TOPIC 1
The world of Geography

1.1 Overview

Numerous videos and interactivities are embedded just where you need them, at the point of learning, in your learnON title at www.jacplus.com.au. They will help you to learn the content and concepts covered in this topic.

1.1.1 Work and careers in Geography

As the world’s population increases and the impacts of environmental changes affect living conditions, people and organisations will need to adapt and develop strategies to manage and sustain fragile environments and resources. Land degradation, marine pollution and feeding the future world populations are just three environmental challenges that will be the focus for many occupations in the future. Which careers will be helpful in managing environmental change?

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>Careers that will manage environmental change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conservationists</td>
<td>Conservationists will work to find solutions to land degradation. They will work for governments, in national parks and on policy development, and with local communities on environmental protection projects.</td>
</tr>
<tr>
<td>Oceanographers</td>
<td>Work for oceanographers will mainly involve research and monitoring of the marine environment. They may work for governments, providing data and advice on pollution levels, or they may work for private or not-for-profit organisations, helping to suggest and implement plans for cleaning up the oceans.</td>
</tr>
<tr>
<td>Agricultural scientists</td>
<td>Agricultural scientists will be employed by the government, and agricultural and horticultural producers. They will work with farmer groups and agribusiness to carry out research, and with mining companies, working on regeneration projects.</td>
</tr>
</tbody>
</table>

Profile of a geographer

Geographers have a love of learning. They are the explorers of the modern world. Geographers are lifelong learners; they expand their knowledge to adapt their skills to the tasks required.

Expansion of knowledge requires a willingness to learn. How many of these skills and attributes have you developed?

- Willingness to learn
- Curiosity and adaptability
• Active listening
• Good communication
• Critical thinking
• Time management
• Problem solving

You can develop your skills and work attributes by undertaking work experience or volunteering activities while you are still at school.

1.1.2 The importance of work experience

The activities you undertake and skills that you develop in Geography will be useful to you in many aspects of your life and your career. In building and managing your career options, it is also helpful to have an understanding of the interconnections between various careers. One way of building your knowledge of these interconnections, particularly in relation to Geography and the career paths that lead from it, is to undertake work experience in the field. Work experience can help you to understand the tasks involved in various roles and the training required to specialise in a particular area. You can gain first-hand experience through observation of and participation in the day-to-day tasks of workplaces.

Volunteering

Volunteering in your community is a great way to find out about different work environments and the things that impact on the delivery of the services or programs. Volunteering your time to support local communities and businesses also demonstrates your willingness to learn and support others and it can provide a great boost to your self-confidence, as well as important skill development.

Thinking of volunteering? Why not consider …

Learning directly from industry experts through volunteering can help you to consolidate your interests while also picking up valuable core skills for work (refer to table 2). These core skills are considered the most important component of a career portfolio. The study of Geography also assists in the development of these skills.
**TABLE 2** The core skills for work

<table>
<thead>
<tr>
<th>Skill</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication</td>
<td>Ability to use effective listening and speaking skills</td>
</tr>
<tr>
<td>Teamwork</td>
<td>Ability to connect and work with others</td>
</tr>
<tr>
<td>Planning and organisation</td>
<td>Ability to develop plans and see things through to completion</td>
</tr>
<tr>
<td>Self-management</td>
<td>Ability to make decisions</td>
</tr>
<tr>
<td>Problem solving</td>
<td>Ability to identify and solve problems</td>
</tr>
<tr>
<td>Initiative and enterprise</td>
<td>Ability to create and innovate through new ideas</td>
</tr>
<tr>
<td>Use of technology</td>
<td>Ability to work in a digital world</td>
</tr>
</tbody>
</table>

**FIGURE 2** Evaluating my core skills for work

**FIGURE 3** Core skills for work – Ashley Green, Semester 1 2017

**Legend**

1 = Poor  
2 = Fair  
3 = Good  
4 = Very good  
5 = Excellent
How many of the core skills for work have you developed? Use the figure 2 chart to help you think about your own skills. You may find you have particular strengths and other areas you need to improve upon. If you do this periodically, you can monitor your progress in this area. Figure 3 is an example of a completed chart.

