

# 1 Geographical concepts and skills

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## LESSON 1.1 Overview

### INQUIRY QUESTION

**Why is geography important to study, and what skills do I need to understand geography?**

Studying Geography helps you and your community by building essential knowledge and skills for the present and future. These concepts will aid not only in Geography but also in everyday tasks like navigation. It might even benefit your future career in Australia or abroad. You will explore topics that enhance your understanding of local and global environments and investigate pressing issues for the future.

### learn on

-  **eWorkbook**  
Customisable worksheets for this topic
-  **Digital document**  
Key terms glossary
-  **Video eLesson**  
Geography concepts and skills



## SkillBuilder

Use the SkillBuilder activities to develop these Geographical concepts and skills:

- GEOGRAPHICAL INQUIRY
- CONCLUDING AND DECISION-MAKING
- COMMUNICATING

## LESSON 1.2 Geographical concepts and skills

### LEARNING INTENTION

By the end of this lesson you should be able to:

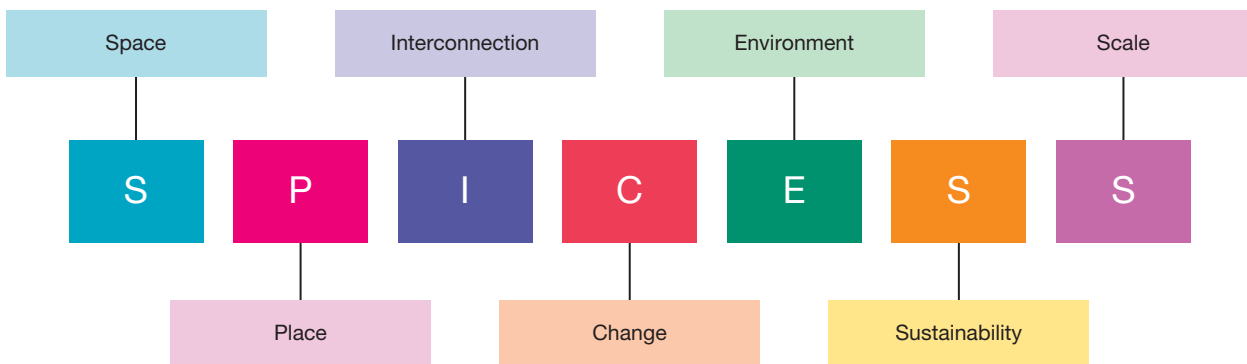
- **identify, explain and apply** the seven Geography concepts using the acronym SPICESS
- **apply** the skills that geographers use.

### 1.2.1 Geographical concepts: SPICESS

Geographical concepts help you to make sense of your world. By using these concepts, you can investigate and understand the world you live in. The concepts help you to think geographically. There are seven major concepts: **space, place, interconnection, change, environment, sustainability** and **scale**.

You will use the seven concepts to investigate two units: *Landscapes and landforms* and *Changing nations*.

**FIGURE 1** A way to remember these seven concepts is to think of the acronym SPICESS.



### 1.2.2 What is space?

The concept of space focuses on the location and distribution of things on the surface of the Earth. The space can be organised and managed by people or it can simply be where things are located in the natural environment.

When referring to space in Geography, location can be absolute or relative.

- Absolute location is the unique location of a site or geographical feature. For example, the absolute location of Shepparton is 36°22' south longitude and 124°24' east latitude.
- Relative location is the location of a place or feature in relation to other places. It can be described by direction and distance from other places and features. For example, Shepparton is 189 km NNE of Melbourne.

A place can be described by its absolute location (latitude and longitude) or its relative location (in what direction and how far it is from another place).

### 1.2.3 What is place?

The world is made up of places, so to understand our world we need to understand its places by studying their variety, how they influence our lives and how we create and change them.

Places may be natural (such as an undisturbed wetland) or highly modified (like a large urban conurbation).

Place refers to how people perceive a location. You often have mental images and perceptions of places – your city, suburb, town or neighbourhood – and these may be very different from someone else’s perceptions of the same places.

### SkillBuilder discussion

#### Concluding and decision-making

1. What challenges would you imagine that people living in the Paraisópolis favela face?
2. Would the residents of the favela have a different sense of ‘place’ to that of the residents of the wealthier areas?

