketches)**.**  **Note:** access [Excursions and variations of routine](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/excursions) along with the school excursion policy when delivering an excursion.  **Students construct a field sketch illustrating a landscape or landform in the local environment (Activity 1.3.2) and answer the following questions:**   1. **Identify the type of landscape or landform your field sketch illustrates.** 2. **Describe the landscape drawn in your field sketch.** 3. **Identify and list any landforms illustrated in your field sketch.** 4. **Describe any human features illustrated in your field sketch.** 5. **How can you inquire about the landscape drawn in your field sketch? Who would know if the landscape has any cultural or spiritual significance for local Aboriginal and Torres Strait Islander Peoples?**   Post-fieldwork questioning:   1. How is a field sketch different to a photograph? 2. What can you learn about the characteristics of (insert local landscape) that you couldn’t from a photograph? 3. What advantages are possible for drawing a field sketch as opposed to drawing a photo sketch? 4. How might the time difference between taking a photograph and creating a photo sketch impact on your study of a place? 5. Why might you use a hand-drawn field sketch instead of using digital tools? 6. How might field sketches assist in making predictions about the future of a field study site?   **Evidence of learning:** student resource booklet activities **1.3.1, 1.3.2.**  **Teaching and learning activity – Lesson 4**  **Student resource booklet activities: 1.4.1, 1.4.2, 1.4.3, 1.4.4, 1.4.5, 1.4.6, 1.4.7.**  [The lesson as episodes](https://education.nsw.gov.au/teaching-and-learning/professional-learning/teacher-quality-and-accreditation/strong-start-great-teachers/refining-practice/planning-a-lesson/the-lesson-as-episodes) – have students watch [Scrat causes the Continental Crack-Up Scene - ICE AGE 4 (2012) Movie Clip (4:54)](https://youtu.be/bKzQMnZRdU0?si=ZF_pd5vFav_ALrSX) to ‘hook’ student interest and activate prior knowledge. Use the video to define and discuss the term ‘geomorphic processes’. Students use the definition of geomorphic processes provided to discuss the terms: lithosphere, erosion, weathering and plate tectonics.  [Connecting learning](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/connecting-learning) – have students complete a [KWLH chart](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/562) for geomorphic processes that create landforms.  Students use [Landforms, Hey!: Crash Course Kids #17.1 (3:57)](https://youtu.be/FN6QX43QB4g?si=j3ThQP_RrE-FdlGX) to inform responses to the following:   * identify the geographical process that shape and change our landforms and landscapes * outline the 4 spheres that make up our Earth’s system * identify the geomorphic processes outlined.   Students use [Plate Tectonics](https://www.sciencefacts.net/plate-tectonics.html) to develop questions to exchange and respond to with peers in the class.  Students use [Plate Boundaries-Divergent-Convergent-Transform (2:52)](https://youtu.be/3ZpDjdFzQUM?si=bjLiZtLfuqO5AT8a) and further research to develop annotated sketches of convergent (continental to continental, continental to oceanic, oceanic to oceanic), divergent, and transformative plate boundaries.  Students engage with Geography: [Geography: Landscapes and Landforms – Chapter 1: Earth is moving (10:24)](https://www.abc.net.au/education/digibooks/geography-landscapes-and-landforms/102231488?vcOpensOnLoad=true&vcPageId=102641852) to inform responses to multiple-choice questions (Activity 1.4.7).  Students [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645) responses to the following:   1. Describe the relationship between tectonic plates and earthquakes. 2. What is the asthenosphere and why is it important for tectonic plate movement? 3. Explain how volcanic mountains can form at tectonic plate boundaries. 4. Why are there no active volcanoes on mainland Australia? 5. How do seismometers help scientists understand earthquakes?   **Evidence of learning:** student resource booklet activities 1.4.1, 1.4.2, 1.4.3, 1.4.4, 1.4.5, 1.4.6, 1.4.7.  **Activity 1.4.7 answers – multiple choice**: 1b, 2b, 3a, 4b, 5b  **Think-Pair-Share**  Q1. Tectonic plates are large pieces of the Earth's lithosphere that move and interact at their boundaries. Earthquakes occur when these plates push into, pull apart from, or slide past each other, causing a sudden release of energy that shakes the ground.  Q2. The asthenosphere is a layer of partially melted rock below the lithosphere. It is important because it allows the rigid tectonic plates to move on top of it, facilitating the processes that cause earthquakes, volcanic activity and the formation of mountains.  Q3. Volcanic mountains can form at tectonic plate boundaries where plates move apart or one plate slides under another. When plates move apart, magma from the mantle rises to fill the gap, cools, and forms new crust, creating volcanic mountains. When one plate slides under another, it can melt and create magma that rises to the surface, forming volcanoes.  Q4. There are no active volcanoes on mainland Australia because it is located in the middle of the Indo-Australian tectonic plate, far from the boundaries where most volcanic activity occurs. Volcanic activity is more common at plate boundaries where plates interact.  Q5. Seismometers detect and record the vibrations caused by earthquakes. The data collected by seismometers helps scientists determine the location, magnitude and characteristics of an earthquake, enabling them to study the Earth's movements and assess potential hazards.  Students reflect back to the Ice Age Scrat video and engage with the [Ancient Earth globe](https://dinosaurpictures.org/ancient-earth#240) interactive timeline.  **Teaching and learning activity – Lesson 5**  **Student resource booklet activities: 1.5.1, 1.5.2, 1.5.3, 1.5.4, 1.5.5.**  Students return to the capacity matrix (Activity 1.1.6) and highlight any concepts covered in the previous lesson. Activate prior knowledge using opening questions. Students respond to ‘Yes’ and ‘No’ questions about the rock cycle, sedimentary, metamorphic and igneous rock types. Provide samples and images where available.  Students review [Gillespie Museum Short Takes - The Rock Cycle (2020) (6:09)](https://youtu.be/_JzrkOk4oHI?si=u_MVQj1myNrlEIka) and the diagram [The Rock Cycle](https://www.stetson.edu/other/gillespie-museum/media/GM%20Rock%20Cycle%20diagram.jpg) to respond to the following:   * Identify the 3 main forms rocks take in our environment. * Explain why the change in rock formation is called the rock cycle. * Where are you most likely to find sedimentary rocks? * Where are you most likely to find metamorphic rocks? * Where are you most likely to find igneous rocks? * Explain why the rock cycle is relevant to our study of geography.   Students watch [Difference between Weathering and Erosion (4:44)](https://youtu.be/qGw1yB10lX0?si=bYVz2Z97QGh4vxjB) and write definitions for weathering, erosion and deposition.  Students complete a [Frayer diagram](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/553) for the concepts erosion, weathering, deposition and transportation. They then engage in a quadrant discussion identifying which concepts they are most familiar with.  **Differentiation:** using the quadrant discussion (Activity 1.5.4) teachers can identify any concepts the class is finding more challenging or recognise any outliers for further adjustment.  **Note:** the following fieldwork is optional. Teachers choosing to conduct this fieldwork will need to adjust timing in the sequence to accommodate the 60-minute lesson. Access [Excursions and variations of routine](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/excursions) along with the school policy when planning and delivering an excursion.  Students:   * record field observations of examples of weathering, erosion and deposition by conducting a field sketch, making observations and taking field photographs * reflect on observations made in the field and answer the following question ‘How do fieldwork activities, such as field sketches, observation, photos and surveys, help us understand a landscape?’   **Differentiation:** where fieldwork is inaccessible for students, teachers may have students engage with [River Erosion and Deposition (21:27)](https://youtu.be/3YdEkegvJCQ?si=ptOYIinEaL6xSo6o).  **Thinking and working geographically support material:** [Geography 7–10 – thinking and working geographically – fieldwork](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10), [Excursions and variations of routine](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/excursions) , [Geographical inquiry (2:59)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/geographical-inquiry), [Geography 7–10 – field sketches](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/geography-7-10-field-sketches), [Conducting a field sketch (4:50)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/conducting-a-field-sketch).  **Evidence of learning:** student resource booklet activities 1.5.1, 1.5.2, 1.5.3, 1.5.4, 1.5.5.  **Teaching and learning activity – Lesson 6**  **Student resource booklet activities: 1.6.1, 1.6.2, 1.6.3, 1.6.4, 1.6.5.**  Students revisit their capacity matrix and highlight any new learning of concepts covered in the previous lesson.  Students engage with [Geography: Landscapes and Landforms – Chapter 7: Mountain landscapes (8:25)](https://www.abc.net.au/education/digibooks/geography-landscapes-and-landforms/102231488?vcOpensOnLoad=true&vcPageId=102641922) to inform responses to multiple-choice questions (Activity 1.6.2).  Students [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645) responses to the following questions:   1. Describe the key characteristics that differentiate mountains from hills. 2. Explain how fold mountains are formed. 3. How do tectonic plate movements contribute to the formation of volcanic mountains? 4. Compare and contrast the formation processes of block mountains and fold mountains. 5. Discuss the impact of weathering and erosion on the Great Dividing Range.   Students research and illustrate how mountains are formed, appear and exist around the world. Students illustrate as an annotated collage.  **Note:** the Piz Cengalo landslide event can be used as a case study to highlight the dynamic nature of mountains. It is important to note that this section of the learning sequence addresses the loss of life at Piz Cengalo. Follow school protocol and [Controversial issues in schools](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/controversial-issues) proceduresregarding the teaching of controversial and sensitive content.  Teachers may consider conducting the [pre-test Latitude and longitude assessments](https://app.powerbi.com/groups/me/reports/aa404755-6414-42f6-8eb3-2bbdbcd6f9bf/a27d0f14d76dfe736d0e?ctid=05a0e69a-418a-47c1-9c25-9387261bf991&experience=power-bi) at this stage in the program. The [Geography (Stage 4) –sample assessment task 1 notification – Landscapes and landforms](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10) identifies latitude and longitude pre-test as a suggested test to use in the 30-mark section of the assessment.  **Thinking and working geographically support material:** [Latitude and longitude (4:24)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/latitude-and-longitude), [Mapping latitude and longitude – Geography 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/geography-7-10-mapping-latitude-longitude).  Students investigate Piz Cengalo (Activities 1.6.4 and 1.6.5).  **Differentiation:** extend students by reviewing the article [The Bondo Landslide and the Future of Climate Disasters](https://www.outsideonline.com/outdoor-adventure/environment/bondo-switzerland-landslide-climate-change/) and conducting a Predict, Observe, Explain (POE) routine using [Predicting and inferring](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Browser) for the discussion questions.  Option a) POE the role of climate change in increasing the risk of landslides.  Option b) POE the broader implications of unstable mountain regions on local communities and infrastructure.  **Evidence of learning:** student resource booklet activities 1.6.1, 1.6.2, 1.6.3, 1.6.4, 1.6.5.  **Activity 1.6.2 answers**: 1a, 2c, 3c, 4d, 5b.  Q1. Mountains are landforms that rise at least 300 metres above the surrounding area.  Q2. Fold mountains form when tectonic plates push into each other, causing the Earth's crust to buckle and fold due to the compression of equally thick plates.  Q3. Volcanic mountains form when magma rises through the Earth's crust near plate boundaries and flows out onto the surface where it cools and hardens, often due to the subduction of an oceanic plate beneath a continental plate.  Q4. Fold mountains are formed by the compression and folding of tectonic plates, while block mountains are formed by the breaking and tilting of the Earth's crust due to tectonic plates pushing together and pulling apart, creating faults.  Q5. Weathering and erosion have significantly shaped the Great Dividing Range by breaking down rocks through extreme temperatures, ice, salt, plants and animals, and then transporting the particles through wind, water, ice and gravity to new locations, thereby smoothing out and reshaping the landscape over time.  **Activity 1.6.5 answers**: Q1. The landslide sent an estimated 4 million cubic metres of material towards the village of Bondo.  Q2. The automated warning system (introduced in 2012) registered movement of the Piz Cengalo mountain, alerting emergency services and automatically closed off roads in the village, which helped prevent further loss of life.  Q3. The main factors were geological structure of the mountain and water build up in its fractures. Over thousands of years, water accumulated beneath the top layer of rock, gradually pushing it out. This process caused the mountain to slowly react, moving at about 10 cm per year and eventually led to the landslide event.  Q4. Radar and infrared technology have been effective in identifying movement and instability in mountain regions like Piz Cengalo. However, accurate predictions remain challenging due to the complex and slow nature of the geological processes involved.  **Teaching and learning activity – Lesson 7**  **Student resource booklet activities: 1.7.1, 1.7.2.**  [Checking for understanding](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding#What2) – students respond to ‘yes’ and ‘no’ questions about the world’s continents, the world’s hemispheres, latitude and longitude, and mapping conventions (BOLTSS).  **Note:** when students demonstrate that they do not understand the continent, hemispheres, basics of latitude and longitude, and BOLTSS, teachers revisit teaching where relevant. Follow with a repeat check for understanding.  **Thinking and working geographically support material:** [BOLTSS and scale (4:06)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/boltss-and-scale)**,** [Latitude and longitude (4:24)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/latitude-and-longitude), [Mapping latitude and longitude – Geography 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/geography-7-10-mapping-latitude-longitude), [Climatic graphs (2:14)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/climatic-graphs-video), [Geography 7–10 – climate graphs](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10).  **Students locate and label world continents on a world map** [Miscellaneous templates](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/641)**.** Students use an atlas or [Google Earth](https://www.google.com.au/earth/) to locate and label on the map at least one mountain range per continent.  Students identify in which hemisphere the mountain range is located. Students identify the highest mountain (peak) for each mountain range marked on their map and use appropriate mapping conventions (BOLTSS) for the height (black triangle, name of mountain, height in metres).  Students use an atlas or [Google Earth](https://www.google.com.au/earth/) (2D map view) to locate and label the latitude and longitude for each mountain peak on their world map.  Teacher uses annotated climate graph to familiarise students with characteristics of climatic graphs.  **Differentiation:** extend students by using climatic data to construct and evaluate climatic graphs (Activity 1.7.2).  **Evidence of learning:** student resource booklet activities 1.7.1, 1.7.2. |  |

# Learning sequence 2 – human impacts on landscapes and landforms

The following learning sequence is designed to be completed in approximately 3 hours. It aligns to Term 1 Week 4 in the [Geography Stage 4 scope and sequence](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10).

