1 Geographical concepts and skills

LESSON SEQUENCE

LESSON 1.1 Overview

INQUIRY QUESTION

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

The world around us is made up of a large range of interesting places, people, cultures and environments. Geography is a way of exploring, analysing and understanding this world of ours — especially its people and places. Studying Geography at school allows you to build up your knowledge and understanding of our planet, at different scales: the local area, our nation, our region and our world. Geographers investigate the characteristics of places and the relationships between people and places.

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- **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

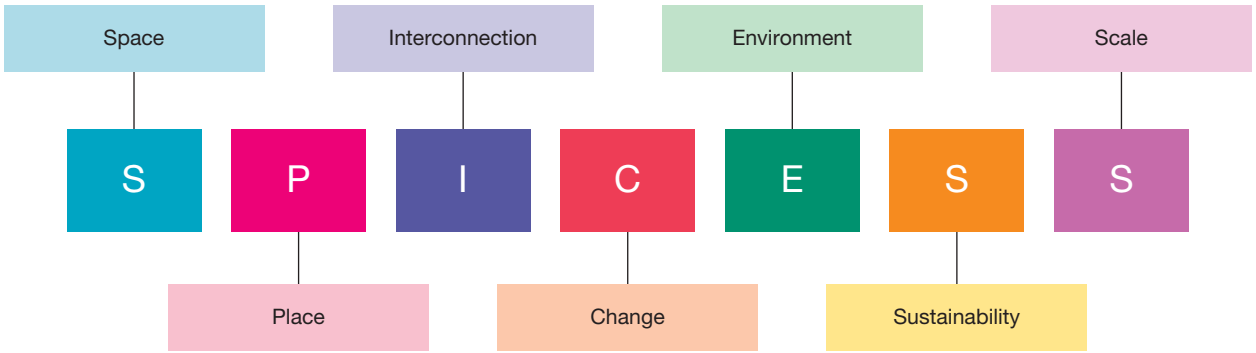
By the end of this lesson you should be able to:

- **identify, explain** and **apply** the seven geography concepts using the acronym SPICESS
- **describe** the three geographical skills.

1.2.1 Introduction

Geographical concepts help you to make sense of your world. You can use these concepts to both investigate and understand the world you live in. The concepts help you to think geographically. The seven major concepts are **space**, **place**, **interconnection**, **change**, **environment**, **sustainability** and **scale**. You will use the seven concepts to investigate two topics: water as a resource, and place and liveability.

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



What is space?

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

When referring to space in geography, we can have absolute or relative location.

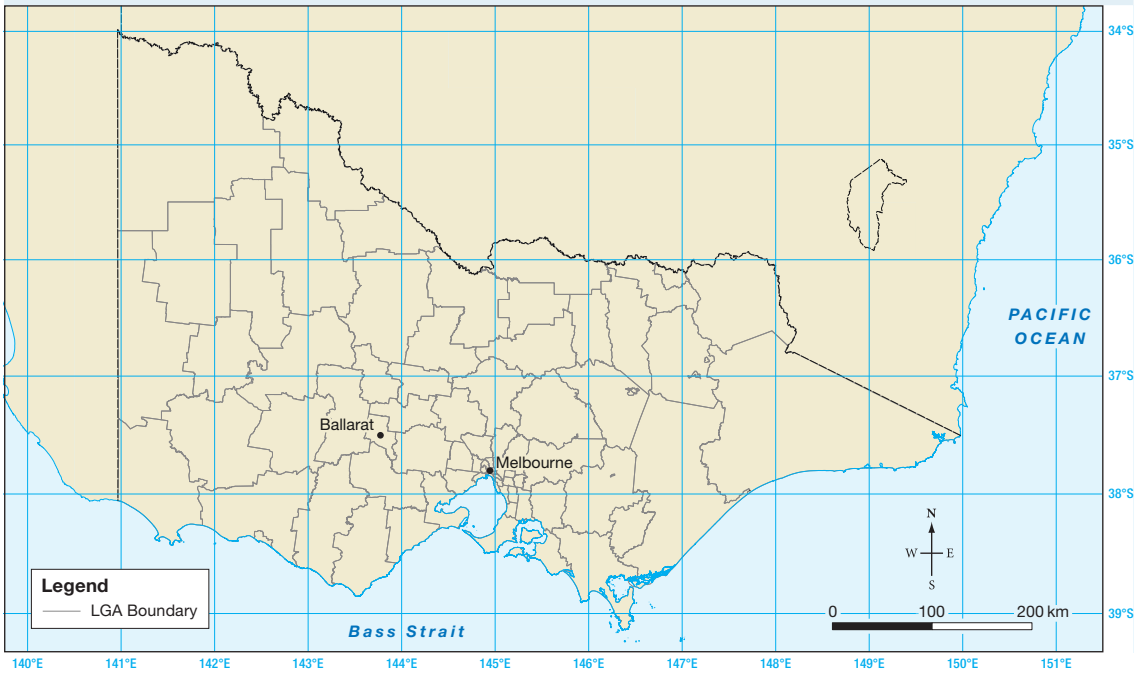
- Absolute location is the unique location of a site or geographical feature. For example, the absolute location of Ballarat is at 32°.33' South latitude and 143°.51' East longitude.
- Relative location is the location of a place or feature in relation to other places. It can be described by direction and distance from other places and features. For example, Ballarat is 110 km WNW of Melbourne.

