11

GLOBAL INTERACTIONS

YEAR 11

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Global Interactions

The *Global Interactions Third Edition* series is written for the NSW Stage 6 Geography syllabus. The text aims to help develop students' knowledge, understanding, skills, attitudes and values in relation to the biophysical and human environments. Students using *Global Interactions* will be well placed to realise their full academic potential in Year 12 Geography.

Student book

- Chapter titles and units reflect the NSW Stage 6 Geography syllabus
- Full-colour text with engaging and highly visual design
- Dynamic and relevant images, textual examples, graphs and maps
- Topic-based units written in accessible language with clear and concise explanations of key terms and concepts
- A variety of learning activities for regular revision and consolidation
- Case studies that describe and encourage in-depth investigation
- End-of-chapter glossary for reference and exam-style questions
- Written by an experienced author team:
  - **Grant Kleeman** (lead author) is an experienced teacher educator, geography teacher, author, curriculum consultant and examiner. Grant has been closely involved in the development of the geography curriculum at the state and national level. He is the coordinating author of several texts, including the Pearson Geography NSW series.
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The Publishers wish to thank Rod Lane and Barbara Rugendyke for their contribution to *Global Interactions 1 Second Edition*.

Reader+

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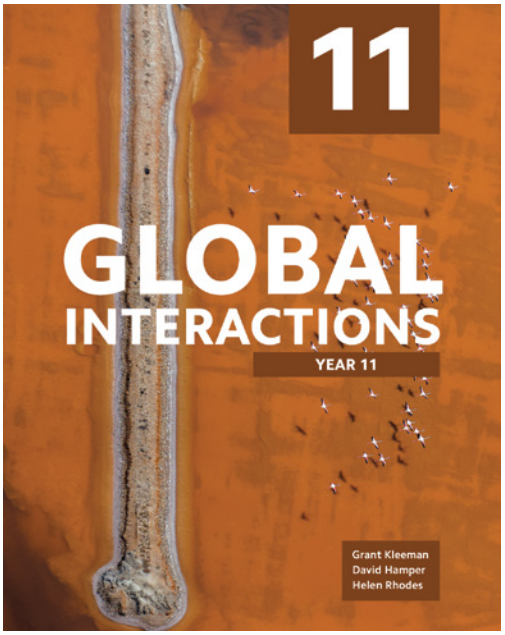
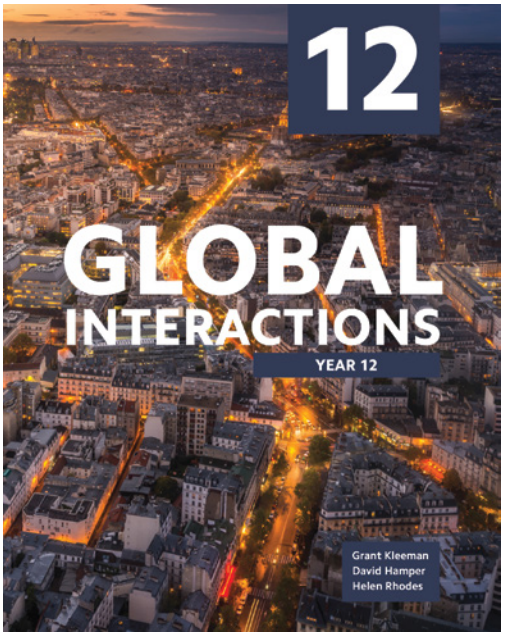
- Synchronise state and data across multiple devices even when the user is offline
- Access both student and teacher resources



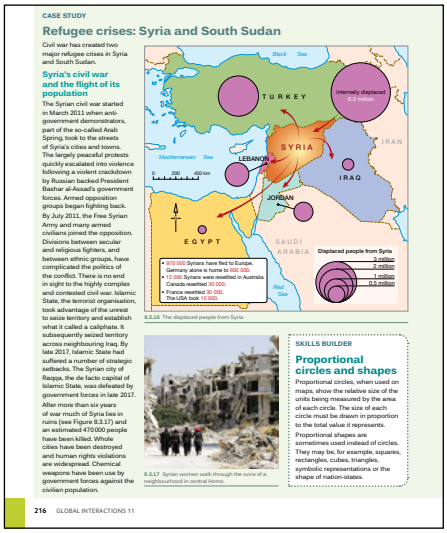


Contents

How to use

Case studies

Case study units relate to a specific event or location; and are written to extend students' knowledge and understanding.


