

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?

When you study Geography, you are building knowledge and skills that you and your community will need now and into the future. The concepts and skills that you use in Geography can also be applied to everyday situations, such as finding your way from one place to another. Studying Geography may help you in a future career here in Australia or somewhere overseas.

Throughout your study of Geography, you will cover topics that will give you a better understanding of the social and physical aspects of the world around you, at both the local and global scale. You will investigate important issues that need to be addressed now and in the future.

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eWorkbook

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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

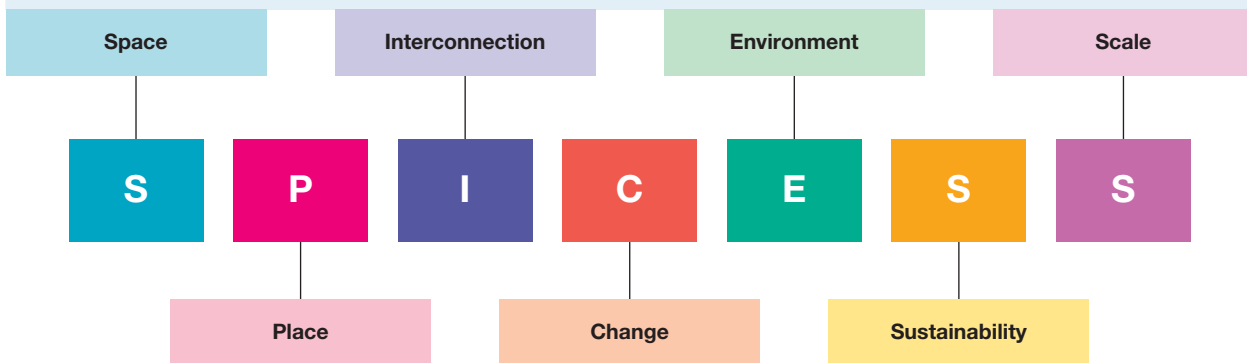
By the end of this lesson you should be able to:

- **identify, explain and apply** the seven Geography concepts using the acronym SPICESS
- **explain** the three Geographical skills.

1.2.1 Introduction

Geographical concepts help you make sense of your world. By using these concepts, you can investigate and understand the world you live in, and you can use them to try to imagine a different world. The concepts help you to think geographically. The seven major concepts space, place, interconnection, change, environment, sustainability and scale will be explored in detail in the following sections and through the activities and exercises in this lesson.

FIGURE 1 A way to remember the seven geographical 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.

A site can be described by its absolute location; for example, latitude and longitude, a grid reference, street directory reference or an address. Or a place can be described using its relative location — where it is in relation to another place in terms of distance and direction.

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 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.

What is place?

A **place** is a part of the Earth's surface with meaning to people. To understand our world, we study the variety of places, their impact on our lives, and how we shape them.

Everywhere is a place, from biomes like deserts to specific areas such as the Sahara Desert. Places can be natural, like an oasis, or man-made, like Las Vegas. They serve different functions; for example, Canberra as an administrative centre, the MCG for sports events, and the Great Barrier Reef for its coral biome beauty. People connect to places and each other through movement and technology, linking us to familiar locations like our neighbourhood or favourite vacation spots.

