Senior Syllabus

Geography

2007
Contents

1. Rationale .............................................................................................................. 1
   1.1 Learning through studying the social sciences ............................................ 1
   1.2 What is Geography? .................................................................................... 2
   1.3 Learning through studying Geography ......................................................... 3
   1.4 Approaches to Geography........................................................................... 3
       Study of people and place............................................................................ 3
       Study of people and environment relationships....................................... 3
   1.5 Geographical inquiry process....................................................................... 4

2. Global aims .......................................................................................................... 5

3. General objectives .............................................................................................. 7
   3.1 Knowledge ................................................................................................... 7
   3.2 Analytical processes .................................................................................... 7
   3.3 Decision-making processes ......................................................................... 8
   3.4 Research and communication...................................................................... 8
   3.5 Affective objectives ...................................................................................... 8

4. Language education, and quantitative concepts and skills............................ 9
   4.1 Language education..................................................................................... 9
   4.2 Quantitative concepts and skills................................................................. 10

5. Course organisation ......................................................................................... 11
   5.1 Themes ...................................................................................................... 12
       Focus units................................................................................................. 12
       Elective units ............................................................................................ 12
       Scales of study........................................................................................... 13
   5.2 Sample course organisation....................................................................... 14
   5.3 Composite classes ..................................................................................... 15
   5.4 Work program requirements ...................................................................... 18

6. Learning experiences ....................................................................................... 19
   6.1 Learning in Geography .............................................................................. 19
   6.2 Key questions and the geographical inquiry .............................................. 19
   6.3 Geographic skills ....................................................................................... 21
       Field studies............................................................................................... 21
       Spatial technologies and information and communication technologies... 21
   6.4 Thinking skills............................................................................................. 22
   6.5 Communication skills ................................................................................ 22
   6.6 Assessment................................................................................................ 22
1. Rationale

1.1 Learning through studying the social sciences

Education should increase the ability and willingness of society’s citizens to participate constructively and ethically in their public and private lives. Open and reasoned debate with the wide and effective participation of all members of society enhances democratic processes, and individual and social wellbeing.

Cooperative and competitive processes shape societies, and understanding these processes is central to explaining social behaviour and to evaluating the performance of a social system. The social sciences equip people with tools and strategies to devise ways to improve social processes and their outcomes at the collective and individual levels.

Social science subjects should be designed and conducted so that students develop personally and socially useful ways to analyse the world around them by:

- studying human societies and their achievements
- using the analytical and problem-solving techniques of the social science disciplines
- gaining a critical understanding of the values underpinning both the study of social behaviour and the actions of those within society.

In particular, issues of equity will be important in choosing the topics for study and the methods used for learning. Equity issues include access to and ownership of resources, and their distribution among nations, social groups and classes.

Inquiry is central to all disciplines within the social sciences. Each discipline has its own analytical and problem-solving techniques to help students understand complex social and environmental matters. The goal is to improve the ability of a society and its members to anticipate, initiate and respond to profound social changes. Social systems from the local to the global scale all merit study. They are interdependent and they evolve together. Students can widen their horizons by exposure to different societies and by examining why some solutions can succeed and others fail.

Students may imagine possible and preferred futures. They may appreciate what societies can achieve, what they struggle to achieve, and how barriers to beneficial changes can be overcome. They can understand what social outcomes can be expected and sometimes predicted, what phenomena can be understood after they happen, and what changes take us by surprise and are difficult to explain with existing understanding.

Students can become more:

- knowledgeable, effective, constructive and committed participants in personal, professional and civic life
- aware of the importance of values and beliefs, and how differences can be identified, understood, negotiated and, perhaps, resolved
- reflective, responsible and sensitive citizens, parents, workers, managers, entrepreneurs, consumers and investors
- aware of the connections among the social sciences and with other subject areas
• sensitive to the interdependencies between the social, cultural, political, economic, environmental and ethical aspects of experience

• able to grasp the sort of tensions that can arise when a social system operates in a way that may seem at odds with its sustainability and the natural environment.

These subjects can lead some students directly towards future careers as economists, geographers, historians and social scientists. While most students will proceed to other careers, their study of these subjects will give them important lifeskills (including the key competencies*).

In designing learning activities for their students, teachers should include the list of key competencies to suggest specific inquiries or inspire projects. In addition to this, teachers should refer to the principles outlined above that deepen or go beyond the key competencies to develop professional, discipline-specific expertise. Each subject has its own terminology†, interpretative framework, mode of reasoning and conventions of presentation.

Critical analysis contains implicit social value judgments about which issues are worth studying, and social values and the values of individual students should be explored and evaluated in a constructive and critical way. Whether students are working collaboratively or developing individual skills in communicating ideas clearly, fairly and persuasively, opportunities will arise for both information and values to be in focus. Making effective decisions requires an understanding of any far-reaching ramifications of actions occurring in a particular social and historical context.

Underlying these studies and the values involved in them should be a commitment to open-minded debate, human rights and responsibilities, improvements in the quality of life, social justice and ecological sustainability.

1.2 What is Geography?

Geography is the study of the human and natural characteristics of places and the interactions between them. Geography is a rich and complex discipline which includes two vital dimensions:

• the spatial dimension, which focuses on where things are and why they are there

• the ecological dimension, which considers how humans interact with environments.

Geography prepares students for adult life by developing in them an informed perspective. This perspective should be developed across the two-year course of study through a range of scales, including local, regional, national, and global scales. Geographically informed citizens understand the many interdependent spheres in which they live, and make informed judgments to improve their community, state, country and the world.

To meet the challenges of the future, a geographically informed citizen should be able to:

• know and understand facts, concepts and generalisations about Geography

• apply geographic skills to observe, gather, organise, present and analyse information

• use geographic perspectives to evaluate, make decisions about, and report on issues, processes and events.

* KC1: collecting, analysing and organising information; KC2: communicating ideas and information; KC3: planning and organising activities; KC4: working with others and in teams; KC5: using mathematical ideas and techniques; KC6: solving problems; KC7: using technology

† This syllabus uses several technical terms. Please refer to the Glossary at the end of the syllabus.
1.3 **Learning through studying Geography**

Geography is offered in the school curriculum because it is a valuable medium for the education of young people. Its contributions lie in the content, cognitive processes, skills and values that Geography can promote to help students better explore, understand and evaluate the spatial and ecological dimensions of the world.

Geography in the school curriculum involves the education of young people about, in and for their society and environment. It is based upon the following educational assumptions:

1. Knowledge about the environment and society is arranged within spatial units, ranging through local, regional, national and global scales.
2. The development of inquiry skills is essential to knowing about people and places, becoming informed and active citizens, and developing a love of learning.
3. Experiences in social and physical environments are major sources of understanding in Geography. Therefore, students already have a range of geographic skills and values simply because of their daily experiences with people and environments. Geography develops these understandings and abilities to enable students to fulfil their potential.
4. Education for the society and environments in which students live incorporates the knowledge, analytical, decision-making, and research and communication objectives of Geography teaching.
5. Geographical education includes the affective objectives of a feeling for and an enjoyment of landscape, and the formation of values underpinning human and environmental justice.
6. A course in Geography should provide students with grounding in both the physical and the human aspects of the subject.
7. Students of Geography should be aware that the field of study is dynamic. They need to be exposed to the latest technological developments to better understand current issues and their associated decision-making processes.

1.4 **Approaches to Geography**

**Study of people and place**

Students will understand how natural, economic, political, cultural and social processes interact to shape patterns of human populations, interdependence, cooperation and conflict.

**Study of people and environment relationships**

These studies arise out of the study of people and place. Environments may include those that are largely natural and those mainly developed by people. The same environment may be perceived differently by different people.

The distribution of features on the earth’s surface is far from uniform. Geographers seek to understand the mutual impacts of people and place and suggest alternatives and solutions so that improvements in human and environmental welfare might be achieved.

Geography is concerned not only with the study of the physical environment, but also the way that people have sought to modify physical and social environments and the effects of these human actions. The environmental and social effects of these human actions can be both beneficial and detrimental depending on the extent of human understanding.
The syllabus is constructed around four themes to provide schools with a framework within which to develop a course of study in Geography. The four themes are designed to cover physical, social economic and environmental studies. The syllabus facilitates the use of an investigation that is based on the process of geographic inquiry.

1.5 Geographical inquiry process

Geographical inquiry involves the students in active investigation of the interrelationships between people and the spatial and ecological dimensions. The purpose of geographical inquiry is to engage students in the learning process through formulating questions, investigating widely, and building new understandings, meanings and knowledge. The process follows these key geographical questions:

- What and where are the issues or patterns being studied?
- How and why do these issues and patterns develop?
- What are the impacts of these issues and patterns?
- What is being done or what could be done to sustainably manage these impacts?

Students acquire geographical knowledge through answering these questions to develop a solution or support a position or viewpoint. The product of this inquiry leads to active and informed citizenship through examination of actions and alternative management strategies. Table 3 outlines a suggested model for geographical inquiry.
2. Global aims

Through studying Geography, students will:

- **Develop an understanding of the contribution of Geography to understanding questions, issues and problems arising from human perceptions and use of the earth’s resources.**
  - The discipline of Geography is concerned with helping to sustainably manage environments and improve the quality of human life. The achievement of this goal is based on geographical investigation and the answers to the questions, issues and problems that arise from the way the environment is perceived and used.

- **Become proficient in the use of the key questions and concepts of Geography and the way they guide the process of geographic investigation.**
  - Effective teaching and learning in Geography is characterised by a process of inquiry. Students use the key questions and concepts of Geography to refine their understanding of the people, the environment, and the issues and problems under investigation.

- **Use geographical concepts to organise information about people and environments to achieve an understanding of questions, issues and problems.**
  - Participation in geographical investigation can help students develop a knowledge and understanding of significant **factual information** that can be organised around the guiding **concepts** of Geography to form **generalisations**. Students use facts, concepts and generalisations to identify questions, issues and problems, explain patterns and resolve concerns associated with the human use of the spatial and ecological dimensions.

- **Become proficient in the use of a range of thinking, social, communication, practical and study skills, and be able to use each step in following through the stages of a geographical inquiry.**
  - Geographers use a range of thinking processes and skills as they seek an understanding of people–environment relationships and the processes and patterns that result from these relationships. Competence in these processes and skills is essential both for conducting geographical investigations and for the lifelong skill of making good decisions.

- **Develop spatial literacy.**
  - Students need to be aware of and be able to use a range of resources to develop a deeper understanding of the spatial dimension of Geography. This should include students accessing and/or creating printed and digital images. Spatial technologies are an important tool for geographers because of their pervasiveness in contemporary society.

- **Develop a concern for the sustainability of the environment and the quality of human life. Through investigation, students should explore a range of attitudes and values related to ecologically sustainable development, social justice and democratic processes and institutions.**
  - Attitudes and values shape knowledge and influence the way it is used. Decisions affecting use of the spatial and ecological dimensions are based on value positions. Students should recognise that conflicting value positions underpin decision-making processes. Opportunities should be given to students to question these value positions as a means of analysing and qualifying their own values, attitudes and beliefs. Geographical inquiry helps to develop an understanding of how the values of different groups and individuals shape their world. In this way students can develop a “geography” of concern as they come to appreciate the significance of the nature of knowledge, and develop social empathy, tolerance and respect for others.
• **Value the study of Geography**
  – Students should appreciate the importance of geographical study. Geography’s emphasis is on people and environments, the processes of geographical inquiry and the knowledge developed through such inquiry. They should realise the qualities of rigorous investigation, critical thinking and the benefits of considered decisions.

• **Develop the knowledge, abilities and ethical commitment to participate as active citizens in shaping the future.**
  – Geographical education involves students taking responsible social and environmental action against, or in support of, decisions by organisations, governments or other bodies. It is important that through the study of Geography, students are equipped with opportunities and methods for change in a democratic society. Values education occurs when responsible social and environmental actions and participation are promoted. Such action should be a logical outcome of many geographical investigations.
3. General objectives

The objectives have been formulated in terms of specific behaviours that students should acquire by the conclusion of the course. The objectives for the course of study in Geography have been defined as:

- **Knowledge**
- **Analytical processes**
- **Decision-making processes**
- **Research and communication**
- **Affective objectives**.

The first four objectives — *Knowledge, Analytical processes, Decision-making processes, and Research and communication* — are linked to the exit criteria. The affective objectives describe the attitudes, values and feelings that the syllabus aims to develop. They are not assessed for the awarding of exit levels of achievement.

### 3.1 Knowledge

*Knowledge* relates to the significant key questions of geographical inquiry: *what, where, how, and why, what is being done, what could be done* where a recall component is involved. By the conclusion of the course, students should have knowledge of:

- geographical facts, concepts and key ideas, and explanations of the relationships between people and their environments
- characteristics of natural and cultural phenomena across a range of scales
- processes that affect the location, distribution and arrangement of geographical elements on earth
- processes geographers use to investigate environmental and spatial aspects of human decision making
- the impact of people on the environment
- the impact of the environment on quality of life
- equity issues as they apply to Geography.

### 3.2 Analytical processes

*Analytical processes* relate to the key questions of geographical inquiry:

- What and where are the issues or patterns being studied?
- How and why do these issues and patterns develop?
- What are the impacts of these issues and patterns?

The ability to analyse, as opposed to the ability to recall, is shown when students can recognise trends, similarities/differences and patterns for themselves to explain the possible causes and relationships of an issue/problem.

By the conclusion of the course, students should be able to:

- break information into parts by identifying and explaining patterns or the steps in a process
• understand the meaning of information by transforming, interpreting and extrapolating text or illustrative material
• identify relationships
• suggest causes for some of these relationships.

3.3 Decision-making processes

Decision-making processes relate to the key question of geographical inquiry: What is being and could be done to sustainably manage these impacts?

By the conclusion of the course, students should be able to:
• recognise the environmental, social, economic and political implications of an issue
• examine alternative proposals, strategies, solutions and plans
• apply appropriate criteria
• make a judgment/decision about the alternatives
• justify this decision.

3.4 Research and communication

Geography requires effective skills in Research and communication. These are to be developed throughout the course at an increasing level of complexity and independence. These skills include gathering information from a variety of sources and presenting information in a variety of ways.

By the conclusion of the course, students should have developed research and communication skills in:
• gathering and recording information and primary data from sources and settings
• designing research plans relevant to the purpose
• selecting and organising information
• referencing and acknowledging sources of information using current conventions
• establishing the currency, validity and reliability of information
• communicating and presenting information in a variety of ways
• devising an appropriate format when presenting research findings
• demonstrating use of clear written expression and language conventions
• using maps, diagrams and statistics appropriately.

3.5 Affective objectives

By the conclusion of the course, students should have developed:
• an attitude of concern for the quality of environments, the condition of human life and the biosphere as a life support system
• a willingness to relate to the environment and to participate in actions that ensure a sustainable future
• a willingness to challenge existing attitudes and values in environmental, social, cultural and economic issues
• the ability to clarify and develop personal values in relation to environmental, social and cultural questions, issues and problems
• an interest in learning as a lifelong process.
4. Language education, and quantitative concepts and skills

4.1 Language education

Teachers of Senior English have a special responsibility for language education. However, it is the responsibility of all teachers to develop and monitor students’ abilities to use the forms of language appropriate to their own subject areas. Their responsibility entails developing the following skills:

- ability in the selection and sequencing of information required in the various forms (such as reports, essays, interviews and seminar presentations)
- the use of technical terms and their definitions
- the use of correct grammar, spelling, punctuation and layout.

Geography requires students to use language in a variety of ways, but especially to access information and communicate effectively using a range of modes and media (oral, written, graphic and electronic) either singly or in combination. Learning experiences that enrich students’ vocabularies and enhance their understanding of key concepts are integral to the study of Geography. Students need to be involved in learning activities that require them to comprehend data in a variety of forms, manipulate or process that data, and compose appropriate responses to set tasks.

The learning of language is a developmental process in which teachers of Geography play a vital role. Geographic expression and language use are characterised by:

- selection of appropriate style and media
- conciseness and clarity
- use of appropriate, effective and non-discriminatory language
- use of geographic terms with accuracy
- comprehension and interpretation of data from a variety of sources
- recording and summarising appropriately from a variety of sources
- use of conventions, both discipline-specific and general
- use of illustrative and referencing conventions
- effective interaction with others in different sized groups
- presentation of information using various forms of technology.

Geographers make use of various styles of expression in order to communicate with others. Descriptive, expository, analytical, evaluative and persuasive styles of writing, speaking and presentation are examples of communication employed by geographers. Print, oral and graphical communication are used to suit a particular audience and purpose.
Reports, short responses, seminar presentations, interviews, note summaries, maps and graphs are common communication types used by geographers. Use of other styles that are consistent with the key questions of Geography should also be encouraged.

Students need opportunities to practise their communication skills with the support of sympathetic and discriminating audiences. As students develop flexibility in using communication skills, their appreciation of the interaction of text and context grows. Students should also develop a critical awareness of their own language use and appraise that of texts and other media that form part of the learning environment.

Assessment in all subjects needs to take into consideration appropriate use of language.

**4.2 Quantitative concepts and skills**

Success in dealing with issues and situations in life and work depends on the development and integration of a range of abilities, such as being able to:

- comprehend basic concepts and terms underpinning the areas of number, space, probability and statistics, and measurement
- extract, convert or translate information given in numerical forms, or as diagrams, maps, graphs or tables
- calculate and apply procedures
- make use of calculators and computers
- use skills or apply concepts from one problem or one subject domain to another.