CASE STUDY

Refugee crises: Syria and South Sudan

Civil war has created two major refugee crises in Syria and South Sudan.

Syria's civil war and the flight of its population

The Syrian civil war started in March 2011 when anti-government demonstrators, part of the so-called Arab Spring, took to the streets of Syria's cities and towns. The largely peaceful protests quickly escalated into violence following a violent crackdown by Russian backed President Bashar al-Assad's government forces. Armed opposition groups began fighting back. By July 2011, the Free Syrian Army and many armed civilians joined the opposition. Divisions between secular and religious fighters, and between ethnic groups, have complicated the politics of the conflict. There is no end in sight to the highly complex and contested civil war. Islamic State, the terrorist organisation, took advantage of the unrest to seize territory and establish what it called a caliphate. It subsequently seized territory across neighbouring Iraq. By late 2017, Islamic State had suffered a number of strategic setbacks. The Syrian city of Raqqa, the de facto capital of Islamic State, was defeated by government forces in late 2017. After more than six years of war much of Syria lies in ruins (see Figure 8.3.17) and an estimated 470 000 people have been killed. Whole cities have been destroyed and human rights violations are widespread. Chemical weapons have been use by government forces against the civilian population.

8.3.16 The displaced people from Syria

8.3.17 Syrian women walk through the ruins of a neighbourhood in central Homs.

SKILLS BUILDER

Proportional circles and shapes

Proportional circles, when used on maps, show the relative size of the units being measured by the area of each circle. The size of each circle must be drawn in proportion to the total value it represents.

Proportional shapes are sometimes used instead of circles. They may be, for example, squares, rectangles, cubes, triangles, symbolic representations or the shape of nation-states.

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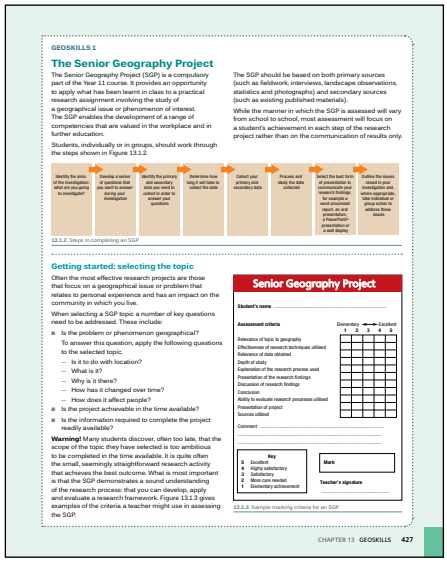
Skills builders

Skills builders are embedded in selected units and concentrate on key geographical skills and concepts.


GEOSKILLS 1

The Senior Geography Project

The Senior Geography Project (SGP) is a compulsory part of the Year 11 course. It provides an opportunity to apply what has been learnt in class to a practical research assignment involving the study of a geographical issue or phenomenon of interest. The SGP enables the development of a range of competencies that are valued in the workplace and in further education.

Students, individually or in groups, should work through the steps shown in Figure 13.1.2.

13.1.2 Steps in completing an SGP

The SGP should be based on both primary sources (such as fieldwork, interviews, landscape observations, statistics and photographs) and secondary sources (such as existing published materials).

While the manner in which the SGP is assessed will vary from school to school, most assessment will focus on a student's achievement in each step of the research project rather than on the communication of results only.

Getting started: selecting the topic

Often the most effective research projects are those that focus on a geographical issue or problem that relates to personal experience and has an impact on the community in which you live.