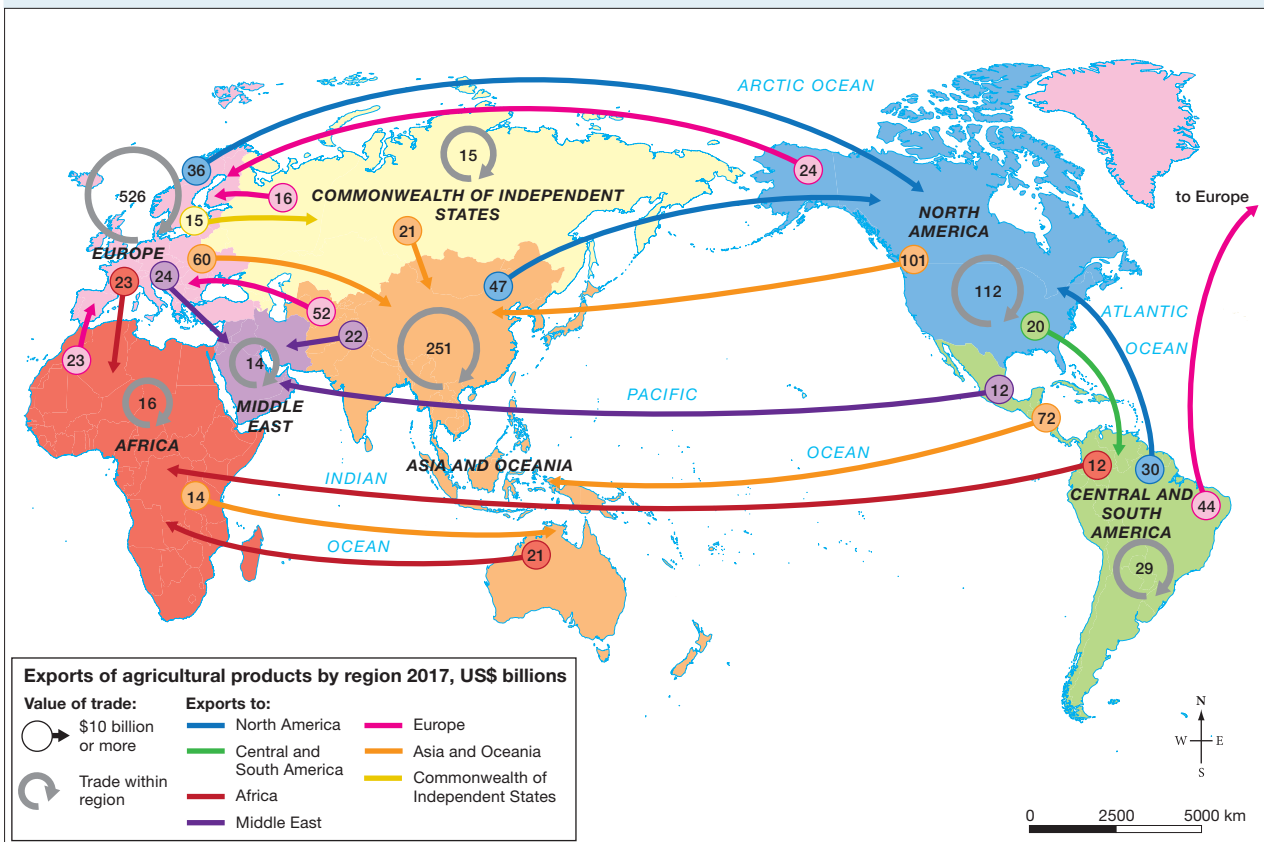
FIGURE 2 Located in a desert biome, this array of greenhouses in Almeria, Spain, allows for the control of soil, moisture, nutrients and weather conditions, enabling the large-scale farming of fruit and vegetables.



What is interconnection?

People and things are connected to other people and things in their own and other places, and understanding these connections helps us to understand how and why places are changing.

FIGURE 3 World trade flows — exports of agricultural products by region, US\$ billion



Source: Based on data from WTO. Map drawn by Spatial Vision.

SkillBuilder discussion

Concluding and decision-making

Look at **FIGURE 3**. Discuss the interconnectedness of the world through exports. What trends do you see, and how might these have changed since the map was drawn?

Individual geographical features can be interconnected; for example, the climate within a place or biome, such as a tropical rainforest, can influence natural vegetation, while removal of this vegetation can affect climate. People can be interconnected to other people and other places via employment, communications, sporting events or cultural ties. The manufacture of a product may create **interconnections** between suppliers, manufacturers, retailers and consumers. Trade in goods and services creates interconnections across the globe.

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.