Some subjects focus on the development and application of numerical and other mathematical concepts and skills. These subjects may provide a basis for the general development of such quantitative skills or have a distinct aim, such as to prepare students to cope with the quantitative demands of their personal lives or to participate in a specific workplace environment.

In Geography, students are to be encouraged to develop their understanding and to learn through the incorporation of mathematical strategies and approaches to tasks which are appropriate to the subject. Similarly, students should be presented with experiences that stimulate their mathematical interest and hone those quantitative skills that contribute to operating successfully within each of their subject domains.

Geographers use a variety of numerical and other mathematical concepts and skills, especially those relating to graphs and tables, statistics, maps, diagrams and measurement. Geographers also make extensive use of computer databases and software packages to manipulate and represent geographical data and concepts.

The distinctive nature of Geography may require that new mathematical concepts be introduced and new skills developed. All students need opportunities to practise the quantitative skills and understandings that they have previously developed. Within appropriate learning contexts and experiences in Geography, opportunities are to be provided for the revision, maintenance and extension of such skills and understandings.
5. Course organisation

The senior syllabus in Geography requires a minimum of 55 hours of timetabled school time per semester including assessment. A course of study in Geography will usually be completed over two years (220 hours). The course of study is based on four themes and a number of focus and elective units. It is important that across the two-year course of study students gain a global perspective and that the selection of case studies provides global coverage.

The syllabus describes two focus units per theme and offers a range of elective units.

**To fulfil the requirements of a two-year course, students must study:**

- the four themes
- a minimum of two and maximum of three units for each theme, including at least one focus unit per semester, and not more than two elective units. The pattern of focus and elective unit selection may vary from one semester to the next. Selections per semester may include:
  - two focus units
  - two focus units and one elective unit
  - one focus unit and one elective unit
  - one focus unit and two elective units
- the key questions and key ideas within each unit.

**The course of study must:**

- include a brief introduction on each of the themes prior to teaching the focus and/or elective units (1–2 weeks maximum). This introduction should reflect the key ideas described at the beginning of each theme
- provide a minimum of six and a maximum of ten weeks per focus or elective unit
- provide opportunities for students to complete a minimum of 20 hours in the field
- incorporate the four general objectives (*Knowledge*, *Analytical processes*, *Decision-making processes*, and *Research and communication*) into learning experiences and assessment
- include a range of scales — local, national, regional, global — of varying emphasis across the course or within a focus or elective unit
- include a range of geographical contexts: Australia, Asia-Pacific, Europe, Africa, the Americas, Antarctica
- include and develop a range of geographical skills, including
  - drawing and interpreting maps (e.g. topographic, synoptic, orthophoto, thematic, geological, land-use, choropleth, isoline, dot, flow)
  - compiling and interpreting tables of data
  - drawing and interpreting graphs (e.g. column, line, scatter, population pyramid)
  - interpreting photographs (e.g. horizontal, aerial, satellite)
  - drawing and interpreting diagrams/sketches (e.g. cross-sections, systems diagrams, flow diagram, block diagrams)
  - accessing or using spatial information systems
  - collecting primary data in the field (e.g. with measuring instruments, interviews).
5.1 Themes

The four themes cover a range of studies in Geography, including physical, social, economic and environmental studies. Although the depth of these studies will vary from school to school, a comprehensive program must include some study in each of these areas.

The focus and elective units are explored through case studies which have been selected by the school to represent the theme. Case studies facilitate an in-depth application of the geographical inquiry process to a particular location, geographic area, or issue.

The four themes may be studied in any sequence over the four semesters. The focus and elective units may be studied in any sequence and arrangement within a theme.

The four themes and focus units offered in senior Geography are:

**Theme 1: Managing the natural environment**
- Focus unit 1: Responding to natural hazards
- Focus unit 2: Managing catchments

**Theme 2: Social environments**
- Focus unit 3: Sustaining communities
- Focus unit 4: Connecting people and places

**Theme 3: Resources and the environment**
- Focus unit 5: Living with climate change
- Focus unit 6: Sustaining biodiversity

**Theme 4: People and development**
- Focus unit 7: Feeding the world’s people
- Focus unit 8: Exploring the geography of disease

**Focus units**

The focus units allow schools to develop the important concepts of the theme, as suggested in each of the rationales. The focus units are detailed in Section 7 of the syllabus and provide a framework for schools to select appropriate topics and case studies according to the interests of their students, availability of resources, and local conditions. Sample units of work based on the focus units have been included in each theme to illustrate how the requirements for a course of study can be met.

The key questions and key ideas are not in themselves statements of content. They provide guidance for the selection of case studies at a sufficient depth to allow students to explore the unit and demonstrate their ability to meet the general objectives.

At least one focus unit must be studied each semester. Focus units should be allocated a minimum of six and a maximum of ten weeks, and must be studied at different scales.

**Elective units**

Elective units are designed to give schools flexibility of choice in structuring the school’s course of study.

If elective units are included in a course of study, the case studies selected for them should relate to the semester theme in which they occur. They should be studied at different scales, and should be allocated a minimum of six and a maximum of ten weeks. *Elective units must be*
developed using distinctly different key ideas and case studies from the focus unit(s) which have been selected for study.

Elective units may be used to:

- introduce a theme
- provide opportunities to further examine aspects of the theme that have not been dealt with in a focus unit
- explore different key ideas, case studies, or an area of interest developed in a focus unit
- provide a link to the next theme
- conclude a theme.

Schools wishing to pursue this option are required to submit in their work programs an outline of ONE elective unit that includes:

- a rationale for the unit (see Section 7)
- a sample unit of work that represents the theme, using the case study format outlined in the syllabus for focus units.

When developing elective units, the distinctive nature of geographical inquiry should be emphasised. The geographical skills that students will employ and develop should be evident, and the unit should contribute to student development of the understandings and processes described in the general objectives.

**Scales of study**

Students enjoy studying a diversity of places. The intent of the syllabus is to encompass a broad and balanced range of geographical locations and issues. To facilitate this intent, focus and elective units should be contextualised by selecting different scales to provide for identification of relationships. The course organisation encourages teachers to look at the interrelationships between scales of study.

The time spent on one scale of study may be two or three lessons in the form of an introduction, or a series of lessons where geographic skills are applied to unfamiliar data. The assessment of the unit should reflect the scale of greater emphasis which should be the case study. Other scales of study may or may not be assessed.

For the purposes of guidance, scales of study are defined as follows:

- **Local scale** is characterised by place, or position in space, and is immediate to wherever the study is taking place. Fieldwork is conducted at the local scale and could be as small as a hill, slope or beach, or as large as a sub-catchment area.

- **Regional scale** covers a larger area than the local scale. Characteristic features from the surrounding area will give this area unity. Regional studies might be as small as the biophysical units of Queensland, Queensland itself, or as large as the economic area of Oceania.

- **National scale** focuses study on a nation bound by a common political unit or historical community with cultural ties. Studies at this scale usually refer to nations, e.g. Australia, Thailand or Canada.

- **Global scale** considers a significant proportion of the earth, for example, the distribution of rainforests across the earth.
### 5.2 Sample course organisation

Table 1 provides an example of possible course organisation for a two-year course of study in Geography. The choice of focus and elective units, and case studies, is for illustration purposes only, and should in no way indicate or limit the choices that teachers and students may make.

#### Table 1: Sample course organisation based on sample teaching units

<table>
<thead>
<tr>
<th>Semester</th>
<th>Theme</th>
<th>Unit</th>
<th>Time</th>
<th>Predominant geographical context (scale)</th>
<th>Assessment techniques</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Managing the natural environment</td>
<td>Responding to natural hazards</td>
<td>1 week</td>
<td>Australia (national)</td>
<td>Short-response test</td>
<td>C1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 weeks</td>
<td>Canberra (local)</td>
<td>Formative</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td></td>
<td>Managing catchments</td>
<td>2 weeks</td>
<td>Murray Darling Basin (regional)</td>
<td>Short-response test</td>
<td>C1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8 weeks</td>
<td>Local catchment (local)</td>
<td>Formative</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Social environments</td>
<td>Sustaining communities</td>
<td>6 weeks</td>
<td>Local community (local)</td>
<td>Practical exercise</td>
<td>C2, C3, C4</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>2 weeks</td>
<td>Shanghai, Bosnywash (regional)</td>
<td>Formative</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Resources and the environment</td>
<td>Connecting people and</td>
<td>6 weeks</td>
<td>Brisbane and the Western Corridor</td>
<td>Report</td>
<td>C2, C3, C4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>places</td>
<td>2 weeks</td>
<td>(regional)</td>
<td>Formative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Local planning (local)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>People and development</td>
<td>Feeding the world’s</td>
<td>4 weeks</td>
<td>Global Europe (regional)</td>
<td>Short-response test</td>
<td>C1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>people</td>
<td>5 weeks</td>
<td>Local energy usage (local)</td>
<td>Summative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Foja Mts, Island of New Guinea (regional)</td>
<td>Stimulus response essay</td>
<td>C2, C3, C4</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td>Biomes of Australia (national)</td>
<td>Summative</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exploring the geography</td>
<td>2 weeks</td>
<td>Global Sub-Saharan Africa (regional)</td>
<td>Short-response test</td>
<td>C2, C3, C4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>of disease</td>
<td>5 weeks</td>
<td></td>
<td>Summative</td>
<td></td>
</tr>
</tbody>
</table>

Note: Assessment techniques can be Formative or Summative, and may be used formative or summative. Criteria are denoted by C1, C2, C3, C4, etc.
5.3 Composite classes

In some schools, it may be necessary to combine students into a composite Year 11 and 12 class. This syllabus provides teachers with an opportunity to develop a course of study that caters for a variety of circumstances such as combined Year 11 and 12 classes, combined campuses, or modes of delivery involving periods of student-directed study.

The multilevel nature of such classes can prove advantageous to the teaching and learning process because:

- it provides opportunities for peer teaching
- it allows teachers to maximise the flexibility of the syllabus
- it provides opportunities for a mix of multilevel group work, and for independent work on appropriate occasions
- learning experiences and assessment can be structured to allow both Year 11 and Year 12 students to consider the key concepts and ideas at the level appropriate to the needs of students within each year level.

The following guidelines may prove helpful in designing a course of study for a composite class:

- the course of study could be written in a Year A/Year B format, if the school intends to teach the same topic to both cohorts
- place a topic at the beginning of each year that will allow new Year 11 students easy entry into the course
- learning experiences and assessment items need to cater for both year levels throughout the course — even though tasks may be similar for both year levels, it is recommended that more extended and/or complex tasks be used with Year 12 students.

Table 2, a sample course organisation, illustrates a two-year course of study for a composite class. The order of themes illustrates how verification requirements may be met in a course organisation for a composite class.
## Table 2: Sample course organisation for a composite class

### Year A (see next table for Year B)

<table>
<thead>
<tr>
<th>Semester</th>
<th>Theme</th>
<th>Unit</th>
<th>Time</th>
<th>Predominant geographical context (scale)</th>
<th>Year 11 assessment techniques</th>
<th>Year 11 criteria</th>
<th>Year 12 assessment techniques</th>
<th>Year 12 criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/3</td>
<td>Managing the natural environment</td>
<td>Responding to natural hazards</td>
<td>1 week</td>
<td>Australia (national)</td>
<td>Short-response test Formative</td>
<td>C1</td>
<td>Short-response test Summative</td>
<td>C1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 weeks</td>
<td>Canberra (local)</td>
<td>Stimulus response essay Formative</td>
<td>C2, C3, C4</td>
<td>Report Summative</td>
<td>C2, C3, C4</td>
</tr>
<tr>
<td></td>
<td>Managing catchments</td>
<td></td>
<td>2 weeks</td>
<td>Murray Darling Basin (regional)</td>
<td>Short-response test Formative</td>
<td>C1</td>
<td>Stimulus response essay Summative</td>
<td>C2, C3, C4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8 weeks</td>
<td>Local catchment (local)</td>
<td>Report Formative</td>
<td>C2, C3, C4</td>
<td>Short-response test Summative</td>
<td>C1</td>
</tr>
<tr>
<td>2/4</td>
<td>Social environments</td>
<td>Sustaining communities</td>
<td>6 weeks</td>
<td>Local community (local)</td>
<td>Practical exercise Formative</td>
<td>C2, C3, C4</td>
<td>Practical exercise Summative</td>
<td>C2, C3, C4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 weeks</td>
<td>Shanghai, Bosnywash (regional)</td>
<td>Short-response test Formative</td>
<td>C1</td>
<td>Short-response test Summative</td>
<td>C1</td>
</tr>
<tr>
<td></td>
<td>Connecting people and places</td>
<td></td>
<td>6 weeks</td>
<td>Brisbane and the Western Corridor (regional)</td>
<td>Report Formative</td>
<td>C2, C3, C4</td>
<td>Verification</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 weeks</td>
<td>Local planning (local)</td>
<td></td>
<td></td>
<td>Stimulus response essay Summative</td>
<td>C2, C3, C4</td>
</tr>
<tr>
<td>Semester</td>
<td>Theme</td>
<td>Unit</td>
<td>Time</td>
<td>Predominant geographical context</td>
<td>Year 12 assessment techniques</td>
<td>Year 12 criteria</td>
<td>Year 11 assessment techniques</td>
<td>Year 11 criteria</td>
</tr>
<tr>
<td>----------</td>
<td>------------------------------</td>
<td>----------------------------------------</td>
<td>----------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
<td>------------------</td>
<td>-----------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>3/1</td>
<td>Resources and the environment</td>
<td>Living with climate change</td>
<td>1 week</td>
<td>Global Europe (regional) Local energy usage (local)</td>
<td>Short-response test Summative</td>
<td>C1</td>
<td>Short-response test Formative</td>
<td>C1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2 weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Report Summative</td>
<td>C2, C3, C4</td>
<td></td>
<td>C2, C3, C4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Summative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stimulus response essay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Formative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Report Formative</td>
<td>C2, C3, C4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Summative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sustaining biodiversity</td>
<td>4 weeks</td>
<td>Foja Mts, Island of New Guinea (regional) Biomes of Australia (national)</td>
<td></td>
<td></td>
<td>Stimulus response essay Summative</td>
<td>C2, C3, C4</td>
<td>Short-response test Formative</td>
<td>C1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3 weeks</td>
<td></td>
<td>C1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Report Formative</td>
<td>C2, C3, C4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Summative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4/2</td>
<td>People and development</td>
<td>Feeding the world's people</td>
<td>4 weeks</td>
<td>Global Central and South America (regional)</td>
<td>Practical exercise Summative</td>
<td>C2, C3, C4</td>
<td>Practical exercise Summative</td>
<td>C2, C3, C4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>5 weeks</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Short-response test Summative</td>
<td>C1</td>
<td>Short-response test Summative</td>
<td>C1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Verification</td>
<td>C2, C3, C4</td>
<td>Report Formative</td>
<td>C2, C3, C4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Stimulus response essay Summative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Short-response test Summative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5.4 Work program requirements

A work program is the school’s plan of how the course will be delivered and assessed based on the school’s interpretation of the syllabus. It allows for the special characteristics of the individual school and its students.

The school’s work program must meet all syllabus requirements and must demonstrate that there will be sufficient scope and depth of student learning to meet the general objectives and the exit standards.

The requirements for work program approval can be accessed on the Queensland Studies Authority’s website, www.qsa.qld.edu.au. This information should be consulted before writing a work program. Updates of the requirements for work program approval may occur periodically.
6. Learning experiences

6.1 Learning in Geography

Geographers seek to develop more than knowledge and understanding about the earth and its use by humans. They also seek to explain, analyse, compare, contrast, evaluate and make decisions about improvements for current and future use.

6.2 Key questions and geographical inquiry

The process of geographical inquiry takes place as geographers answer four key questions. The key questions are the scaffold for all geographical inquiries, and are exemplified in the case studies in Section 7. Before addressing the key questions teachers should consider students’ prior knowledge and perceptions of the issues or patterns.

1. What and where are the issues or patterns being studied?
2. How and why do these issues and patterns develop?
3. What are the impacts of these issues or patterns?
4. What is being done or could be done to sustainably manage these impacts?

Through application of the geographical inquiry process for each focus and elective unit studied, students will undertake a variety of learning experiences. Table 3 illustrates some examples of possible learning experiences that might be used when dealing with the key questions of inquiry. It is important to note that some learning experiences are applicable to more than one key question.
### Table 3: Key questions and concepts for guiding geographical inquiry

<table>
<thead>
<tr>
<th>Key questions</th>
<th>More specific questions to guide inquiry</th>
<th>Examples of possible learning experiences</th>
</tr>
</thead>
</table>
| **What and where are the issues or patterns being studied?** | What is the issue or pattern being investigated?  
Where is the location of the environment or activity being investigated?  
What patterns in this environment or associated with this activity are observable?  
How might these issues and patterns be investigated? | Observe, record and describe a social, built or natural environmental pattern or activity by reading and creating maps, reading satellite images  
Frame and focus questions or hypothesis to test  
Outline and define the question, issue or problem  
Examine the issue or pattern at a range of scales and from a variety of data, sources, maps and statistics to observe patterns and processes |
| **How and why do these issues and patterns develop?** | What processes are at work?  
How do these processes operate to change environments?  
How are the processes related?  
Why does the development of these patterns or processes become an issue? | Compare patterns of mapped and/or graphical data record and interpret fieldwork data  
Woolly web to illustrate linkages between different aspects of the issue  
Explain the spatial organisation and interaction of the issue or activity under investigation  
Model analytical skills through T-Charts, PCQ, PMI using data, statistics, images and maps  
Summarise and note-take from a variety of sources |
| **What are the impacts of these issues and patterns?** | What are the social, environmental, political and economic impacts of the issue or pattern being investigated?  
How can these impacts be prioritised for action? | Compare patterns of mapped and/or graphical data  
Record and interpret fieldwork data  
Design a graphic organiser to highlight each key impact of the geographical issue  
Construct a consequences wheel for the different impacts  
Woolly web to illustrate linkages between different aspects of the issue  
Model the use of analytical processes when interpreting data manipulated by the students |
| **What is being done or what could be done to sustainably manage these impacts?** | What are alternative ways of managing the environment in response to this issue?  
Who is involved in the issue?  
What are the perceptions about the issue?  
What is being done and could be done to manage the environment?  
Which criteria should be used to justify the management of the environment in response to this issue?  
How are the criteria traded off in this decision-making process?  
How should communities/individuals/governments respond?  
Which alternative(s) should be chosen?  
Why is the alternative chosen the best response to this issue (given the application of appropriate criteria)? | Develop criteria for evaluating possible solutions  
Develop action plans for a specific school or community instance of the issue  
Communicate outcomes of investigations with key decision makers  
Diamond rank possible alternative solutions  
Model the integration of decision-making processes within a report, essay or nonwritten presentation |
6.3 Geographic skills

Geographic skills are an essential element of any geographic inquiry, and are integral to the development of geographic thinking and communication processes.