When selecting a SGP topic a number of key questions need to be addressed. These include:

- Is the problem or phenomenon geographical?
  To answer this question, apply the following questions to the selected topic:
  - Is it to do with location?
  - What is it?
  - Why is it there?
  - How has it changed over time?
  - How does it affect people?
- Is the project achievable in the time available?
- Is the information required to complete the project readily available?

Warning! Many students discover, often too late, that the scope of the topic they have selected is too ambitious to be completed in the time available. It is quite often the small, seemingly straightforward research activity that achieves the best outcome. What is most important is that the SGP demonstrates a sound understanding of the research process: that you can develop, apply and evaluate a research framework. Figure 13.1.3 gives examples of the criteria a teacher might use in assessing the SGP.

Senior Geography Project

13.1.3 Sample marking criteria for an SGP

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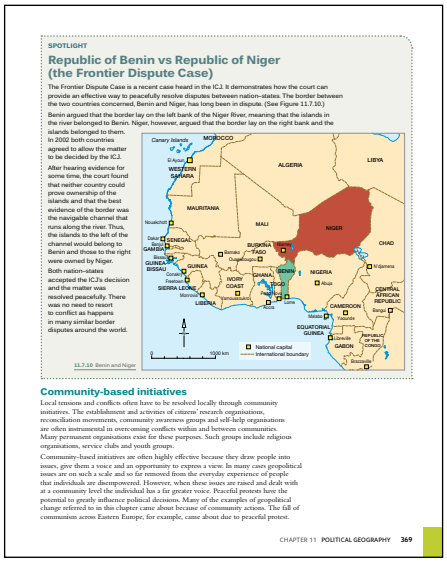
Spotlight

Spotlight boxes focus attention on a place, an issue or a concept relating to the unit. They are designed to develop students' knowledge and understanding of the concepts and processes that are central to the study of geography at this stage of learning.


SPOTLIGHT

Republic of Benin vs Republic of Niger (the Frontier Dispute Case)

The Frontier Dispute Case is a recent case heard in the ICJ. It demonstrates how the court can provide an effective way to peacefully resolve disputes between nation-states. The border between the two countries concerned, Benin and Niger, has long been in dispute. (See Figure 11.7.10.)

Benin argued that the border lay on the left bank of the Niger River, meaning that the islands in the river belonged to Benin. Niger, however, argued that the border lay on the right bank and the islands belonged to them.

In 2002 both countries agreed to allow the matter to be decided by the ICJ.

After hearing evidence for some time, the court found that neither country could prove ownership of the islands and that the best evidence of the border was the navigable channel that runs along the river. Thus, the islands to the left of the channel would belong to Benin and those to the right were owned by Niger.

Both nation-states accepted the ICJ's decision and the matter was resolved peacefully. There was no need to resort to conflict as happens in many similar border disputes around the world.

11.7.10 Benin and Niger

Community-based initiatives

Local tensions and conflicts often have to be resolved locally through community initiatives. The establishment and activities of citizens' research organisations, reconciliation movements, community awareness groups and self-help organisations are often instrumental in overcoming conflicts within and between communities. Many permanent organisations exist for these purposes. Such groups include religious organisations, service clubs and youth groups.

Community-based initiatives are often highly effective because they draw people into issues, give them a voice and an opportunity to express a view. In many cases geopolitical issues are on such a scale and so far removed from the everyday experience of people that individuals are disempowered. However, when these issues are raised and dealt with at a community level the individual has a far greater voice. Peaceful protests have the potential to greatly influence political decisions. Many of the examples of geopolitical change referred to in this chapter came about because of community actions. The fall of communism across Eastern Europe, for example, came about due to peaceful protest.