**FIGURE 2** The Paraisópolis favela (slum), home to 60 000 people, is situated next to the gated complexes of the wealthy Morumbi district of São Paulo in Brazil.

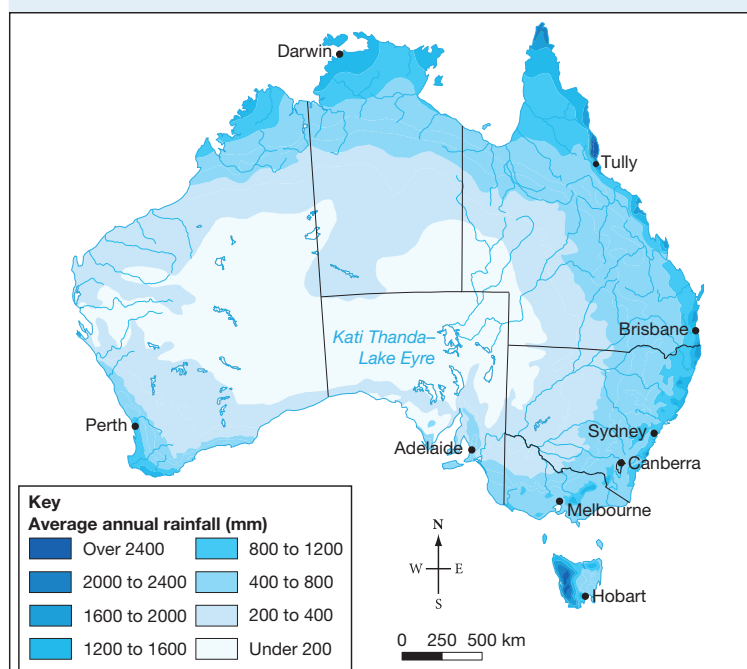


## 1.2.4 What is interconnection?

People and things are connected to other people and things in their own and other places. Understanding these connections helps us to understand how and why places are changing. The concept of interconnection emphasises that no object of geographical study can be viewed in isolation. It is about the ways that geographical phenomena are connected to each other through environmental processes, the movement of people, flows of trade and investment, the purchase of goods and services, cultural influences and the exchange of ideas and information.

An event in one location can lead to change in a place some distance away.

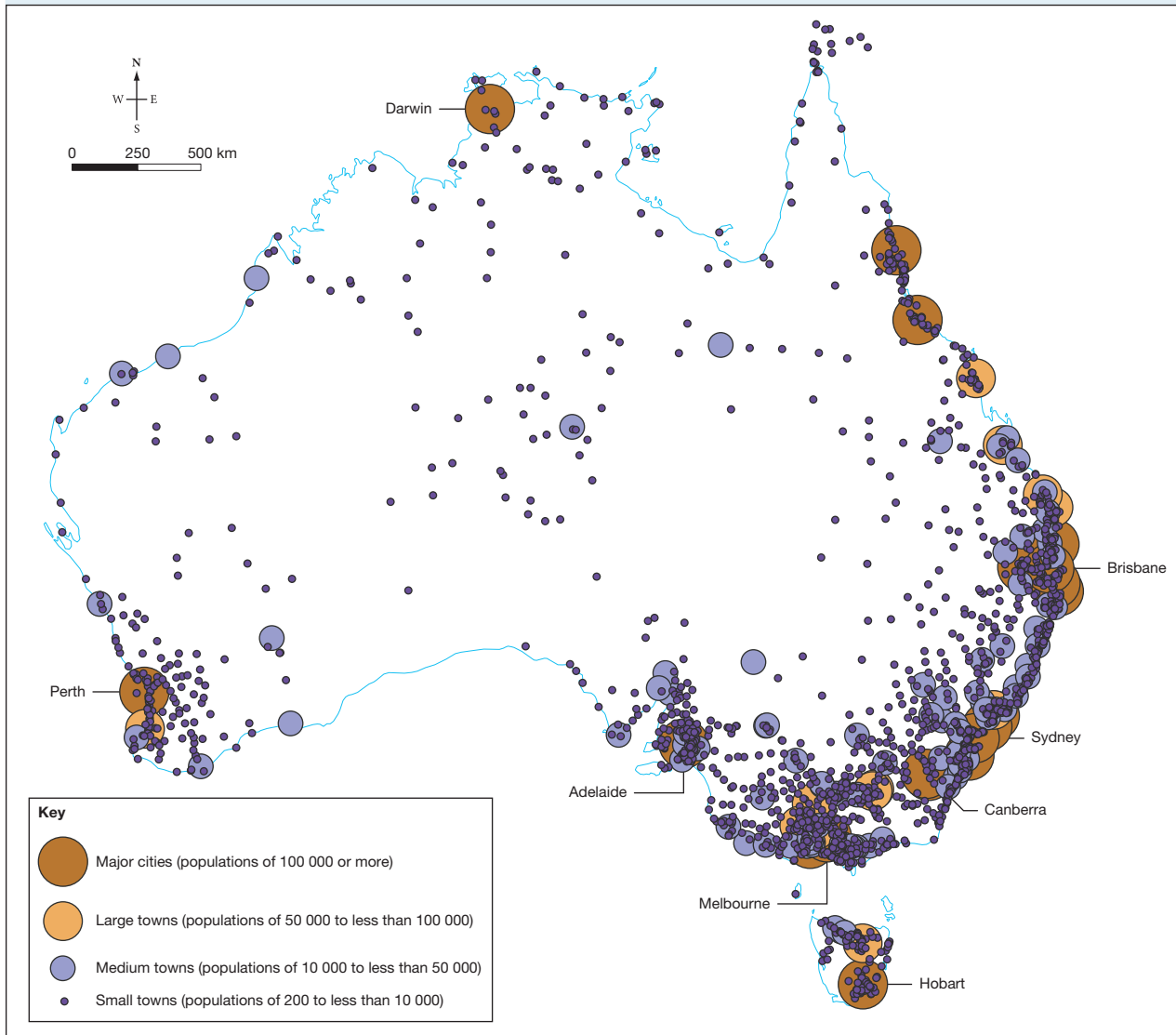
**FIGURE 3** Distribution of annual rainfall in Australia