Table 2 – Learning sequence 2 details

|  |  |  |
| --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Registration |
| **Outcome**  **GE4-DFC-01, GE4-PRI-01, GE4-PER-01, GE4-MAN-01, GE4-APC-01, GE4-TAP-01, GE4-COM-01**  **Content:**  Dynamic landscapes and landforms   * Human impacts that modify landscapes and landforms   **Geographical tools**  **Data and graphs:**  Construct and interpret data tables and graphs  Interpret sector graphs  **Additional geographical representations:**  Identify different types of photographs from the location they were taken  Diagrams, infographics, mind maps, flowcharts, sketches such as field sketches  **Geographical concepts**   * Space * Environment * Interconnection * Scale * Change | **Learning intention**  Students develop an understanding of the ways humans utilise and impact landscapes and landforms.  **Success criteria**  **I can:**   * identify and describe the ways humans use and change landscapes * construct and interpret pie charts.   **Teaching and learning activity – Lesson 1**  **Student resource booklet activities: 2.1.1, 2.1.2.**  [Checking for understanding](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding#What2) – students respond to ‘yes’ and ‘no’ questions about land degradation, erosion and the importance of soil.  **Note:** when students demonstrate that they do not understand the concept of land degradation, definition of erosion or importance of soil, teachers revisit teaching where relevant. Follow with a repeat check for understanding.  Teachers will need to allocate students to groups in the following activity.  The resource [The Value of Soil (4:45)](https://youtu.be/fH0wZSO705E?si=-R2ocHV1Y4EABzGI) includes topics that may be considered controversial or sensitive. Teachers are to respect the diverse views and experiences of all students and approach discussions in a manner that is impartial, free from harassment and discrimination, supportive of students’ wellbeing needs and aligned with the department’s [Code of ethics and conduct](https://education.nsw.gov.au/policy-library/policies/pd-2004-0020-01), [Anti-racism procedures](https://education.nsw.gov.au/policy-library/policies/pd-2005-0235-01), [Controversial issues in schools](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/controversial-issues) procedures, and [values in NSW public schools](https://education.nsw.gov.au/policy-library/policies/pd-2005-0131). Teachers should facilitate rational discourse and objective study while tailoring the content to meet the unique needs of their students. Where possible, teachers should consult with the school’s wellbeing team before using contexts that may be sensitive for some students.  **Activate prior knowledge – students work in groups to contribute to a class brainstorm:**   * **examples of ways people utilise and change landscapes** * **the impact of human activities on the landscape.**   **Students use** [The Value of Soil (4:45)](https://youtu.be/fH0wZSO705E?si=-R2ocHV1Y4EABzGI) **to add further learning to class brainstorm.**  **Thinking and working geographically support material:** [Drawing Pie Charts (6:48)](https://youtu.be/p_nPxTRuLxo?si=Af5hkIxRl2JpM_W2)**,** [Common graphs (2:58)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/common-graphs)**.**  Teacher identifies key features of pie charts. **Students use data provided to construct a pie chart and answer the following questions:**   1. **Identify the most prominent land use in Australia.** 2. **What percentage of land use is dedicated to conservation in Australia?** 3. **Why is it important to know the percentages associated with land use?** 4. **Explain how knowing the different percentages of land use in Australia inform our understanding of causes of land degradation.**   **Evidence of learning:** student resource booklet activities 2.1.1, 2.1.2.  **Teaching and learning activity – Lesson 2**  **Student resource booklet activities: 2.2.1, 2.2.2.**  Revisit [Checking for understanding](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding#What2) – students respond to ‘yes’ and ‘no’ questions about land degradation, erosion and the importance of soil.  **Note:** when students demonstrate that they do not understand the continent, hemispheres, basics of latitude and longitude and BOLTSS, teachers revisit teaching where relevant. Follow with a repeat check for understanding.  **Students choose:**   * Option 1 Create an infographic that illustrates human impacts on the landscape. * Option 2 Conduct an investigative case study ‘Gully erosion in Northern Queensland’.   Students present infographic or case study in a class Gallery walk ([Gallery walks](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/555)) and respond to the following:   * identify ways Australia’s landscape has been degraded and impacted by humans * identify ways people have mitigated or managed land degradation in Australia * construct a well-reasoned paragraph on the cause and effect of land degradation common in Australia.   **Evidence of learning:** student resource booklet activities 2.2.1, 2.2.2.  **Teaching and learning activity – Lesson 3**  **Student resource booklet activities: 2.3.1, 2.3.2, 2.3.3, 2.3.4.**  [Activate prior knowledge](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/562) **– students complete** [KWLH chart](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/562) **for landslides.**  **Students engage in a** [backchannel discussion](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/574) **based on landslides, responding to the following:**   1. What do you find most surprising about landslides? 2. Identify some human activities that can trigger landslides. How do these activities contribute to the problem? 3. Which prevention strategy do you think is most effective and why? Can you think of any other ways to prevent landslides that we have not discussed? 4. You will be assigned a recent landslide event. Share the recent landslide event and describe one prevention measure used or proposed. 5. What is one new thing you learned today about landslides or their prevention? Can we predict landslides to save lives?   Suggested resources:   * [What Causes Landslides (3:13)](https://youtu.be/MoWj6xttRKY) * [Causes, Effects and Types of Landslides.](https://eartheclipse.com/environment/natural-disaster/causes-effects-and-types-of-landslides.html) * The Conversation – [What causes landslides? Can we predict them to save lives?](https://theconversation.com/what-causes-landslides-can-we-predict-them-to-save-lives-230968?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20May%2029%202024%20-%202983530363&utm_content=Latest%20from%20The%20Conversation%20for%20May%2029%202024%20-%202983530363+CID_002398a4b8b49a6e7d05ddbaac7697d4&utm_source=campaign_monitor&utm_term=explains%20Pierre%20Rognon) * The Conversation – [Replanting trees can help prevent devastating landslides like the one in PNG – but it’s not a silver bullet](https://theconversation.com/replanting-trees-can-help-prevent-devastating-landslides-like-the-one-in-png-but-its-not-a-silver-bullet-231055?utm_medium=email&utm_campaign=Latest%20from%20The%20Conversation%20for%20May%2029%202024%20-%202983530363&utm_content=Latest%20from%20The%20Conversation%20for%20May%2029%202024%20-%202983530363+CID_002398a4b8b49a6e7d05ddbaac7697d4&utm_source=campaign_monitor&utm_term=Replanting%20trees%20can%20help%20prevent%20devastating%20landslides%20like%20the%20one%20in%20PNG%20%20but%20its%20not%20a%20silver%20bullet)   Students return to the capacity matrix and highlight any new learning about the concepts covered in the previous lesson.  **Students return to the KWLH chart on landslides and add any further learning and understanding.**  **Evidence of learning:** student resource booklet activities **2.3.1, 2.3.2, 2.3.3, 2.3.4.** |  |

# Learning sequence 3 – value and protection of landscapes and landforms

The following learning sequence is designed to be completed in approximately 6 hours. It aligns to Term 1 Weeks 5 and 6 in the [Geography Stage 4 scope and sequence](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10).