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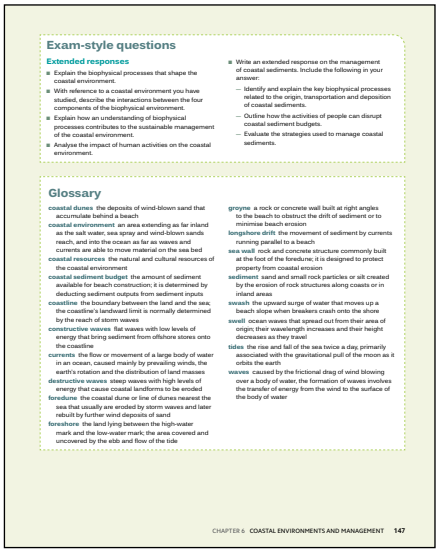
Exam-style questions

Exam-style questions are a variety of extended responses which enable students to practise and develop their exam skills.


Exam-style questions

Extended responses

- Explain the biophysical processes that shape the coastal environment.
- With reference to a coastal environment you have studied, describe the interactions between the four components of the biophysical environment.
- Explain how an understanding of biophysical processes contributes to the sustainable management of the coastal environment.
- Analyse the impact of human activities on the coastal environment.
- Write an extended response on the management of coastal sediments. Include the following in your answer:
  - Identify and explain the key biophysical processes related to the origin, transportation and deposition of coastal sediments.
  - Outline how the activities of people can disrupt coastal sediment budgets.
  - Evaluate the strategies used to manage coastal sediments.

Glossary

coastal dunes the deposits of wind-blown sand that accumulate behind a beach

coastal environment an area extending as far inland as the salt water, sea spray and wind-blown sands reach, and into the ocean as far as waves and currents are able to move material on the sea bed

coastal resources the natural and cultural resources of the coastal environment

coastal sediment budget the amount of sediment available for beach construction; it is determined by deducting sediment outputs from sediment inputs

coastline the boundary between the land and the sea; the coastline's landward limit is normally determined by the reach of storm waves

constructive waves flat waves with low levels of energy that bring sediment from offshore stores onto the coastline

currents the flow or movement of a large body of water in an ocean, caused mainly by prevailing winds, the earth's rotation and the distribution of land masses

destructive waves steep waves with high levels of energy that cause coastal landforms to be eroded

foredune the coastal dune or line of dunes nearest the sea that usually are eroded by storm waves and later rebuilt by further wind deposits of sand

foreshore the land lying between the high-water mark and the low-water mark; the area covered and uncovered by the ebb and flow of the tide

groyne a rock or concrete wall built at right angles to the beach to obstruct the drift of sediment or to minimise beach erosion

longshore drift the movement of sediment by currents running parallel to a beach

sea wall rock and concrete structure commonly built at the foot of the foreshore; it is designed to protect property from coastal erosion

sediment sand and small rock particles or silt created by the erosion of rock structures along coasts or in inland areas

swash the upward surge of water that moves up a beach slope when breakers crash onto the shore

swell ocean waves that spread out from their area of origin; their wavelength increases and their height decreases as they travel

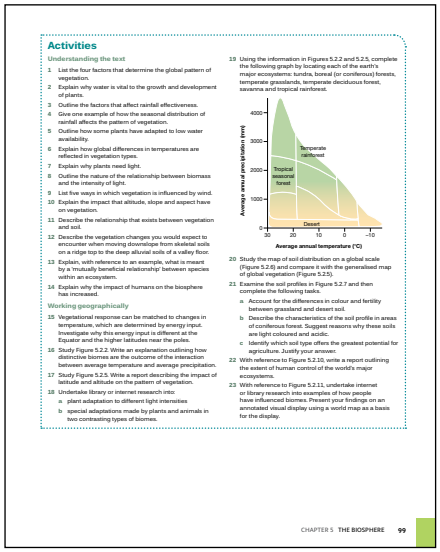
tides the rise and fall of the sea twice a day, primarily associated with the gravitational pull of the moon as it orbits the earth

waves caused by the frictional drag of wind blowing over a body of water, the formation of waves involves the transfer of energy from the wind to the surface of the body of water

CHAPTER 6 COASTAL ENVIRONMENTS AND MANAGEMENT 147

Activities

Activities have been carefully selected to cater for the full range of student abilities. Many activities are based on the stimulus material presented and aim to facilitate the development of the skills used by geographers.