What is place?

The world is made up of places. We 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 (such as a large city). Place refers to how people perceive a location. You often have mental images and perceptions of places — your city, suburb, town or neighbourhood. They may be very different from someone else's perceptions of the same places.

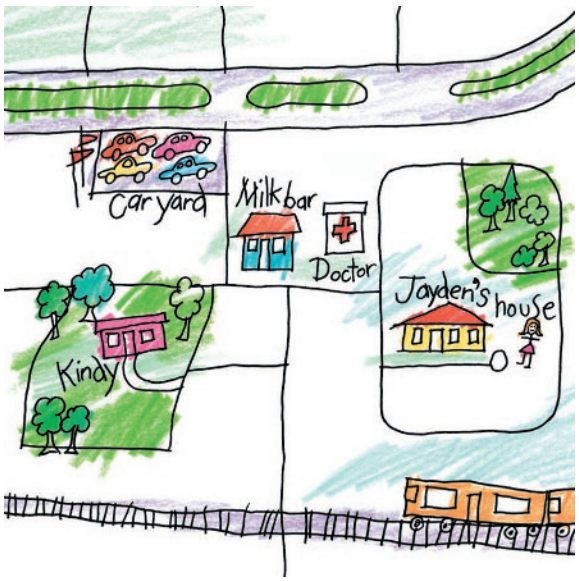
FIGURE 2 A map of Victoria



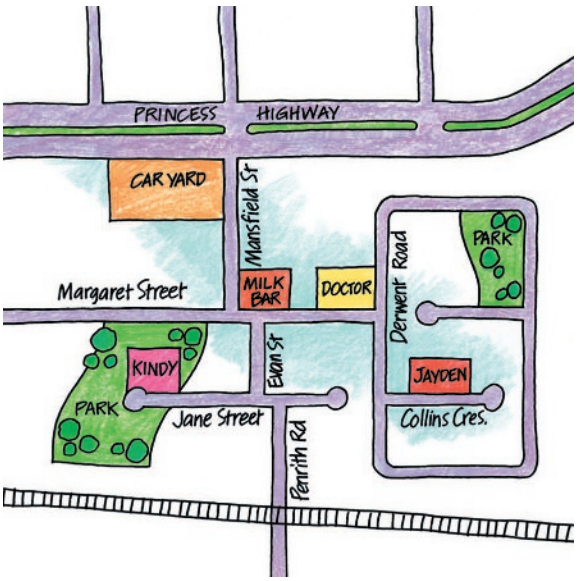
Source: Spatial Vision

FIGURE 3 Map of Jayden's local place (a) drawn by Jayden and (b) drawn by Annette, Jayden's mother

(a)



(b)