Table 3 – Learning sequence 3 details

|  |  |  |
| --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Registration |
| **Outcome**  **GE4-DFC-01, GE4-PRI-01, GE4-PER-01, GE4-MAN-01, GE4-APC-01, GE4-TAP-01, GE4-COM-01**  **Content**  The value and protection of landscapes and landforms:   * Environmental, economic, recreational and cultural value of landscapes and landforms * Protection of landscapes and landforms on various scales * Knowledges and Practices used by Aboriginal Peoples to manage and care for Country   **Geographical tools**  **Maps:**  Identify key features on a map using cartographic conventions  Identify physical and human features on a map  Identify spatial patterns using a range of maps  Use a range of large-scale and small-scale maps  Locate features on a map using latitude and longitude coordinates in degrees  Identify contour lines  Measure distances on a map using a linear scale  **Fieldwork:**  Identify, collect and record geographical information  Develop and conduct surveys and interviews  **Data and graphs:**  Construct and interpret data tables and graphs  Use a range of graphs and tables  Use quantitative data and graphs to identify patterns and trends  **Spatial technologies:**  Interpret geographical information using a range of spatial technologies  Describe land use of an area using virtual or digital maps  Identify the latitude, longitude and altitude of locations using relevant spatial technologies  Record and map features using GPS  Interpret relationships between geographical data using GIS  **Additional geographical representations:**  Identify different types of photographs from the location they were taken  Diagrams, infographics, mind maps, flowcharts, sketches such as field sketches  Interpret photographs and satellite images to determine how a place has changed over time  Document experiences of places and spaces using photographs  **Geographical concepts**   * Place * Space * Environment | **Learning intention**  Students develop an understanding of the concepts of environmental, economic, recreational and cultural value.  **Success criteria**  **I can:**   * engage in collaborative discussion using appropriate geographical terminology to identify the different values of landscapes * interpret a local topographic map to identify areas of geographical value within their local area * identify different landform features using cross-section and contour line diagrams.   **Teaching and learning activity – Lesson 1**  **Student resource booklet activities: 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5.**  Students review the National Geographic [Landslide](https://education.nationalgeographic.org/resource/landslide/) images illustrating landscapes and landforms to inform their response to the following discussion questions:   1. What things do you notice about these landscapes? 2. How might these landscapes be valuable or important?   Assign students to work in groups with one of the following categories allocated to each group: environmental, economic, recreational and cultural. Students work in groups to review an image of a landscape and contribute to a brainstorm ‘Ways the landscape is valued [insert category].’  The class combines the brainstorm as a class summary and discusses the different ways we value landscapes.  Students identify a landscape or landform they value and identify what values – environmental, economic, recreational and cultural – can be applied to their chosen landscape or landform.  **Thinking and working geographically support material:** [BOLTSS and scale (4:06)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/boltss-and-scale), [Topographic maps (3:55)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/topographic-maps), [Geography 7–10 – guide to teaching mapping – scale](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10).  **Note:** teachers may like to conduct pre-test [Pre and post assessments](https://app.powerbi.com/groups/me/reports/aa404755-6414-42f6-8eb3-2bbdbcd6f9bf/a27d0f14d76dfe736d0e?ctid=05a0e69a-418a-47c1-9c25-9387261bf991&experience=power-bi) on mapping tools – topographic maps and mapping tools – BOLTSS at this point in the program. The [Geography (Stage 4) – sample assessment task 1 notification – Landscapes and landforms](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10) identifies topographic maps pre-test as a suggested test to use in the 30-mark section of the assessment.  Use [BOLTSS and scale (4:06)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/boltss-and-scale), [Topographic maps (3:55)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/topographic-maps) and activity 3.1.3 to familiarise students with mapping conventions and key features of topographic maps.  Students construct one to 2 paragraphs describing the key features of a topographic map.  Students use a topographic map to determine contour intervals (Activity 3.1.4.).  Students complete an [exit ticket](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/543) answering the following questions:   1. What are 4 key ways we value landscapes and landforms? 2. What are some key features on a topographic map? 3. What does a contour line on a topographic map show you? 4. What is a contour interval?   **Evidence of learning:** student resource booklet activities 3.1.1, 3.1.2, 3.1.3, 3.1.4, 3.1.5.  **Activity 3.1.4 answers**: Diagram A: 10 metres. Diagram B: 100 metres. Diagram C: 20 metres. Diagram D: 10 metres.  **Teaching and learning activity – Lesson 2**  Student resource booklet activities: 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5.  Revisit student [exit tickets](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/543) from the previous lesson. [Check for understanding](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding#What2) of environmental, economic, recreational and cultural value of landscapes and landforms using choral responses like ‘We value Uluru for its (student choral response) value’.  **Note:** when students demonstrate that they do not understand the different ways we value landscapes and landforms revisit teaching. Follow with a repeat check for understanding.  Students use the stimulus and further research to complete a table summarising the value of Uluru under categories environmental, economic, recreational and cultural.  Suggested resources:   * [Welcome from Anangu, Northern Territory (2:16)](https://youtu.be/VZNYcYJt1gA?si=euzn6_8QxUVBUNE3) * [Uluru Google Maps](https://www.google.com/maps/place/Uluru/@-25.3456375,131.0268461,15z/data=!3m1!4b1!4m6!3m5!1s0x2b236c2b6d625223:0x43a8cd4d9bc55f21!8m2!3d-25.3444277!4d131.0368822!16zL20vMF81eGM?entry=ttu&g_ep=EgoyMDI0MTAyOS4wIKXMDSoASAFQAw%3D%3D) * [The significance of Uluru to Australian Indigenous Culture](https://ulurutoursaustralia.com.au/blog/the-significance-of-uluru-to-australian-indigenous-culture/) * [Conservation](https://parksaustralia.gov.au/uluru/discover/nature/conservation/) * [World Heritage Places - Uluru-Kata Tjuta National Park](https://www.dcceew.gov.au/parks-heritage/heritage/places/world/uluru)   Students revisit their capacity matrix and identify current understanding of environmental, economic, recreational and cultural value.  **Thinking and working geographically support material:** [Geography 7–10 – guide to teaching mapping – cross-sections](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10)**,** [Cross-sections and transects (2:53)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/cross-sections-and-transects)**, and** [Topographic maps (3:55)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/topographic-maps)**.**  [Checking for understanding](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding#What2) – students answer ‘yes’ and ‘no’ questions about topographic maps:   * Topographic maps show height of land above sea level (yes) * Contour lines join places of equal height on a topographic map (yes) * Contour interval is the height difference between 2 contour lines (yes) * Contour maps don’t show us the highest points on a map (no).   **Note:** when students demonstrate that they do not understand the basic features of topographic maps, revisit teaching. Follow with a repeat check for understanding.  Students review and discuss the key characteristics of topographic cross-sections.  Students construct a topographic cross-section of Uluru.  Conduct a traffic light reflection with the students to check their understanding of the ways landscapes are valued and key characteristics of topographic cross-sections.   1. How confident are you in explaining how different landscapes and landforms are valued? 2. How confident are you in explaining to a peer the value of Uluru? 3. How confident are you in finding contour lines on topographic maps? 4. How confident are you in drawing a cross-section?   **Evidence of learning:** student resource booklet activities 3.2.1, 3.2.2, 3.2.3, 3.2.4, 3.2.5.  **Teaching and learning activity – Lesson 3**  **Note**: teachers may consider a range of options for addressing local landscapes we value. When considering the local landscape to study it may be useful to identify and connect with the school’s local AECG. The following activities are a series of local landscape inquiry options. Teachers do not need to complete every option provided. A variety of options have been suggested to accommodate different school contexts. Teachers may like to connect with their local Environmental Education Centre (EEC) to plan for and deliver a local fieldwork experience or access [Geography 7–10 – thinking and working geographically – Fieldwork](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10) for teaching advice. Teachers will need to access [Excursions and variations of routine](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/excursions) when planning for an excursion.  **Thinking and working geographically support material:** [How to interpret a satellite image: five tips and strategies](https://earthobservatory.nasa.gov/features/ColorImage#:~:text=Geology%20shapes%20the%20landscape%20in%20ways%20that%20are,by%20shadows.%20Mountains%20look%20like%20wrinkles%20or%20bumps.) (NASA Earth Observatory) provides key tips and examples to support student understanding of the interpretation of satellite imagery. Alternatively, [Seven cues for imagery readout](https://storymaps.arcgis.com/stories/3b7b9ddd285f423fbbe1cdc60ef804c8#:~:text=in%20image%20interpretation.-,Seven%20cues%20for%20imagery%20readout,-In%20your%20day) is an extensive resource that incorporates a range of activities to showcase aspects of interpretation.  [Geography 7–10 – thinking and working geographically – Fieldwork](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10), [Excursions and variations of routine](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/excursions), [Geographical inquiry (2:59)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/geographical-inquiry), [Field sketches – Geography 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/geography-7-10-field-sketches), [Conducting a field sketch (4:50)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/conducting-a-field-sketch).  **Option A – excursion to a local landscape of environmental value**  Students record and observe the features in the local landscape that are of environmental value.  Students conduct a biodiversity survey to assess the variety of different species in different habitats across the landscape:  Students conduct transect walks to record plant and animal species:   * use quadrats to sample vegetation * conduct a canopy survey * observe and document bird and insect species using binoculars and field guides.   Students conduct a wildlife mapping exercise to identify and map habitats of local wildlife:   * identify and map areas used by different species, for example nesting sites, scat surveys and feeding areas * use land use maps or GPS devices to document findings.   Conduct a geological field study:   * study rock types * draw a soil profile * observe and identify geological features such as faults, folds and erosion patterns.   **Option B – excursion to a local landscape of economic value**  Students record and observe the features in the local landscape that are of economic value.  Students conduct a land-use survey:   * document current land uses, for example agriculture, residential, commercial and recreational * evaluate how each land use contributes to the local economy, for example income from agriculture or tourism revenue.   Students map local landscape for potential sites for renewable energy:   * map areas with high solar or wind energy potential * assess landscape suitability for renewable energy installations * wind power stations (high on mountains, large open fields, on the edge of water bodies) * solar power stations (undulating or flat topography, climate, solar irradiance) * hydro power stations (hilly location where dams can be build, large amounts of water) * evaluate environmental impacts of potential renewable energy projects * visit a local hydroelectricity station, wind or solar farm.   Students conduct an agricultural productivity study:   * fieldwork at a local dairy, poultry, beef or fish farm, or other appropriate agricultural enterprise.   Students conduct a real estate valuation:   * property surveys: document real estate prices in different landscape contexts such as urban, rural and coastal * assess how liveability and proximity to natural features such as parks and waterfronts affect property values.   **Option C – excursion to a local landscape of recreational value**  Students record and observe features in the local landscape that are of recreational value.  Students conduct recreational use mapping:   * use maps or GIS tools to mark areas used for hiking, cycling, bird watching, water sports * conduct field observations to note activity hotspots and patterns of use * use a tally to record user numbers, time of use, and types of activities.   **Note:** the following activity recommends teachers allow student access to members of the public. Teacher support in ensuring safe and ethical research practices is essential, with the wellbeing and safety of the student a key consideration. A research proposal could be developed to support this community engagement, with risk management strategies put in place to protect the student. Community consultation should be supervised by either the teacher or a parent or carer. Ensure the [Excursions and variations of routine](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/excursions) has been adhered to when engaging with external agencies or participants.  Visitor experience surveys:   * distribute questionnaires to visitors asking about their activities, satisfaction and spending. * conduct interviews with visitors to gather qualitative insights into their experiences * analyse responses to understand popular activities and areas needing improvement.   Wildlife observation and ecotourism:   * visit a wildlife encounter centre such as Dubbo Zoo, Taronga Zoo or a local national park * interview participants in ecotourism activities to understand their motivations and economic contributions * assess the suitability of different areas for wildlife viewing. Assess against * safety of observers * safety of wildlife * biodiversity.   Water-based recreation study:   * observe and record activities like fishing, swimming, boating and kayaking * test water quality parameters to ensure safe recreational use * tally the frequency and types of water-based recreational activities.   Landscape design and aesthetics study:   * document design elements such as trails, viewpoints and rest areas that enhance recreational use. For example, the rail train northern NSW * interview users about the design and aesthetics of recreational areas * identify areas where design enhancements could improve recreational value and make proposals for those changes.   **Option D – excursion to a local landscape of cultural value**  **Note:** the following activity recommends teachers allow student access to members of the public. Teacher support in ensuring safe and ethical research practices is essential, with the wellbeing and safety of the student a key consideration. A research proposal could be developed to support this community engagement, with risk management strategies put in place to protect the student. Community consultation should be supervised by either the teacher or a parent or carer. Ensure the [Excursions and variations of routine](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/excursions) has been adhered to when engaging with external agencies or participants.  Students record and observe features in the local landscape that are of cultural value.   * Capture photographs or videos that showcase cultural activities in the landscape. Analyse visual representations to understand cultural value of the chosen landscape. * Conduct a field sketch of the landscape. Include annotations to help identify natural features and human-made elements that connect the landscape and culture. * Conduct interviews with a local personality who can inform an inquiry of the cultural value of a chosen local landscape.   **Option E – incursion local landscape of cultural value**  **Note:** when selecting a culturally significant local landscape or landform, teachers should work in partnership with Elders, Community members, Cultural Knowledge Holders, and/or the local AECG. Respect for Elders and the roles of men and women should be shown, especially when engaging with landscapes and landforms that have specific protocols.The following suggested activities will require teacher access and adhere to [Excursions and variations of routine](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/excursions) procedures.  Engage with local experts to present on the cultural value of a local landscape or landform.  Students use the [Strategic planning and evaluation](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/659?clearCache=436b81a5-aa3e-e3f5-160e-865d48b84a50) tool POOCH to develop a plan of action for the school that promotes understanding of the cultural value of the local landscape or landform. The plan should aim to:   * use the guest speaker or speakers invited to the classroom to inform the group’s pitch * have each group contribute to the options and outcomes section of the template * decide collectively which option is best suited for the school. Work collectively to act on the recommendations in your school * invite the guest speakers to return and evaluate the success of your strategic plan and action.   **Option F – satellite imagery exercise**  Students use satellite imagery to identify land use patterns of a local landscape or landform. Instruct students to look for patterns, shapes and textures and the range of different colours to identify patterns related to:   * environmental land use * economic land use * recreational land use * cultural land use.   Students generate a screen clipping of the satellite image of a selected landscape or landform and annotate the land use patterns they have identified using an appropriate key.  **Evidence of learning:** data recorded in the field, incursion orsatellite imagery analysis.  **Teaching and learning activity – Lesson 4**  Student resource booklet activities: 3.4.1, 3.4.2, 3.4.3, 3.4.4, 3.4.5.  Students engage with [Geography: Landscapes and Landforms – Chapter 8 Mt Kosciuszko (6:12)](https://www.abc.net.au/education/digibooks/geography-landscapes-and-landforms/102231488?vcOpensOnLoad=true&vcPageId=102641926) to inform responses to multiple-choice questions.  Students [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645) responses to the following questions:   1. Describe the processes that have shaped the landscapes around Mt Kosciuszko. 2. What Cultural significance does the area around Mt Kosciuszko hold for the Ngarigo people? 3. How do freezing and thawing contribute to the weathering of rocks? 4. Why are the Australian Alps considered a significant tourist destination? 5. Explain the significance of the Ramsar Convention in relation to the wetlands around Blue Lake.   **Thinking and working geographically support material:** [Geography 7–10 – guide to teaching mapping – cross-sections](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10)**,** [Cross-sections and transects (2:53)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/cross-sections-and-transects)**,** [Topographic maps (3:55)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/topographic-maps)**,** [Latitude and longitude (4:24)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/latitude-and-longitude), [Mapping latitude and longitude – Geography 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/geography-7-10-mapping-latitude-longitude), [Climatic graphs (2:14)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/climatic-graphs-video), and [Geography 7–10 – climate graphs](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10).  Students use [Google Earth Mt Kosciuszko](https://earth.google.com/web/search/Mount+Kosciusko/@-36.45740275,148.26561634,2178.66772163a,3480.68615655d,35y,-12.01264876h,60t,0r/data=CiwiJgokCXquFZMTYkdAEcLYY-ZH6UZAGVItmJizuyRAIbj6JX9lrSFAQgIIAUICCABKDQj___________8BEAA), navigate to the 2D Map and identify the latitude and longitude for Mt Kosciuszko.  Students use the PEEL template (Activity 3.4.2 or [Writing scaffolds](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/625)) to write a paragraph that describes the location of Mt Kosciuszko using latitude and longitude.  