Source: MAPgraphics Pty Ltd, Brisbane



**FIGURE 4** Australia's population distribution and density



**Source:** Australian Bureau of Statistics

### SkillBuilder discussion

#### Geographic inquiry

Look at **FIGURES 3** and **4**. Do these factors lead to change elsewhere? Are rainfall and population interconnected?

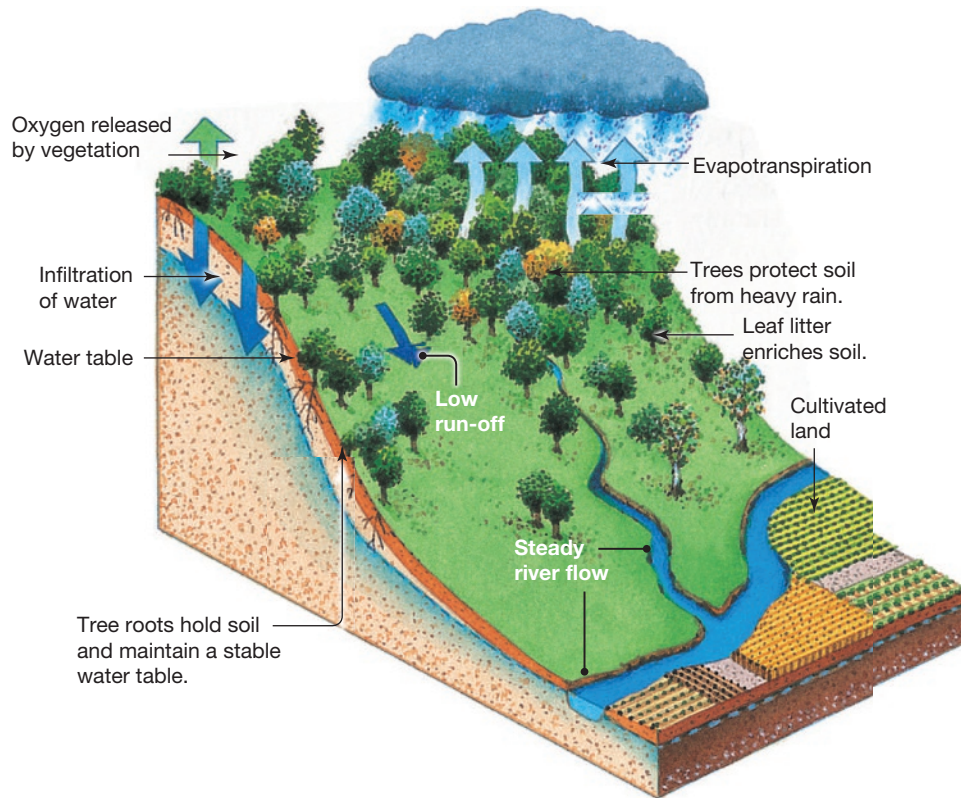
## 1.2.5 What is change?