SkillBuilder discussion

Communicating

1. Why is it that Jayden and Annette draw the same place differently?
2. What things do each of them focus on?

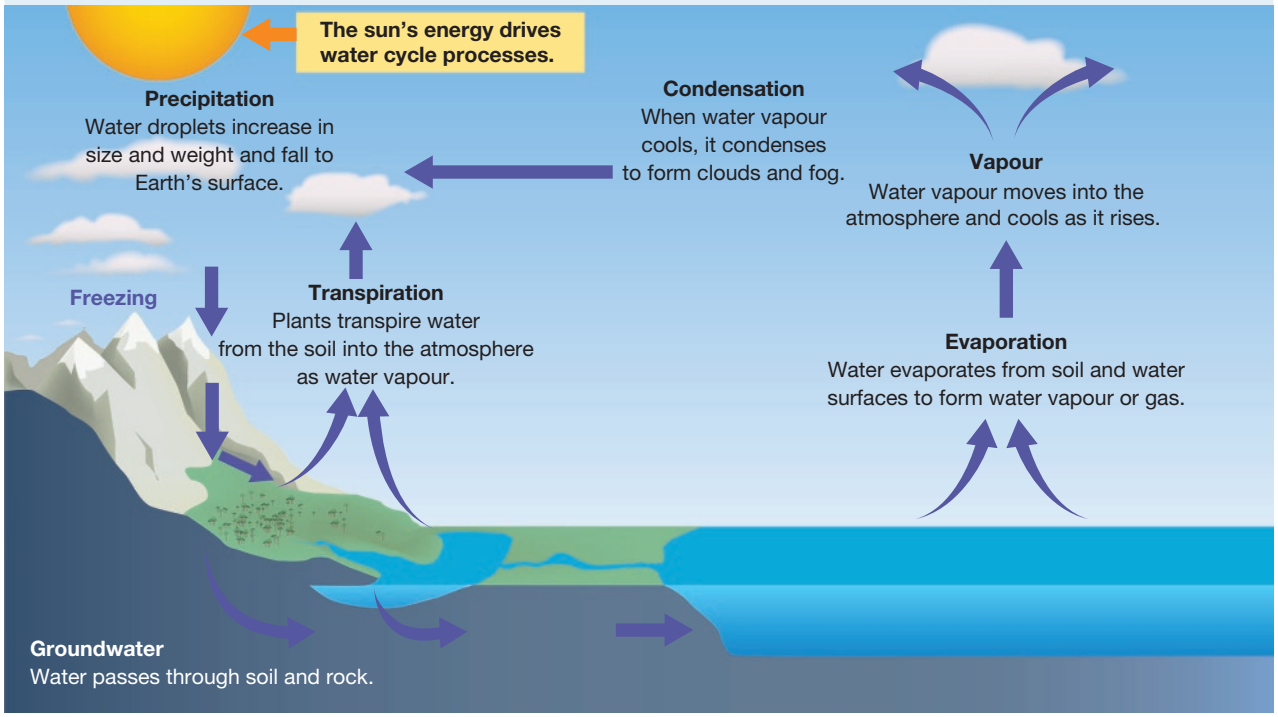
What is interconnection?

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. 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 4 Mount Tom Price township and mine in Western Australia, with fly in, fly out (FIFO) worker huts in the left foreground. It is interconnected to the rest of Australia by both the flights and the workers.

FIGURE 5 The water cycle shows many interconnections.



What is change?

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

The concept of change involves both time and space — change can take place over a period of time, or over a geographical area. The time period for change can be very short (e.g., the impact of a flash flood) or over thousands or millions of years (e.g., the development of fossil fuel resources).

FIGURE 6 Port Douglas, 60 km north of Cairns, has always been a busy area, first as a mining region and port and later as a tourist destination.

Environmental change can occur over short or long periods of time. Technology can result in rapid change — think of the explosions at a mining site that reveal mineral seams.

The degree of change occurring can be used to predict, or plan for, actual or preferred futures.

What is environment?

People live in and depend on the environment. It has an important influence on our lives.