Students use [360 Mount Kosciuszko Summit](https://www.360cities.net/image/summit-mount-kosciuszko-new-south-wales-australia) to observe and discuss physical features and characteristics of Mt Kosciuszko.  Students complete a summary of ways Mt Kosciuszko is valued.  Suggested resources:   * [National Geographic Mount Kosciuszko](https://education.nationalgeographic.org/resource/mount-kosciuszko/) * [Kosciuszko Heritage – Memorandum signed](https://www.kosciuszkoheritage.com/2016/07/09/memorandum-signed/#:~:text=The%20Monaro%20Ngarigo%20people%2C%20the%20traditional%20custodians%20of,with%20the%20National%20Parks%20and%20Wildlife%20Service%20%28NPWS%29.) * [NSW National Parks and Wildlife Service – Kosciuszko National Park](https://www.nationalparks.nsw.gov.au/visit-a-park/parks/kosciuszko-national-park) * [Indigenous custodians divided over the fate of wild horses in Kosciuszko National Park](https://www.abc.net.au/news/2021-10-31/draft-wild-horse-management-plan-feedback-closes-soon/100579214) * [Mount Kosciuszko and the push to give our highest peak an Indigenous dual name](https://www.abc.net.au/news/2019-06-15/inside-the-push-to-dual-name-mount-kosciuszko/11207722) * [Snowy Hydro](https://www.snowyhydro.com.au/)   Provide students with aprinted terrain map of Mt Kosciuszko (Activity 3.4.5).  Students complete a topographic cross-section of Mt Kosciuszko. [Using effective feedback](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/using-effective-feedback), students assess a peer’s Kosciuszko cross-section.  **Differentiation:** provide students with a template that includes the contour patterns for Mt Kosciuszko and graph to scaffold the more difficult steps in constructing a cross-section.  Extend students using the ‘Using spatial technologies’ section of Geography 7–10 – guide to teaching mapping – cross-sections at the conclusion of this sequence.  **Evidence of learning:** student resource booklet activities 3.4.1, 3.4.2, 3.4.3, 3.4.4, 3.4.5.  **Activity 3.4.1 answers – multiple choice**: 1b, Mt Kosciusko, 2d, volcanic eruptions, 3b, a bowl-shaped lake formed by glacial erosion, 4b, Ramsar Convention, 5b, it expands and takes up more space.  **Think-Pair-Share**  Q1. The landscapes around Mt Kosciuszko were shaped by processes such as uplift, folding, faulting and erosion. Additionally, glaciers played a significant role by scraping off rock and dirt, forming features like cirque lakes.  Q2. The area around Mt Kosciuszko is culturally and spiritually important to the Ngarigo people. It contains physical sites such as occupation sites, stone scatters, culturally marked trees, stone arrangements, and significant cultural landscapes that remain important.  Q3. Freezing and thawing contribute to weathering when water in cracks and holes of rocks repeatedly freezes and thaws. As water freezes, it expands, causing the rock to crack and weaken. This repeated expansion and contraction eventually causes the rock to crumble and weather.  Q4. The Australian Alps are significant as a tourist destination due to their natural beauty, national parks and reserves. They offer various recreational activities like skiing and hiking, attracting over 3 million visitors in 2018.  Q5. The Ramsar Convention is an international treaty for the conservation and sustainable use of wetlands. The wetlands around Blue Lake were listed under this convention in 1996, highlighting their international importance and the need for their protection.  **Teaching and learning activity – Lesson 5**  **Note**: the following lessons (5a–5d) can be utilised by the teacher in a variety of ways. There are 3 options detailed below.  Lesson 5a – valuable landscapes in Asia, Mt Fuji  Lesson 5b – valuable landscapes in Asia, Mt Everest  Lesson 5c – valuable landscapes in South America, Machu Picchu  Lesson 5d – valuable landscapes in Africa, Mt Kilimanjaro  **Option 1**  Select one lesson sequence from 5a – 5d to complete as a class.  Revisit the map of location and features of mountain landforms developed in Learning Sequence 1 – Lesson 7 and identify each of the mountains and ranges in lessons 5a – 5d.  **Option 2**  Complete lessons 5a – 5d as a [Jigsaw](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/546), and present your ideas and results to the class.  **Option 3**  Use the template from lessons 5a – 5d and apply this to a different mountain of interest. For example:   * Aoraki, Mt Ruapehu, Taranaki, or Te Mata Peak (New Zealand) * Mount Blanc, Mount Elbrus, Dykh-Tau, Ben Nevis, Piz Cengalo (Europe/Eurasia)   Additional lessons from 5a – 5d could be provided as homework or extension activities.  **Thinking and working geographically support material:** [Geography 7–10 – guide to teaching mapping cross-sections](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10)**,** [Cross-sections and transects (2:53)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/cross-sections-and-transects)**,** [Topographic maps (3:55)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/topographic-maps)**,** [Latitude and longitude (4:24)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/latitude-and-longitude), and [Mapping latitude and longitude – Geography 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/geography-7-10-mapping-latitude-longitude).  **Lesson 5a – valuable landscapes in Asia, Mt Fuji**  Check for student understanding using mini whiteboard responses addressing latitude and longitude and the 4 hemispheres:   * lines of latitude run east to west across the globe (yes) * equator is a line of longitude (no) * the North Pole has a latitude of 90° north (yes) * Australia is located in the northern hemisphere (no) * Australia is located in the eastern hemisphere (yes) * we use latitude and longitude to describe the exact location of a place on Earth (yes).   **Note:** when students demonstrate that they do not understand the basics of latitude and longitude and the 4 hemispheres, revisit teaching. Follow with a repeat check for understanding.  Conduct a class [concept mapping](https://schoolsnsw.sharepoint.com/:p:/s/DLS/Efi9ETWGLdNNuzkoard47U8BXfct0QlFINhkyrujbNl0SA?rtime=cwv_-HUh2Ug) exercise and discuss prior knowledge of Mt Fuji.  Students use [Google Earth: Mt Fuji](https://earth.google.com/web/search/mt+fuji/@35.360625,138.7273634,3772.04769706a,4381.21387038d,35y,287.99961957h,45t,0r/data=CnIaSBJCCiUweDYwMTk2MjlhNDJmZGM4OTk6MHhhNmExZmNjOTE2ZjNhNGRmGURN9PkorkFAIdbpm49GV2FAKgdtdCBmdWppGAIgASImCiQJN1yMS5sCNkARx-BAk_d7OsAZ4eYJiEYNVUAhkuE4P70IZsA), explore the map and identify 5 key facts about Mt Fuji and the continent on which Mt Fuji is located.  Students use [Google Earth: Mt Fuji](https://earth.google.com/web/search/mt+fuji/@35.360625,138.7273634,3772.04769706a,4381.21387038d,35y,287.99961957h,45t,0r/data=CnIaSBJCCiUweDYwMTk2MjlhNDJmZGM4OTk6MHhhNmExZmNjOTE2ZjNhNGRmGURN9PkorkFAIdbpm49GV2FAKgdtdCBmdWppGAIgASImCiQJN1yMS5sCNkARx-BAk_d7OsAZ4eYJiEYNVUAhkuE4P70IZsA), navigate to the 2D Map and identify the latitude and longitude for Mt Fuji.  Students use a [writing scaffold](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/625) such as PEEL to write a paragraph that describes the location of Mt Fuji using latitude and longitude.  **Note:** the [Top of Mount Fuji 360 video (2:39)](https://www.youtube.com/watch?v=lcGdGcGSTfQ) is a 360-degree video. Your class can view the video on desktop or with 360 goggles for full immersion in the film.  Students watch [Top of Mount Fuji 360 video (2:39)](https://www.youtube.com/watch?v=lcGdGcGSTfQ) and discuss what they observed.  Students work with a partner to complete a summative table outlining how Mt Fuji is valued.  Suggested resources:   * [Mt Fuji: More than a mountain](https://www.japan.travel/en/fuji-guide/mt-fuji-more-than-a-mountain/) * [Fujisan World Cultural Heritage Council](https://www.fujisan-3776.jp/en/value/index.html) * [Sacred Land Film Project](https://sacredland.org/mount-fuji-japan/)   **Note:** students will need to be provided with aprinted terrain map of Mt Fuji from [Google Maps](https://www.google.com/maps/place/Mount+Fuji/@35.3362595,138.6673628,12z/data=!4m6!3m5!1s0x6019629a42fdc899:0xa6a1fcc916f3a4df!8m2!3d35.3606255!4d138.7273634!16zL20vMGNrczA!5m1!1e4?authuser=0&entry=ttu&g_ep=EgoyMDI1MDEyMi4wIKXMDSoASAFQAw%3D%3D), graph paper and a ruler to complete a topographic cross-section of Mt Fuji.  Students use a printed terrain map of Mt Fuji, graph paper and a ruler to complete a topographic cross-section of Mt Fuji.  Students assess a peer’s Mt Fuji cross-section and provide feedback using a similar feedback template to the table provided in activity 3.4.5.  **Lesson 5b – valuable landscapes in Asia, Mt Everest**  Check for student understanding of latitude and longitude and the 4 hemispheres.  Conduct a class [concept mapping](https://schoolsnsw.sharepoint.com/:p:/s/DLS/Efi9ETWGLdNNuzkoard47U8BXfct0QlFINhkyrujbNl0SA?rtime=cwv_-HUh2Ug) exercise and discuss prior knowledge of Mt Everest.  Students use [Google Earth: Mt Everest](https://earth.google.com/web/search/mt+everest/@27.98812015,86.9249751,8729.53332286a,3891.8198043d,35y,248.07645259h,60t,0r/data=CngaShJECiQweDM5ZTg1NGEyMTViZDllYmQ6MHg1NzZkY2Y4MDZhYmJhYjIZ_4C9ePX8O0AhUQfDyjK7VUAqCm10IGV2ZXJlc3QYAiABIiYKJAnVfBasm7pBQBGtDoPs5qhBQBl_psm0kldhQCEjRsyZ_1JhQEICCAE6AwoBMEICCABKDQj___________8BEAA), explore the map and identify 5 key facts about Mt Everest and the continent on which Mt Everest is located.  Students use [Google Earth: Mt Everest](https://earth.google.com/web/search/mt+everest/@27.98812015,86.9249751,8729.53332286a,3891.8198043d,35y,248.07645259h,60t,0r/data=CngaShJECiQweDM5ZTg1NGEyMTViZDllYmQ6MHg1NzZkY2Y4MDZhYmJhYjIZ_4C9ePX8O0AhUQfDyjK7VUAqCm10IGV2ZXJlc3QYAiABIiYKJAnVfBasm7pBQBGtDoPs5qhBQBl_psm0kldhQCEjRsyZ_1JhQEICCAE6AwoBMEICCABKDQj___________8BEAA), navigate to the 2D Map and identify the latitude and longitude for Mt Everest.  Students use a [writing scaffold](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/625) such as PEEL to write a paragraph that describes the location of Mt Everest using latitude and longitude.  **Note:** [National Geographic’s Everest from above](https://www.nationalgeographic.com/magazine/graphics/see-what-the-summit-of-mount-everest-looks-like-in-360-degrees-feature) provides a 360-degree tour of the mountain. Your class can view the video on desktop or with 360 goggles for full immersion.  Students engage with [National Geographic’s Everest from above](https://www.nationalgeographic.com/magazine/graphics/see-what-the-summit-of-mount-everest-looks-like-in-360-degrees-feature) 360-degree experience and watch [Video - route to the summit of Mount Everest (1:38)](https://mount-everest3d.com/) and discuss what they observed.  Students work with a partner to complete a summative table outlining how Mt Everest is valued.  Suggested resources:   * [Expedition Everest: The Mission - 360 National Geographic (4:11)](https://youtu.be/KM6HWp_ik2c?si=76k97WxtGt91d8-X) * [Overcrowding at Mount Everest: How the world's highest mountain became a tourist attraction](https://www.smh.com.au/traveller/inspiration/overcrowding-at-mount-everest-how-the-worlds-highest-mountain-became-a-tourist-attraction-20190603-h1f0gn.html) * [Sagarmatha National Park](https://whc.unesco.org/en/list/120) * [Climate Change and Human Impacts Are Altering Mt Everest Faster and More Significantly Than Previously Known](https://news.nationalgeographic.org/climate-change-and-human-impacts-are-altering-mt-everest-faster-and-more-significantly-than-previously-known/)   **Note:** students will need to be provided with aprinted terrain map of Mt Everest from [Google Maps](https://www.google.com/maps/place/Mt+Everest/@27.9806347,86.8895681,13.25z/data=!4m6!3m5!1s0x39e854a215bd9ebd:0x576dcf806abbab2!8m2!3d27.9881206!4d86.9249751!16zL20vMGJsYmQ!5m1!1e4?authuser=0&entry=ttu&g_ep=EgoyMDI1MDEwOC4wIKXMDSoASAFQAw%3D%3D), graph paper and a ruler to complete a topographic cross-section of Mt Everest.  Students use a printed terrain map of Mt Everest, graph paper and a ruler to complete a topographic cross-section of Mt Everest.  Students assess a peer’s Mt Everest cross-section and provide feedback using a similar feedback template to the table provided in activity 3.4.5.  **Lesson 5c – valuable landscapes in South America, Machu Picchu**  Check for student understanding of latitude and longitude and the 4 hemispheres.  Conduct a class [concept mapping](https://schoolsnsw.sharepoint.com/:p:/s/DLS/Efi9ETWGLdNNuzkoard47U8BXfct0QlFINhkyrujbNl0SA?rtime=cwv_-HUh2Ug) exercise and discuss prior knowledge of Machu Picchu.  Students use [Google Earth: Machu Picchu](https://www.google.com/maps/search/Machu+Picchu/@-13.1741132,-72.5517867,15z/data=!3m1!4b1!5m1!1e4?authuser=0&entry=ttu&g_ep=EgoyMDI1MDEyMi4wIKXMDSoASAFQAw%3D%3D), explore the map and identify 5 key facts about Machu Picchu and the continent on which Machu Picchu is located.  Students use [Google Earth: Machu Picchu](https://earth.google.com/web/@-13.17420524,-72.54148699,2959.72022423a,4437.09959599d,35y,-133.13785154h,60t,0r/data=CgRCAggBOgMKATBCAggASg0I____________ARAA), navigate to the 2D Map and identify the latitude and longitude for Machu Picchu.  Students use a [writing scaffold](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/625) such as PEEL to write a paragraph that describes the location of Machu Picchu using latitude and longitude.  **Note:**[Machu Picchu 360](https://machupicchu360vr.com/#/) provides a 360-degree tour of the mountain. Your class can view the video on desktop or with 360 goggles for full immersion.  Students engage with the[Machu Picchu 360](https://machupicchu360vr.com/#/) experience and discuss what they observed.  Students work with a partner to complete a summative table outlining how Machu Picchu is valued.  Suggested resources:   * [Historic Sanctuary of Machu Picchu](https://whc.unesco.org/en/list/274) * [Machu Picchu: the First Carbon Neutral Wonder of the World](https://www.unwto.org/covid-19-oneplanet-responsible-recovery-initiatives/machu-picchu-world-s-first-carbon-neutral-wonder) * [Machu Picchu Flora and Fauna: 11 exotic animals and plants to see in the lost city of the Incas](https://inkaperutravel.com/machu-picchu-flora-and-fauna/)   **Note:** students will need to be provided with aprinted terrain map of Machu Picchu from [Google Maps](https://www.google.com/maps/search/Machu+Picchu/@-13.1741132,-72.5517867,15z/data=!3m1!4b1!5m1!1e4?authuser=0&entry=ttu&g_ep=EgoyMDI1MDEyMi4wIKXMDSoASAFQAw%3D%3D), graph paper, and a ruler to complete a topographic cross-section of Machu Picchu.  Students use a printed terrain map of Machu Picchu, graph paper and a ruler to complete a topographic cross-section of Machu Picchu.  Students assess a peer’s Machu Picchu cross-section and provide feedback using a similar feedback template to the table provided in activity 3.4.5.  **Lesson 5d – valuable landscapes in Africa, Mt Kilimanjaro**  Check for student understanding of latitude and longitude and the 4 hemispheres.  Conduct a class [concept mapping](https://schoolsnsw.sharepoint.com/:p:/s/DLS/Efi9ETWGLdNNuzkoard47U8BXfct0QlFINhkyrujbNl0SA?rtime=cwv_-HUh2Ug) exercise and discuss prior knowledge of Mt Kilimanjaro.  Students use [Google Earth: Mt Kilimanjaro](https://earth.google.com/web/search/Mt+Kilimanjaro/@-3.0674246,37.3556273,5826.67510436a,4587.98293369d,35y,0h,0t,0r/data=Cn0aTxJJCiUweDE4MzlmYzVhMzk2ZWE4MDU6MHg4ZTc0MWM0NzhlZWE2YzAxGXeKC_YVigjAIUqIAzKFrUJAKg5NdCBLaWxpbWFuamFybxgCIAEiJgokCdV8FqybukFAEa0Og-zmqEFAGX-mybSSV2FAISNGzJn_UmFAQgIIAToDCgEwQgIIAEoNCP___________wEQAA), explore the map and identify 5 key facts about Mt Kilimanjaro and the continent on which Mt Kilimanjaro is located.  Students use [Google Earth: Mt Kilimanjaro](https://earth.google.com/web/search/Mt+Kilimanjaro/@-3.0674246,37.3556273,5826.67510436a,4587.98293369d,35y,0h,0t,0r/data=Cn0aTxJJCiUweDE4MzlmYzVhMzk2ZWE4MDU6MHg4ZTc0MWM0NzhlZWE2YzAxGXeKC_YVigjAIUqIAzKFrUJAKg5NdCBLaWxpbWFuamFybxgCIAEiJgokCdV8FqybukFAEa0Og-zmqEFAGX-mybSSV2FAISNGzJn_UmFAQgIIAToDCgEwQgIIAEoNCP___________wEQAA), navigate to the 2D Map and identify the latitude and longitude for Mt Kilimanjaro.  Students use a [writing scaffold](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/625) such as PEEL to write a paragraph that describes the location of Mt Kilimanjaro using latitude and longitude.  Students engage with [Kilimanjaro 4K the best drone footage ever captured (3:05)](https://youtu.be/61hkC0wTzzo?si=dsXY1c6EoyTjEuhN) and discuss what they observed.  Students work with a partner to complete a summative table outlining how Mt Kilimanjaro is valued.  Suggested resources:   * [Mt Kilimanjaro - video by Tanzania National Park (1:41)](https://youtu.be/HNLpTiSnHRg?si=gOAh-MBu_FwWEsbY) * [Climbing Kilimanjaro](https://www.climbing-kilimanjaro.com/kilimanjaro-cultural-significance/) * [Kilimanjaro National Park](https://whc.unesco.org/en/list/403/) (UNESCO) * [National Geographic – Kilimanjaro](https://education.nationalgeographic.org/resource/kilimanjaro/)   **Note:** students will need to be provided with aprinted terrain map of Mt Kilimanjaro from [Google Maps](https://www.google.com/maps/place/Mt+Kilimanjaro/@-3.0674031,37.3453276,15z/data=!3m1!4b1!4m6!3m5!1s0x1839fc5a396ea805:0x8e741c478eea6c01!8m2!3d-3.0674247!4d37.3556273!16zL20vMDE1MTNi!5m1!1e4?authuser=0&entry=ttu&g_ep=EgoyMDI1MDEyMi4wIKXMDSoASAFQAw%3D%3D), graph paper and a ruler to complete a topographic cross-section of Mt Kilimanjaro.  Students use a printed terrain map of Mt Kilimanjaro, graph paper and a ruler to complete a topographic cross-section of Mt Kilimanjaro.  Students assess a peer’s Mt Kilimanjaro cross-section and provide feedback using a similar feedback template to the table provided in activity 3.4.5.  **Teaching and learning activity – Lesson 6**  Student resource booklet activities: 3.6.1, 3.6.2.  [Check for understanding](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding#What2) of the difference between cross-sections and transects. Show an image of a cross-section and elicit a choral response to ‘This is a …’. Show an image of a transect and elicit a choral response to ‘This is a …’.  **Note:** when students demonstrate that they do not understand the difference between cross-sections and transects revisit teaching. Follow with a repeat check for understanding.  Teachers will need to provide students with a topographic map or contour map of a selected local landscape or landform, graph paper and ruler to complete a cross-section of a local landscape or landform. Teachers may like to consider providing a [WAGOLL](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/622) transect of another local landscape or landform.  Students draw a cross-section of a local landscape or landform.  Students use their cross-section to develop a transect that illustrates landscape and landform use and value. They must include:   * environmental * economic * recreational * cultural.   **Differentiation:** three options are provided below to allow for differentiation of literacy skills. Further scaffolding for options 1 and 2 could be provided through visual images of specific landscapes and landforms around the world.  **Option 1**  Ask students to think about different places around the world and how they can help us in many ways:   * making money (such as farming or tourism) * taking care of nature (such as parks protecting animals) * having fun (such as going on hikes or swimming) * special to people (such as places with important traditions or history).   Have students answer the following questions:   1. Can you name one place in your local area that does one of these things? 2. Can you name one place around the world that does one of these things? 3. Can some places do more than one of these things? Give an example from your local area and one from around the world. 4. Can you think of a time when using a place for more than one thing caused a problem? Explain what happened.   **Option 2**  Ask students to think about different places around the world. These places can do different things like:   * make money – economic benefits (like farms or places where people go on vacation) * take care of nature – environmental sustainability (like parks that protect animals) * have fun – recreational opportunities (like hiking trails or swimming spots) * special to people – Cultural significance (like places with important traditions or history).   Have students write a response to this question: How do landscapes around the world do many things at once?  Use specific examples to explain how the values of making money, taking care of nature, having fun, and being special to people can:   * work well together in some places * sometimes cause problems in other places.   **Option 3**  Have students write a long response to the question: Discuss how landscapes around the world serve multiple roles by providing economic benefits, contributing to environmental sustainability, offering recreational opportunities, and holding Cultural significance.  Their response should:   * use a range of examples from specific landscapes around the world * discuss the multiple roles across these landscapes, linking them to specific values * consider how the interaction of multiple roles may create cohesion or conflict.   **Note:** have students use the [C3B4ME](https://www.fractuslearning.com/c3b4me-self-directed-learners/) technique before submitting their final responses. C3B4ME is an effective method for introducing students to the idea of the classroom as a learning community.  Students use the marking rubric in activity 3.6.2 to peer- and self-assess responses.  **Evidence of learning:** student resource booklet activities 3.6.1, 3.6.2. |  |