The concept of change refers to using time to better understand a place, an environment, a spatial pattern or a geographical problem.

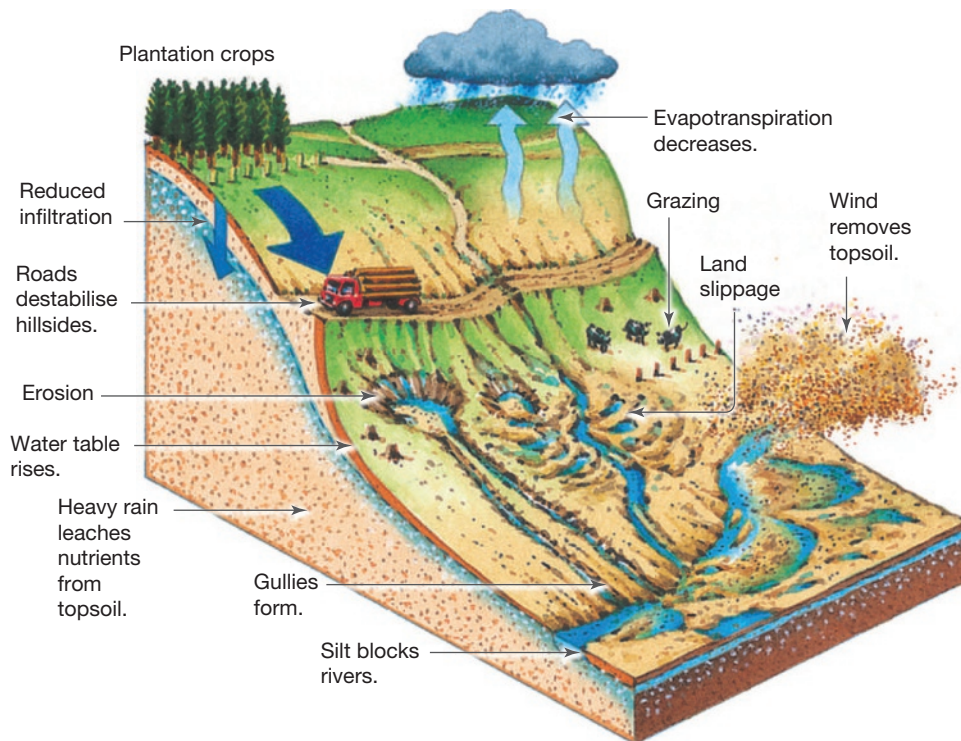
Some changes can be fast and easily observed; others are very slow. For example, cities can expand outwards over a number of years. Similarly, landforms generally change very slowly, as with the formation of mountains. But some landscape change can be very fast, as is the case with landslides, volcanic eruptions and deforestation.



**FIGURE 5(a)** Landscape before deforestation



**FIGURE 5(b)** Landscape after deforestation



### SkillBuilder discussion

#### Geographical inquiry

1. Look at **FIGURES 5 a** and **b**. Describe the scenes before deforestation and after deforestation.
2. What are the most significant changes?

## 1.2.6 What is environment?

People live in and depend on the environment, so it has an important influence on our lives.

The environment is the physical and biological world around us. It supports and enriches human and other life by providing raw materials and food, absorbing and recycling wastes, and being a source of enjoyment and inspiration to people.

## 1.2.7 What is sustainability?

Sustainability refers to the capacity of the environment to support our lives and those of other living creatures.

Sustainability is about the interconnection between the human and natural world, and who gets which resources and where. It involves the use of resources in a responsible way that doesn't exhaust them for future generations.

**FIGURE 6** An image of a 'shelterbelt'. Shelterbelts are a sustainable farming practice, where land is divided by trees and shrubs.



**FIGURE 7** Melbourne Airport is developing a solar panel network designed to generate enough energy to power all of its terminals.