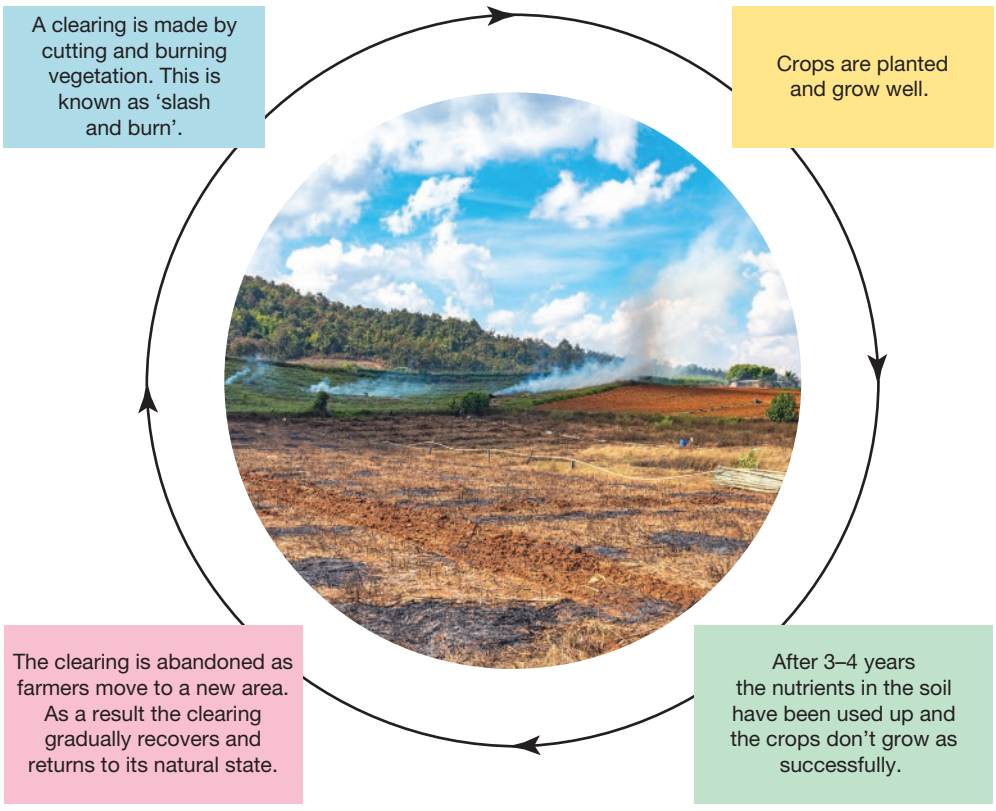
The environment is the physical and biological world around us. It supports and enriches human and other life by providing raw materials and food, absorbing and recycling wastes, and being a source of enjoyment and inspiration to people.

SkillBuilder discussion

Communicating

1. What environmental changes have occurred in the diagram?
2. Consider your environment. How is it changing?

FIGURE 7 The process of shifting cultivation alters the environment that is being farmed.



What is sustainability?

Sustainability is about maintaining the capacity of the environment to support our lives and those of other living creatures.

Sustainability considers the interconnection between the human and the 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.

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 be applied from local, regional, national or global levels.

Looking at things at a range of scales allows a deeper understanding of geographical issues.

Different factors can be involved in explaining phenomena at different scales. Local events can have global outcomes; for example, removing areas of forest at a local scale can have an impact on climate at a global scale. A policy at a national scale, such as forest protection, can have an impact at a local scale, such as the protection of an endangered species.

FIGURE 8 Railway route and main settlements between Sydney and Perth

Source: Spatial Vision

1.2.2 Geographical skills

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 geography skills and let you practise with activities related to the topics covered in this subject.

TABLE 1 The skills that you will use in Geography.

Skill	Description
Collecting your own data and information	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 issues such as wealth and livability, 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 might use 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 the study of Geography. Using geographical concepts and knowledge and a range of digital and non-digital formats, you will 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 7, 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 1.15.

1.2 SkillBuilder activity **GEOGRAPHICAL INQUIRY**

Investigating a river

1. Look at **FIGURE 9**. Discuss the types of data the students might be collecting. Why might this data be useful in studying a river?
2. Think of a question you could investigate about a river. Write down the question and explain how you might find out the answer. For example: How does the depth of the river change along its course? Measure using a meter stick ruler or depth gauge.
3. What patterns might you notice in the data (e.g., does the river get deeper in certain areas)? How could this information help people who live near the river?
4. Based on your question, write a short paragraph explaining why geographical inquiry is important when studying rivers.