**Retrieving information** — satellite images, aerial photos, ABS data, topographic maps, orthophoto maps, software/freeware (e.g. Google Earth), graphs (e.g. column, line, scatter), diagrams (e.g. flow, block), synoptic charts, atlases, street directories, survey results, statistics, photographs, fieldwork (e.g. conducting surveys, interviews).

**Creating, manipulating and presenting information** — graphs, diagrams, line sketches, maps (e.g. choropleth, land-use), geographic conventions, annotating images, using spreadsheets, creating databases, gathering information, tabulating, statistical calculation and techniques, transects and cross-sections, classifying and ranking.

**Field studies**

Many of the geographic skills detailed above should be developed as part of field studies. Geography teachers should make use of a variety of learning settings including the school grounds, community, local and distant locations.

Field studies are essential for the collection of primary data. The collection of this data may be conducted individually or as part of a team.

Field studies throughout the course of study should move progressively from teacher-guided activities to situations in which students plan and conduct their own field investigations.

*A minimum of 20 hours* (or the equivalent of four school days) must be spent in the field across the two years of a course of study.

**Spatial technologies and information and communication technologies**

The application of technology, especially computer technology, is becoming increasingly significant in all areas of geographical study, and should be reflected in Geography classrooms. Students must use information and communication technologies in a range of contexts, including the use of the internet, multimedia, presentations, spreadsheets and databases.

The availability of data and access to current technologies through the web or software packages provides a contemporary context for geographers. Spatial technologies encompass a range of hardware and software that allow the user to enhance their spatial literacy while examining issues of a spatial nature. In a modern context, a variety of technologies are used, including GPS, remote sensing applications, satellite imagery, 3-D visualisers, satellite navigation systems, internet-based geographic information systems (GIS) and stand-alone GIS. Students of Geography at exit must have been exposed to and have a knowledge of spatial technologies.

*A minimum of 40 hours* should be spent in the use of computers across the two years of a course of study. This may include time allocated to writing reports using the internet and manipulation of field data.
6.4 Thinking skills

The thinking skills that should be developed through a course in Geography are derived from the General objectives in Section 3. They include:

- Knowledge: recall of factual, conceptual and spatial knowledge
- Analytical processes: interpretation, extrapolation from trends, comprehension and description of patterns and processes, explanation, analysis of relationships among information, cause and effect and identification of anomalies evident in patterns and trends
- Decision-making processes: evaluating, synthesising, making judgments and trading-off using criteria, drawing conclusions, making decisions, reviewing conclusions/decisions and justifying using evidence.

6.5 Communication skills

Communication skills that should be developed through a course in Geography include:

- conventions for written communication: in-text referencing, acknowledging sources, clear, concise and coherent expression, using geographical terms and following report and essay genres
- conventions for oral communication: acknowledging sources, clear, concise and coherent expression, using geographical terms and following an investigative approach
- conventions for cartographic and graphical communication: acknowledging sources and time period, mapping conventions, graphing conventions, and consideration of currency of images and data.

6.6 Assessment

Students should become familiar with the assessment techniques used in Geography. Modelling assessment techniques such as practical exercises, stimulus response essays, reports and nonwritten responses as learning experiences, allows students to develop their skills and gain confidence. Familiarity with assessment terminology and techniques will assist students to undertake formal assessment tasks to the best of their ability.

Students should be fully aware of the processes through which the exit level of achievement is determined. They should have opportunities for involvement in the assessment process through such techniques as peer assessment, collaboration in the construction of tasks, and compilation of the monitoring and verification folios.

Students need to be specifically taught the meaning of each criterion. Scaffolding in assessment instruments should be provided early in the course and decreased throughout Year 12.

**Learning experiences should provide students with the opportunity to develop their abilities across the four key questions throughout each focus and elective unit.**

It is expected that throughout the course of study students progressively develop the ability to undertake independently the study of the four inquiry questions. The development of learning experiences related to the key questions for each focus and elective unit will allow students to develop the five general objectives for Geography:

- Knowledge
- Analytical processes
- Decision-making processes
• Research and communication
• Affective objectives.

For each of the focus units in this syllabus there are sample learning experiences that will be useful for the exploration of each of the key questions. It is through these learning experiences that students will develop the key ideas suggested for each unit.

Learning experiences can reflect the key competencies

In developing learning experiences, teachers have ample opportunity to incorporate the key competencies, many of which occur naturally in geographical inquiry and field study experiences, especially:
• collecting, analysing and organising information
• communicating ideas and information
• planning and organising activities
• solving problems
• working with others and in teams.

The two remaining key competencies (using technology, and using mathematical ideas and techniques) are also important in the development of learning experiences and in the presentation of student work.
7. Themes and units

7.1 Theme 1: Managing the natural environment

This theme introduces students to physical studies in Geography. The theme explores the relationships of people with the natural environment. The theme draws on studies in climatology, geomorphology, hydrology and biogeography.

The actions of people have an impact on the physical environment. These actions may stem from management decisions made by governments at all levels, business interests, community groups and private individuals, in rural and urban settings. The focus units illustrate the importance of understanding the operations of the natural environment to mitigate hazards and manage catchments. The elective unit(s) may explore other examples of issues related to the management of natural environments.

The understanding of natural environment management encourages students to consider the links that exist between all components of the natural environment and the responsibilities this places on all people.

Key ideas for the introduction to Theme 1

Students should develop some knowledge and understanding of the following key ideas to provide a context within the theme for the focus and elective units.

1. The natural environment results from the operation and interaction of physical systems, i.e. biosphere, lithosphere, hydrosphere, atmosphere.
2. Changes to the dynamics of physical systems because of factors such as population change over time, land use practices, attitudes and values can exacerbate or reduce impacts on the natural environment.
3. Managing the natural environment sustainably depends on an understanding of the elements of the natural environment.
4. Some management decisions or lack of them have increased the vulnerability of people to adverse impacts such as contamination of water supplies, landslides, inundation, loss of lives and livelihood.

Focus units

There are two focus units for Theme 1, at least one of which must be selected for study (see Section 5). Focus units must:

- be allocated a minimum of six and a maximum of ten weeks
- assist students to meet the general objectives of the syllabus
- develop geographical skills
- employ the key questions of geographical inquiry (see Section 6)
- develop the key ideas from the focus unit(s) selected for study, through the selection of appropriate case studies.
Focus unit 1: Responding to natural hazards

Rationale

This unit introduces students to the geographical study of natural hazards. Natural hazards are relatively rare in most communities. However, their potential to cause immense damage and loss of life is substantial. The vulnerability of the Australian and Asia-Pacific environments to natural hazards means that it is important for geographers to understand their patterns of occurrence and causes, and help plan the strategies for prevention, mitigation, recovery and reconstruction.

The geographical study of natural hazards is a multidisciplinary one. It draws on ideas from geomorphology, climatology, psychology, economics, sociology and engineering. Geography’s special contribution to the study of natural hazards lies in its focus on synthesising ideas from the natural and social sciences to produce a comprehensive explanation of the causes and effects of natural hazards and detailed plans to minimise loss of life and damage to property.

This unit provides a focus for the study of a range of concepts and processes in physical geography and of the social processes that influence human responses to the physical environment.

Key questions

Learning experiences based on this unit should involve students in active investigation of the key questions.

<table>
<thead>
<tr>
<th>Application of the key questions to Focus unit 1</th>
</tr>
</thead>
</table>
| What and where are the issues or patterns being studied? | What are natural hazards?  
| | Where do natural hazards occur?  
| | What is the pattern of natural hazard occurrence?  |
| How and why do these issues and patterns develop? | What are the processes associated with natural hazards?  
| | How are the processes associated with natural hazards operating to cause change?  
| | Why do natural hazards occur?  |
| What are the impacts of these patterns and issues? | What is the impact of natural hazards considering the social, economic, political and physical contexts?  
| | How can the impacts of natural hazards be prioritised for action?  |
| What is being done or what could be done to sustainably manage these impacts? | How should individuals/communities/governments manage the prediction and impact of natural hazards?  
| | Who will make these decisions?  |

Key ideas

The investigation of the key questions should lead to an understanding and consideration of the following key geographical ideas, using the case studies selected by the school:

- Natural hazards are a potential source of harm or damage resulting from the forces of nature and occur where decisions have been made to locate human activities in areas where extreme physical events also occur.
- Extreme physical events are geographical processes which may be caused by geological processes inside the earth (e.g. earthquakes) or on the geomorphologic surface of the earth (e.g. landslides, bushfires), atmospheric and meteorological processes (e.g. tropical cyclones), and biological processes (e.g. pandemics, pests), or the result of these and/or some combination of these (e.g. floods).
• Geophysical processes and associated hazardous events may be described by indicators such as their speed of onset, magnitude, duration, spatial extent and frequency. These indicators help determine the impact of the damage caused by an event.
• Many human factors influence the severity of the impact of natural hazards including population density, level of economic development, degree of preparedness, and the speed and effectiveness of relief and reconstruction services.
• Human activities of various kinds (e.g. overstocking, deforestation, dam construction) can intensify or mitigate the onset and effect of “natural” hazards.
• The levels of economic damage caused by natural hazards tend to be exacerbated in economically developed countries whereas the loss of human life tends to be more severe in less economically developed countries.
• Human perceptions and social, cultural, economic and political structures interact to determine how individuals and communities interpret and respond to the threat, occurrence and effects of natural hazards.
• Action is necessary on local, national and international scales to plan ways of predicting the onset of natural hazards, preventing them or mitigating their effects, and developing places for relief and reconstruction.

Sample learning experiences
• Select and record relevant information (summarise and note-make, note-take) from expository teaching, print sources, audiovisual and computer technologies, maps and photographic records to describe and define hazard types and their location, and the physical processes that cause them.
• Map from primary data sources including field surveys and interviews where possible, to identify the relationships between the process, occurrence, types and impacts of natural hazards (such as drought).
• Construct a sequence wheel to demonstrate the complex impacts of a natural hazard (e.g. a tsunami in a nation of the South).
• Gather and interpret data from media reports relating to natural hazards to analyse critically the treatment of a hazard event and its impacts (e.g. an earthquake).
• Use technology such as CD-ROM, computer simulations and websites to analyse hazard processes and impacts (e.g. bushfires in south-east Australia).
• Track the progress of a hazard using research from the internet (e.g. track a flood or cyclone’s course from Bureau of Meteorology website).
• Draw a hazard profile from statistical data to predict the severity of impacts (e.g. cyclones or tornadoes).
• Interview and read accounts of those who have experienced hazards (e.g. SES personnel, local government employees, Bureau of Meteorology officers, residents) to appreciate the severity of impacts and alternative response strategies.
• As part of a group, roleplay community contributors and decision makers to identify and evaluate future responses to a natural hazard and alternative strategies.
• Facilitate classroom discussion to evaluate disaster response strategies of governments and the SES to develop critical listening skills (e.g. techniques such as Socratic questioning and hypothetical scenarios).
• Write letters to decision makers using the results of classroom inquiry to enhance student understanding of democratic processes and citizenship.
• Design a webpage about hazards, their potential impacts and effective community response strategies using the results of classroom learning to communicate and present information effectively.
• Create a choropleth map looking at the potential impacts of a hazard using spatial data such as population data, land use and predicted flood heights.

Developing a unit of work for Focus unit 1

Table 4 provides an example of how a unit of work might be developed for Focus unit 1. The case studies and the learning experiences suggested in the sample unit are examples only. The sample unit contributes to the requirements for a course of study as outlined in Section 5.

The study of this sample unit should be contextualised by drawing on a selection of different scales of study (one of these scales may be two or three lessons in the form of an introduction):

• global, e.g. earthquake incidences around the world
• regional, e.g. “Ring of Fire” in the Asia-Pacific region
• national, e.g. drought in Australia
• local, e.g. tsunami in Banda Aceh, Cyclone Larry in Innisfail.
### Table 4: Sample unit of work for Focus unit 1: Responding to natural hazards — Bushfires in Australia

<table>
<thead>
<tr>
<th>Key questions for the sample unit</th>
<th>Suggested time and scale</th>
<th>Thinking skills, linked to common curriculum elements</th>
<th>Learning experiences</th>
<th>Geographical skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are natural hazards?</td>
<td>2–3 hours</td>
<td>Recognising, Recalling, Visualising</td>
<td>View media materials of previous fires — video, newspaper reports, Use map data, access GIS data, Construct timelines of major fires in Australia</td>
<td>Gathering information from media, Interpreting maps, Constructing maps, Constructing timelines</td>
</tr>
<tr>
<td>What types of hazard are bushfires?</td>
<td>National (e.g. east Australia, Ash Wednesday, Canberra fires)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>What is the pattern of bushfire occurrence in Australia?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. What natural processes and human activities cause bushfires?</td>
<td>4–6 hours</td>
<td>Compiling results, Interpreting, Recording, Graphing, Translating (from one form to another), Explaining to others</td>
<td>Research case studies (incl. emphasis, accuracy), Investigate cyclic nature of bushfire disasters, Investigate pattern of occurrence and climate/vegetation types in Australia, Examine climate data over time, Discuss the role of people in contributing intentionally or unintentionally to bushfires, Undertake a local field study of a forest area to determine fire hazard risk</td>
<td>Constructing flowcharts, Sketching, Interpreting graphs, tables</td>
</tr>
<tr>
<td>3. What are the social, economic, political and physical impacts of bushfires?</td>
<td>4–6 hours, Australia</td>
<td>Analysing, Generalising from information, Comparing, contrasting</td>
<td>Construct consequences wheel, Research case studies, Roleplay, Research from internet sources</td>
<td>Drawing consequences wheels, Interpreting aerial photographs, Analysing census data</td>
</tr>
<tr>
<td>4. What is being done or could be done to predict and minimise their impact?</td>
<td>4–6 hours, Australia</td>
<td>Judging/evaluating, Creating/composing</td>
<td>Interview e.g. local fire officer, council officer, Examine local/regional management plans, Examine school bushfire management plan, if relevant, Draw up a school plan for fire hazard reduction and management</td>
<td>Interviewing, conducting focus groups, Surveying public for awareness of hazard, Applying GIS to school</td>
</tr>
</tbody>
</table>

Assessment technique: Stimulus response essay, using selections of weather data, media reports, aerial photographs, ABS data. Criteria assessed: 2, 3 and 4.
Focus unit 2: Managing catchments

Rationale
This unit introduces students to the geographical study of catchments. Catchment studies demonstrate the interrelatedness of people and the environment. A catchment is a dynamic system which includes land, water, vegetation, crops, wildlife, people, animals, farms, industries and cities.

The geographical study of catchments is a multidisciplinary one, drawing on ideas from geomorphology, climatology, hydrology, economics and sociology. Geography’s special contribution to the study of catchments lies in its focus on synthesising ideas from the physical and social sciences to produce a comprehensive explanation of the health of a catchment. These explanations can help in the development of catchment management plans and biodiversity conservation.

This unit provides a focus for the study of a range of concepts, patterns and processes in physical and human geography.

Key questions
Learning experiences based on this unit should involve students in active investigation of the key questions.

<table>
<thead>
<tr>
<th>Application of the key questions to Focus unit 2</th>
</tr>
</thead>
</table>
| What and where are the issues or patterns being studied? | What is a catchment?  
Where are selected catchments located?  
What are the elements and the patterns of these elements in a catchment? |
| How and why do these issues and patterns develop? | What are the processes at work in a catchment?  
How are the processes at work in catchments operating to cause change?  
Why do catchment management problems occur? |
| What are the impacts of these patterns and issues? | What are the social, economic, political and physical impacts of changes in catchments?  
How can the impacts of changes in catchments be prioritised? |
| What is being done or what could be done to sustainably manage these impacts? | What is being and could be done to manage catchments for sustainability by individuals, groups and governments?  
Who will make the decisions about catchment management? |

Key ideas
The investigation of the key questions should lead to an understanding and consideration of the following key geographical ideas, using the case studies selected by the school:

- River catchments are geographic units that vary in size and complexity of characteristics.
- Elements of catchments can be mapped and quantified. Elements include topography, drainage patterns, geology, vegetation cover, rainfall, soil types, land use and settlement patterns.
- Land and water resources are basic and interactive components of natural ecosystems within catchments.
- River catchments are changing continuously in response to natural processes and human activity.
- Changes within a catchment affect the natural systems and the social and economic systems of people living within the catchment.
• People make short-term responses to changes in a catchment (e.g. tree planting, damming, fencing, catchment monitoring and flood mitigation).