### SkillBuilder discussion

#### Geographical inquiry

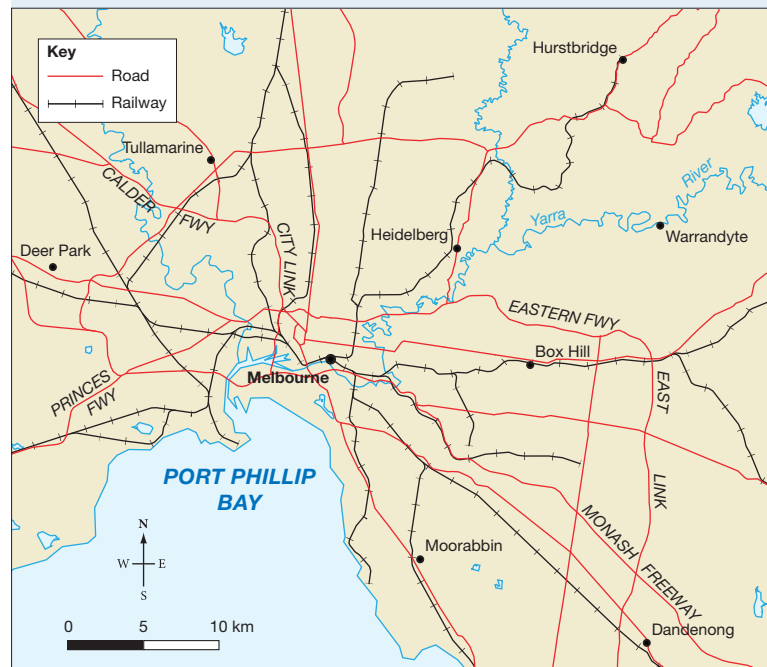
1. Look at **FIGURE 6**. List the ways that shelterbelts are sustainable.
2. Consider **FIGURE 7**. Explain how this is sustainable in a geographical sense.

## 1.2.8 What is scale?

When we examine geographical questions at different spatial levels, we are using the concept of scale to find more complete answers.

Scale can vary from personal and local to regional, national or global. Looking at things on a range of scales provides a deeper understanding of geographical issues.

**FIGURE 8** Melbourne, Victoria. Building sustainable communities means we must work at various scales.



**Source:** Department of Environment, Land, Water and Planning

Ways to improve sustainability at the local scale include:

- reducing the ecological footprint
- protecting the natural environment
- increasing community wellbeing and pride in the local area
- changing behaviour patterns by providing better local options
- encouraging compact or dense living
- providing easy access to work, play and schools.

Ways to improve sustainability at the city scale include:

- building strong central activity areas (one major hub or a number of activity areas)
- reducing traffic congestion
- protecting natural systems
- avoiding suburban sprawl and reducing inefficient land use
- distributing infrastructure and transport networks equally and efficiently to provide accessible, cheap transportation options
- promoting inclusive planning and design
- providing better access to healthy lifestyles (e.g. cycle and walking paths)
- improving air quality and waste management
- using stormwater more efficiently
- increasing access to parks and green spaces
- reducing car dependency and increasing walkability
- promoting green spaces and recreational areas
- demonstrating a high mix of uses.

**FIGURE 9** Activity and green areas in a Melbourne suburb



## 1.2.9 Skills used in studying Geography

As you become more familiar with Geography, there are three essential skills to practise and master. The SkillBuilder lessons in this topic will show you how to apply the skills related to the topics covered in this subject.

**TABLE 2** There are three broad geographical skills that you need to develop in Year 8.

Geographical skill	Description
Geographical inquiry	You will develop questions for a geographical inquiry related to a phenomenon or issue. Collect and process information from primary and secondary sources, including fieldwork. Use geospatial technologies and digital tools to make decisions and come to conclusions. You will also use a range of formats, including maps and geospatial technologies to explain patterns, relationships and trends in information presented: issues such as wealth and liveability or the relationship between mountain ranges and rainfall.
Concluding and decision-making	Geography is all about making decisions and coming to conclusions in an evidence-based manner. You will consider ethical values and analyse data using the concepts of space, change, interconnection and environment. For example, you could be using an analysis of the distribution of water to determine the sustainability of a farm.
Communicating	Communicating your ideas and justifying your conclusions are key skills you will develop in Geography. Using geographical concepts and knowledge and a range of digital and non-digital formats, you will seek to express your thoughts on a wide range of concepts and issues. When communicating in Geography, you need to ensure that you consider your audience, acknowledge your sources and choose appropriate methods of communication to ensure your message is clear and well-conceived. In Year 8, you will be expected to explore new ways of presenting information, take risks and develop new presentation skills.