FIGURE 9 Collecting your own data and information

1.2 Exercise

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Learning pathways

LEVEL 1	LEVEL 2	LEVEL 3
1, 2, 4	3, 6, 8, 10	5, 7, 9

REMEMBER AND UNDERSTAND

1. 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
2. What is meant by the geographical concept of ‘place’?
   - **A.** A physical location with a specific address
   - **B.** A location that holds meaning and significance for individuals or groups
   - **C.** An area characterised by a particular climate
   - **D.** A space used for human activities

3. How does interconnection influence geographical phenomena?
   - **A.** It separates regions from one another.
   - **B.** It shows how features and processes are related and affect each other.
   - **C.** It identifies isolated geographical locations.
   - **D.** It maps the boundaries of continents.
4. 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
5. What does sustainability aim to achieve in geography?
   - **A.** Unlimited consumption of resources
   - **B.** Preservation of resources for future generations
   - **C.** Economic growth without environmental concerns
   - **D.** Expansion of urban areas

ANALYSE AND APPLY

6. **Explain** the concept of 'scale' in geography and how it helps us to understand geographical phenomena.
7. **Describe** how the concept of 'change' is important in understanding geographical processes.
8. What are the key steps involved in conducting a geographical inquiry?
9. Why is concluding and decision-making important in geographical studies?

EVALUATE AND COMMUNICATE

10. Reflect on the various ways you might collect and encounter geographical information. Suggest three ways that you could present this information to an audience.

LESSON 1.3 SkillBuilder: Geographical inquiry

online only

What are maps and why are they useful?

Maps represent parts of the world as if you were looking down from above. The mapmaker ('cartographer') simplifies the plan view from a vertical aerial photograph or satellite image. Cartographers use colours and symbols on the map to show how features such as roads, rivers and towns are organised spatially. Maps show features that give us a deeper understanding of places. When travelling, maps help us to navigate unfamiliar places.

LESSON 1.4 SkillBuilder: Concluding and decision-making

online only

What are weather maps?

Weather maps, or synoptic charts, show weather conditions over a larger area at any given time. They appear every day in newspapers and on television news. Being able to read a weather map is a useful skill because weather affects our everyday life.

LESSON 1.5 SkillBuilder: Communicating

online only

What is a pie graph?

A pie graph, or pie chart, is a graph in which slices or segments represent the size of different parts that make up the whole. The circle of 360 degrees represents the total, or 100 per cent of whatever is being examined. The size of the segments is easily seen. Presenting the parts in order, from largest to smallest, makes it easier to interpret.

LESSON 1.6 SkillBuilder: Using topographic maps

online only

What are topographic maps?

Topographic maps are more than just contour maps showing the height and shape of the land. They also show features of the natural environment, such as forests and lakes, and features of human environments, such as roads and settlements (places where a community of people live).

LESSON 1.7 SkillBuilder: Interpreting topological maps

online only

What are topological maps?

Topological maps are very simple maps, with only the most vital information included. These maps generally use pictures to identify places, are not drawn to scale and give no sense of distance. However, everything is correct in its interconnection to other points.

LESSON 1.8 SkillBuilder: Using alphanumeric grid references

online only

What are alphanumeric grid references?

Alphanumeric grid references are a combination of letters and numbers that help us locate specific positions on a map. They are linked to the lines that form a grid over certain kinds of maps. The letters and numbers are placed alongside the gridlines, just outside the map. The grid, letters and numbers allow you to pinpoint a place or feature by stating its alphanumeric grid reference.

LESSON 1.9 SkillBuilder: Drawing a climate graph

online only

What are climate graphs?

Climate graphs, or climographs, are graphs that show climate data for a particular place over a 12-month period. They combine a column graph and a line graph. The line graph shows average monthly temperature, and the column graph shows average monthly precipitation (rainfall).

LESSON 1.10 SkillBuilder: Creating and analysing overlay maps

online only

What are overlay maps?

An overlay map usually consists of two or more maps of the same area. A base map is overlaid with a transparent overlay, showing different information. Overlay maps allow users to see the relationships between the information on two or more maps.

LESSON 1.11 SkillBuilder: Annotating a photograph

online only

What are annotated photographs?

Photographs are used to show aspects of a place. Annotations are added to photographs to draw the reader's attention to what can be seen and deduced.

LESSON 1.12 SkillBuilder: Interpreting diagrams

online only

What are diagrams?

A diagram is a graphic representation of something. In Geography, it is often a simple way of showing the arrangement of elements in a landscape and the relationships between those elements. Diagrams also have annotations: labels that explain aspects of the illustration.

LESSON 1.13 SkillBuilder: Cardinal points — Wind roses

online only

What are wind roses?

A wind rose is a diagram that shows the main wind features of a place; in particular, wind direction, speed and frequency. Wind directions can be divided into 8 or 16 compass directions.

LESSON 1.14 SkillBuilder: Creating a concept diagram

online only

What is a concept diagram?