FIGURE 4 A view of Melbourne's city skyline



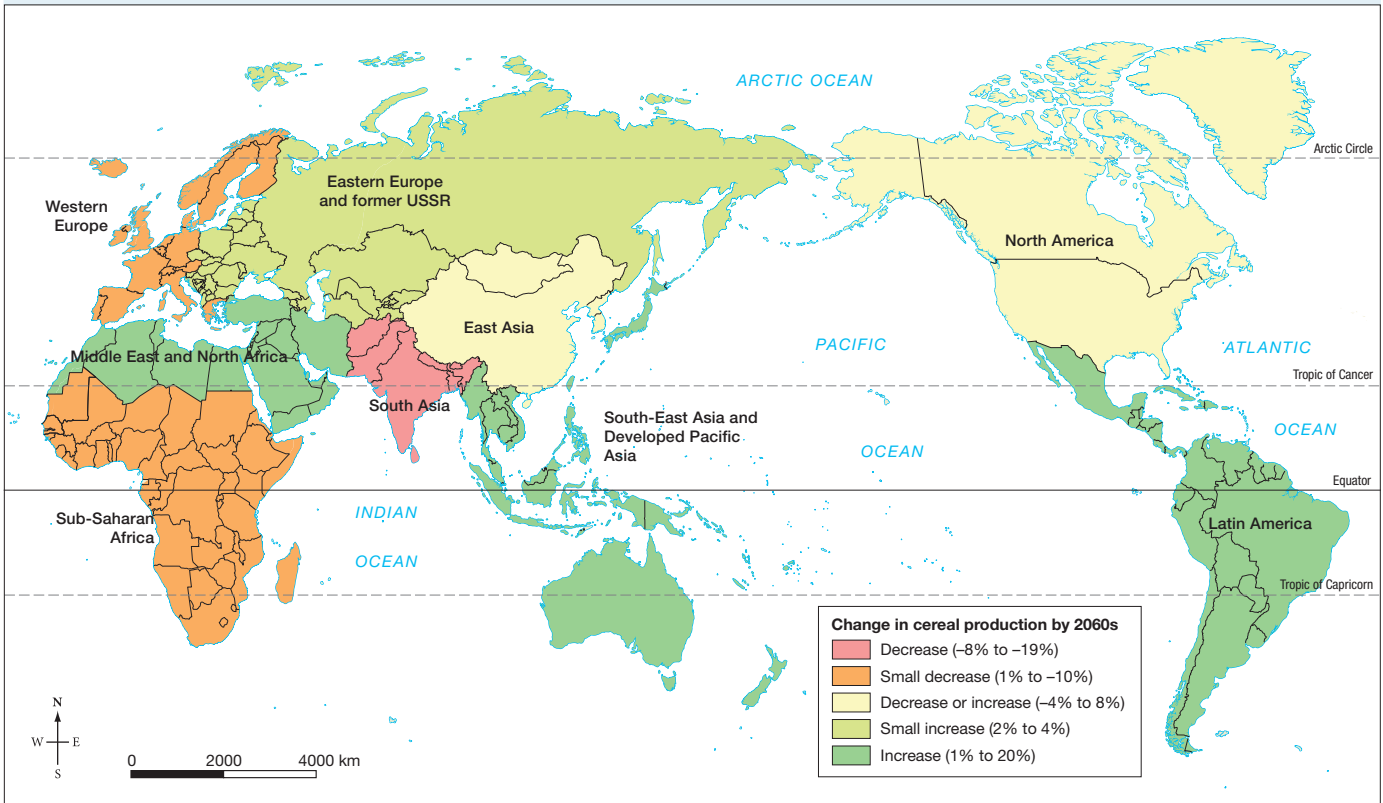
SkillBuilder discussion

Concluding and decision-making

How has Melbourne changed during your lifetime? How has your town or suburb changed?

From a geographical time perspective, change can be very slow — think of processes such as the formation of mountains or soil. On the other hand, a volcanic eruption or landslide can change landforms rapidly. It may take some years for the boundary of a city to expand outwards, but in the space of a few weeks whole suburbs can be demolished to make way for a freeway. Change can also have physical, economic and social implications for people and communities. Consider the effect of the COVID-19 pandemic.

FIGURE 5 Mapping potential change: predictions of the effects of climate change on cereal crops



Source: Based on data from Reducing climate change impacts on agriculture: Global and regional effects of mitigation, 2000•2080 by Tubiello F N, Fisher G in Technological Forecasting and Social Change 2007, 747: 1030-56. Map drawn by Spatial Vision.