To help develop your Geographical skills further, see bonus SkillBuilders from lessons 1.6 to 1.20.

## 1.2 Exercise

learnon

### Learning pathways

#### ■ LEVEL 1

3, 5, 7

#### ■ LEVEL 2

1, 2, 6, 8

#### ■ LEVEL 3

4, 9, 10

### REMEMBER AND UNDERSTAND

- How does the concept of 'place' influence human activities?
  - It is a physical location with a specific address.
  - It holds meaning and significance for individuals or groups.
  - It is characterised by a particular climate.
  - It is a space used for human activities.
- What role does interconnection play in geography?
  - It separates regions from one another.
  - It shows how features and processes are related and affect each other.
  - It identifies isolated geographical locations.
  - It maps the boundaries of continents.

3. Which of the following best defines the concept of 'space' in geography?
  - A. The arrangement of objects and people on the Earth's surface
  - B. The physical distance between two locations
  - C. An area with defined boundaries
  - D. The atmosphere surrounding the Earth
4. What does sustainability aim to achieve in geographical terms?
  - A. Unlimited consumption of resources
  - B. Preservation of resources for future generations
  - C. Economic growth without environmental concerns
  - D. Expansion of urban areas
5. Which of the following is an example of a natural environment?
  - A. A city park
  - B. A rainforest
  - C. A shopping mall
  - D. A residential neighborhood

### ANALYSE AND APPLY

6. **Explain** what is meant by the concept of 'space' in geography. How does the arrangement of different spaces influence human activities?
7. **Discuss** the concept of 'change' in geography and provide examples of both natural and human-induced changes. Refer to a place that has changed over time.
8. What are the key components of the skill of geographical inquiry?
9. **Explain** why concluding and decision-making is a key skill in geography. Use an example to support your answer.

### EVALUATE AND COMMUNICATE

10. **Identify** one advantage and one disadvantage of each method for collecting geographical information: field observations, remote sensing, and GIS.

Answers and sample responses for this topic are available online.

## LESSON 1.3 SkillBuilder: Geographical inquiry

online only

### What is a basic choropleth map?

A basic choropleth map is a shaded or coloured map that shows the density or concentration of a particular aspect of an area. The key/legend shows the value of each shading or colouring. The darkest colours show the highest concentration, and the lightest colours show the lowest concentration.

## LESSON 1.4 SkillBuilder: Concluding and decision-making

online only

### What is a population pyramid?

A population pyramid is a bar graph that provides information about the age and gender of a population. The bars identify the proportion of a country's population within a particular age group. The graph is split to show information about males and females. The shape of the population pyramid tells us about a particular population.

## LESSON 1.5 SkillBuilder: Communicating

online only

### What are compound bar graphs?

A compound bar graph is a bar or series of bars divided into sections to provide detail of a total figure. These bars can be drawn vertically or horizontally. The height or length of each section represents a percentage, with the total length of the bar representing 100 per cent.

## LESSON 1.6 SkillBuilder: Reading contour lines on a map

online only

### What are contour lines?

Contour lines drawn on a map join all places of the same elevation (height). These lines are usually brown and have a number written on them to indicate height above sea level. Contour maps are used to show the relief (shape) of the land and the heights of the landscape. Land heights are identified from aerial photography. Natural features, such as rivers, lakes and beaches, and human features, such as towns, roads and power lines, are added to the map to complete the landscape picture. Symbols provided in a legend (or key) or labels on the map add information to complete the image of the environment.

## LESSON 1.7 SkillBuilder: Recognising land features

online only

### What are land features?

Land features are landforms with distinct shapes, such as hills, valleys and mountains. You recognise these as you look around your natural environment. On topographic maps you recognise land features from the patterns formed by the contour lines.

## LESSON 1.8 SkillBuilder: Using latitude and longitude

online only

### What are latitude and longitude?

Latitude and longitude are imaginary grid lines encircling the Earth. They can be drawn over a map to help us locate a place.

## LESSON 1.9 SkillBuilder: Calculating distance using scale

online only

### What does it mean to calculate distance using scale?

Calculating distance using scale involves working out the actual distance from one place to another using a map. The scale on a map allows you to convert distance on a map or photograph to distance in the real world – what it represents on Earth's surface. A linear scale is the easiest to use, but sometimes the distance being measured between places is not straight.