• Long-term responses require planning and coordinated action through the informed action of individual users and managers of resources (such as governments through legislation) in order to achieve sustainability and a balance between economic development and conservation of land and water resources.

• Individuals can contribute to the resolution of catchment management problems through participation in community groups.

Sample learning experiences

• Select and record relevant information (note-make, note-take) from expository teaching, print sources, audiovisual and computer technologies, maps and photographic records to describe and define catchments and their elements.

• Illustrate data in diagrammatic, graphic, photographic and cartographic formats gathered from primary and secondary sources to identify geographic processes and patterns relating to catchments (such as sedimentation patterns in a waterway, or formation of landforms due to a waterway).

• Use GIS, aerial photographs and satellite imagery to analyse the relationships existing within catchments between the physical and human elements (such as the Brisbane River catchment using spatial datasets in Arcview or Mapinfo).

• Read and interpret data sources such as topographic maps, aerial photographs and satellite imagery to assess the impacts of human activity and the extent of changes over time in a catchment area (such as development of canal estates in coastal areas).

• Search the internet for catchment groups, local government, state agencies and non-government organisations to identify issues and responses in local areas. Listen to and question catchment management, Bushcare, Landcare conservation groups, and local government representatives to appreciate catchment issues at a local scale.

• Participate, as part of a school team, in a monitoring program to collect primary data about catchment health (e.g. Saltwatch, Pasture Watch). Gather and record information from the field — observation, sketching, plotting, calculation, measurement using field equipment — to identify catchment patterns, processes, impacts and current issues.

• Roleplay stakeholders, and debate catchment issues in groups to gain an appreciation of their interests in and the role of negotiation in management responses.

• Review part or all of an existing catchment management plan to highlight the complexity of issues associated with management in terms of impacts and alternative strategies (such as management of Cooper’ Creek, upper catchment of the Darling River and Cubbie Station, Mary Valley catchment).

• Evaluate catchment management strategies using a set of criteria to understand and apply integrated catchment management principles.

• Prepare an action plan for the local catchment (either individually or in a team) to report inquiry findings and make recommendations for improvement.

• Present an action plan using suitable technology (e.g. multimedia presentation) to a local community catchment coordinating group.

• Design a webpage to raise awareness levels and community involvement in a catchment management issue.
Developing a unit of work for Focus unit 2

Table 5 provides an example of how a unit of work might be developed for Focus unit 2. The case studies and the learning experiences suggested in the sample unit are examples only. The sample unit contributes to the requirements for a course of study as outlined in Section 5.

The study of this sample unit should be contextualised by drawing on a selection of different scales of study (one of these scales may be two or three lessons in the form of an introduction):

- regional, e.g. Mekong River catchment in South-East Asia, Murray Darling Basin, Lake Eyre basin
- national, e.g. Nile River, Lesotho
- local, e.g. local catchment or sub-catchment, or one of Queensland’s catchments.
<table>
<thead>
<tr>
<th>Key questions for the sample unit</th>
<th>Suggested time and scale</th>
<th>Thinking skills, linked to common curriculum elements</th>
<th>Learning experiences</th>
<th>Geographical skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is a catchment? Where is the Murray-Darling catchment?</td>
<td>2–3 hours Regional — southeastern Australia Refer to local area catchment — small scale but similar processes</td>
<td>Recognising Recalling Visualising</td>
<td>View multimedia materials on major world catchments as well as Murray-Darling Use data supplied by local authorities on catchment/water storage, consumption as well as waste water treatment strategies Consider use of the resource over time, e.g. changes in use, increasing value of water</td>
<td>Gathering information from media Interpreting maps Constructing maps Accessing and manipulating GIS data Constructing timelines</td>
</tr>
<tr>
<td>2. What are the natural processes that work or interrelate in a catchment?</td>
<td>Compiling results Interpreting Recording Graphing Translating (from one form to another) Explaining to others</td>
<td>Research case studies, e.g. cotton growing, irrigation, Adelaide’s water supply, salinity in the Murray Investigate the cumulative impacts of salinity, erosion, waste water treatment etc. on the river Consider the natural processes of catchments and how they impact on such localities or issues</td>
<td>Constructing flowcharts Sketching Interpreting graphs, tables</td>
<td></td>
</tr>
<tr>
<td>3. What are the social, economic, political and physical impacts on catchments?</td>
<td>4–6 hours Systems approach, variety of differing impacts/consequences</td>
<td>Analysing Generalising from information Comparing, contrasting</td>
<td>Construct consequences wheel Research case study(ies) — short- and long-term responses, e.g. flood mitigation Roleplay stakeholder viewpoints Research internet sources, e.g. are there overseas examples that provide solutions?</td>
<td>Drawing consequences wheels Interpreting aerial photographs and satellite images GIS</td>
</tr>
<tr>
<td>4. What is being done or could be done to manage, minimise or rectify these impacts?</td>
<td>4–6 hours Local example as well as regional example — management strategies and obstacles to these</td>
<td>Judging, evaluating Synthesising Creating/composing Criticising</td>
<td>Interview local authority officers, e.g. Landcare, Waterwatch groups Examine local/regional management plans — sustainability Examine water usage in the home and school Visit a local park built on a part of a catchment or visit farms practising effective catchment management</td>
<td>Interviewing, conducting focus groups Conducting fieldwork into a local catchment</td>
</tr>
</tbody>
</table>

Assessment technique: Report on management of a local creek/river applying criteria 2, 3 and 4.
Elective units for Theme 1

Elective units for a semester must relate to the theme for the semester. Decisions about offering any elective units and the number to be offered (maximum two) are entirely at the discretion of the school, subject to resource availability, student interest and other local conditions. Provisions regarding the number and role of elective units are described in Section 5.

Elective units, if included in a course of study, must:
- be allocated a minimum of six and a maximum of ten weeks
- assist students to meet the general objectives of the syllabus
- develop geographical skills
- employ the key questions of geographical inquiry (see Section 6)
- develop distinctly different key ideas and case studies from the focus unit(s) selected for study.

The following elective unit suggestions might be appropriate for student geographical investigation. The list is neither finite nor compulsory:
- conserving water through water-wise practices in your home/school
- deforestation practices and the impacts on ecological and economic sustainability at a global, regional or local scale
- the effect of human-induced disasters on the natural environment (e.g. Chernobyl, cane toads)
- managing coral reefs or sand islands
- investigating current or emerging issues and future scenarios in managing the natural environment
- managing desertification.
7.2 Theme 2: Social environments

This theme introduces students to studies in urban and rural geography and draws on studies from planning, economics, sociology and ecology. Issues related to the sustainability of urban and rural environments are the focus of the theme. The focus units provide students with an understanding of the variety and complexity of communities from farm to mega-city, and encourage them to examine both the human profile and the structure of settlements. The dynamic nature of settlement is examined within the context of planning. Elective units may explore other issues related to settlements and social environments.

The understanding of issues relating to social environments encourages students to make better-informed decisions about planning processes within their communities.

Key ideas for the introduction to Theme 2

Students should develop some knowledge and understanding of the following key ideas to provide a context within the theme for the focus and elective units.

1. Communities vary in size from farmsteads to mega-cities. Their size and location is usually related to the historical and economic development of an area.
2. The global pattern of settlements has changed significantly in the past fifty years. The rapid rate of urbanisation has raised problems of sustainability.
3. Planning can assist in improving the liveability and sustainability of communities and is particularly important at times of rapid population growth or decline in a community.
4. Changes in lifestyle and technology are challenging the “tyranny of distance” in social environments in Australia and other parts of the world.

Focus units

There are two focus units for Theme 2, at least one of which must be selected for study (see Section 5). Focus units must:

- be allocated a minimum of six and a maximum of ten weeks
- assist students to meet the general objectives of the syllabus
- develop geographical skills
- employ the key questions of geographical inquiry (see Section 6)
- develop the key ideas from the focus unit(s) selected for study, through the selection of appropriate case studies.

Focus unit 3: Sustaining communities

Rationale

This unit introduces students to the geographical study of the sustainability of urban and rural communities. The geographical study of sustainable communities draws on areas of study such as physical geography, economics, sociology, public health and ecology, and town planning and regional development.

Urban and rural communities are significant because they constitute the locations where people live, work and participate in leisure and recreational activities. It is important for students to understand the role of planning in balancing the needs of all stakeholders and of the environment to develop sustainable rural and urban communities.

This unit encourages the study of an approach to sustainability that is underpinned by the values of social justice, ecological sustainability and democratic processes.
**Key questions**

Learning experiences based on this unit should involve students in active investigation of the key questions.

<table>
<thead>
<tr>
<th>Application of the key questions to Focus unit 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What and where are the issues or patterns being studied?</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>How and why do these issues and patterns develop?</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>What are the impacts of these patterns and issues?</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>What is being done or what could be done to sustainably manage these impacts?</strong></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Key ideas**

The investigation of these key questions should lead to an understanding and consideration of the following key geographical ideas, using the case studies selected by the school:

- A community exists within a physical environment and is characterised by features such as landforms, climate, vegetation, animal life and risk of natural hazards.
- A community is a system of interacting and interdependent social groups within an area. These groups are characterised by patterns of demography, ethnicity, income, family structure, religion, etc.
- Distribution of access to education, childcare, healthcare, social welfare, leisure opportunities and personal security may be inequitable within communities.
- Rural and urban communities are dynamic and are subject to change through processes such as urbanisation, gentrification and population decline.
- These processes can have significant impacts on communities such as the inadequate provision of services (e.g. sewerage and transport and/or the growth of ghettos). All of these factors can affect the wellbeing and life opportunities of members of the community.
- Planning can improve the equity of access to services within a community and even the economic viability and liveability of a community.
- Planning is a process that may operate on many levels. For example, on a local level, planning may be evident through solar orientation of buildings in a home or school or, at a community level, through processes such as land use zoning or prescribing minimum areas or population densities for certain types of land use. Regional planning provides strategic direction for the future development of large areas.
- The degree to which settlements are planned varies. Some cities (e.g. Canberra and Brasilia) are totally planned and others (e.g. Calcutta) have little evidence of planning.
- Planning should involve community participation to ensure that the interests of all stakeholders can be considered.
Sustainable communities require people to participate actively in the solution of social and ecological problems. The degree of community participation differs throughout the world.

For areas to be sustainable there must be environmental, economical, political and social justice. Where governments and communities work together the opportunities to achieve justice are far greater.

Sample learning experiences

- Select and record information (e.g. note-make, note-take) from expository teaching, print resources, audiovisual and computer technologies, maps and photographic records to describe and define key ideas related to different types of communities at a variety of scales (e.g. rural, suburban, religious, ethnic).

- Using the process of geographic inquiry, research the elements or characteristics of a sustainable community.

- Study aerial photographs to establish the physical location of a community.

- Use mental mapping activities to record perceptions about a place — its physical elements and social character.

- Access spatial technologies to identify relationships from census data and maps of community social patterns to identify key patterns and processes in the community (e.g. age structure, wealth, level of education).

- Graph those features of a community critical to its growth and decline, to identify patterns and trends (i.e. changes over time).

- Conduct group and individual fieldwork activities (observations, surveys, interviews) to investigate issues in the local area (e.g. gentrification, change in service regime).

- Debate reasons for geographical patterns of social wellbeing in terms of the liveability of a place and the sustainability of its lifestyle.

- Conduct fieldwork activities to identify the extent of decline and renewal within a community, in terms of its physical elements and social structure.

- In groups, use simulation and roleplay activities to develop empathy with groups involved in an issue affecting a community’s wellbeing.

- Use computer software to simulate ecological and social issues resulting from planning decisions and so enhance an understanding of their complex interplay.

- Analyse movements or projects seeking to develop sustainable social environments in order to discern the philosophies, values and aims of such ventures, and identify a set of criteria for measuring the success of such movements.

- Use futures strategies (e.g. cross-impact matrices, futures wheels, decision-making trees, alternative pathways exercises) to analyse government or community decisions affecting urban and rural environments.

- Employ decision-making and problem-solving strategies to identify possible planning issues to provide solutions to ecological and social urban problems.

- Collaborate, as part of a team, using information from field observation and research (e.g. principles of sustainable design employed by local government and other agencies) to design a future community.

- As part of a team, develop action plans for more ecologically sustainable and socially equitable local communities to highlight potential community improvements.

- Present these in written and oral formats to community interest groups.
Developing a unit of work for Focus unit 3

Table 6 provides an example of how a unit of work might be developed for Focus unit 3. The case studies and the learning experiences suggested in the sample unit are examples only. The sample unit contributes to the requirements for a course of study as outlined in Section 5.

The study of this sample unit should be contextualised by drawing on a selection of different scales of study (one of these scales may be two or three lessons in the form of an introduction):

- global, e.g. urbanisation and the growth of mega-cities
- national, e.g. coastal orientation of settlements in Australia and primacy of state capital cities
- regional, e.g. “sea change” and “tree change” phenomena in Australia, USA, UK
- local, e.g. redevelopment of local sites, controversial local issues.
<table>
<thead>
<tr>
<th>Key questions for the sample unit</th>
<th>Suggested time and scale</th>
<th>Thinking skills, linked to common curriculum elements</th>
<th>Learning experiences</th>
<th>Geographical skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the characteristics and patterns of a local community? What makes a community sustainable?</td>
<td>4–6 hours (e.g. Gold Coast or a part of Brisbane)</td>
<td>Interpreting the meaning of maps Compiling lists/statistics Graphing Comparing, contrasting Analysing Visualising Sketching</td>
<td>Construct mental maps of the journey to school and identify the key elements of the local area — define a local community Determine appropriate demographic characteristics of the area Map/graph census data of the characteristics Describe the patterns of the characteristics Map community resources such as health, education, recreation, public transport Using the process of geographic inquiry, research the elements or characteristics of a sustainable community</td>
<td>Constructing line sketches/field sketches Identifying elements of a landscape Drawing choropleth maps Reading choropleth maps Examining correlations visually and by mathematics (e.g. Spearman’s rank coefficient)</td>
</tr>
<tr>
<td>2. What physical and human processes have caused these patterns?</td>
<td>2–3 hours</td>
<td>Classifying Analysing Interpreting Recording</td>
<td>Study local aerial photos showing change over time where possible Examine changes evident from school knowledge and records (population patterns) Investigate changes in the local area at the council libraries — statistics, photo collections and other sources available Interview a local government planner</td>
<td>Developing timelines Reading topographic maps Researching local area history</td>
</tr>
<tr>
<td>3. What impact do these processes and patterns have on the local community and its long-term sustainability?</td>
<td>4–6 hours</td>
<td>Extrapolating Analysing Generalising from information</td>
<td>Conduct fieldwork activities to explore decline and renewal in the community and public perceptions of the community In groups, use consequences wheels to analyse the impacts of changes in the community, e.g. technology, gentrification Roleplay some of these consequences</td>
<td>Interviewing, surveying Collating data in different forms — map, graphs and tables Constructing transects of a landscape from map or field data</td>
</tr>
<tr>
<td>4. What is being done and could be done to enhance the resilience and sustainability of the community?</td>
<td>2–3 hours</td>
<td>Judging/evaluating Synthesising Creating/composing/ devising Justifying</td>
<td>Debate the meaning of sustainability in the community and explore the nature of resilience Investigate communities that have renewed themselves, e.g. overseas examples such as Bogotá, Seattle Develop and evaluate action plans for ecological, social and economic sustainability of the local community Present the proposals to the local Council</td>
<td>Writing reports Presenting information in a multimedia format</td>
</tr>
</tbody>
</table>

Assessment technique: Practical exercise on a different/unfamiliar community using ABS data and applying criteria 2, 3 and 4.
Focus unit 4: Connecting people and places

Rationale

This unit introduces students to the geographical study of infrastructure development and planning (see Glossary). The focus of this unit is on linkages and connectedness between communities. The geographical study of infrastructure provision draws on areas of study such as physical geography, economics, regional planning, demography and political geography.

The study of infrastructure provision is important in Geography because it impacts on people and environments through activities such as transportation and telecommunications. It is important for students to understand that the provision of infrastructure does not always match the supply-and-demand needs of the population.

This unit encourages an appreciation of the role and responsibility of governments at various levels and the part they play in the provision of sustainable infrastructure and the impact this can have on the liveability and viability of communities.

This unit provides a focus on the concepts, processes and roles of planning, and its impact on communities.

Key questions

Learning experiences based on this unit should involve students in active investigation of the key questions.