Activities

Understanding the text

1 List the four factors that determine the global pattern of vegetation.
2 Explain why water is vital to the growth and development of plants.
3 Outline the factors that affect rainfall effectiveness.
4 Give one example of how the seasonal distribution of rainfall affects the pattern of vegetation.
5 Outline how some plants have adapted to low water availability.
6 Explain how global differences in temperatures are reflected in vegetation types.
7 Explain why plants need light.
8 Outline the nature of the relationship between biomass and the intensity of light.
9 List five ways in which vegetation is influenced by wind.
10 Explain the impact that altitude, slope and aspect have on vegetation.
11 Describe the relationship that exists between vegetation and soil.
12 Describe the vegetation changes you would expect to encounter when moving downslope from skeletal soils on a ridge top to the deep alluvial soils of a valley floor.
13 Explain, with reference to an example, what is meant by a 'mutually beneficial relationship' between species within an ecosystem.
14 Explain why the impact of humans on the biosphere has increased.

Working geographically

15 Vegetational response can be matched to changes in temperature, which are determined by energy input. Investigate why this energy input is different at the Equator and the higher latitudes near the poles.
16 Study Figure 5.2.2. Write an explanation outlining how distinctive biomes are the outcome of the interaction between average temperature and average precipitation.
17 Study Figure 5.2.5. Write a report describing the impact of latitude and altitude on the pattern of vegetation.
18 Undertake library or internet research into:
  a plant adaptation to different light intensities
  b special adaptations made by plants and animals in two contrasting types of biomes.
19 Using the information in Figures 5.2.2 and 5.2.5, complete the following graph by locating each of the earth's major ecosystems: tundra, boreal (or coniferous) forests, temperate grasslands, temperate deciduous forest, savanna and tropical rainforest.

Average annual precipitation (mm)
4000
3000
2000
1000
0
Temperate rainforest
Tropical seasonal forest
Desert
30 20 10 0 −10
Average annual temperature (°C)

20 Study the map of soil distribution on a global scale (Figure 5.2.6) and compare it with the generalised map of global vegetation (Figure 5.2.5).
21 Examine the soil profiles in Figure 5.2.7 and then complete the following tasks.
  a Account for the differences in colour and fertility between grassland and desert soil.
  b Describe the characteristics of the soil profile in areas of coniferous forest. Suggest reasons why these soils are light coloured and acidic.
  c Identify which soil type offers the greatest potential for agriculture. Justify your answer.
22 With reference to Figure 5.2.10, write a report outlining the extent of human control of the world's major ecosystems.
23 With reference to Figure 5.2.11, undertake internet or library research into examples of how people have influenced biomes. Present your findings on an annotated visual display using a world map as a basis for the display.

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Understanding the text

These questions guide students towards an understanding of the content (knowledge and understandings) specified by the syllabus.

Working geographically

These tasks extend students beyond the text and involve them in a variety of learning experiences.

Using Global Interactions 11: Third Edition

Structure

This text is divided into two sections corresponding with the Stage 6 syllabus.

1 Biophysical interactions

This section investigates the nature and functioning of the four components of the biophysical environment, including the interactions between the components and the human impacts on them. It also focuses on the ways that an understanding of these processes contributes to sustainable management. Students develop this knowledge and understanding by studying a specific environment and a related environmental issue. Students are provided with two studies:

- Coastal environments and management
- Catchments and river regulation

2 Global challenges

The focus of this section is the social, cultural, political and environmental challenges occurring at a global scale. These challenges are investigated under the following headings:

- Population geography
- Natural resource use
- Cultural integration
- Political geography
- Geographies of development

Year 11 Course Outcomes matrix

Section of text	Syllabus outcomes											
	P1	P2	P3	P4	P5	P6	P7	P8	P9	P10	P11	P12
Section 1: Biophysical interactions	✓	✓	✓			✓	✓	✓	✓	✓		✓
Section 2: Global challenges	✓			✓	✓	✓	✓	✓	✓	✓		✓