1.1.3 Future careers and Geography

Studies in Geography, along with other Social Science subjects and evidence of your work experience or volunteering, can demonstrate your adaptability, creativity and enterprise skills for future work.

In the future, the type of work that will be available will change in response to the impact of climate change, population growth and decline, and technological innovation. The rapid expansion of world economies will mean that industries will adapt their workforces. Migration and a borderless world will mean that individuals will become global citizens working in large teams around the world. Many of the occupations of this century are yet to be created, while others have been imagined and offer a glimpse into the future.

1.1 Activities

To answer questions online and to receive immediate feedback and sample responses for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

1. Part-time, casual or vacation work are all useful ways to build your core skills for work. Use the ACTU Worksite weblink in the Resources tab to locate information on work experience, volunteering and being ready for your first job.

2. Geographers work in primary, secondary and tertiary industries. 
   (a) Provide a definition for each of these industries.
   (b) What is a quaternary industry?
   (c) Give an example of a quaternary industry career that may use geographical skills (Hint: spatial technologies)

3. Over the coming decades, new careers in geography will emerge. Ecosystem auditors, localisers and rewilders will become commonplace in the future. Exploring these careers today can provide an insight into the type of studies and further training you will need to undertake to ensure that you are ready for the workforce of tomorrow.
   (a) Use the Careers 2030 weblink in the Resources tab to learn about the work of an Ecosystem auditor, a localiser or a rewild.
   (b) Develop a career profile for this emerging career. Include the following details in your profile:
      (i) a definition for this occupation
      (ii) the core skills needed in this field
      (iii) the study or training required to successfully carry out the tasks of the role
      (iv) the industries that will employ these occupations.

FIGURE 4 Agroecologist – a career of the future

SEEKING AN AGROECOLOGIST...

Agroecologists help restore ecological balance while feeding and fueling the planet. Agroecologists work with farmers to design and manage agricultural ecosystems whose parts (plants, water, nutrients and insects) work together to create an effective and sustainable means of producing the food and environmentally-friendly biofuel crops of the future. Agroecologists also work with Ecosystem Managers to reintroduce native species and biodiversity to repair the damage done by the ecosystem disruptive farming techniques of the past.

Job Requirements/Skills

You will need an undergraduate degree in Agroecology, in which you’ll have learned how plants, soil, insects, animals, nutrients, water and weather interact with one another to create the living systems in which crop-based foods are grown. You’ll also have learned about the technologies and methods involved in growing food in a sustainable way.

To be successful in this role, you will need to be responsive to change, demonstrate adaptability by working as part of a global team, and be creative and enterprising in all elements of the business to ensure that business growth is sustainable.
1.2 Geographical concepts

1.2.1 Introduction

Geographical concepts help you to make sense of your world. By using these concepts you can both 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. There are seven major concepts: space, place, interconnection, change, environment, sustainability and scale.

In this book, you will use the seven concepts to investigate two units: Environmental change and management and Geographies of human wellbeing.

1.2.2 What is space?

Everything has a location on the space that is the surface of the Earth, and studying the effects of location, the distribution of things across this space, and how it is organised and managed by people, helps us to understand why the world is like it is.

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

Geographers also study how features are distributed across space, the patterns they form and how they interconnect with other characteristics. For example, tropical rainforests are distributed in a broad line across tropical regions of the world, in a similar pattern to the distribution of high rainfall and high temperatures.
1.2.2 Activities
To answer questions online and to receive immediate feedback and sample responses for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

1. Using an atlas, give the absolute location for Melbourne, Australia. Refer to figure 2.
2. Identify the feature at the following locations:
   (a) GR496895
   (b) GR494880.
3. Using the grid references on the topographic map, give the absolute location for:
   (a) Redwood Avenue Reserve (south-west of map)
   (b) the intersection of Eureka Rd and Pound Rd
4. Describe the location of the Hallam Main Drain Linear Reserve (GR504897) relative to the River Gum Creek Reserve (GR488887). Use distance and direction in your answer.
5. Describe the distribution pattern of creeks and drains in the map area.
6. Explain the influence of the creeks and drains on the distribution of streets and houses.
7. Describe the use of space shown on this map.

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.