<table>
<thead>
<tr>
<th>Key questions to Focus unit 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>What and where are the issues or patterns being studied?</td>
</tr>
<tr>
<td>What are types of transport/communication that connect people and places?</td>
</tr>
<tr>
<td>Where is the transport and communication network being studied?</td>
</tr>
<tr>
<td>What are the features and patterns of the transport/communication network?</td>
</tr>
<tr>
<td>How and why do these issues and patterns develop?</td>
</tr>
<tr>
<td>What historical, economic, social and political processes have caused the pattern of transport and/or communication?</td>
</tr>
<tr>
<td>How are these processes operating to cause change in the transport and communication networks?</td>
</tr>
<tr>
<td>Why does Australia still suffer from “the tyranny of distance”?</td>
</tr>
<tr>
<td>What are the impacts of these patterns and issues?</td>
</tr>
<tr>
<td>What are the social, economic, environmental and political impacts of the processes affecting transport and communication networks?</td>
</tr>
<tr>
<td>How can the impacts of the processes affecting transport and communication networks be prioritised?</td>
</tr>
<tr>
<td>What is being done or what could be done to sustainably manage these impacts?</td>
</tr>
<tr>
<td>What is being done, or could be done by individuals, groups and governments to improve the efficiency and effectiveness of transport and/or communication networks?</td>
</tr>
<tr>
<td>Who makes the decisions about connecting people and places?</td>
</tr>
</tbody>
</table>

Key ideas

The investigation of these key questions should lead to an understanding and consideration of the following key geographical ideas, using the case studies selected by the school:

- Community infrastructure links people with people, and people with goods and services across geographical space. Modes of transport and communication are part of the infrastructure of communities.
- Transport routes include road, rail, water and air.
• Modes of communication include written, telephone, internet and satellite.
• Patterns of transport and communication can be mapped and examined.
• Different modes of transport and communication have the potential to impact on the livelihood, opportunities and lifestyles of the population, e.g. access to services (education, health, jobs), and markets and factors of production (labour, resources, capital).
• Access to transport and communication has shaped Australia’s development and the nature of Australian communities.
• The transport and communication infrastructure of new communities often fails to keep pace with their rapidly expanding populations.
• The remoteness of a community is partly determined by the extent of its access to transport and communication infrastructure.
• The provision of infrastructure is the responsibility of various levels of government.
• The efficiency of a transport and communication system impacts on the economic development of a community and/or region.
• Communities need to consider the environmental and social impacts of building infrastructure that caters for motorised transport.
• Rising fuel costs impact on modes of transport and communication.
• Planning by governments of transport and communication infrastructure at a local and regional level contributes to the building of sustainable communities.
• Infrastructure provision involves long-term planning and long lead times for the development of these structures.
• Infrastructure development has a high cost to the community over a long period of time.

Sample learning experiences
• Select and record information (note-make, note-take) from expository teaching, print resources, audiovisual and computer technologies, maps and photographic records to describe and define key ideas related to transport and/or communication infrastructure of communities of a variety of scales and types.
• Study aerial photographs to establish the physical location of a community and its pattern of transport and/or communication infrastructure.
• As part of a team, survey and/or interview community members about their modes of transport and/or communication.
• Examine historical sources to assess the impact of past factors on the provision of current transport and communication infrastructure.
• Analyse census data and maps of community social patterns (e.g. social atlases) to identify key issues influencing the adequacy of transport and communication infrastructure.
• Graph those features of a rapidly growing new community to determine the adequacy of current and planned transport and/or communication infrastructure.
• Debate reasons for geographical patterns of social wellbeing in terms of a place’s “liveability” and the sustainability of its lifestyle, especially in relation to the provision of transport and communication infrastructure.
• Conduct fieldwork activities to identify the social, economic and environmental impact on current or proposed transport and/or communication infrastructure provision in a community.
• In groups, use simulation and roleplay activities to develop empathy with groups involved in an issue related to the provision of transport and/or communication infrastructure.
• Use computer software to simulate ecological and social issues resulting from transport and/or communication infrastructure planning decisions and so enhance understanding of their complex interplay.

• Analyse social movements (e.g. new urbanism) and community groups (e.g. toll busters) or projects (e.g. traffic calming, pro- and anti-tollways) seeking to develop sustainable social environments in order to discern the philosophies, values and aims of such ventures, and establish a set of criteria for measuring the outcomes of such movements.

• Use futures strategies (e.g. cross-impact matrices, futures wheels, decision-making trees, alternative pathways exercises) to analyse government or community transport and/or communication infrastructure decisions affecting urban and rural environments.

• Employ decision-making and problem-solving strategies to identify possible solutions to transport and/or communication infrastructure problems.

• Collaborate as part of a team, using information from field observation, interviews from planning professionals and research (e.g. principles of sustainable design as used by local government and other agencies) to design the transport and communication infrastructure for a future community.

• Develop action plans (as part of a team) for more ecologically sustainable transport and/or communication infrastructure and socially equitable local communities to highlight potential community improvements.

• Present action plans in written and oral formats to community interest groups.

**Developing a unit of work for Focus unit 4**

Table 7 provides an example of how a unit of work might be developed for Focus unit 4. The case studies and the learning experiences suggested in the sample unit are examples only. The sample unit contributes to the requirements for a course of study as outlined in Section 5.

The study of this sample unit should be contextualised by drawing on a selection of different scales of study (one of these scales may be two or three lessons in the form of an introduction):

• global, e.g. the global village — connecting with modern technology

• national, e.g. intercontinental transport links

• regional, e.g. south-east Queensland transport planning

• local, e.g. bikeways and pedestrian pathways in the local area, improving the liveability in suburban streets, the provision of public transport in Curitiba in Brazil.
### Key questions for the sample unit

<table>
<thead>
<tr>
<th>Key questions for the sample unit</th>
<th>Suggested time and scale</th>
<th>Thinking skills, linked to common curriculum elements</th>
<th>Learning experiences</th>
<th>Geographical skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is infrastructure? What are the patterns and types of infrastructure evident in Brisbane and the Western Corridor?</td>
<td>4–6 hours Local and regional/national patterns</td>
<td>Recognising, visualising, summarising, recording Translating Interpreting Analysing Generalising</td>
<td>View media materials — video, newspaper reports about transport and communication issues in the Western Corridor Collect, collate and graph data on methods of travel to work and school Analyse and interpret maps related to transport and communication for Brisbane and Western Corridor, e.g. method of transport to work, land use patterns, income distribution, population growth</td>
<td>Gathering information from media Interpreting maps, statistics, census data Constructing tables Drawing choropleth maps Drawing scatter graphs</td>
</tr>
<tr>
<td>2. What are the social (including historical factors), economic, political and physical processes that have caused the pattern of transport and/or communication?</td>
<td>2–3 hours Local/regional</td>
<td>Interpreting Explaining to others Perceiving patterns Generalising Comparing, contrasting Classifying</td>
<td>Investigate factors contributing to the provision of transport and communication infrastructure in Brisbane and the Western Corridor, e.g. use aerial and/or satellite photos to examine physical constraints in the provision of transport infrastructure Research case studies of expanding communities, e.g. Toronto, Curitiba (Brazil), which emphasise different modes of transport or communication Compare factors for differing infrastructure choices</td>
<td>Constructing flowcharts Sketching from satellite and/or air photos Interpreting graphs, tables, current and historical photos</td>
</tr>
<tr>
<td>3. What impact has this pattern of transport and/or communication had on the sustainability of communities within the Western Corridor (e.g. Goodna and Gailes)?</td>
<td>2–3 hours Local/regional</td>
<td>Analysing Generalising from information Comparing/contrasting</td>
<td>Construct consequences wheels of the effects of transport or communication infrastructure on communities in the Western Corridor, e.g. separating railway and housing with a major highway Roleplay impact of transport or communication provision on different members of a community Interpret and evaluate media reports of community response to infrastructure projects</td>
<td>Drawing consequences wheels</td>
</tr>
<tr>
<td>4. What is being done or could be done by individuals, groups and governments to improve the mode of transport and/or communication and therefore of communities within the Western Corridor (e.g. Goodna and Gailes)?</td>
<td>4–6 hours Local/regional</td>
<td>Judging, evaluating Creating/composing Extrapolating Justifying</td>
<td>Interview a planning professional about their role in the planning process Examine transport and communication options in SEQLD Regional Plan and Ipswich 2020 Plan Compare these options to case studies of alternatives being tried in other rapidly growing areas Evaluate alternatives in the light of a local community’s needs, e.g. Goodna and Gailes</td>
<td>Interviewing, conducting focus groups Writing reports</td>
</tr>
</tbody>
</table>

Assessment technique: Report applying criteria 2, 3 and 4.
Elective units for Theme 2

Elective units for a semester must relate to the theme for the semester. Decisions about offering any elective units and the number to be offered (maximum two) are entirely at the discretion of the school, subject to resource availability, student interest, and other local conditions. Provisions regarding the number and role of elective units are described in Section 5.

Elective units, if included in a course of study, must:

- be studied at two scales
- be allocated a minimum of six and a maximum of ten weeks
- assist students to meet the general objectives of the syllabus
- develop geographical skills
- employ the key questions of geographical inquiry (see Section 6)
- develop distinctly different key ideas and case studies from the focus unit(s) selected for study.

The following elective unit suggestions might be appropriate for student geographical investigation. The list is neither finite nor compulsory:

- investigating the uses of recycled water overseas or in the local area
- managing the impacts of rural decline on people and communities
- investigating transportation planning alternatives to maximise quality of life in south-east Queensland
- investigating the changing role of women in rural communities
- investigating current and emerging issues, and future scenarios in social environments.
7.3 Theme 3: Resources and the environment

This theme introduces students to studies in the use of resources and their impact on the environment. The theme focuses on issues related to human use of and reliance on the environment. The theme draws on studies in many areas, including physical, economic and political studies.

The complex nature of this relationship is explored in the focus units. Focus unit 7 explores the broad physical relationships that underpin all interactions between systems within the environment, particularly on a regional or global scale, irrespective of political and economic boundaries. Focus unit 8 examines the management of resources sustainably within the environment, often on a local scale. Elective units may explore other issues related to resources and environmental management.

The understanding of environmental issues encourages students to consider the cultural perceptions of resources and environments and the role of political entities in the management of and decision making about these environments.

Key ideas for the introduction to Theme 3

Students should develop some knowledge and understanding of the following key ideas to provide a context within the theme for the focus and elective units.

1. The world’s physical environment is composed of systems — atmosphere, (e.g. nitrogen, carbon cycles), biosphere, lithosphere, hydrosphere — that are not separate entities but interact upon each other and have a profound effect on human existence. The systems are dynamic, constantly changing in response to natural processes and human activity.

2. The development of resources is essential to our social and economic wellbeing, but this needs to be balanced against harmful impacts on the natural environment and the potential impact on the quality of life of some people.

3. Individuals and groups have an important role to play in influencing decision makers and in participating in wise management of resources for environmental sustainability.

4. Resource management problems are often difficult to resolve, especially when there are conflicting social, economic and political values within a society and there may be changes in these values over time.

5. The concept of a resource varies over time and between different societies.

Focus units

There are two focus units for Theme 3, at least one of which must be selected for study (see Section 5). Focus units must:

- be allocated a minimum of six and a maximum of ten weeks
- assist students to meet the general objectives of the syllabus
- develop geographical skills
- employ the key questions of geographical inquiry (see Section 6)
- develop the key ideas from the focus unit(s) selected for study, through the selection of appropriate case studies.
Focus unit 5: Living with climate change

Rationale
This unit introduces students to the geographical study of physical systems and specifically to the study of the atmosphere. These systems (atmosphere, biosphere, lithosphere and hydrosphere) are fundamental to the operation of all interactions within the environment, particularly on a regional and global scale.

The geographical investigation of climate change requires an understanding of the structure and patterns of circulation of the global atmosphere. It looks at the natural and human processes that affect the atmospheric system and the resulting changes that can occur. These changes in turn have implications for the nature and pattern of human activities in relation to social, economic and political responses. The consequences of the interactions should be explained and understood.

This unit provides a focus for the study of issues that have implications for human activities and future management.

Key questions
Learning experiences based on this unit involve students in the active investigation of the key questions.

<table>
<thead>
<tr>
<th>Application of the key questions to Focus unit 5</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>What and where are the issues or patterns being studied?</td>
<td>What is climate change?</td>
</tr>
<tr>
<td></td>
<td>Where is climate change happening?</td>
</tr>
<tr>
<td></td>
<td>What are the patterns that provide evidence that climate change is occurring?</td>
</tr>
<tr>
<td>How and why do these issues and patterns develop?</td>
<td>What are the physical, economic, social and political processes operating that cause climate change?</td>
</tr>
<tr>
<td></td>
<td>How is climate change occurring?</td>
</tr>
<tr>
<td></td>
<td>Why is climate change occurring?</td>
</tr>
<tr>
<td>What are the impacts of these patterns and issues?</td>
<td>What are the possible social, environmental, economic and political consequences of climate change?</td>
</tr>
<tr>
<td></td>
<td>How can the impacts of climate change be prioritised?</td>
</tr>
<tr>
<td>What is being done or what could be done to sustainably manage these impacts?</td>
<td>Who will make the decisions about managing the impacts and consequences of climate change?</td>
</tr>
<tr>
<td></td>
<td>How should individuals/communities and governments respond to these issues?</td>
</tr>
</tbody>
</table>

Key ideas
The investigation of these key questions should lead to an understanding and consideration of the following key geographical ideas, using the case studies selected by the school:

- The earth’s climate system is influenced by a range of systems (atmosphere, biosphere, hydrosphere, and lithosphere) that have observable processes.
- The earth’s climate system has demonstrably changed on both global and regional scales since the pre-industrial era, with some of these changes attributable to human activities.
- These changes can be mapped and observed through a number of indicators: concentration of greenhouse gases, weather (temperatures, temperature range, hot days/heat index, cold/frost days, precipitation, frequency of drought).
Human activities have increased the atmospheric concentrations of greenhouse gases and aerosols since the pre-industrial era.

Key biophysical indicators of climate change are sea level changes, duration of ice cover on rivers and lakes, Arctic Sea ice extent and thickness, non-polar glaciers, snow cover, permafrost, El Niño events, growing season, plant and animal ranges, breeding, flowering, migration and coral reef bleaching.

Rising sea levels are of global significance because of population distributions around low-lying coastal communities and river deltas. Rising sea levels affect food production and drinking water because of salt water intrusion, and therefore have an impact on the quality of human life.

Observed changes in regional sea levels and their impacts on ecosystems are linked with the increased risk of extinction of some vulnerable species.

The basis for determining the effect of climate change will depend on the local nature of climate change and the adaptive and mitigating capacity of the region. For example, populations who inhabit small islands and/or low-lying coastal areas are a particular risk of severe social and economic effects from sea level rise and storm surges.

Resources critical to island and coastal populations such as beaches, fresh water, fisheries, coral reefs and atolls, and wildlife habitat will be at risk from rising sea levels — also necessitating a shift in tourist destinations.

Rising sea levels are projected to increase threats to human health (loss of life in floods and storms), particularly in lower-income populations, mostly in tropical and subtropical countries.

The projected rate and magnitude of climate change can be lessened by reducing greenhouse gas emissions. There is a range of strategies: reducing energy use from fossil fuel sources, carbon trading, sequestration, land use, better forestry practices, and fuel cell technology.

Adaptation is a necessary strategy at all scales to complement the reduction of greenhouse gas emissions — involving risk assessment and management.

Grassroots strategies have been successful in drawing attention to climate change, such as “think globally, act locally”.

Cooperation between governments can result in the removal of barriers preventing the introduction of low emission technology (Kyoto Protocol, Asia Pacific Summit).

Sample learning experiences

• Analyse data and hypothesise about future effects of higher maximum temperatures on communities.
• Investigate the patterns and processes evident in different systems that influence climate. Create diagrams or flowcharts to illustrate the processes.
• Read and draw diagrams, maps, tables and charts that reflect these patterns and distributions of the biophysical indicators of climate change.
• Collect newspaper and other media reports about alternative energy use and the impacts of climate change for sharing and class discussion.
• Survey community and class attitudes to the use of renewable resources and emission reduction.
• Construct a rising sea level/climate change consequences wheel for food and water resources, ecosystems and biodiversity, human settlements and human health.
• Investigate the mitigation capacity of different regions (compare and contrast).
Gather data associated with the effects of heat waves on older people, livestock, shifts in

tourist destinations, electric cooling demand, and decreased reliability of electricity supply.

Construct a decision-making matrix between alternatives for emission reduction and apply

appropriate criteria (social, environmental political implications).

Construct a table that compares and contrasts resourcing in the North and in the South in
terms of strategies for adaptation in London (River Thames Tidal Barrier), Bangladesh,
Maldives, Pacific Islands (Tuvalu, Kiribati), Senegal, New York, New Orleans, Venice,
Florida and the Atlantic Coast.

Compare and contrast the adaptive capacity of Tuvalu/Bangladesh and New Orleans.

SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis of local councils’ decisions
around the implementation of energy efficient housing.

Developing a unit of work for Focus unit 5

Table 8 provides an example of how a unit of work might be developed for Focus unit 5. The
case studies and the learning experiences suggested in the sample unit are examples only. The
sample unit contributes to the requirements for a course of study as outlined in Section 5.