What is environment?

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

The biological and physical world that makes up the environment is important to us as a source of food and raw materials, a means of absorbing and recycling wastes, and a source of enjoyment and inspiration.

People perceive, adapt and use environments in many ways. For example, three different people could look at a well-vegetated hillside; one might see it as a source of timber for construction, another might see a slope that could be cleared and terraced to produce food, while another might view it as a scenic environment for ecotourism.

FIGURE 6 The East Kolkata wetlands act as a sewage filtration system and recycle nutrients through the soil to allow a wide range of food crops to be grown. The ponds provide one-third of the city's fish supply.



What is sustainability?

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

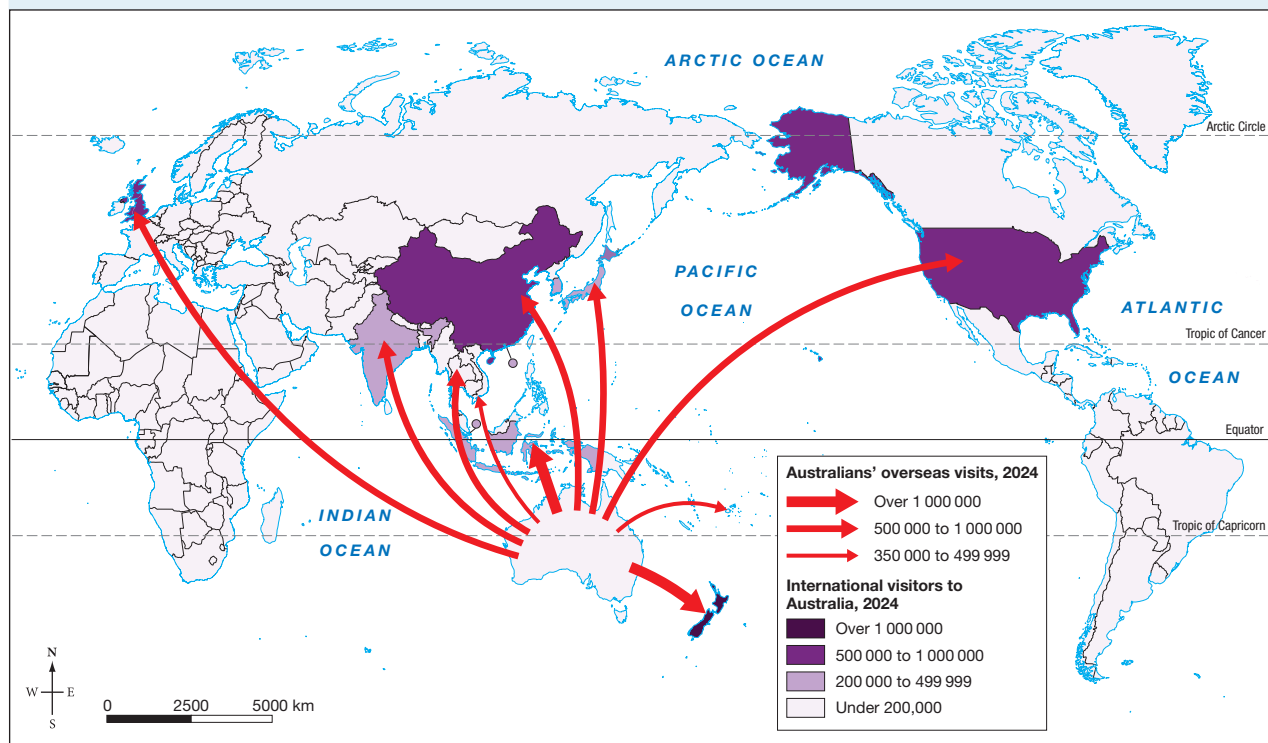
Sustainability involves maintaining and managing our resources and environments for our needs today and for future generations. It is important to understand the causes of unsustainable situations to be able to make informed decisions on the best way to manage our natural world.