FIGURE 3 The Democratic Republic of the Congo (DRC) has for years been subject to raids by militia groups and the influx of refugees from neighbouring countries. Forests in the country are important places for wildlife habitats and shelter for soldiers. Forests also provide the valuable resources of timber for fuel and building materials for refugees, and cleared land can be planted for food crops.
Places may be natural (such as an undisturbed wetland) or highly modified (like a large urban conurbation). Places provide us with the services and facilities we need in our everyday life. The physical and human characteristics of places, their location and environmental quality can influence the quality of life and wellbeing of people living there.

### 1.2.3 Activities

To answer questions online and to receive immediate feedback and sample responses for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

Refer to figure 3.

1. Identify and name a place on the map that would be considered a natural environment, and a place that is a human-developed environment.

2. How many places in the region have been subject to deforestation or illegal logging?

3. What services and functions do the forests provide people and wildlife?

4. In what ways do the people of Rwanda interconnect with the DRC?

5. How would forest clearing change the importance of a place for:
   (a) soldiers
   (b) refugees
   (c) mountain gorillas?

6. Using direction and place names, compare the pattern of refugee movements in the 1990s with the more recent movements around southern DRC.

### 1.2.4 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.

The interconnection between people and environments in one place can lead to changes in another location. The damming of a river upstream can significantly alter the river environment downstream and affect the people who depend on it. Similarly, the economic development of a place can influence its population characteristics; for example, an isolated mining town will tend to attract a large percentage of young males, while a coastal town with a mild climate will attract retirees who will require different services. The economies and populations of places are interconnected.
1.2.4 Activities

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Refer to figure 4.

1. What is the interconnection between the physical characteristics of Bangladesh and its flood risk?

2. What is the interconnection between human activities and Bangladesh’s flood risk?

3. Use information from the figure to construct a flow diagram to show the interconnection between human activities and natural processes (increased risk of flooding) in Bangladesh.

4. How might an increase in the number and severity of floods affect:
   (a) people’s wellbeing
   (b) economic development in the country?

5. Considering the interconnections that you have identified, suggest some possible steps that could be taken to reduce the impact of flooding.

Deepen your understanding of this topic with related case studies and questions.

Interconnection
1.2.5 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.

Topics that are studied in Geography are in a constant process of change over time. The scale of time may be a short time period; for example, the issue of traffic congestion in peak hour or the erosion of a beach during a storm. Other changes can take place over a longer time period, such as changes in the population structure of a country, or revegetation of degraded lands.

**FIGURE 5** Population pyramids for Kenya, showing the predicted changes from 2012 to 2050. The graphs represent the number of males and females in five-year age groups.

1.2.6 What is environment?

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

There is a strong interrelationship between humans and natural and urban environments. People depend on the environment for the source, sink, spiritual and service functions it provides.
Humans significantly alter environments, causing both positive and negative effects. The building of dams to reduce the risk of flooding, the regular supply of fresh water and the development of large-scale urban environments to improve human wellbeing are examples. On the other hand, mismanagement has created many environmental threats such as soil erosion and global warming, which have the potential to have a negative impact on the quality of life for many people.

**FIGURE 6** Lake Urmia is the largest lake in the Middle East and one of the largest landlocked saltwater lakes in the world. Since 2005, the lake has lost over 65 per cent of its surface area due to over-extraction of water for domestic and agricultural needs. The lake and its surrounding wetlands are internationally important as a feeding and breeding ground for migratory birds.

1.2.6 Activities
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Refer to figure 6.
1. What physical features make up this environment?
2. What features of the natural environment are consistent across the two images?
3. Describe the changes to this environment over the time period of 1998 to 2011.
4. Describe the distribution of salt flats around the lake in 1998 compared with their distribution in 2011.
5. How might the loss of water and increase in salt flats affect:
   (a) people
   (b) the environment in the surrounding region?
6. Suggest a possible future scenario for Lake Urmia:
   (a) if water continues to be extracted and withdrawn
   (b) if water withdrawals for irrigation are reduced, and water conservation methods are introduced in neighbouring places.
1.2.7 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 is a useful tool for examining issues from different perspectives; from the personal to the local, regional, national and global. It is also used to look for explanations or compare outcomes. For example, explaining the changing structure of the population in your local area may require an understanding of migration patterns at a national or even global scale.