## LESSON 1.10 SkillBuilder: Drawing simple cross-sections

online only

### What are cross-sections?

A cross-section is a side-on, or cut-away, view of the land as if it had been sliced through by a knife. It is like taking a vertical slice of the landscape and looking at it side-on. Cross-sections provide us with an idea of the shape of the land. We can use contour lines on topographic maps to draw a cross-section between any two points. Cross-sections also indicate heights at a range of points.

## LESSON 1.11 SkillBuilder: Interpreting an aerial photo

online only

### What are aerial photos?

Aerial photographs are those that are taken from above the Earth from an aircraft. Aerial photos, either oblique or vertical, record how a place looks at a particular moment in time. Greater detail of a place can be captured than in a photo taken from ground level. Some aerial photos are also satellite compilations; that is, created by a number of images transmitted from the satellite.

## LESSON 1.12 SkillBuilder: Understanding thematic maps

online only

### What is a thematic map?

A thematic map is a map drawn to show one aspect; that is, one theme. For example, a map may show the location of vegetation types, hazards or weather. Parts of the theme are given different colours or, if only one idea is conveyed, symbols may show location.

## LESSON 1.13 SkillBuilder: Drawing a line graph using Excel

online only

### What is a line graph?

A line graph is a clear method of displaying information so it can be easily understood. It is best used to show changes in data over time. In this SkillBuilder, you will develop your skills in constructing a line graph using Excel, which is a spreadsheet program. Using a digital means of drawing a line graph enables you to show multiple data sets clearly.

## LESSON 1.14 SkillBuilder: Using positional language

online only

### What is positional language?

Positional language uses compass points to locate places and provide directions between places. A magnetic compass will always point to north. All other directions are taken from this reference point. An 8-point compass — with points north, north-east, east, south-east, south, south-west, west, and north-west — is standard in most Geography books and atlases. A 16-point compass provides even further detail.

## LESSON 1.15 SkillBuilder: Constructing a field sketch

online only

### What are field sketches?

Field sketches are drawings completed during fieldwork — Geography outside the classroom. Field sketches allow a geographer to capture the main aspects of landscapes in order to edit the view, focusing on the important features and omitting the unnecessary information. Field sketches are free-hand drawings with annotations. Colour may be added but is not a requirement. A field sketch aids our sense of observation and allows us to record and interpret environments.

## LESSON 1.16 SkillBuilder: Creating and describing complex overlay maps

online only

### What is a complex overlay map?

A complex overlay map is created when one or more maps of the same area are laid over one another to show similarities and differences between the mapped information. All maps must be at the same scale. Laid over a base map with information that is consistent (for example, landforms), traced copies of maps showing variables (for example, population) allow you to see the elements underneath. Traditionally, the second map is on tracing paper that is attached to the original map.

## LESSON 1.17 SkillBuilder: Drawing a précis map

online only

### What is a précis map?

A précis map is a simplified map — the cartographer has decided which details to leave in and which to leave out. It is different from a sketch map, which includes all the main features.

## LESSON 1.18 SkillBuilder: Creating and reading pictographs

online only

### What is a pictograph?

A pictograph is a graph drawn using pictures to represent numbers, instead of the bars or dots that are traditionally used on graphs. Data can be drawn vertically or horizontally. Each picture is given a value.

## LESSON 1.19 SkillBuilder: Describing photographs

online only

### What is meant by ‘describing a photograph’?

A description is a brief comment (up to a paragraph) on a photograph, identifying and communicating features from a geographic point of view. Sometimes it is necessary to infer information from a photograph; for example, a cloud of dust in an image may tell us that the climate is dry, or that the place is experiencing drought, or that some movement disturbed the soil at the time the photograph was taken.

## LESSON 1.20 SkillBuilder: Constructing a basic sketch map

online only

### What is a basic sketch map?

A basic sketch map is a map drawn from an aerial photograph or developed during fieldwork. It identifies the main features of an area and is different from a précis map, in which the cartographer opts to include or leave out certain features.

## LESSON 1.21 Review

### 1.21.1 Key knowledge summary

Use this dot point summary to review the content covered in this topic.