The study of this sample unit should be contextualised by drawing on a selection of different
scales of study (one of these scales may be two or three lessons in the form of an introduction):

- global, e.g. global dimming, changes in ocean currents, incidence of extreme weather events,
  Kyoto Protocol and USA response

- national, e.g. energy usage and carbon dioxide emissions, alternative energy strategies and
  national policy

- regional, e.g. environmental changes and responses in Europe, environmental refugees from
  the Pacific Islands

- local, e.g. danger of rising sea levels causing flooding in London, energy use in the home.
### Table 8: Sample unit of work for Focus unit 5: Living with climate change — Environmental changes and responses in Europe

<table>
<thead>
<tr>
<th>Key questions for the sample unit</th>
<th>Suggested time and scale</th>
<th>Thinking skills, linked to common curriculum elements</th>
<th>Learning experiences</th>
<th>Geographical skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How evidence is there that climate change is occurring in Europe?</td>
<td>3–4 hours</td>
<td>Comprehend and collect Structure and sequence</td>
<td>Investigate the physical systems of the earth</td>
<td>Retrieving information from a variety of sources including internet, atlas</td>
</tr>
<tr>
<td></td>
<td>Regional (Europe)</td>
<td></td>
<td>Identify the physical components of the European region</td>
<td>Interpreting tables and graphs</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Investigate the changes in the atmospheric system (temperature, precipitation) and its interaction with other physical systems in Europe</td>
<td>Manipulation of data to reveal patterns and trends</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Examine the role ocean currents play in distributing energy from atmospheric systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Discuss and debate the possibility of the changes being linked to long-term climate change or to natural fluctuations in physical cycles</td>
<td></td>
</tr>
<tr>
<td>2. What activities and factors are contributing to the process of climate change?</td>
<td>3–4 hours</td>
<td>Analyse, assess and conclude</td>
<td>Design a flowchart that illustrates energy processes associated with climate change</td>
<td>Construction of flowcharts</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td></td>
<td>Research information on energy usage, types and carbon dioxide emissions for the EU and selected countries</td>
<td>Interpreting data</td>
</tr>
<tr>
<td></td>
<td>Local</td>
<td></td>
<td>Compare energy patterns with data on climate change</td>
<td>Creating choropleth maps</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Compare these patterns with Australia, low economically developed countries and medium economically developed countries</td>
<td>Construction of graphs</td>
</tr>
<tr>
<td>3. What are the environmental, social, economic and political consequences of climate change?</td>
<td>3–4 hours</td>
<td>Analyse, assess and conclude</td>
<td>Construct a consequences wheel of the effects of climate change on food and water resources, human health, human settlements and ecosystems, and biodiversity</td>
<td>Developing and applying skills in GIS</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td></td>
<td>Research impacts identified in Europe including changes in glaciers, snow cover, biodiversity, river discharge/flooding, crop yield and human health</td>
<td>Construction of a consequences wheel</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Compare and contrast consequences in richer western Europe to those in poorer eastern Europe</td>
<td>Interpreting graphs and tables</td>
</tr>
<tr>
<td>4. What strategies could be adopted individually, locally, nationally and globally to combat the problem of climate change?</td>
<td>3–4 hours</td>
<td>Create and present Analyse, assess and conclude</td>
<td>Investigate alternative energy sources and energy conservation in Europe</td>
<td>Interviewing and gathering information from the community</td>
</tr>
<tr>
<td></td>
<td>Europe</td>
<td></td>
<td>Compare to Australian situation</td>
<td>Developing a willingness to participate in actions that ensure a sustainable future</td>
</tr>
<tr>
<td></td>
<td>Local</td>
<td></td>
<td>Consider the support from Europe for the Kyoto Protocol versus opposition from USA and Australia</td>
<td>Developing the ability to clarify personal values in relation to environmental and social issues</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Evaluate the strategy of “think global, act local”</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Identify areas where Australians can make individual or community changes to reduce greenhouse gas emissions</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Evaluate these strategies in terms of cost, lifestyle change and likelihood of success of widespread adoption</td>
<td></td>
</tr>
</tbody>
</table>

Assessment technique: Report on attitudes and responses to energy usage and conservation as applied to transportation and domestic use in the local area, applying criteria 2, 3 and 4.
Focus unit 6: Sustaining biodiversity

Rationale

This unit introduces students to the geographical study of sustaining biodiversity. This unit draws on areas of study such as biogeography, zoogeography, economics and environmental studies. This unit requires an understanding of biogeographical areas and the ecosystems that exist within them.

Sustaining biodiversity by maintaining life-sustaining systems in the biosphere is vital for the survival of future generations. It is important for students to understand the complex value systems that underpin the decisions that are being made in relation to resource use and the impact that these decisions have on the environment.

Biogeographical regions provide a framework within which to monitor and evaluate the status of ecosystems and the levels of biodiversity.

Key questions

Learning experiences based on this unit involve students in the active investigation of the key questions.

<table>
<thead>
<tr>
<th>Application of the key questions to Focus unit 6</th>
</tr>
</thead>
</table>
| What and where are the issues or patterns being studied? | What is biodiversity?  
Where are particular biogeographical regions located?  
What are the characteristics of a particular biogeographical region? |
| How and why do these issues and patterns develop? | What processes have contributed to the biogeographical pattern?  
How are processes operating to cause change in biogeographical areas?  
Why is biodiversity important within these biogeographical regions? |
| What are the impacts of these patterns and issues? | What impact has resource use had on the biodiversity within the biogeographical region(s)?  
How can the impacts of change in biogeographical areas be prioritised? |
| What is being done or what could be done to sustainably manage these impacts? | What is being done or could be done by individuals, groups and governments to sustainably manage biodiversity within the biogeographical region(s)?  
Who makes the decisions about managing biodiversity? |

Key ideas

The investigation of these key questions should lead to an understanding and consideration of the following key geographical ideas, using the case studies selected by the school:

- Biodiversity means the variety of biological life. It includes genetic diversity, species diversity and ecosystem diversity.

- Biogeographical regions may vary in size from a world biome such as the grasslands to an area such as the brigalow belt in Queensland and New South Wales or to a small area such as a coastal sand dune system.

- Biogeographical areas have distinctive plant and animal groups that have adapted to that particular environment. The landforms and climate of an area determine what types of plants and animals can survive there.

- Some regions such as rainforests are very rich in terms of biodiversity, while other regions such as the tundra have few species and are much less biodiverse. Regardless of the level of biodiversity, it is important that as many species as possible are sustained. Greater biodiversity is associated with greater resilience of an area.
• Physical elements such as climate, soils, topography, aspect and site contribute to the biogeographical pattern of an area. Monoculture, domestication of animals, land clearing for settlements and climate change are examples of human-related processes that also contribute to the biogeographical pattern of an area.

• The global population explosion means that humans are having a dramatic and sometimes irreversible effect on the earth’s biodiversity. Human impacts can be positive, negative and neutral on different elements of biodiversity all at once.

• Plant and animal diversity provides food security, industrial products, medicines (both pharmaceutical and alternative) as well as maintaining the health and wellbeing of the atmosphere and lithosphere. Over time, the political will and cooperation between government bodies also plays a role which may affect intergenerational equity.

• Human activities associated with the use of resources have accelerated the rate of species extinction. Major threats to biodiversity include
  – land clearing of forests, wetlands and coastal areas for urbanisation, cultivation and mining
  – alteration of grasslands and forests by use of chemicals, and the introduction of invasive species and overgrazing
  – degradation of aquatic areas from overfishing, excessive nitrification of water from fertilisers and sewage disposal, and the introduction of exotic species

• The maintenance of biodiversity can be assisted by sustainable management strategies including conservation practices, tree corridors, nature strips, organic farming, agroforestry and permaculture.

• Meeting human needs while protecting natural heritage and sustaining biodiversity is a challenge shared by all inhabitants of our planet.

• Individuals, groups and governments all have responsibility to sustain biodiversity within biogeographical regions by participating in the wise management of resources.

• The concept of intergenerational equity needs to be considered. This is where each generation has a responsibility to use resources such that the world’s physical environment — the atmosphere, biosphere, lithosphere and hydrosphere — are in no worse a condition than when they took responsibility for them.

Sample learning experiences

• Select and record relevant information (summarise, note-make, note-take) from expository teaching, print sources, audiovisual and computer technologies, maps and photographic records to describe and define “biodiversity” and investigate the background to environmental management issues.

• Investigate what processes contribute to shaping a specific biogeographical region (e.g. geological, geomorphological, climatic, historical).

• Using the process of geographic inquiry, examine biodiversity hotspots around the world and evaluate the criteria used to justify selection of those areas included but also of areas left out.

• Understand through research the importance of endemic species and human impact on the biodiversity of a biogeographical region.

• Use audiovisual stimulus to engage students in discussions regarding the loss of the biodiversity of biogeographical regions.

• Use geographic information systems to examine data and create maps that highlight the distinct spatial patterns associated with biodiversity of regions.

• Use publications such as the Queensland State of the Environment Report to assess and compare state biodiversity health and plans to the global issues and patterns.

• Visit your local government and speak with the council environmental officer.
• Gather and record information from the field — observation, sketching, plotting, calculation, measurement using field equipment — to identify physical patterns, processes, impacts, and current issues.

• Take a field trip to an environmental education centre and collect primary data (using GPS units) and with additional data from government sources use the data in a geographic information system package to visually represent the data collected and examine pressures on that environment.

• Become involved in local environmental protection and/or improvement projects to enhance appreciation of the potential civic roles and the common good.

• Compare and contrast values underlying environmental controversies to analyse the contexts of resource management issues.

• Compare similar natural systems in which different management approaches have produced contrasting environments (e.g. Hispaniola) to appreciate the range of strategies brought to environmental management over time because of changing values or technologies.

Developing a unit of work for Focus unit 6

Table 9 provides an example of how a unit of work might be developed for Focus unit 6. The case studies and the learning experiences suggested in the sample unit are examples only. The sample unit contributes to the requirements for a course of study as outlined in Section 5.

The study of this sample unit should be contextualised by drawing on a selection of different scales of study (one of these scales may be two or three lessons in the form of an introduction):

• global, e.g. biomes of the world, biodiverse hotspots

• national, e.g. Australian biodiverse hotspots

• regional, e.g. the Foja mountains in Irian Jaya, threats to the Great Barrier Reef, the brigalow belt, the Australian high country

• local, e.g. a coastal wallum landscape, a declining mangrove area.
### Table 9: Sample unit of work for Focus unit 6: Sustaining biodiversity — Tropical forests in the Foja Mountains of Irian Jaya, Indonesia.

<table>
<thead>
<tr>
<th>Key questions for the sample unit</th>
<th>Suggested time and scale</th>
<th>Thinking skills, linked to common curriculum elements</th>
<th>Learning experiences</th>
<th>Geographical skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the characteristics of the tropical forests on the island of New Guinea?</td>
<td>4–6 hours New Guinea with a focus on Foja Mountains in Irian Jaya</td>
<td>Recognising Recalling/remembering Perceiving patterns</td>
<td>Locate New Guinea in Asia-Pacific — examine political boundaries and consider sovereignty Research history of governance of PNG and Irian Jaya Map the main biogeographical regions in NG Examine reports of the December 2005 visit by the US-based <em>Conservation International</em> that discovered numerous new species in Foja Mts Research tropical forest vegetation types, associated fauna and adaptations Undertake fieldwork in a local tropical forest</td>
<td>Gathering information from media especially electronic Interpreting maps/photographs Constructing (drawing) maps Field skills (mapping, transects)</td>
</tr>
<tr>
<td>2. What processes have contributed to the biogeographical patterns? Why is biodiversity important?</td>
<td>4–6 hours</td>
<td>Compiling results Interpreting data Recording data Translating data Reaching conclusions</td>
<td>Collate and correlate spatial data for New Guinea of topography, rainfall, temperature, population density and land use Construct transects Identify current and potential resources in the area (timber) and possible stakeholders Investigate value of biodiversity in tropical forests</td>
<td>Constructing transects Interpreting graphs, tables Constructing graphs</td>
</tr>
<tr>
<td>3. What impact has resource use had within this region? (or could it have in the future?)</td>
<td>4–6 hours</td>
<td>Analysing Comparing/contrasting Generalising from information Explaining to others</td>
<td>Construct consequences wheel for various land uses Research case studies from the internet Roleplay stakeholders in a resource debate with various scenarios Engage in problem-solving exercises that require listening, empathising, lateral thinking</td>
<td>Drawing consequences wheels Interpreting aerial photographs Analysing data Using reasoned argument</td>
</tr>
<tr>
<td>4. What is being done or could be done by individuals, groups and governments to sustainably manage biodiversity within the tropical forests region?</td>
<td>4–6 hours Local scale — examples at the school and community level</td>
<td>Judging, evaluating Extrapolating Criticising Hypothesising Synthesising Creating/devising Justifying</td>
<td>Investigate Australia’s position on the extraction of resources such as timber and minerals from tropical forests Interview your federal member of Parliament on Australia’s role in protecting the forests in Irian Jaya Research alternative plans and options for protecting biodiversity in tropical forests globally</td>
<td>Surveying public for awareness Interviewing Decision-making tasks</td>
</tr>
</tbody>
</table>

Assessment technique: Stimulus response essay on biodiversity issues at other locations applying criteria 2, 3 and 4.
Elective units for Theme 3

Elective units for a semester must relate to the theme for the semester. Decisions about offering any elective units and the number to be offered (maximum two) are entirely at the discretion of the school, subject to resource availability, student interest, and other local conditions. Provisions regarding the number and role of elective units are described in Section 5.

Elective units, if included in a course of study, must:

- be studied at two scales
- be allocated a minimum of six and a maximum of ten weeks
- assist students to meet the general objectives of the syllabus
- develop geographical skills
- employ the key questions of geographical inquiry (see Section 6)
- develop distinctly different key ideas and case studies from the focus unit(s) selected for study.

The following elective unit suggestions might be appropriate for student geographical investigation. The list is neither finite nor compulsory:

- mining industries in Australia
- agricultural industries in Australia
- planning for the effect of climate change on canal developments
- managing nature-based recreation on one of the large sand islands in Queensland
- conserving water through water-wise practices in your school
- managing the maintenance of biodiversity in arid areas, reefs or wetlands
- investigating current and emerging issues, and future scenarios in the management of resources and the environment
- investigating the sustainability of ecotourism
- sustainable water supplies
- agroforestry
- organic farming
- shifting farming vs plantation agriculture
- sustainable housing or living
- sustainable farming.
7.4 Theme 4: People and development

This theme explores studies in human geography. The theme focuses on issues related to the disparity in living conditions, wealth and poverty, opportunities and choices that exist within and between peoples from different places. The ecological, social, political and economic factors that underlie these differences are explored in relation to their impact on variations in levels of development. This theme draws on studies in other areas such as physical, historical, welfare and political studies.

The focus units provide students with a knowledge of the elements and patterns of variation in development, with reference to two important elements — access to food and the incidence of disease. The elective units may explore other examples of issues that demonstrate differences in development.

The understanding of development issues encourages students to consider the way they perceive other groups in society. It challenges them to examine possible implications for ecologically sustainable development in a rapidly consolidating global economy.

Key ideas for the introduction of Theme 4

Students should develop some knowledge and understanding of the following key ideas to provide a context within the theme for the focus and elective units.

1. Development is a complex concept that includes economic, social, cultural, political, historical, physical and environmental components.
2. Terminology used to categorise patterns of development has changed over time and continues to do so, reflecting the world’s recent historical path from a colonial era to one of globalisation (e.g. Third World, North–South, Less Developed Countries, Newly Industrialised Countries).
3. Contrasts in development between places are indicated by variable standards of living, quality of life, and levels of social wellbeing.
4. The study of development issues focuses on synthesising concepts such as human wellbeing, social justice, equity and ecologically sustainable development.

Focus units

There are two focus units for Theme 4, at least one of which must be selected for study (see Section 5). Focus units must:

- be allocated a minimum of six and a maximum of ten weeks
- assist students to meet the general objectives of the syllabus
- develop geographical skills
- employ the key questions of geographical inquiry (see Section 6)
- develop the key ideas from the focus unit(s) selected for study, through the selection of appropriate case studies.

Focus unit 7: Feeding the world’s people

Rationale

This unit introduces students to the geographical study of the global pattern of production and consumption of food. The Universal Declaration of Human Rights declares that all people are entitled to adequate food, shelter and basic health care. Today global food production is
Increasing, yet because of regional disparities in food distribution and production, there are significant numbers of people still experiencing hunger, poverty and a reduced quality of life.

The geographical study of global food production is multidisciplinary, drawing concepts from physical geography, economics, agricultural sciences, studies of development, and ethics. A geographical approach to the issue requires an understanding of the allocation of natural and human resources for food production and distribution. This occurs within the context of social and political systems. In this context appropriate strategies can be suggested to alleviate imbalance and provide sustainable solutions.

This unit provides a focus for the study of a range of physical patterns and social processes that underlie the global patterns of food production and consumption. It encourages the development and critique of current political and economic systems as well as strategies to deal with the issues.

**Key questions**

Learning experiences based on this unit should involve students in the active investigation of the key questions.

<table>
<thead>
<tr>
<th>Application of the key questions to Focus unit 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What and where are the issues or patterns being studied?</strong></td>
</tr>
<tr>
<td>Where are food production areas located?</td>
</tr>
<tr>
<td>What are patterns of food production, distribution and consumption?</td>
</tr>
</tbody>
</table>

| **How and why do these issues and patterns develop?** | **What historical and current social, economic, political and physical processes cause these patterns?** |
| What are the historical and current social, economic, political and physical processes causing these patterns? | How are processes operating to cause change in food production and consumption? |
| Why does famine occur? | Why does famine occur? |

| **What are the impacts of these patterns and issues?** | **What impact do the patterns of food production and consumption have on people, groups of people and nations economically, environmentally, socially and politically?** |
| What are the impacts of these patterns and issues? | What impact do the patterns of food production and consumption have on people, groups of people and nations economically, environmentally, socially and politically? |
| How can the impacts of change in food production and consumption be prioritised? | How can the impacts of change in food production and consumption be prioritised? |

| **What is being done or what could be done to sustainably manage these impacts?** | **What is being done, and what could be done, by individuals, groups and governments to achieve greater equity in food production, distribution and consumption?** |
| What is being done, and what could be done, by individuals, groups and governments to achieve greater equity in food production, distribution and consumption? | Who will make the decisions about the management of food production and distribution? |

**Key ideas**

The investigation of these key questions should lead to an understanding and consideration of the following key geographical ideas, using the case studies selected by the school:

- Agricultural systems are a key element in food production. Such systems involve inputs to the land and a series of processes and transformations to generate a range of outputs.
- Economic, social, political and physical factors affect the nature of the inputs, processes and outputs in agricultural systems and, in turn, produce variation in the pattern of the production, distribution and consumption of food.
- Colonial powers from the North created dual economies in the agricultural sectors of nations of the South whereby traditional farming practices were replaced by commercial systems (e.g. cash cropping, plantation agriculture) and agribusinesses.
- Processes of globalisation have led to the emergence of the “global supermarket” concept.
“Green revolutions” have been accompanied by the increasing influence of agribusiness from the North in the economic, political and social systems of the South.