![Figure 7: A map of India showing the distribution of literacy levels (percentage) for 2011.](image)

Source: Government of India, Ministry of Home Affairs, Office of Registrar General.

1.2.7 Activities
To answer questions online and to receive immediate feedback and sample responses for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

Refer to Figure 7.
1. At the national scale, what is the average literacy rate for India?
2. At the regional scale, which three states have the lowest literacy levels?
3. What factors might contribute to a state’s low literacy level?
4. How might literacy levels affect the wellbeing of people?
5. Data, such as for literacy levels, is collected by governments during a census. How would knowing this sort of information assist a government in planning for future populations?
1.2.8 What is sustainability?

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

Sustainability ensures that the source, sink, service and spiritual functions of the environment are maintained and managed carefully to ensure they are available for future generations. There can be variations in how people perceive sustainable use of environments and resources. Some people think that technology will provide solutions, while others believe that sustainable management involves environmental benefits and social justice.

This concept can also be applied to the social and economic sustainability of places and their communities, which may be threatened by changes such as the degradation of the environment. Land degradation in the Sahel region of Africa has often forced people, especially young men, off their land and into cities in search of work.

**FIGURE 8** Dust storms are an extreme form of land degradation. Dry, unprotected topsoil is easily picked up and carried large distances by wind before being deposited in other places. Drought, deforestation and poor farming techniques are usually the cause of soil being exposed to the erosional forces of wind and water. It may take thousands of years for a new topsoil layer to form. Therefore, any land practices that lead to a loss of topsoil may be considered unsustainable.

1.2.8 Activities

To answer questions online and to receive *immediate feedback* and *sample responses* for every question, go to your learnON title at www.jacplus.com.au. *Note:* Question numbers may vary slightly.

Refer to **figure 8**.

1. Complete the following table with examples of factors contributing to soil erosion.
2. Explain how the *interconnection* of human activities and natural processes can contribute to land degradation.
3. Describe the impacts of the dust storm on people living in these two different *places*:
   (a) rural areas (source of the soil)
   (b) the urban area shown in the image.
4. What are the long-term implications of the *unsustainable* use of soil?
5. How can farming be made more *sustainable* in terms of soil conservation?

### 1.3 Review

#### 1.3.1 Applying the concepts

Dharavi, home to over one million people, is considered to be the largest slum in Asia. Located on former swamp land, 80 distinct neighbourhoods have developed, with an estimated population density of 45 000 per hectare. Largely built by the residents themselves, Dharavi lacks traditional urban infrastructure of sewerage, sealed roads and public amenities. On the other hand, it is calculated that the annual value of goods produced in Dharavi’s informal slum industries is US$500 million. The land alone that the slum is located on is worth over $10 billion in a city that is rapidly running out of room and where many of its citizens exist on $1 per day. The city plans to replace the slums with high-rise apartment blocks, but there is concern that this will destroy the small industries and social networks that presently exist.

**FIGURE 1** Dharavi, a slum located in the middle of Mumbai, India’s financial capital
1.3 Activities

To answer questions online and to receive immediate feedback and sample responses for every question, go to your learnON title at www.jacplus.com.au. Note: Question numbers may vary slightly.

Refer to figure 1.

1. Where is Dharavi located? (space)
2. How has the former environment of swamps and marshes been changed to accommodate slum neighbourhoods?
3. Describe the living conditions in the place you see in the photograph.
4. In what ways would living in this type of environment possibly impact on people’s wellbeing?
5. What would be the main forms of transport in the slum? (interconnection)
6. List the types of urban infrastructure that are evident and not evident in this image. (place)
7. What would be the advantages and disadvantages of running small-scale industries such as recycling, leather work and clothing in Dharavi?
8. How would such a high population density in the slum assist in the interconnection of people and businesses?
9. List the possible social, economic and environmental changes that a new housing estate would bring to the residents.
10. Dharavi is largely a self-sufficient and economically viable community. What would be needed to ensure its continual and future sustainability?
11. How might the citizens’ rights and wellbeing be challenged if the slum is demolished to make way for new housing?
12. Knowing the value of the land and needs of a growing city, do you think this is the most sustainable use of a scarce resource? Give reasons for your answer.