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 enables us to examine issues from different perspectives, from personal to local, regional, national or global. Using scale helps in the analysis and explanation of phenomena. For example, climate is the most important factor in determining vegetation type on a global scale, whereas, at a local scale, soil and drainage might be more important. Different activities can also have an impact at a range of scales; for example, the construction of an international airport in Cairns saw the development of tourism evolve from a local to an international scale, with direct flights between Australia and South-East Asia.

FIGURE 7 Country of origin for tourists visiting Australia, and destinations for Australian tourists



Source: Adapted from Australian Bureau of Statistics. Map drawn by Spatial Vision.

1.2.2 Geographical skills

In addition to the concepts you study in Geography, there are a range of essential practical skills that you will learn, practise and build.

The specific Geographical skills you'll use in Year 9 are listed below. These can be categorised into the three core Geography skills.

TABLE 1 The skills that you will use in Geography

Skill	Description
Geographical inquiry	Develop a range of questions for geographical inquiry related to a phenomenon, issue or challenge. Conduct fieldwork to collect, process and compare information from primary and secondary sources. Use geospatial technologies and digital tools to present and analyse information in various formats, including graphs and maps. Understand how our interconnected and interdependent world shapes the planet's future.
Concluding and decision-making	Analyse data from various sources to justify conclusions and propose strategies. Consider ethical values to address issues using geographical concepts. Evaluate environmental, economic and social factors to assess the interconnectedness of biomes and food security. Draw conclusions on balancing food production with maintaining sustainable biomes. Theorise how information and communication technologies will shape future interactions with the natural world. Develop and evaluate strategies using environmental, economic or social criteria, recommending actions and predicting their impacts on food security and the connectivity of biomes.
Communicating	Develop communication skills using geographical concepts and knowledge. Express ideas on a wide range of concepts and issues using digital and non-digital formats. Consider your audience, acknowledge sources and choose appropriate methods of communication to ensure your message is clear and well-presented. Explore new ways of presenting information, such as developing a documentary or podcast, to enhance fieldwork reports or research assignments.

To help develop your Geographical skills further, see bonus SkillBuilders from lessons 1.6 to 1.19.

SkillBuilder activity GEOGRAPHICAL INQUIRY

Think about a place you've visited for a hike, holiday or school trip — a natural site like a beach, mountain or park. What changes did you notice from tourism (e.g., litter, crowds, signs, walkways)?

- With your place in mind, answer the following questions:
 - Why do people visit this place?
 - What problems might occur if too many people visit?
 - What is 'ecotourism'? Why is it important?
- Collect some additional information about your chosen place, such as:
 - visitor numbers over time
 - management strategies used by park authorities
 - maps showing location and trails
 - satellite images to show change over time.
- In pairs, come up with five geographical inquiry questions about managing ecotourism at your local landform site. Use these sentence starters, and complete some extra research to answer your questions:

What is...

Where is...

Why is...

How does...

What if...

Example: What is the impact of tourism on the walking tracks at [local site]?
- Answer the following based on what you've discovered.
 - What are the biggest challenges of managing ecotourism here?
 - What actions could be taken to protect the landform while still allowing people to visit?

Learning pathways

■ LEVEL 1

1, 4, 6

■ LEVEL 2

2, 5, 7, 8

■ LEVEL 3

3, 9, 10

REMEMBER AND UNDERSTAND

- Which of the following most accurately defines the concept of 'space' in Geography?
 - The arrangement of objects and people on the Earth's surface
 - The physical distance between two locations
 - An area with defined boundaries
 - The atmosphere surrounding the Earth
- What is meant by the geographical concept of 'place'?
 - A physical location with a specific address
 - A location that holds meaning and significance for individuals or groups
 - An area characterised by a particular climate
 - A space used for human activities
- How does interconnection influence geographical phenomena and the overall wellbeing of a population?
 - 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.
- Which of the following is an example of a natural environment?
 - A city park
 - A rainforest
 - A shopping mall
 - A residential neighbourhood
- What does sustainability aim to achieve in Geography?
 - Unlimited consumption of resources
 - Preservation of resources for future generations
 - Economic growth without environmental concerns
 - Expansion of urban areas

ANALYSE AND APPLY

- Explain** the concept of 'scale' in geography.
- Describe** the concept of 'change' and its importance in understanding the liveability of a place.
- What are the key steps involved in conducting a geographical inquiry?
- Why is concluding and decision-making critical in geographical studies?