# Learning sequence 4 – the importance of landscapes and landforms as Country

The following learning sequence is designed to be completed in approximately 6 hours. It aligns to Term 1 Weeks 7 and 8 in the [Geography Stage 4 scope and sequence](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10).

Table 4 – Learning sequence 4 details

|  |  |  |
| --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Registration |
| **Outcome**  **GE4-DFC-01, GE4-PRI-01, GE4-PER-01, GE4-APC-01, GE4-TAP-01, GE4-COM-01**  **Content**  The value and protection of landscapes and landforms:   * Knowledges and Practices used by Aboriginal Peoples to manage and care for Country   **Geographical tools**  **Maps:**  Identify key features on a map using cartographic conventions  Identify physical and human features on a map  Identify contour lines  Determine altitude of a location using contour lines  Calculate the local relief between 2 points using spot heights and contour lines  Recognise the steepness of a slope using shading, spot heights, colour or contour lines  Identify spatial patterns using a range of maps  **Fieldwork:**  Identify, collect and record geographical information  Develop and conduct surveys and interviews  Use fieldwork tools to collect geographical information  **Data and graphs:**  Construct and interpret data tables and graphs  **Spatial technologies:**  Interpret geographical information using a range of spatial technologies  Describe land use of an area using virtual or digital maps  **Additional geographical representations:**  Identify different types of photographs from the location they were taken  Diagrams, infographics, mind maps, flowcharts, sketches such as field sketches  Document experiences of places and spaces using photographs  **Geographical concepts**   * Place * Space * Environment * Interconnection * Scale * Sustainability * Change | **Learning intention**  Students will understand the diverse range of landscapes and landforms which Aboriginal Peoples identify as Country, exploring the importance of Aboriginal Custodianship and the variety of methods used to care for and manage Country. Students develop an appreciation of Dreaming stories to explain the formation and significance of landscapes and landforms.  **Success criteria**  **I can:**   * identify and describe the cultural and spiritual significance of specific landscapes and landforms for Aboriginal and Torres Strait Islander Peoples * explain the methods used by Aboriginal and Torres Strait Islander Peoples to manage and protect landscapes * interpret Dreaming stories and link them to the physical characteristics of landscapes and landforms * demonstrate geographical skills such as mapping conventions, the construction of topographic cross-sections and the interpretation of geographical data.   **Note:** a range of Indigenous and non-Indigenous resources have been referenced in this learning sequence. Where possible, teachers should attempt to include additional resources from a local Indigenous perspective.  **Teaching and learning activity – Lesson 1**  **Student resource booklet activities: 4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.5.**  Students review the ABC News article [How Gunditjmara words and traditions hold stories of Victoria's rich volcanic history](https://www.abc.net.au/news/2020-03-21/indigenous-stories-from-times-of-volcanic-eruptions/12003576) (21 March 2020) and utilise a [3-2-1 thinking routine](https://www.teachthought.com/critical-thinking/3-2-1-strategy/) to:   * list 3 key points they have learned about how the Gunditjmara people’s stories and traditions hold information about Victoria’s volcanic history * write down 2 questions they have after reading the article * share 1 aspect of the article they found particularly interesting.   Allocate students a Dreaming story from around Australia to review. Teachers may like to use suggested resources or choose from a local Dreaming story students are familiar with.  Suggested resources:   * [Kintiiyirapiin (how coal was made)](https://awabakallanguage.org.au/how-coal-was-made) (Awabakal Country, New South Wales) * [Dooragan, Mooragan, Booragan – Three Brothers Mountains](https://www.nma.gov.au/exhibitions/endeavour-voyage/dooragan-mooragan-booragan-three-brothers) (Biripai Country, New South Wales) * [Glass House Mountains](https://www.queensland.com/au/en/places-to-see/destinations/sunshine-coast/sunshine-coast-hinterland/how-to-do-the-glasshouse-mountains) (Jinibara and Gubbi Gubbi Countries, Queensland)   **Note:** teachers may prefer to use the artwork [Mimburi Dreaming](https://www.qimrberghofer.edu.au/our-research/aboriginal-torres-strait-islander-health/indigenous-artwork/mimburi-dreaming/) by Aboriginal artist Zeitha Jalamala Murphy for a visual representation of the Glass House Mountains.   * [ABC This place](https://www.abc.net.au/education/this-place/102566508) videos * [The Goanna Spirit on Barralbarayi (3:39)](https://www.abc.net.au/education/this-place-the-goanna-spirit-on-anderson-sugarloaf-mountain/102565762) (Dhangatti Country, New South Wales) * [Leanganook – His Teeth (2:40)](https://www.abc.net.au/education/this-place-leanganook-his-teeth/102569588) (Dja Dja Wurrung Country, Victoria) * Sharing Stories Foundation [multi-touch books](https://sharingstoriesfoundation.org/resource-catalogue/publishing/) – these interactive books include a Welcome to Country, short films to describe Country and Cultural significance, photographs, use of language alongside an interactive map of the area * [Yurlu: The Kingfisher Man](https://sharingstoriesfoundation.org/resource/yurlu-the-kingfisher-man/) (Flinders Ranges, Adnyamathanha Country, South Australia) * [Dunggula](https://sharingstoriesfoundation.org/resource/dunggula/) (Murray River, Bangerang Country, Victoria) * [Gandjaḻaḻa the Sugarbag Hunter](https://sharingstoriesfoundation.org/resource/ga%e1%b9%89dja%e1%b8%bba%e1%b8%bba-the-sugarbag-hunter/) (Wägilak Peoples, Yolŋu Country, Northern Territory) * [Jirraginy joo Goorrarndal: Frog and Brolga](https://sharingstoriesfoundation.org/resource/jirraginy-joo-goorrarndal-the-frog-and-brolga/) (Bungle Bungles, Gija Country, Western Australia) * [Woonyoomboo – The night heron](https://sharingstoriesfoundation.org/resource/woonyoomboo-the-night-heron/) (Mount Anderson – Jarlmadangah, Nyikina Country, Western Australia).   Students create a storyboard that shows the development of the landscape or landform.  Students share storyboards with the class and use them to inform either an [affinity diagram](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/576) or [brainstorming](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542) template to collate the themes presented across the different storyboards.  Refer students to the [AIATSIS Map of Indigenous Australia](https://aiatsis.gov.au/explore/map-indigenous-australia) and identify locations discussed in the Dreaming stories on the map.  **Thinking and working geographically support material:** [BOLTSS and scale (4:06)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/boltss-and-scale), [Miscellaneous templates](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/641) – Maps (Australian).  Students use the information presented by the class about different Dreaming stories in conjunction with the AIATSIS Map of Indigenous Australia and A3 blackline map to construct a map that illustrates the locations and Traditional Custodians of these stories. Students apply appropriate mapping conventions to their map (border, orientation, legend, title, scale, source).  Students complete a [Think-Pair-Share](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/645) responding to the following questions:   1. Are there any other monuments, landmarks or cultural practices linked to this landscape? 2. How does this landscape contribute to the identity of the local Community or nation? 3. How has this landscape been represented in art, literature or music? 4. What cultural festivals or ceremonies take place in this landscape? (if appropriate) 5. How do local communities interact with and respect this landscape?   **Evidence of learning:** student resource booklet activities **4.1.1, 4.1.2, 4.1.3, 4.1.4, 4.1.5.**  **Teaching and learning activity – Lesson 2**  **Student resource booklet activities: 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.2.5.**  Have students watch [The Land Owns Us (6:14)](https://www.youtube.com/watch?v=w0sWIVR1hXw) and work in small groups to discuss Bob Randall’s view of Country and belonging. Students complete a [Y-chart](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/599) that provides a description of land, including what the land looks, feels and sounds like.  Students use a discussion and notes on the Y-chart to answer the following questions:   1. Explain the meaning of land and Country to Aboriginal and Torres Strait Islander Peoples. 2. Considering the strong connection Aboriginal and Torres Strait Islander Peoples have to Country, why is it important to consult with Traditional Custodians when making decisions about landscape management?   Teacher-led discussion that defines [Traditional Ecological Knowledge](https://www.nps.gov/subjects/tek/description.htm) (TEK) and [Traditional Knowledge](https://www.aboriginalheritagecouncil.vic.gov.au/taking-care-culture-discussion-paper/traditional-knowledge) (TK). Explain what constitutes an [Indigenous Protected Area](https://www.dcceew.gov.au/environment/land/indigenous-protected-areas) (IPA) and how these differ from other conservation sites in Australia.  Students access [Indigenous Protected Areas](https://www.niaa.gov.au/indigenous-affairs/environment/indigenous-protected-areas-ipas) and view the map of Australia’s Indigenous Protected Areas (see maps listed under Project locations). Students answer the following questions:   1. What is an Indigenous Protected Area? 2. What role do Aboriginal and Torres Strait Islander Peoples have in Indigenous Protected Areas? 3. How many Indigenous Protected Areas are there across Australia? Can you identify any local to your school or home?   Have the class engage with [Savanna Burning (7:34)](https://ictv.com.au/video/item/2675) and discuss why savanna burning is a good example of Traditional Knowledge. Consider if your class has any other examples of Traditional Knowledge relevant to your local area.  Students watch [Marine Turtle and Dugong monitoring on Wunambal Gaambera country (5:00)](https://ictv.com.au/video/item/2408) and answer the following questions:   1. In the video, the ranger talks about how he learnt about sacred sites. How is this different to how you are learning today? 2. What is the ‘Healthy Country Plan’ and what does it provide the rangers? 3. How do boat-based surveys work? Suggest why they are better than other forms of surveying turtles and dugongs.   Students work with a partner to assess the contribution of Aboriginal and Torres Strait Islander Peoples’ knowledge and management to the protection and sustainability of Australia’s unique desert landscape. Pairs complete a summary table on the contribution of Aboriginal and Torres Strait Islander Peoples to management of land.  Suggested resources:   * [The Spark Of Life: How Fire Defines A Desert Country](https://www.countryneedspeople.org.au/the_spark_of_life) * [Burning For Biodiversity – The Benefits Of Indigenous Fire Management](https://www.countryneedspeople.org.au/burning_for_biodiversity_the_benefits_of_indigenous_fire_management) from Country Needs People   Students conduct a peer feedback exercise for their summary. Using the [Ladder of Feedback](https://pz.harvard.edu/resources/ladder-of-feedback) with their partner, students move to work with another pair and follow these steps:   1. Read/listen/ask clarifying questions. 2. Identify the strengths. 3. Identify areas for improvement. 4. Suggest ways to improve.   Return to your desk with your partner. Discuss suggested ways to improve. Decide on and include any new changes required.  **Evidence of learning:** student resource booklet activities 4.2.1, 4.2.2, 4.2.3, 4.2.4, 4.2.5.  **Teaching and learning activity – Lesson 3**  **Student resource booklet activities:4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6.**  Allocate students to small groups to review [Tjukurpa](https://parksaustralia.gov.au/uluru/discover/culture/stories/) stories.  Suggested resources:   * [Mala story](https://parksaustralia.gov.au/uluru/discover/culture/stories/mala-story/) * [Kuniya and Liru story](https://parksaustralia.gov.au/uluru/discover/culture/stories/kuniya-liru-story/) * [Lungkata story](https://parksaustralia.gov.au/uluru/discover/culture/stories/lungkata-story/) * stories of [Kata Tjuta](https://parksaustralia.gov.au/uluru/discover/culture/stories/kata-tjuta-stories/)   **Note:** it is important to note that access to cultural knowledge about Kata Tjuta is restricted. However, you can access information about sites like [Walpa Gorge](https://parksaustralia.gov.au/uluru/do/walks/walpa-gorge-walk/) and the [Valley of the Winds.](https://parksaustralia.gov.au/uluru/do/walks/valley-of-the-winds/)  Groups use a [Graphic organiser](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/599) like a fishbone diagram to investigate the stories, images and maps. The class completes a [Jigsaw activity](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/546) to share work and learn about the other stories of the Anangu people.  Students watch the ABC Education video [How Uluru came to be (5:00)](https://www.abc.net.au/education/how-uluru-came-to-be/13503302) and complete a [Graphic organiser](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/599#.X63MT37YcBg.link) Y-chart to describe Uluru, including what the land looks, feels and sounds like.  [Checking for understanding](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding#What2) – students answer ‘yes’ or ‘no’ response questions about geomorphological processes.  **Teacher draws random shapes to** [sketch and squiggle](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/657?clearCache=e3f0ac21-8590-c7d1-935e-77c599ea7b30) **an annotated diagram to explain the geomorphological processes that shaped Uluru.**  Students engage with [Geography: Landscapes and Landforms – Chapter 6 Uluru and Kata Tjuta (6:13)](https://www.abc.net.au/education/digibooks/geography-landscapes-and-landforms/102231488?vcOpensOnLoad=true&vcPageId=102641910) to respond to multiple-choice questions.  Students complete a [3-2-1 Bridge activity](https://thinkingpathwayz.weebly.com/321bridge.html).  Suggested resources:   * [Please don’t climb](https://www.dcceew.gov.au/parks-heritage/national-parks/uluru-kata-tjuta-national-park/management-and-conservation/please-dont-climb#working-towards-closing-the-climb:~:text=Please%20don%27t%20climb-,Please%20don%27t%20climb,-Wanyu%20Ulurunya%20tatintja) (before the closing of Uluru) * [Uluru climb closure announcement](https://parksaustralia.gov.au/uluru/discover/culture/uluru-climb/#:~:text=The%20Traditional%20Owners%20of%20Uluru%20ask%20you%20to,or%20been%20injured%20while%20attempting%20to%20climb%20Uluru.)   **Note:** the following outlines an optional virtual fieldwork activity.  Use [NSW National Parks Basin Head Aboriginal art site (Aboriginal Connections)](https://sites.google.com/education.nsw.gov.au/geography-virtual-fieldwork/4-aboriginal-connections) and further research to address the following inquiry questions:   * What are the aesthetic, Cultural, spiritual, and economic values of landscapes and landforms for Aboriginal and Torres Strait Islander Peoples? * How do Aboriginal and Torres Strait Islander Peoples manage and protect landscapes? * What natural resources can be found across landscapes of Country that can be used for food, tools, weapons, medicine and shelter?   The resource also includes Acknowledgement of Country, videos, student work booklet and interactive location map with images and information.  **Note:** teachers could use this opportunity to discuss the diverse perspectives and differences across and between both Aboriginal Cultures and Torres Strait Islander Cultures.  **Evidence of learning:** student resource booklet activities 4.3.1, 4.3.2, 4.3.3, 4.3.4, 4.3.5, 4.3.6.  **Activity 4.3.1** **answers:** 1. True 2. False 3. True 4. True 5. False 6. True 7. False 8. False 9. True 10. False  **Activity 4.3.5 answers – multiple choice**: 1b, weathering and erosion, 2c, 30,000 years, 3b, Tjukurpa, 4c, Arkose sandstone, 5a, UNESCO  **Think-Pair-Share**: Q1. Weathering involves the heating and cooling of the rock surfaces, causing cracks and the eventual falling away of rock pieces. Erosion happens as softer rock parts are worn down faster than harder parts, and rainwater runoff shapes canyons and domes.  Q2. The Anangu are the Aboriginal people who are the traditional owners of Uluru and Kata Tjuta. They have lived in the area for at least 30,000 years and believe that the landscape was created by ancestral beings, with their culture and law rooted in Tjukurpa.  Q3. The demonstration shows how wind erosion affects smaller particles while larger boulders remain mostly unmoved, mirroring how weathering and erosion shape the landscape by differentially wearing down softer and harder rock sections.  Q4. The World Heritage listing by UNESCO recognises both the natural and cultural values of the park, highlighting its importance for biodiversity, geology, and the cultural heritage of the Anangu people.  Q5. Positively, tourism brings attention and funding for preservation efforts and educates the public about the Cultural significance of the site. Negatively, it can lead to environmental degradation and disruption of the cultural landscape if not managed sustainably.  **Teaching and learning activity – Lesson 4**  **Student resource booklet activities: 4.4.1, 4.4.2, 4.4.3, 4.4.4, 4.4.5, 4.4.6.**  Teacher-led discussion using the prompting question ‘What are the significant landscapes and landforms in your local area?’  **Thinking and working geographically support material:** [Latitude and longitude (4:24)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/latitude-and-longitude), and [Mapping latitude and longitude – Geography 7–10](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/geography-7-10-mapping-latitude-longitude). [Photo sketch video (2:06)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/photo-sketch), [Geography 7–10 – guide to using photographs](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10), [Geography 7-10 – field sketches](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10).  Students use a topographic map to identify aspects of their chosen landscape or landform, including latitude and longitude and key features of the environment.  Students use the [AIATSIS Map of Indigenous Australia](https://aiatsis.gov.au/explore/map-indigenous-australia) to note the Traditional Custodians and Country of their landscape or landform, using the language of the Traditional Custodians where appropriate.  Students either complete a photo sketch or field sketch of a landscape or landform that is of Cultural significance.  Students design a series of interview questions related to the Cultural significance and management of the chosen landscape or landform. Where appropriate students interview a relevant participant and record responses.  Students write a long response to the question ‘How does the Cultural significance of [chosen local landscape or landform] illustrate the importance of its formation and protection within the local Aboriginal and/or Torres Strait Islander Community? The response should include:   * an introduction to the chosen landscape or landform, including its location and key features * an explanation of the Cultural significance of the landscape or landform, referencing Dreaming stories and Traditional Knowledge * a discussion on the methods used by the local Aboriginal and/or Torres Strait Islander Community to protect and manage the landscape or landform * specific examples illustrating the connection between Cultural significance, formation, and protection efforts. * a conclusion summarising the importance of the landscape or landform within the local Community.   **Note:** the [C3B4ME](https://www.fractuslearning.com/c3b4me-self-directed-learners/) technique encourages students to become learning resources for one another. C3B4ME is an effective method for introducing students to the idea of the classroom as a learning community. Teachers may like to access [Appendix 4](#_Appendix_4_–) for a sample marking criteria.  Students use the Marking criteria for A grade report and [C3B4ME](https://www.fractuslearning.com/c3b4me-self-directed-learners/) routine to review and improve long responses.  **Evidence of learning:** student resource booklet activities 4.4.1, 4.4.2, 4.4.3, 4.4.4, 4.4.5, 4.4.6. |  |

# Learning sequence 5 – geomorphic hazards

The following learning sequence is designed to be completed in approximately 6 hours. It aligns to Term 1 Weeks 9–10 in the [Geography Stage 4 scope and sequence](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10).