#### 1.2 Concepts in Geography

- The acronym SPICESS helps you remember the seven geographical concepts:
  - space
  - place
  - interconnection
  - change
  - environment
  - sustainability
  - scale.
- Many occupations are linked to the study of Geography.
- New jobs are developing in the spatial sciences that use geographical tools such as GPS, GIS, satellite imaging and surveying.
- You will learn, practise and master a range of essential practical skills, including geographical inquiry, concluding and decision-making, and communicating.

### 1.2.2 Key terms

**change** the process by which places, environments or spatial patterns alter over time. In Geography, change can be natural (like erosion or climate change) or human-made (like urban development or deforestation).

**environment** the natural and human surroundings in which people, plants and animals live, including ecosystems, landscapes, and built environments.

**interconnection** the way people, places and environments are linked to each other through natural processes, trade, migration, culture and technology.

**place** a specific location on Earth that has unique physical and human characteristics, making it meaningful to people.

**sustainability** the responsible use and management of resources to meet current needs while ensuring future generations can also meet theirs.

**space** how features and places are arranged on Earth's surface; where things are located, how they are distributed, and the patterns they form

**scale** the ratio that shows how much smaller a map is compared to the real world, e.g. one centimetre on a map equals one kilometre in real life

### 1.2.3 Reflection



Complete the following to reflect on your learning.

Revisit the Inquiry question posed in the Overview.

#### **Why is geography important to study, and what skills do I need to understand geography?**

1. Now that you have completed this topic, what is your view on the question? Discuss with a partner. Has your learning in this topic changed your view? If so, how?
2. Write a paragraph in response to the inquiry question, outlining your views.

## learnon

-  **eWorkbooks** Customisable worksheets for this topic  
Reflection
-  **Digital document** Key terms glossary

### 1.21 Review exercise

#### Learning pathways

**LEVEL 1**

3, 7, 11, 12

**LEVEL 2**

1, 2, 5, 6, 9, 13

**LEVEL 3**

4, 8, 10, 14, 15

#### REMEMBER AND UNDERSTAND

- Identify what the acronym SPICES stands for in Geography.
  - Space, Place, Interconnection, Change, Environment, Sustainability, Scale
  - Space, Population, Interaction, Climate, Ecosystem, Sustainability, System
  - Soil, People, Integration, Change, Ecosystem, Species, Scale
  - Space, People, Interaction, Climate, Environment, Sustainability, Scale
- From the following, identify the word that is *not* part of the SPICES framework in Geography.
  - Space
  - Population
  - Place
  - Sustainability
- Geography primarily focuses on:
  - exploring space.
  - understanding the world's environments and human interactions.
  - creating maps.
  - studying historical events.
- The geographical inquiry approach is best described as:
  - memorising facts and figures.
  - investigating geographical questions by gathering and analysing data.
  - making creative representations.
  - listening to oral histories.
- From the following, identify the essential tool used by geographers to study the world.
  - Books
  - Maps
  - Computers
  - Photographs
- Maps provide detailed information primarily about:
  - species distribution.
  - locations and spatial relationships between places.
  - weather patterns.
  - historical events.
- When producing maps, geographers typically:
  - draw by hand or use digital tools.
  - paint abstract representations.
  - sculpt terrain models.
  - use photographs exclusively.



8. The primary reason geographers use maps is to:
  - A. navigate from place to place.
  - B. document cultural history.
  - C. interpret spatial patterns and relationships.
  - D. develop artistic representations.
9. To fully engage with geography, one must develop:
  - A. practical analytical skills.
  - B. advanced artistic abilities.
  - C. physical fitness skills.
  - D. drawing and painting techniques.
10. What is the main value of studying geography?
  - A. To learn the capitals of the world
  - B. To understand the physical world, its people and their interactions
  - C. To improve artistic creativity
  - D. To develop navigational skills

### ANALYSE AND APPLY

11. **Explain** the importance of geography in understanding the world's environmental and societal dynamics.
12. **Explain** how the concept of 'space' in geography helps explain the distribution of people, resources and environments.
13. **Distinguish** between the concepts of 'environment' and 'sustainability' within a geographical context.

### EVALUATE AND COMMUNICATE

14. **Assess** the role and effectiveness of technological advancements in geographical research and data collection.
15. **Discuss** how geographical skills can be applied to real-world scenarios, and how they assist in everyday decision-making.

**Answers and sample responses for this topic are available online.**

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