EVALUATE AND COMMUNICATE

- Reflect** on the various ways you might collect and encounter geographical information. **Suggest** three methods to present this information to an audience.

Answers and sample responses for this topic are available online.

LESSON 1.3 SkillBuilder: Geographical inquiry

online only

What are interviews that survey people's opinions?

Surveys collect primary data, such as data that has been gathered in the field. Conducting a survey interview means asking questions, recording and collecting responses, and collating the number of responses. In this lesson you will create your own survey.

LESSON 1.4 SkillBuilder: Concluding and decision-making

online only

What is a satellite image?

A satellite image is an image taken from a satellite orbiting the Earth. Satellite images allow us to see very large areas — much larger than those that can be visualised using vertical aerial photography. A satellite image often does not use the natural colours that we expect to highlight spatial patterns more clearly. In this lesson you will analyse satellite images to draw conclusions and communicate the change in an area.

LESSON 1.5 SkillBuilder: Communicating

online only

What is a fieldwork report?

A fieldwork report helps you process all the information that you have gathered during fieldwork. You sort your data, create tables and graphs, and select images. You interpret the data as text or annotated images to communicate your ideas. In this lesson you will practice communicating the findings of a fieldwork report.

LESSON 1.6 SkillBuilder: Describing spatial relationships in thematic maps

online only

What are spatial relationships in thematic maps?

A spatial relationship is the interconnection between two or more pieces of information in a thematic map, and the degree to which they influence each other's distribution in space. Describing these relationships helps us understand how one thing affects another.

LESSON 1.7 SkillBuilder: Describing divergence graphs

online only

What is a divergence graph?

A divergence graph is a graph that is drawn above and below a zero line. Those numbers above the line are positive, showing the amount above zero. Negative numbers that are shown indicate that the data has fallen below zero.

LESSON 1.8 SkillBuilder: Describing patterns and correlations on a topographic map

online only

What is a pattern?

A pattern is the way in which features are distributed or spread. A correlation shows how two or more features are interconnected — that is, the relationship between the features. In this lesson you will describe the patterns and correlations seen on a topographic map.

LESSON 1.9 SkillBuilder: Constructing and describing a transect on a topographic map

online only

What is a transect?

A transect is a cross-section with additional detail which summarises information about the environment. In addition to the shape of the land, a transect shows what is on the ground, including landforms, vegetation, soil types, settlements and infrastructure.

LESSON 1.10 SkillBuilder: Constructing multiple line and cumulative line graphs

online only

What are multiple line and cumulative line graphs?

Multiple line graphs consist of a number of separate lines drawn on a single graph. Cumulative line graphs are more complex to read, because each set of data is added to the previous line graph in a new layer or level. Both formats show change over time, and both show trends effectively.

LESSON 1.11 SkillBuilder: Constructing a land use map

online only

What is a land use map?

A land use map may be drawn from a topographic map, an aerial photograph or a plan, or during fieldwork.

A land use map shows simplified information about the uses made of an area of land. In a built environment, a land use map may show a shopping centre, a local shopping strip, or the types of houses in a street. In a rural environment, a land use map may show vegetation types or agricultural activities.

LESSON 1.12 SkillBuilder: Constructing ternary graphs

online only

What are ternary graphs?

Ternary graphs are triangular graphs that show the relationship or interconnection between features. They are particularly useful when a feature has three components and the three components add up to 100 per cent.

LESSON 1.13 SkillBuilder: Constructing and describing isoline maps

online only

What is an isoline map?

An isoline map shows lines that join all the places with the same value. Isoline maps show gradual change in one type of data over a continuous area. Isolines do not cross or touch each other. The same difference is always shown between each isoline and the next over the entire map.

LESSON 1.14 SkillBuilder: Constructing and describing a flow map

online only

What is a flow map?

A flow map is a map that shows the movement of people or objects from one place to another. Arrows are drawn from the point of origin to the destination. Sometimes these lines are scaled to indicate how much of the feature is moving. Thicker lines show a larger amount; thinner lines show a smaller amount.