Table 5 – Learning sequence 5 details

|  |  |  |
| --- | --- | --- |
| Outcomes and content | Teaching and learning activities | Registration |
| **Outcomes**  **GE4-DFC-01, GE4-PRI-01, GE4-PER-01, GE4-MAN-01, GE4-APC-01, GE4-TAP-01, GE4-COM-01**  **Content**  Geomorphic hazards:   * Nature of geomorphic hazards * Investigation of ONE geomorphic hazard that has occurred this century, including impacts, responses and management   **Geographical tools**  **Maps:**  Identify key features on a map using cartographic conventions  Identify physical and human features on a map  Identify spatial patterns using a range of maps  Use a range of large-scale and small-scale maps  Locate features on a map using area and grid references  Measure distances on a map using a linear scale  **Fieldwork:**  Identify, collect and record geographical information  **Data and graphs:**  Construct and interpret data tables and graphs  **Spatial technologies:**  Interpret geographical information using a range of spatial technologies  Describe land use of an area using virtual or digital maps  **Additional geographical representations:**  Diagrams, infographics, mind maps, flowcharts, sketches such as field sketches  Identify different types of photographs from the location they were taken  Interpret photographs and satellite images to determine how a place has changed over time  Use photographs and satellite images to describe the rate and extent of change  Identify and describe spatial patterns and changes using geographical representations  **Geographical concepts**   * Place * Space * Environment * Scale * Sustainability * Change | **Learning intention**  **Students:**   * learn about the location and significance of the Ring of Fire and causes of volcanic hazards * explore the nature of geomorphic hazards and the impact of volcanic hazards on a variety of locations around the world * develop an understanding of the responses to and management of volcanic hazards and develop ideas for reducing impact of volcanic hazards on people and places * learn about small- and large-scale maps * learn about area and grid reference on maps used in geography * learn about recording data in graphs.   **Success criteria**  **I can:**   * describe the characteristics and range of geomorphic hazards * explain the cause and effect of a selected geomorphic hazard * explain the management and protection of the selected geomorphic hazard * demonstrate geographical skills, including identifying small- and large-scale maps and their purposes in geography * use area and grid reference on maps to locate and identify human and physical features * interpret and use data to construct column graphs and identify patterns.   **Note: teachers may like to include the post-test quizzes available at** [Pre and post assessments](https://app.powerbi.com/groups/me/reports/aa404755-6414-42f6-8eb3-2bbdbcd6f9bf/a27d0f14d76dfe736d0e?ctid=05a0e69a-418a-47c1-9c25-9387261bf991&experience=power-bi) **at this point in the program for** [Geography (Stage 4) – sample assessment task 1 notification – Landscapes and landforms](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10) .  **Teaching and learning activity – Lesson 1**  **Student resource booklet activities: 5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.1.5, 5.1.6.**  Use [Checking for understanding](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding) exercises such as [Mini whiteboards](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/575?clearCache=1d1dfb01-c240-59ce-bc9-d33f716be53e) to make informed decisions when moving between modelled, guided and independent practice. Use the questions ‘Is a earthquake a geomorphic hazard?’ and ‘Is a natural disaster what happens once a hazard has occurred?’ with mini whiteboard ‘yes’ or ‘no’ responses to determine the need for the following activities:   * Use the ‘What’s the difference?’ paragraph from [Natural Hazards Vs. Natural Disasters](https://disasterempire.com/disaster-resilience/natural-hazards-vs-natural-disasters/) to conduct a [Note taking](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Browser?clearCache=f79ab9b6-dffa-7d17-3d97-ac48c8449bc5) dictogloss exercise with the class. * As a class use [Brainstorming](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/542) to identify different examples of natural hazards. * Define the terms [geomorphic](https://dictionary.cambridge.org/dictionary/english/geomorphic), [meteorological](https://dictionary.cambridge.org/dictionary/english/meteorological), [hydrological](https://dictionary.cambridge.org/dictionary/english/hydrological) and [biological](https://dictionary.cambridge.org/dictionary/english/biological) for the class.   **Note:** teachers will need to provide examples of small- and large-scale maps.  **Thinking and working geographically support material:** [Area and grid reference (3:32)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/area-and-grid-reference)**,** [Geography 7–10 – mapping – area and distance](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10)**,** [Introduction to maps (3:39)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/introduction-to-maps)**.**  [Checking for understanding](https://education.nsw.gov.au/teaching-and-learning/curriculum/explicit-teaching/explicit-teaching-strategies/checking-for-understanding#What2) – use ‘yes’ and ‘no’ responses to the difference between small- and large-scale maps and area and grid references on maps to determine the need for the following activities:   * Use [Introduction to maps (3:39)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/introduction-to-maps) to revisit or introduce the different types of maps and map scales used in geography. * Students use the video and the map in ‘global seismic centres in 1975–99’ from [Britannica Kids earthquake](https://kids.britannica.com/students/article/earthquake/106195/media) to complete comprehension questions (activities 5.1.3 and 5.1.4). * Students watch [Area and grid reference (3:32)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/area-and-grid-reference) (from 0:00 to 2:24) and complete activity 5.1.5 to familiarise the class with this mapping tool. Students play the Snake in the grass game (activity 5.1.6).   **Evidence of learning:** student resource booklet activities **5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.1.5, 5.1.6.**  **Teaching and learning activity – Lesson 2**  **Student resource booklet activities: 5.2.1, 5.2.2, 5.2.3, 5.2.4.**  Check prior knowledge – students complete a [KWLH](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/562) chart.  Students review [360° Kamchatka Volcano Eruption | National Geographic (2:16)](https://youtu.be/o3a1fkLsNS4?si=8Ul2iS6S0r2cXU3X) and identify 3 key points of interest.  Students complete an annotated sketch of a volcano. Students visit [The Science of Volcanoes: How They Are Made – Infographic](https://graphicspedia.net/the-science-of-volcanoes-how-they-are-made-infographic/) and revisit their diagram, adding any details they may have missed.  Provide students with a blackline world map from [Miscellaneous templates](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/641?clearCache=2048f8d-c810-a1af-8ec5-cedeafc7ec47). Have students illustrate the location of Earth’s major volcanoes and with a partner discuss the following:   1. Where are Earth’s major volcanoes located? 2. How does the location of volcanoes align to the plate margins? 3. What do you know about the Ring of Fire?   Students create an infographic that informs others about the Ring of Fire.  Suggested resources:   * [Pacific Ring Of Fire](https://www.worldatlas.com/geography/pacific-ring-of-fire.html) * [Ring of Fire – Volcanoes, Earthquakes, and Tectonic Plates (7:39)](https://youtu.be/Vu6t3e4oqrE?si=nmIk5jVlBexMHECc) * [The Ring of Fire: Nat Geo Kids Volcano Playlist (1:00)](https://youtu.be/RFbKsAE-8Ek?si=1ILim4N5fAEspjHL)   **Differentiation:** the resource [Mapping Volcanoes and Earthquakes](https://storymaps.arcgis.com/stories/5ce6318a0fe14ee8b8bc8e3215e0b67d) includes an [interactive map](https://storymaps.arcgis.com/stories/5ce6318a0fe14ee8b8bc8e3215e0b67d#:~:text=This%20map%20shows%20the%20global%20distribution%20of%20volcanoes.) where students can engage with specific volcanoes and determine their type and activity status. There is also a [slider image](https://storymaps.arcgis.com/stories/5ce6318a0fe14ee8b8bc8e3215e0b67d#:~:text=seen%20using%20the-,slider%20below.,-Esri%2C%20HERE%2C%20FAO) that demonstrates the correlation between volcanoes, earthquakes and tectonic plates. Alternatively, students could use [National Geographic’s MapMaker 4.0 Plate Tectonics map](https://www.arcgis.com/apps/instant/atlas/index.html?appid=0cd1cdee853c413a84bfe4b9a6931f0d&webmap=e0bc7263581f4bd5a8a416de167be7ff) to observe the relationship between the world's tectonic plates and the locations of major earthquakes and volcanic eruptions. Students could also access [ArcGIS](https://learn.arcgis.com/en/paths/plate-tectonics-earthquakes-and-volcanoes/#:~:text=Plate%20tectonics%2C%20earthquakes%2C%20and%20volcanoes) resources to explore [Hawaiian volcanoes](https://learn.arcgis.com/en/paths/plate-tectonics-earthquakes-and-volcanoes/#:~:text=View%20a%20map%20of%20Hawaiian%20volcanoes%20using%20Explorer%20for%20ArcGIS.) using spatial technologies. Extension opportunities for engagement with digital tools and spatial technologies could occur through the application of [Google My Maps](https://www.google.com/maps/about/mymaps/) where students develop their own map and identify relevant [volcanoes](https://www.arcgis.com/apps/instant/atlas/index.html?appid=0cd1cdee853c413a84bfe4b9a6931f0d&webmap=e0bc7263581f4bd5a8a416de167be7ff), or a [map in a minute activity](https://www.esri.com/arcgis-blog/products/arcgis-online/mapping/map-in-a-minute-volcanic/#:~:text=ArcGIS%20Online-,Map%20in%20a%20minute,-%3A%20Map%20volcanic%20activity) using ArcGIS Online and ArcGIS Living Atlas.  **Evidence of learning:** student resource booklet activities **5.2.1, 5.2.2, 5.2.3, 5.2.4.**  **Teaching and learning activity – Lesson 3a**  **Note**: this section of the learning sequence refers to the 2019 White Island disaster in New Zealand. Please be aware this may be upsetting for some students and refer to the [Controversial issues in schools](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/controversial-issues) procedures before proceeding. An additional lesson sequence (4a and 4b) related to the 2023 Shiveluch eruption in Russia is provided as a possible alternative for this investigation.  Ask students a series of true or false questions. Students place hands on head if the answer is true or on the desk if the answer is false.   1. The Ring of Fire is a region around the Pacific Ocean where many volcanoes and earthquakes occur. 2. All volcanoes in the Ring of Fire are active and erupt regularly. 3. Magma is molten rock found beneath the Earth's surface, and it becomes lava once it erupts from a volcano. 4. Shield volcanoes are typically found in the Ring of Fire and are known for their broad, gently sloping sides. 5. Volcanoes can form at both divergent and convergent plate boundaries. 6. The ‘Pacific Plate’ is one of the tectonic plates that make up the Earth's crust and is associated with the Ring of Fire. 7. Volcanoes are only found on land, not under the ocean. 8. A volcanic eruption can create new land by cooling and hardening lava flows. 9. Volcanoes only produce lava; they do not emit gases or ash. 10. The Ring of Fire is primarily associated with earthquake activity because of the many fault lines and tectonic movements in the area.   **Answers:** 1. True, 2. False, 3. True, 4. False (shield volcanoes are more commonly found in places like Hawaii, not the Ring of Fire which has more stratovolcanoes), 5. True, 6. True, 7. False, 8. True, 9. False, 10. True.  Display a world map illustrating the [Pacific Ring Of Fire](https://www.worldatlas.com/geography/pacific-ring-of-fire.html) for the class. Revisit the infographics created by the class in Lesson 2, review the world map illustrating the Pacific Ring of Fire and as a class read [What is the Ring of Fire and how does it affect New Zealand?](https://www.sbs.com.au/news/article/what-is-the-ring-of-fire-and-how-does-it-affect-new-zealand/o9jmume5r) Use the stimulus to have students answer the following questions:   * Is New Zealand located in the Pacific Ring of Fire? * How might this influence the likelihood of an earthquake or volcanic activity? * How might this influence the landscapes and landforms common in New Zealand?   **Thinking and working geographically support material:** [Common graphs (2:58)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-7-10-curriculum-resources/common-graphs).  **Note:** this resource includes topics that may be considered controversial or sensitive. Teachers are to respect the diverse views and experiences of all students and approach discussions in a manner that is impartial, free from harassment and discrimination, supportive of students’ wellbeing needs and aligned with the department’s [Code of ethics and conduct](https://education.nsw.gov.au/policy-library/policies/pd-2004-0020-01), [Anti-racism procedures](https://education.nsw.gov.au/policy-library/policies/pd-2005-0235-01), [Controversial issues in schools](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/controversial-issues) procedures, and [values in NSW public schools](https://education.nsw.gov.au/policy-library/policies/pd-2005-0131). Teachers should facilitate rational discourse and objective study while tailoring the content to meet the unique needs of their students. Where possible, teachers should consult with the school’s wellbeing team before using contexts that may be sensitive for some students.  