Significant numbers of people in both the North and the South experience starvation and malnutrition, either ongoing or as crisis events (e.g. famines).

Export crop production in the South has increased at the expense of domestic production, providing a source of foreign exchange but also opening nations of the South to the impacts of economic adjustment (e.g. commodity price changes, gluts) and hazards (e.g. climate change, disease).

“Green revolutions” have involved transfer of technologies from the North to the South, with predictable results (e.g. higher yields) and unintended consequences (e.g. environmental degradation).

Increases in food production in the South have not been accompanied by increases in domestic food consumption due to a range of factors: economic (e.g. export crops as a source of foreign exchange), social (e.g. population increase reduces per capita food availability) and political (e.g. debt, trade-aid debates, globalisation).

Inadequate food supply has an impact on other aspects of development including health, education and employment and contributes to cycles of economic and human poverty.

Strategies to feed the world’s people more equitably and sustainably must consider issues of global trade and aid, land reform, social reform, environmental degradation and waste, and adoption of appropriate technologies by peoples in the North and the South.

Grassroots and NGO projects that empower local communities to provide food security can be considered as viable alternatives to large-scale aid projects or conditional financial loans.

These grassroots projects can range in scope/scale from food cooperatives to land reform/redistribution policies aimed at agrarian reform in underprivileged rural areas.

New technologies (e.g. genetically modified foodstuffs) may provide some solutions to food demand in both the North and the South, but clarification is required on the science underpinning some of these technologies, as well as the ethics and values underpinning such a response to the challenge of feeding the world’s people.

Sample learning experiences

- Select and record information (summarise and note-make, note-take) from expository teaching, print sources, audiovisual and computer technologies, maps and photographic records to describe and define key ideas related to food production, distribution and consumption.
- Read and/or draw maps from atlases or statistical data to highlight factors influencing food production and consumption.
- Create choropleth maps using GIS to examine the distribution of food production and consumption, as well as examining other indicators of health and development to observe patterns and relationships.
- Compare patterns from mapped data to identify relationships between physical and cultural environments affecting food production and consumption (e.g. effects of desertification, soil type and quality, and climate change, on food output).
- Calculate Spearman’s rank correlation coefficients from primary datasets to identify critical associations affecting food production, consumption and distribution of food resources.
- Draw diagrams and a range of graphs (e.g. bar, line, pie, scatter) using statistical data to illustrate visually aspects of food availability both spatially and over time.
• Research food production and distribution issues from print material, electronic media and the internet to reach a broad knowledge and understanding of the range of cultural and physical environment factors affecting current food stocks and supplies, and future trends.
• Gather information, as part of a team dealing with the problem of feeding the world’s people, through survey or interview activities to identify common perceptions about the global food situation.
• Discuss “the food business” by using media images to critically analyse how economic policies impact on food issues and agricultural challenges across the globe.
• Draw a consequences wheel from primary data and in-class discussion to show the complexity of impacts relating to food production and consumption.
• Use “woolly thinking” activities to explain the possible associations between the North and the South in food exchange — aid and trade.
• Visit fieldwork locations such as permaculture sites, markets, and aid agencies to appreciate food as a business system, and consider alternatives to the general practices in food business.
• Use diamond ranking exercises to order the desirability of alternative solutions to global food problems using economic, social, political and environmental criteria.
• Roleplay stakeholders (individually or in teams) using board games, simulations or hypotheticals to enhance understanding of current and alternative practice through critical listening, questioning and analysis.
• Critically analyse the outcomes of a variety of global campaigns to eradicate hunger and equitably distribute food. These could range from initiatives sponsored by agencies such as the World Bank and the United Nations to AusAid and World Vision Australia.
• Design a food management strategy using a problem-solving scenario to practise skills of decision making (i.e. develop arguments, consider alternatives using criteria, trade-off criteria, rationalise conclusions) and effective communication (oral and visual presentation of the preferred strategy).
• Evaluate, using a structured group debate, the effectiveness of current solutions to food problems by a range of organisations.
• Examine alternative solutions to food problems, particularly recent movements towards redistribution of land and agrarian reform.
• Incorporate the unit’s content to develop a viable solution encompassing economic, political, social and environmental criteria.

Developing a unit of work for Focus unit 7

Table 10 provides an example of how a unit of work might be developed for Focus unit 7. The case studies and the learning experiences suggested in the sample unit are examples only. The sample unit contributes to the requirements for a course of study as outlined in Section 5.

The study of this sample unit should be contextualised by drawing on a selection of different scales of study (one of these scales may be two or three lessons in the form of an introduction):
• global, e.g. multinationals and the global supermarket, genetically modified food, food security and free trade
• national, e.g. agribusiness, country comparisons of data such as kilo-calorie intake, life expectancy
• regional, e.g. increase of traditional native foods, changing agricultural patterns and trends
• local, e.g. different patterns of distribution of food such as the increased popularity of local farmers’ markets and low-priced overseas products in local supermarkets, such as Californian citrus fruit.
### Table 10: Sample unit of work for Focus unit 7: Feeding the world’s people — Food Issues in Central and South America

<table>
<thead>
<tr>
<th>Key questions for the sample unit</th>
<th>Suggested time and scale</th>
<th>Thinking skills, linked to common curriculum elements</th>
<th>Learning experiences</th>
<th>Geographical skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the elements of food production and distribution? What are patterns of food production, distribution and consumption?</td>
<td>4–6 hours Global and regional patterns</td>
<td>Interpreting, analysing, generalising, recalling, summarising, perceiving patterns, classifying, collating and recording</td>
<td>Define the characteristics of the agricultural system and examine its components Use GIS to map the distribution of food production, consumption and associated indicators Graph food security issues in more- and less-developed countries, particularly in Central and South America, now and over time</td>
<td>Creating and interpreting choropleth maps Examining correlations and spatial relationships Accessing and using GIS</td>
</tr>
<tr>
<td>2. What historical and current social, economic, political and physical processes cause these patterns?</td>
<td>4–6 hours Analysis of the food business globally and regionally</td>
<td>Interpreting, perceiving patterns, summarising, contrasting and comparing, and collating and recording</td>
<td>Use multimedia and audiovisual material to analyse the global food business Use reference material and the internet to examine the processes that have led to current food security trends in the region</td>
<td>Collating data in different formats Creating flowcharts</td>
</tr>
<tr>
<td>3. What impact do the patterns of food production and consumption have on people, groups of people and nations economically, environmentally, socially and politically?</td>
<td>4–6 hours Regional</td>
<td>Analysing, comparing and contrasting, extrapolating, classifying, justifying and synthesising</td>
<td>Use current affairs media to illustrate some of the social, economic and political issues that occur as a result of current economic and political systems’ responses to food issues, particularly in Central and South America Use survey instruments to identify current perceptions surrounding food issues</td>
<td>Interviewing and surveying</td>
</tr>
<tr>
<td>4. What is being done, and what could be done by individuals, groups and governments to achieve greater equity in food production, distribution and consumption?</td>
<td>3–5 hours Regional and global</td>
<td>Justifying, analysing, comparing and contrasting, classifying and synthesising</td>
<td>Evaluate the effectiveness of current solutions to food problems by a range of organisations via a structured group debate Examine alternative solutions to food problems, particularly recent movements towards redistribution of land and agrarian reform in the region Incorporate the unit’s content to develop a viable solution, encompassing economic, political, social and environmental criteria, to food problems in Central and South America</td>
<td>Presenting information in multimedia formats</td>
</tr>
</tbody>
</table>

Assessment technique: Practical exercise assessing criteria 2, 3 and 4.
Focus unit 8: Exploring the geography of disease

Rationale
This unit introduces students to the study of disease as a development issue within the context of people and their environments. The geography of disease should be analysed in terms of its relationship to a particular society, culture, resource base and political context.

This geographical study of disease is closely related to development and includes concepts drawn from economics, sociology, politics, and cultural and environmental studies. Geography’s contribution to the study of disease and development issues lies in its focus on synthesising a number of concepts such as human wellbeing, social justice and equity, and ecologically sustainable development. This study requires the application of criteria to evaluate the allocation of resources and to consider a range of sustainable solutions.

This unit provides a focus for understanding the changing pattern of global development and a consideration of the factors that cause variation in this pattern. It allows consideration of the impact of those variations and the ways that resulting inequities can be dealt with.

Key questions
Learning experiences based on this unit should involve students in the active investigation of the key questions.

<table>
<thead>
<tr>
<th>Application of the key questions to Focus unit 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>What and where are the issues or patterns being studied?</td>
</tr>
<tr>
<td>Where is the disease prevalent?</td>
</tr>
<tr>
<td>How and why do these issues and patterns develop?</td>
</tr>
<tr>
<td>How are processes operating to change patterns of disease?</td>
</tr>
<tr>
<td>What are the impacts of these patterns and issues?</td>
</tr>
<tr>
<td>What are the social, economic and political consequences on development of disease within a country?</td>
</tr>
<tr>
<td>What is being done or what could be done to sustainably manage these impacts?</td>
</tr>
<tr>
<td>Who makes the decisions about managing the impacts of this disease?</td>
</tr>
</tbody>
</table>

Key ideas
The investigation of these key questions should lead to an understanding and consideration of the following key geographical ideas, using the case studies selected by the school:

- Some diseases such as HIV/AIDS, malaria, tuberculosis and influenza are of global significance because of their impact on the human health, wellbeing and economic development of large numbers of people.
- Some diseases have global significance because they have the potential to infect populations throughout the world. Current patterns of international air travel and bird migration are examples of how diseases of global significance can be spread rapidly.
- The incidence of disease is strongly linked to poverty.
• Correlations exist between the incidence of disease and literacy levels, the status of women and the distribution of wealth.

• Cultural responses to disease differ and can strongly influence the options for preventing and spreading disease.

• The health and wellbeing of a nation’s population impacts on its social and economic development.

• Countries have varying capacities to respond to problems related to the health and wellbeing of their populations and to be active in research.

• A country’s development can be influenced by the social, economic and political impacts of disease.

• International organisations (WHO, Centre for Disease Control), NGOs, individuals and communities are able to contribute resources, education and technology to limit the spread and impact of disease.

• A range of strategies to limit the spread and impact of disease is being implemented including prevention, drug therapy and vaccination.

• Drug therapies are often owned and controlled by private, profit-driven corporations holding or seeking patents.

• Cooperation between governments has and can result in prompt action to limit the spread and impact of disease.

Sample learning experiences

• Select and record information (summarise and note-make, note-take) from expository teaching, print resources, audiovisual and computer technologies, maps and photographic records to describe and define key concepts relating to globally significant diseases (e.g. disease characteristics and means of spread).

• Manually or electronically gather and record data using atlases or world databases (online) to create spreadsheets and graph data that identify and display development patterns and trends associated with a significant disease globally and for individual countries (changes over time).

• Summarise the key environmental, social/cultural, economical and political factors behind the incidence of a selected disease.

• Create and/or interpret choropleth maps from atlases and texts to distinguish and describe spatial patterns of development indicators related to a globally significant disease.

• Manually, or using GIS, create choropleth maps using sets of primary data variables to show patterns of human development related to a globally significant disease and highlight any anomalies.

• Construct development diamonds to examine regional differences in development of a globally significant disease using key development indicators.

• Construct scatter graphs of development indicators (using correct mathematical techniques) drawn from primary data sources to show the extent of association existing between indicators and the incidence of disease.

• Calculate Spearman’s rank correlation coefficients using primary data and formulae to establish and assess relationships between development indicators and the distribution of a globally significant disease.

• Compare patterns of development indicators and natural resource distribution from atlases and/or student mapping, graphing and calculation to show relationships between the physical world and human development and the incidence of a globally significant disease.
• Research case studies to sum up the relative importance of processes for particular countries or regions, e.g., status of women and levels of poverty, literacy and healthcare.

• Construct a consequences wheel using class-based discussions and information gathered from research activities to show the complexity and scale of impacts of the incidence of disease.

• Roleplay a range of the stakeholders involved in a globally significant disease to understand the complexity and value of their positions, and possible alternatives to the interrelationships between them.

• Investigate issues such as the use of generic drugs, and, using a debate approach, assess the validity of alternative strategies in the treatment and prevention of disease.

• Solve a community-based health problem in teams using hypothetical scenarios to enhance the skills of listening, questioning, argument, negotiation, oral reporting, group presenting, and responding to questions.

**Developing a unit of work for Focus unit 8**

Table 11 provides an example of how a unit of work might be developed for Focus unit 8. The case studies and the learning experiences suggested in the sample unit are examples only. The sample unit contributes to the requirements for a course of study as outlined in Section 5.

The study of this sample unit should be contextualised by drawing on a selection of different scales of study (one of these scales may be two or three lessons in the form of an introduction):

• global, e.g., HIV/AIDS, cholera, malaria, flu pandemics
• regional, e.g., waterborne diseases in Africa
• national, e.g., Marburg virus in Angola, malaria in Papua New Guinea
• local, e.g., dengue fever in North Queensland, Ross River fever in Townsville.
### Table 11: Sample unit of work for Focus unit 8: Exploring the geography of disease — AIDS in sub-Saharan Africa

<table>
<thead>
<tr>
<th>Key questions for the sample unit</th>
<th>Suggested time and scale</th>
<th>Thinking skills, linked to common curriculum elements</th>
<th>Learning experiences</th>
<th>Geographical skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What is a disease that is of global significance? What are the patterns of incidence of HIV/AIDS around the world and over time?</td>
<td>4–6 hours Global patterns and indicators of development</td>
<td>Recognising, recalling, visualising, Summarising, Recording, Graphing, mapping, Translating, interpreting, analysing, Generalising</td>
<td>View media materials of disease issues — video, newspaper reports, Interview health professional about disease characteristics especially mechanics of transmission, Collate, analyse and interpret development indicator data for North and South nations, Collate, analyse and interpret development indicator data for sub-Saharan Africa</td>
<td>Gathering information from media, Interpreting maps, statistics, census data, Constructing tables, Creating choropleth maps, Drawing scatter graphs</td>
</tr>
<tr>
<td>2. What are the processes that have caused the pattern of HIV/AIDS?</td>
<td>4–6 hours</td>
<td>Interpreting, Explaining to others, Perceiving patterns, generalising, Comparing, contrasting, Classifying</td>
<td>Research case studies of poverty in a country in sub-Saharan Africa and in Australia, Investigate contributing factors to differing incidence of the disease</td>
<td>Constructing flowcharts, Sketching, Interpreting graphs, tables</td>
</tr>
<tr>
<td>3. What impact has HIV/AIDS had on the level of development of countries?</td>
<td>2–3 hours Regional, e.g. sub-Saharan Africa Asia</td>
<td>Analysing, Generalising from information, Comparing, contrasting</td>
<td>Construct consequences wheel of the effects of HIV/AIDS on the poverty cycle, Internet research a case study on consequences for an urban and rural community in a developing country, Video interpretation</td>
<td>Drawing consequences wheels</td>
</tr>
<tr>
<td>4. What is being done, and what could be done by individuals, local community groups, organisations (NGOs) and governments to minimise the impact of HIV/AIDS on development?</td>
<td>4–6 hours Regional, e.g. sub-Saharan Africa Asia</td>
<td>Judging, evaluating, Creating, composing, Extrapolating, Justifying</td>
<td>Interview a representative from an organisation such as Care Australia, World Vision, Examine case studies of strategies of countries that have had differing success in limiting the spread of the disease, e.g. Uganda and South Africa, and/or a developing country and Australia, Do a plus/minus/interesting exercise on the role of drug companies in disease mitigation, Evaluate strategies, e.g. prevention strategies, anti-retroviral drugs, vaccination research, in the light of a local community’s needs (by referring to a case study) and/or needs at a national level</td>
<td>Interviewing, conducting focus groups, Writing reports</td>
</tr>
</tbody>
</table>

Assessment technique: Response to stimulus essay analysing the patterns and processes for HIV/AIDS in one African sub-Saharan country. Then evaluate strategies and make a decision about the best way to allocate resources in the fight against HIV/AIDS in that country. Criteria assessed: 2, 3 and 4.
Elective units for Theme 4

Elective units for a semester must relate to the theme for the semester. Decisions about offering any elective units and the number to be offered (maximum two) are entirely at the discretion of the school, subject to resource availability, student interest, and other local conditions. Provisions regarding the number and role of elective units are described in Section 5.

Elective units, if included in a course of study, must:

• be studied at two scales
• be allocated a minimum of six and a maximum of ten weeks
• assist students to meet the general objectives of the syllabus
• develop geographical skills
• employ the key questions of geographical inquiry (see Section 6)
• develop distinctly different key ideas and case studies from the focus unit(s) selected for study.