LESSON 1.15 SkillBuilder: Constructing a table of data for GIS

online only

Why are there tables within GIS?

Geographical information systems, or GIS, use tables to organise and store information about points, lines and polygons (vector data). These tables have rows and columns, called fields. The GIS software links the rows in the table to the points, lines or polygons on a map.

LESSON 1.16 SkillBuilder: GIS — deconstructing a map

online only

What is GIS?

A geographical information system (GIS) is a storage system for information or data, which is stored as numbers, words or pictures. In this lesson you will deconstruct a map and create a simple GIS overlay.

LESSON 1.17 SkillBuilder: Interpreting a geographical cartoon

online only

What are geographical cartoons?

Geographical cartoons are humorous or satirical drawings on topical geographical issues, social trends and events. A cartoon conveys the artist's perspective on a topic, generally simplifying the issue.

LESSON 1.18 Review

1.18.1 Key knowledge summary

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

1.2 Geographical concepts and skills

- The acronym SPICES 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.

1.18.2 Key terms

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 an area

environment the physical and biological world around us, which 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

interconnection refers to the ways people and/or geographical phenomena are connected through environmental processes and human activity, influencing place characteristics

place an area on the Earth's surface which is identified and has meaning for people

scale the way that geographical phenomena and processes can be examined at different spatial levels. Scale can be applied from personal and local levels to regional, national or global levels

space where things are located and distributed on the surface of the Earth

sustainability refers to maintaining the capacity of the environment to support our lives and those of other living creatures now and into the future

1.18.3 Reflection

Complete the following to reflect on your learning.

Revisit the inquiry questions 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.

learn on



eWorkbooks

Customisable worksheets for this topic
Reflection



Digital document

Key terms glossary

1.18 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

1. What do you think the term liveability refers to in Geography?
 - A. How often a place is visited
 - B. How suitable a place is for farming
 - C. How well a place meets the needs of its residents
 - D. How easy it is to find a location on a map
2. Which SPICES concept would you use to study how humans move between cities and affect both places?
 - A. Change
 - B. Environment
 - C. Scale
 - D. Interconnection
3. A geographer investigating pollution levels in a river at local, regional and national levels is using the concept of:
 - A. place.
 - B. scale.
 - C. space.
 - D. change.
4. Which statement best describes the concept of place in Geography?
 - A. A fixed point on a map
 - B. An area of land with no human activity
 - C. A location given meaning by people
 - D. A part of the Earth unaffected by humans
5. Which of the following best represents 'environment' in the SPICES framework?
 - A. Population density maps
 - B. Cultural celebrations
 - C. Natural and built surroundings that support life
 - D. Border disputes between countries
6. A city with high liveability is likely to have:
 - A. poor access to education.
 - B. high levels of crime.
 - C. clean air and green spaces.
 - D. few job opportunities.
7. Which of the following is an example of a qualitative method used to study place?
 - A. Census data
 - B. Climate graphs
 - C. Surveys and interviews
 - D. Population statistics

8. The concept of 'change' in Geography helps us understand:
 - A. how music has evolved over time.
 - B. why places and environments stay the same.
 - C. how places, environments and spatial patterns evolve over time.
 - D. the best route to travel.
9. The liveability of a place can change over time due to:
 - A. changes in latitude.
 - B. population migration and infrastructure development.
 - C. rotation of the Earth.
 - D. movements of tectonic plates.
10. Which of the following is not a factor that influences a person's sense of place?
 - A. Personal memories
 - B. Emotional connection
 - C. Cultural background
 - D. Soil composition

ANALYSE AND APPLY

11. **Explain** how access to public transport can affect the interconnectedness of a suburb.
12. **Describe** how different people (e.g., young families, the elderly, migrants) may value place in different ways.
13. **Compare** two different places you know. How do their features differ (e.g., services, safety, green spaces)?

EVALUATE AND COMMUNICATE

14. **Evaluate** the benefits and challenges of using GIS to study urban wellbeing.
15. **Propose** one local action or strategy that could improve place in your community, and **explain** how it would benefit residents.

Answers and sample responses for this topic are available online.