Students use [A visitor guide to mountains in New Zealand](https://outthere.kiwi/new-zealand-travel-guide/places-to-visit/new-zealand-mountains/) to construct a column graph that illustrates the height of the tallest mountains in New Zealand. Students exchange column graphs and conduct a peer assessment making suggestions for improvement.  **Note:** this section of the learning sequence refers to the White Island eruption, New Zealand. Please be aware this may be upsetting for some students and refer to the [Controversial issues in schools](https://education.nsw.gov.au/policy-library/policies/pd-2002-0045) procedures before proceeding.  Students visit [Google Maps White Island, New Zealand](https://www.google.com/maps/place/Whakaari+%2F+White+Island/@-37.522567,177.1534151,13z/data=!4m5!3m4!1s0x6d6fc17ffd35122d:0xf00ef62249c07c0!8m2!3d-37.5193056!4d177.1810965) and explore the information provided to complete the following:   * Locate and label White Island on a blackline world map from [Miscellaneous templates](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/641?clearCache=2048f8d-c810-a1af-8ec5-cedeafc7ec47). * Use [Google Earth’s White Island New Zealand grid lines](https://earth.google.com/web/search/white+island+new+zealand/@-37.51903551,177.17902496,283.19772058a,10162.00594706d,35y,0h,0t,0r/data=CigiJgokCY_6IycqoDhAEY36IycqoDjAGcQZ7f4n3UpAIcQZ7f4n3UrAOgMKATA) to identify and note the latitude and longitude for White Island, New Zealand. * Use the map of New Zealand’s largest mountains from [A visitor guide to mountains in New Zealand](https://outthere.kiwi/new-zealand-travel-guide/places-to-visit/new-zealand-mountains/) and [Google Maps](https://www.google.com/maps/@-37.5998474,177.1233185,10.17z?entry=ttu) to identify White Island’s location in comparison to the other major mountains on New Zealand’s mainland. * Use these location details to write a one-paragraph description for the location of White Island, New Zealand. * Choose one image of White Island and draw a photo sketch. * Use [writing scaffolds](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/625) such as PEEL or similar to write one paragraph describing the landscape you observed at White Island.   Students revisit their capacity matrix and monitor any new concepts learnt.  **Teaching and learning activity – Lesson 3b**  **Students complete a report scaffold** ([Appendix 1](#_Appendix_1_–_1)) **for White Island eruption.**  **Suggested resources:**   * [ABC News’ account of the 2019 eruption at White Island](https://www.abc.net.au/news/2019-12-12/new-zealand-white-island-volcano-eruption-how-it-unfolded/11789586?nw=0) * infographic ‘Why White Island Blew’ accessed via [How the White Island eruption unfolded](https://www.news.com.au/travel/travel-updates/incidents/how-the-white-island-eruption-unfolded/news-story/5ff868ecc76d9e8c413a12046bc56361) * [Whakaari/White Island eruption: Update #8](https://www.geonet.org.nz/vabs/1imrWXgYtOMK6RkFQqFY9I) * [Whakaari White Island recovery operation](https://www.police.govt.nz/news/release/whakaari-white-island-recovery-operation) * [Kaimoana (seafood and shellfish) around the Whakaari and White Island Area](https://www.whakatane.govt.nz/services/civil-defence-emergency-management/emergency-management-updates/whakaari-white-island-0) * [Local tourism industry works to mitigate economic impact following Whakaari eruption](https://www.whakatane.govt.nz/news/local-tourism-industry-works-mitigate-economic-impact-following-whakaari-eruption)   **Students use their report scaffold (**[Appendix 1](#_Appendix_1_–_1)**) to write a report** outlining the causes and impact of the White Island volcano eruption, and the response to it.  Students use the report marking scaffold ([Appendix 2](#_Appendix_2_–)) to peer assess a peer’s report on White Island, making suggestions for improvement. Students revisit their report after peer feedback and reflect on areas of improvement.  **Teaching and learning activity – Lesson 4a**  **Note:** this section of the learning sequence refers to the 2023 Shiveluch volcanic eruption in Russia. Please be aware this may be upsetting for some students and refer to the [Controversial issues in schools](https://education.nsw.gov.au/policy-management-schools/revised-policies/curriculum-policies/controversial-issues) procedures before proceeding.  **True or false questions (outlined in Lesson 3a).**  Display a world map illustrating the [Pacific Ring Of Fire](https://www.worldatlas.com/geography/pacific-ring-of-fire.html) for the class. Revisit the infographics created by the class in the Lesson 2, review the world map illustrating the Pacific Ring of Fire and as a class read [Kamchatka: The Ring of Fire](https://www.pbs.org/edens/kamchatka/ring.html). Students then answer the following questions:   1. Is Russia located in the Pacific Ring of Fire? 2. How might this influence the likelihood of an earthquake or volcanic activity? 3. How might this influence the landscapes and landforms common in Russia?   Students use [Kamchatka Mountains](https://peakvisor.com/adm/kamchatka-krai.html) to construct a column graph that illustrates the height of the 10 highest peaks (list found at the bottom of the webpage). Students then conduct a peer assessment using [Appendix 3](#_Appendix_3_–) by swapping and checking a peer’s column graph.  Students visit [Google Maps Shiveluch, Kamchatka, Russia](https://www.google.com/maps/place/Shiveluch/@49.5694683,162.9790302,5.25z/data=!4m6!3m5!1s0x59061262fd6b6607:0xf46d72767a366ab8!8m2!3d56.6538889!4d161.3630556!16zL20vMDR2OHZn?entry=ttu) and explore the information provided to complete the following:   * Locate and label Shiveluch on a blackline world map from [Miscellaneous templates](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/641?clearCache=2048f8d-c810-a1af-8ec5-cedeafc7ec47). * Use [Google Earth’s Shiveluch grid lines](https://earth.google.com/web/search/Shiveluch/@56.65802537,161.3649501,3001.25993238a,102183.4004795d,35y,0h,0t,0r/data=CnQaShJECiUweDU5MDYxMjYyZmQ2YjY2MDc6MHhmNDZkNzI3NjdhMzY2YWI4GdRbqKGyU0xAISYUxyaeK2RAKglTaGl2ZWx1Y2gYAiABIiYKJAmySBGojrtCwBHHoPZYC8hCwBmoBV1mDShmQCEHSliSuSJmQDoDCgEw) to identify and note the latitude and longitude for Mt Shiveluch, Russia. * Use [Google Maps](https://www.google.com/maps/place/Kamchatka+Peninsula/@55.2705034,159.0885101,6z/data=!4m6!3m5!1s0x5904e2b2a6a01f69:0x4cc0fcba86bbb18d!8m2!3d56.1327377!4d159.5314398!16zL20vMDMyNmh2?entry=ttu) to identify Shiveluch’s location in comparison to the other major mountains on Kamchatka’s mainland. * Use these location details to write a one-paragraph description for the location of Shiveluch, Russia. * Choose one image of Shiveluch and draw a photo sketch. * Use [writing scaffolds](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/625) such as PEEL or a similar to write one paragraph describing the landscape you observed at Kamchatka.   Students revisit their capacity matrix and monitor any new concepts learnt.  **Teaching and learning activity – Lesson 4b**  **Students complete a report scaffold (**[Appendix 1](#_Appendix_1_–_1)**) for Shiveluch volcanic eruption. The report must consider the question ‘**Was the Shiveluch eruption a hazard or a disaster?’  **Suggested resources:**   * [ABC News’ account of the 2023 eruption at Shiveluch](https://www.abc.net.au/news/2023-04-12/volcano-eruption-russia-kamchatka-peninsula-ash-plume/102214388) * Information provided by your teacher about why Shiveluch erupted and its impact on wildlife (accessed via [Kamchatka: Siberia's Forbidden Wilderness](https://www.pbs.org/edens/kamchatka/ring.html)) * [Russia volcano eruption smothers villages and triggers aviation alert](https://www.theguardian.com/world/2023/apr/11/russia-shiveluch-volcano-eruption-smothers-villages-triggers-aviation-alert) * [Ash from Russian volcano cancels Alaska flights](https://alaskapublic.org/2023/04/13/some-flights-to-western-alaska-canceled-due-to-kamchatka-eruption/) * [Kamchatka](https://peakvisor.com/adm/kamchatka-krai.html#kronotsky-state-nature-reserve) * [Explosive Eruptions: the impact (4:14)](https://vimeo.com/248150327) * [Pyroclastic flow impacts (3:10)](https://vimeo.com/208042037) * [Lahars: the impact (3:11)](https://vimeo.com/208038678)   **Students use their report scaffold to write a report** outlining the causes and impact of the Shiveluch volcano eruption, and the response to it.  Students use the report marking scaffold ([Appendix 2](#_Appendix_2_–)) to peer assess a peer’s report on Shiveluch, making suggestions for improvement. Students revisit their report after peer feedback and reflect on areas of improvement.  **Teaching and learning activity – Lesson 5**  **Student resource booklet activities: 5.5.1, 5.5.2, 5.5.3, 5.5.4, 5.5.5.**  **Thinking and working geographically support material:** [Area and grid reference (3:32)](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/hsie-curriculum-resources-k-12/hsie-11-12-curriculum-resources/area-and-grid-reference)**,** [Geography 7–10 – mapping – area and distance](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/planning-programming-and-assessing-hsie-7-10/planning-programming-assessing-geography-7-10)**.**  Checking for understanding – using ‘yes’ and ‘no’ responses to the following questions:   * Eastings and northings are a grid system used to show the location of places and features on maps (yes) * Eastings run east to west and number appear at the top of the map (yes) * Area reference consists of a 4-digit number (yes) * Grid reference consists of a 4-digit number (no).   **Note:** when students demonstrate that they do not understand the features of area and grid reference revisit teaching. Follow with a repeat check for understanding.  Students use the New Zealand North Island Volcano map (activity 5.5.1) to identify the area reference for each of New Zealand’s North Island volcanoes and volcano groups listed in the number key.  **Answers:** 1. Mount Ruapehu AR 8536, 2. Mount Tongariro AR 8536, 3. Mount Ngauruhoe AR 8536, 4. Whakaari White Island AR 8638, 5. Taupō Volcanic Centre AR 8537, 6. Rotorua Volcanic Centre AR 8538, 7. Okataina Volcanic Centre (including Tarawera) AR 8637, 8. Tuhua Mayor Island AR 8638, 9. Taranaki AR 8436, 10. Auckland Volcanic Field AR 8439, 11. Northland (Bay of Islands and Whangarei Volcanic Fields) AR 8340.  In groups, students complete [affinity diagrams](https://app.education.nsw.gov.au/digital-learning-selector/LearningActivity/Card/576) for their chosen volcano and present diagrams.  **Note:** to complete this activity students will need a large sheet of paper or poster, markers and coloured pencils.  Before students commence, discuss the importance of emergency response plans and strategies in mitigating the impact of volcanic events on communities.  Keeping the same groups, students either create a plan for an imaginary small town near an active volcano or develop a volcanic emergency response plan for an imaginary volcanic eruption to present to the class. The presentation must give illustrative strategies for responding to and managing the impact of a possible eruption.  Refer to [New Zealand’s National Emergency Management Agency](https://www.civildefence.govt.nz/cdem-sector/consistent-messages/volcanic-activity) and scroll through the tabs for an example government response to volcanic hazards and disasters.  **Note**: this section of the learning sequence refers to emergencies and evacuations, which may be upsetting for some students due to experiences with disasters and evacuations. Please refer to the [Controversial issues in schools](https://education.nsw.gov.au/policy-library/policies/pd-2002-0045) procedures and determine adjustments that could be required before proceeding with this activity.  Have the class review the different hazards associated with volcanic eruptions such as: [Explosive Eruptions: the hazards (4:09)](https://vimeo.com/248150325), [Lava: the hazard (3:17)](https://vimeo.com/248150337), [Ashfall - "An eclipse" (6:40)](https://vimeo.com/258987023), [Health Hazards of Ash (7:31)](https://vimeo.com/666146615), [Volcanic gas: the hazard (3:10)](https://vimeo.com/248150328), [Pyroclastic Flow Hazard (2:59)](https://vimeo.com/208040046) and [Lahar Hazard (2:59)](https://vimeo.com/208036959).  Presentations must include a map which applies the mapping conventions (BOLTSS). The map must also include an area reference grid. The group must identify a minimum of 5 key locations related to your emergency plan using a 4-digit area code.  Your group plan should consider:   * evacuation routes and assembly points * shelter locations (safe buildings or designated evacuation centres) * communication strategies (emergency hotlines, social media and so on) * basic emergency supplies and resources needed (food, water, medical aid and so on) * any specific measures or adaptations based on the type of volcanic hazard experienced at the town such as explosive eruptions, lava flows, ashfall, volcanic gas, pyroclastic flows or lahars.   Student groups present the plan and map to the class, explaining the decisions made and strategies undertaken. Allow for a brief discussion after each presentation where students answer questions from the class and receive feedback from peers.  This activity may take 2 lessons depending on the time allocated by the teacher and the depth of research students are expected to engage with.  **Students revisit the KWLH chart** and complete the final column to demonstrate what they have learnt about volcanoes. Students complete the following self-assessment sentence starters reflecting on the learning sequence for geomorphic hazards:   * Now I know … * I now feel confident about … * What I would like to know is … * I was unsure about … but now I …   Students complete the summative task (activity 5.5.5).  **Evidence of learning:** student resource booklet activities **5.5.1, 5.5.2, 5.5.3, 5.5.4, 5.5.5.** |  |