A concept diagram, sometimes mistakenly called a concept map, is a graphical tool that shows links between ideas or concepts. Concept diagrams organise links into different levels. Concept diagrams enable you to organise your ideas and communicate them to others.

LESSON 1.15 SkillBuilder: Understanding satellite images

online only

What are satellite images?

Satellite images show parts of our planet from space. They are taken from satellites and transmitted to stations on Earth. Satellites can collect a variety of data, including standard photographic imagery, colour infrared and radar data. They can show Earth in close-up or from far away.

LESSON 1.16 Review

1.16.1 Key knowledge summary

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

1.2 Geographical concepts and skills

- The acronym SPICESS helps you remember the seven geographical concepts: space, place, interconnection, change, environment, sustainability and scale.
- The three Geographical skills that you will develop throughout your course are:
  - *Geographical inquiry:* This involves developing and refining geographical questions to investigate places and phenomena by collecting, recording and interpreting data from various sources, including fieldwork and maps. It also involves analysing information to identify patterns, trends and relationships.
  - *Concluding and decision-making:* This involves drawing conclusions based on evidence from geographical data and research; evaluating different perspectives and solutions to geographical challenges; and making informed decisions about environmental, social and economic issues.
  - *Communicating:* This involves presenting geographical findings using maps, graphs, reports and digital tools; using geographical terminology and data to support explanations; and sharing findings in different formats to inform and engage audiences.

1.16.2 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.
space where things are located and distributed on the surface of the Earth
sustainability the responsible use and management of resources to meet current needs while ensuring future generations can also meet theirs.
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

1.16.3 Reflection

Complete the following to reflect on your learning.

Revist 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 questions? Discuss with a partner. Has your learning in this topic changed your view? If so,how?
2. Write a paragraph in response to one of the inquiry questions, outlining your views.

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Reflection
Digital document Key terms glossary

1.16 Review exercise

Learning pathways

LEVEL 1	LEVEL 2	LEVEL 3
3, 7, 11, 12	1, 2, 5, 6, 9, 13	4, 8, 10, 14, 15

REMEMBER AND UNDERSTAND

1. What does the acronym SPICESS mean in geography?
   - **A.** Space, Place, Interconnection, Change, Environment, Sustainability, Scale
   - **B.** Space, Population, Interaction, Climate, Ecosystem, Sustainability, System
   - **C.** Soil, People, Integration, Change, Ecosystem, Species, Scale
   - **D.** Space, People, Interaction, Climate, Environment, Sustainability, Scale
2. Which of the following is NOT a geographical concept included in SPICESS?
   - **A.** Space
   - **B.** Population
   - **C.** Place
   - **D.** Sustainability
3. Geography is a way of:
   - **A.** playing sports
   - **B.** analysing and understanding the world
   - **C.** creating art
   - **D.** reacting to sources
4. The inquiry approach in geography involves:
   - **A.** memorising facts
   - **B.** investigating questions by collecting, analysing and interpreting information
   - **C.** drawing pictures
   - **D.** reciting poems
5. What key tool do geographers use to explore the world?
   - **A.** Books
   - **B.** Maps
   - **C.** Vehicles
   - **D.** Cameras
6. Maps contain a lot of information about:
   - **A.** animals and plants
   - **B.** people and places
   - **C.** weather and climate
   - **D.** history and mythology
7. As a geographer, you will produce your own maps:
   - **A.** by hand or digitally
   - **B.** using paint
   - **C.** with clay
   - **D.** on paper

8. Geographers are most likely to use maps to:
   - **A.** find their way around
   - **B.** to develop a hypothesis
   - **C.** analyse spatial information
   - **D.** build models
9. Learning geography requires mastering a range of:
   - **A.** practical skills
   - **B.** artistic skills
   - **C.** writing skills
   - **D.** drawing skills
10. Geography is mostly helpful in allowing us:
   - **A.** to get from one place to another
   - **B.** understand the world, its people and places
   - **C.** to remember capital cities
   - **D.** to develop creativity

ANALYSE AND APPLY

11. **Explain** what is meant by geography and why is it important?
12. **Describe** what is meant by the concept of space in geography
13. What is the difference between the concepts of environment and sustainability?

EVALUATE AND COMMUNICATE

14. **Evaluate** the usefulness of technology to a geographer
15. **Propose** how geographical skills can be useful in everyday life.

Answers and sample responses for this topic are available online.