# 

# Appendix 1 – sample report scaffold

|  |  |
| --- | --- |
| Report scaffold | Comments and notes |
| Introduction – what the report will cover (one paragraph) |  |
| Overview of the disaster (one paragraph) |  |
| Geomorphic processes that resulted in an eruption at [chosen study] (3 paragraphs) |  |
| The impact of the disaster, including environmental, social and economic impacts (3 paragraphs) |  |
| The response to the eruption at [chosen study] (2 paragraphs) |  |
| Conclusion – summarise what was learnt in the report (one paragraph) |  |

# Appendix 2 – sample report marking criteria [chosen study]

|  |  |  |  |
| --- | --- | --- | --- |
| Marking criteria | Didn’t | Tried | Did |
| Included an introduction that clearly stated what will be included in the report in at least one paragraph. |  |  |  |
| Clearly outlined the [chosen study] volcano event in at least one paragraph. |  |  |  |
| Outlined the major geomorphic processes that resulted in an eruption at [chosen study] in 3 paragraphs. |  |  |  |
| Discussed the impact of the disaster on the environment, people and economy of [country of chosen study] in 3 paragraphs. |  |  |  |
| Summarised the response to the eruption at [chosen study] in 2 paragraphs. |  |  |  |
| Included a conclusion that summarised what was learnt in the report in one paragraph. |  |  |  |

# Appendix 3 – peer assessment template

|  |  |  |  |
| --- | --- | --- | --- |
| Marking criteria | Yes | No | Comments |
| Title is clear and concise |  |  |  |
| Axis labelled correctly |  |  |  |
| Column graph presented |  |  |  |
| Scale of measurement on axis appropriate |  |  |  |
| Correct spelling |  |  |  |
| Graph illustrated neatly |  |  |  |

# Appendix 4 – marking criteria long response – Cultural significance of a chosen landscape or landform

|  |  |
| --- | --- |
| Grade | Marking criteria |
| **A** | * Demonstrates extensive knowledge of the Cultural significance, formation and protection of the chosen local landscape or landform * Displays sophisticated skills to assess the Cultural significance, referencing Dreaming stories and Traditional Knowledge * Communicates comprehensive geographical information in a sophisticated and engaging manner, using a variety of strategies |
| **B** | * Demonstrates thorough knowledge of the Cultural significance, formation and protection of the chosen local landscape or landform * Displays high-level skills to explain the Cultural significance, referencing Dreaming stories and Traditional Knowledge * Communicates detailed geographical information in an engaging manner, using a variety of strategies |
| **C** | * Demonstrates sound knowledge of the Cultural significance, formation and protection of the chosen local landscape or landform * Displays sound skills to describe the Cultural significance, referencing Dreaming stories and Traditional Knowledge * Communicates a sound level of geographical information using a variety of strategies |
| **D** | * Demonstrates basic knowledge of a local landscape and/or landform * Displays basic skills to describe the Cultural significance of landscapes and landforms * May reference Dreaming stories and Traditional Knowledge * Communicates some geographical information in a basic manner |
| E | * Identifies some aspects of a local landscape and/or landform * Displays elementary skills with some understanding of Cultural significance * Limited or no reference to Dreaming stories and Traditional Knowledge * Communicates limited geographical information in an elementary manner |

# Overall program evaluation

This section has been provided for teacher evaluation notes. [Evaluating teaching and learning programs for HSIE 7–12](https://education.nsw.gov.au/teaching-and-learning/curriculum/hsie/leading-hsie-k-12/leading-hsie-7-12/hsie-7-12-evaluating-teaching-and-learning-programs) provides advice to support this process.

# References

This resource contains NSW Curriculum and syllabus content. The NSW Curriculum is developed by the NSW Education Standards Authority. This content is prepared by NESA for and on behalf of the Crown in right of the State of New South Wales. The material is protected by Crown copyright.

Please refer to the NESA Copyright Disclaimer for more information <https://educationstandards.nsw.edu.au/wps/portal/nesa/mini-footer/copyright>.

NESA holds the only official and up-to-date versions of the NSW Curriculum and syllabus documents. Please visit the NSW Education Standards Authority (NESA) website <https://educationstandards.nsw.edu.au> and the NSW Curriculum website <https://curriculum.nsw.edu.au>.

[Geography 7–10](https://curriculum.nsw.edu.au/learning-areas/hsie/geography-7-10-2024/content/year-7/fa888383d0) © NSW Education Standards Authority (NESA) for and on behalf of the Crown in right of the State of New South Wales, 2024.

Stetson University (29 October 2020) [‘Gillespie Museum Short Takes - The Rock Cycle (2020)’ [video]](https://www.youtube.com/watch?v=_JzrkOk4oHI), *Stetson University*, YouTube, accessed 27 June 2024.

Stetson University (1 January 2024) [*Educational programs – Gillespie Museum*](https://www.stetson.edu/other/gillespie-museum/educational-programs.php#:~:text=of%20the%20Gillespie%27s-,Rock%20Cycle%20diagram,-%2C%20and%20a%20learn), Stetson University website, accessed 1 July 2024.

**© State of New South Wales (Department of Education), 2025**

The copyright material published in this resource is subject to the Copyright Act 1968 (Cth) and is owned by the NSW Department of Education or, where indicated, by a party other than the NSW Department of Education (third-party material).

Copyright material available in this resource and owned by the NSW Department of Education is licensed under a [Creative Commons Attribution 4.0 International (CC BY 4.0) license](https://creativecommons.org/licenses/by/4.0/).

[](https://creativecommons.org/licenses/by/4.0/)

This license allows you to share and adapt the material for any purpose, even commercially.

Attribution should be given to © State of New South Wales (Department of Education), 2025.

Material in this resource not available under a Creative Commons license:

* the NSW Department of Education logo, other logos and trademark-protected material
* material owned by a third party that has been reproduced with permission. You will need to obtain permission from the third party to reuse its material.

**Links to third-party material and websites**

Please note that the provided (reading/viewing material/list/links/texts) are a suggestion only and implies no endorsement, by the New South Wales Department of Education, of any author, publisher, or book title. School principals and teachers are best placed to assess the suitability of resources that would complement the curriculum and reflect the needs and interests of their students.

If you use the links provided in this document to access a third-party's website, you acknowledge that the terms of use, including licence terms set out on the third-party's website apply to the use which may be made of the materials on that third-party website or where permitted by the Copyright Act 1968 (Cth). The department accepts no responsibility for content on third-party websites.