The following elective unit suggestions might be appropriate for student geographical investigation. The list is neither finite nor compulsory:

• investigating the impact of a large-scale development project such as China’s Three-Gorges policy
• managing the effects of hazards in developing countries
• investigating health issues and management practices in sub-Saharan Africa and Europe
• investigating the links between large-scale movement of people (refugees, guest workers) and contrasts in development
• evaluating the effectiveness of permaculture projects as alternatives to large-scale development
• investigating gender roles in sustainable agricultural practices
• investigating the issues related to the proliferation of GM/GE foods including the costs and benefits to both the North and the South
• investigating current and emerging issues and future scenarios in development.
8. Assessment

The purposes of assessment are to provide feedback to students and parents about learning that has occurred, to provide feedback to teachers about the teaching and learning processes, and to provide information on which to base judgments about how well students meet the general objectives of the course. In designing an assessment program, it is important that the assessment tasks, conditions and criteria are compatible with the general objectives and the learning experiences. Assessment then is an integral aspect of a course of study. It can be formative or summative. The distinction between formative and summative assessment lies in the purpose for which that assessment is used.

Formative assessment is used to provide feedback to students, parents, and teachers about achievement over the course of study. This enables students and teachers to identify the students’ strengths and weaknesses so students may improve their achievement and better manage their own learning. The formative techniques used should be similar to summative assessment techniques, which students will meet later in the course. This provides students with experience in responding to particular types of tasks, under appropriate conditions. So that students can prepare for assessment tasks it is advisable that each assessment technique be used formatively before being used summatively.

Summative assessment, while also providing feedback to students, parents and teachers, provides cumulative information on which levels of achievement are determined at exit from the course of study. It follows, therefore, that it is necessary to plan the range of assessment techniques and instruments/tasks to be used, when they will be administered, and how they contribute to the determination of exit levels of achievement. Students’ achievements are matched to the standards of exit criteria, which are derived from the general objectives of the course. Thus, summative assessment provides the information for certification at the end of the course.

8.1 Underlying principles of exit assessment

The policy on exit assessment requires consideration to be given to the following principles when devising an assessment program for the two-year course of study:

- Information is gathered through a process of continuous assessment.
- Balance of assessments is a balance over the course of study and not necessarily a balance over a semester or between semesters.
- Exit achievement levels are devised from student achievement in all areas identified in the syllabus as being mandatory.
- Assessment of a student’s achievement is in the significant aspects of the course of study identified in the syllabus and the school’s work program.
- Selective updating of a student’s profile of achievement is undertaken over the course of study.
- Exit assessment is devised to provide the fullest and latest information on a student’s achievement in the course of study.

These principles are to be considered together and not individually in the development of an assessment program. Exit assessment must satisfy concurrently the six principles associated with it.
Continuous assessment
The major operating principle is “continuous assessment”. The process of continuous assessment provides the framework in which all the other five principles of balance, mandatory aspects of the syllabus, significant aspects of the course, selective updating, and fullest and latest information exist and operate.

This is the means by which assessment instruments are administered at suitable intervals and by which information on student achievement is collected. It involves a continuous gathering of information and the making of judgments in terms of the stated criteria and standards throughout the two-year course of study.

Decisions about levels of achievement are based on information gathered, through the process of continuous assessment, at points in the course of study appropriate to the organisation of the learning experiences. Levels of achievement must not be based on students’ responses to a single assessment task at the end of a course or instruments set at arbitrary intervals that are unrelated to the developmental course of study.

Balance
Balance of assessments is a balance over the course of study and not necessarily a balance within a semester or between semesters.

Within the two-year course for Geography it is necessary to establish a suitable balance in the general objectives, assessment techniques and instruments/tasks, conditions of assessment, and across the criteria. The exit criteria are to have equal emphasis across the range of summative assessment. The exit assessment program must ensure an appropriate balance over the course of study as a whole.

Mandatory aspects of the syllabus
Judgment of student achievement at exit from a two-year course of study must be derived from information gathered about student achievement in those aspects stated in the syllabus as being mandatory, namely:

- the general objectives of Knowledge, Analytical processes, Decision-making processes, and Research and communication
- the four themes of study, Managing the natural environment, Social environments, Resources and the environment, People and development
- the key questions and key ideas of the selected focus units.

The exit criteria and standards stated in Sections 8.2 and 8.4 must be used to make the judgment of student achievement at exit from a two-year course of study.

Significant aspects of the course of study
Significant aspects refer to those areas in the school’s course of study selected from the choices permitted by the syllabus. Significant aspects can complement mandatory aspects, or be separate items additional to them. They will be determined by the context of the school and the needs of students at that school to provide choice of learning experiences appropriate to the location of the school, the local environment and the resources available.

The significant aspects must be consistent with the general objectives of the syllabus and complement the developmental nature of learning in the course over two years.
Selective updating

In conjunction with the principle of fullest and latest information, information on student achievement should be selectively updated throughout the course.

Selective updating is related to the developmental nature of the two-year course of study and operates within the context of continuous assessment. As subject matter is treated at increasing levels of complexity, assessment information gathered at earlier stages of the course may no longer be representative of student achievement. The information therefore should be selectively and continually updated (not averaged) to accurately reflect student achievement.

The following conceptions of the principle of selective updating apply:

- A systemic whole subject-group approach in which considerations about the whole group of students are made according to the developmental nature of the course and, in turn, the assessment program. In this conception, developmental aspects of the course are revisited so that later summative assessment replaces earlier formative information.

- An act of decision making about individual students — deciding from a set of assessment results the subset which meets syllabus requirements and typically represents a student’s achievements, thus forming the basis for a decision about a level of achievement. In the application of decisions about individual students, the set of assessment results does not have to be the same for all students. However, the subset which represents the typical achievement of a student must conform to the parameters set in requirements for verification folios.

Selective updating must not involve students reworking and resubmitting previously graded assessment tasks. Opportunities may be provided for students to complete and submit additional tasks. Such tasks may provide information for making judgments where achievement on an earlier task was unrepresentative or atypical, or there was insufficient information upon which to base a judgment.

Fullest and latest information

Judgments about student achievement made at exit from a school course of study must be based on the fullest and latest information available. This information is recorded on a student profile.

“Fullest” refers to information about student achievement gathered across the range of general objectives. “Latest” refers to information about student achievement gathered from the most recent period in which the general objectives are assessed. As the assessment program in Geography is developmental, fullest and latest information will most likely come from Year 12.

Information recorded on a student profile will consist of the latest assessment data on mandatory and significant aspects of the course, which includes the data gathered in the summative assessment program that is not superseded.

8.2 Special consideration

Guidance about the nature and appropriateness of special consideration and special arrangements for particular students may be found in the Authority’s Policy on Special Consideration in School-based Assessments in Senior Certification (2006), available from www.qsa.qld.edu.au/yourqsa/policy/special-c/docs/spec-con.pdf. This statement also provides guidance on responsibilities, principles and strategies that schools may need to consider in their school settings.
To enable special consideration to be effective for students so identified, it is important that schools plan and implement strategies in the early stages of an assessment program and not at the point of deciding levels of achievement. The special consideration might involve alternative teaching approaches, assessment plans and learning experiences.

8.3 Authentication of student work

It is essential that judgments of student achievement are made on accurate and authentic student assessment information. Teachers should find ways to ensure that students’ work is their own, particularly where students have access to electronic resources and when they are preparing collaborative tasks.

The QSA information statement “Strategies for authenticating student work for learning and assessment” is available from www.qsa.qld.edu.au/memos/05/047-05.pdf. This statement provides information about various methods teachers can use to monitor students’ work to ensure authentic tasks. Particular methods outlined include:

- teachers seeing plans and drafts of student work
- student production of and maintenance of documentation of the development of responses
- student acknowledgment of resources used.

Teachers must ensure students use consistent accepted conventions of in-text citations and referencing where appropriate.

8.4 Exit criteria

The following criteria must be used to make judgments about each student’s level of achievement at exit from the course of study. The exit criteria reflect the general objectives of the course and should be interpreted accordingly.

Knowledge

*Knowledge* refers to the ability to recall learned factual material in text and spatial forms. The material may include facts, concepts, key ideas, processes and explanations.

Analytical processes

*Analytical processes* involve students in breaking material into its component parts so that they can identify trends, similarities, differences and patterns.

*Analytical processes* involve a number of thinking processes which are investigative and recursive in nature and which may also occur simultaneously as students gather and record their information by:

- breaking the information into parts, e.g. identifying and explaining the elements of a pattern or the steps in a process
- understanding the meaning of information by transforming, interpreting and extrapolating
- identifying relationships
- suggesting causes for some of the relationships.
Decision-making processes
Decision making requires students to select between valid alternatives and make judgments supported by evidence. These processes include:
- evaluating alternative proposals, strategies, solutions and plans
- applying appropriate criteria
- making a judgment/decision about the alternatives
- recognising the need to balance the decision-making criteria (e.g. through the use of trade-offs)
- justifying the decision.

Research and communication
Research skills involve the ability to:
- gather and record information from sources and settings
- organise information prior to analysis and decision making
- reference and acknowledge sources
- establish currency, validity and reliability of information.

Communication skills involve the ability to:
- use an appropriate format when presenting
- use geographical conventions, expression and language conventions relating to grammar, spelling and punctuation
- integrate the use of maps, diagrams, statistics and referencing, adhering to geographic conventions.

8.5 Suggested assessment techniques
Assessment techniques in Geography are designed to facilitate the development of processes and skills over a two-year course of study.

The assessment program that is developed by the school should be evaluated to ensure that:
- the assessment instruments are varied and performed under a variety of conditions
- the assessment tasks are valid measures of the exit criteria
- the program provides students with the opportunity to undertake instruments in a formative context
- consideration has been given to the potential impact of gender, ethnicity, disability or socioeconomic circumstances on student performance in the selection and development of assessment instruments.

Short-response tests
This technique requires precise answers and allows little variation in student responses when knowledge of focus units is being assessed. Short-response tests should include some of the following:
- paragraph(s) responses demonstrating a depth of conceptual understanding
- sentence responses that define terms and give explanations and examples of these terms
- discriminating multiple-choice questions
- drawing, labelling and/or explaining diagrams
- recalling spatial information (e.g. labelling maps).
Data response tests

This technique provides flexibility in designing an assessment plan. It offers opportunities to test analytical and/or decision-making processes so that the minimum number of performances can be met at verification and exit. It can be applied at the same time as a short-response test but the evidence collected must be separate.

This technique may assess criterion 2, criterion 3 or both. Data response tests should include:

- a range of specific geographic data, e.g. aerial photos, maps, graphs, images, statistics, cartoons, texts
- in-depth responses, e.g. paragraphs (100–150 words), extended paragraphs (200 words), not an essay
- appropriate time allocation
- quality and rigour of analysis demonstrating relationships, patterns, anomalies
- in-depth responses recognising the need to balance the decision-making criteria in different contexts — a decision-making matrix on its own will not provide sufficient evidence of decision-making processes.

Practical exercises

This technique has four components:

- interpreting information, such as statistics, maps, photographs, images, graphs
- manipulating this information to produce graphic or cartographic presentations, such as choropleth maps, population pyramids, cross-sections, scatter graphs
- using analytical and/or decision-making processes to identify and resolve issues arising from the components above
- the communication criterion only applies to the manipulation and presentation of data.

Practical exercises also provide opportunities for the manipulation of computer-generated maps and data, and geographical information systems. They also provide opportunities for a variety of presentations and formats. If commercial computer programs, CD-ROMs and other electronic sources are used, care should be taken to ensure that they allow for genuine student data manipulation, analysis and/or decision making. Software programs that do not allow individual student interaction and manipulation will not provide sufficient opportunities for demonstration of student abilities as described in the exit standards and are therefore more suited to learning experiences than to assessment.

Stimulus response essays

These essays are responses (of approximately 600 words by Year 12) to a question or series of questions structured to require students to analyse stimulus materials and/or use decision-making processes.

Reports

This technique requires an individual response. It is an investigation based on primary sources such as maps, statistics (e.g. ABS statistics) and information gathered in the field. In a report, secondary sources should be less important than primary sources. A report may require the design and implementation of a plan, the gathering of data and the demonstration of analytical and decision-making processes.
Reports should:
- have subsections with headings, e.g. Introduction, Methodology, Statement of findings, Evaluation, Bibliography
- be 800–1000 words in length
- have support materials, e.g. maps, tables, diagrams, appendixes, sketches and images
- follow formal language conventions
- use geographical terminology.

Reports may be complemented by the use of spatial technologies, e.g. overlaid and annotated spatial images, student-generated maps based on data collected with GPS, collation of images used in constructing a transect and creating a 3D movie of a study site.

Nonwritten responses

Nonwritten responses are analytical, persuasive, and/or argumentative expositions. These responses should be individually negotiated topics within the theme of study.

Features of nonwritten responses include:
- a presentation of 8–10 minutes arising from an inquiry
- the use of both primary and secondary data
- spatial technologies (e.g. GIS, aerial photographs, satellite images) and/or a variety of multimedia technologies (e.g. audio, visual)
- a question-and-answer session in which the presenter is required to defend positions taken about an issue or requires audience participation and reaction.

When a nonwritten response is used for exit assessment, written, audiovisual or electronic support material used for the presentation must be included in the folio. Schools are responsible for providing adequate evidence to support their judgments and may elect to submit audiovisual evidence of nonwritten presentations. Audiovisual evidence should illustrate the typical A and C standards across the relevant criteria.

### 8.6 Planning an assessment program

At the end of Year 12, judgments are made about how students have achieved in relation to the standards stated in the syllabus for each of the criteria. These summative judgments are based on achievement in each of the general objectives.

When planning an assessment program, schools must consider:
- general objectives (see Section 3)
- the learning experiences (see Section 6)
- the underlying principles of assessment (see Section 8.1)
- a variety of assessment techniques and instruments over the two-year course (see Section 8.5)
- conditions under which the assessment is implemented
- the exit criteria and standards (see sections 8.4 and 8.7)
- verification folio requirements, especially the number and the nature of student responses to assessment tasks to be included (see Section 8.8)
- minimum assessment necessary to reach a valid judgment of the student’s standard of achievement.
Students should be conversant with the assessment techniques and have knowledge of the criteria to be used in assessment instruments.

8.6.1 Assessment techniques and the exit criteria matrix

The exit criteria as stated in the syllabus must be used in the construction of assessment tasks and correction of student responses. Table 12 shows the most appropriate techniques for measuring student performance on the various criteria.

Table 12: Assessment techniques and exit criteria matrix

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-response tests</td>
<td>✓</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Practical exercises</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Stimulus response essays</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Reports</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonwritten presentations</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>Data response test</td>
<td>✓</td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

8.6.2 Developing an exit assessment plan

The exit assessment plan must include a variety of techniques. In the selection of techniques, it is mandatory to include a:

- number of short-response tests
- practical exercise done under test conditions
- stimulus response essay
- report based on primary data.

The exit assessment plan must indicate measurement of student achievement on the exit criteria as follows:

- Criterion 1: the knowledge component of all units studied in Semester 3 and 4 must be assessed. The knowledge component from each focus/elective unit needs to be discrete.
- Criteria 2, 3 and 4: Each of these criteria must be assessed twice in both Semesters 3 and 4.

Table 13: Minimum number of performances for exit

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>✓</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
</tbody>
</table>
8.7 Awarding exit levels of achievement

On completion of the course of study, the school is required to award each student an exit level of achievement from one of the five categories:

Very High Achievement
High Achievement
Sound Achievement
Limited Achievement
Very Limited Achievement.

The school must award an exit standard for each of the four criteria, Knowledge, Analytical processes, Decision-making processes, and Research and communication, based on the principles of assessment described in this syllabus. The criteria are derived from the general objectives and are described in Section 3. The standards associated with the four exit criteria are described in Section 8.3. When teachers are determining a standard for each criterion, it is not always necessary for the student to have met each descriptor for a particular standard; the standard awarded should be informed by how the qualities of the work match the descriptors overall.

For Year 11, particular standards descriptors may be selected from the matrix and/or adapted to suit the task. These standards are used to inform the teaching and learning process. For Year 12 tasks, students should be provided with opportunities to understand and become familiar with the expectations for exit. The exit standards are applied to the summative body of work selected for exit.

The seven key competencies are relevant to this subject and are embedded in the descriptors in the standards matrix.

When standards have been determined in each of the four criteria of Knowledge, Analytical processes, Decision-making processes, and Research and communication, the following table is used to determine the exit level of achievement, where A represents the highest standard and E the lowest.

Table 13: Awarding exit levels of achievement

<table>
<thead>
<tr>
<th>Level of achievement</th>
<th>Minimum combination of standards</th>
</tr>
</thead>
<tbody>
<tr>
<td>VHA</td>
<td>Standard A in any three exit criteria and no less than a B in the remaining criterion</td>
</tr>
<tr>
<td>HA</td>
<td>Standard B in any three exit criteria and no less than a C in the remaining criterion</td>
</tr>
<tr>
<td>SA</td>
<td>Standard C in any three exit criteria and no less than a D in the remaining criterion</td>
</tr>
<tr>
<td>LA</td>
<td>Standard D in any three exit criteria</td>
</tr>
<tr>
<td>VLA</td>
<td>Standard E in three or more criteria</td>
</tr>
</tbody>
</table>

‡ KC1: collecting, analysing and organising information; KC2: communicating ideas and information, KC3: planning and organising activities; KC5: using mathematical ideas and techniques; KC6: solving problems; KC7: using technology.
### Table 14: Standards associated with exit criteria (This table spreads over two pages.)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowledge</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
</tr>
<tr>
<td></td>
<td>• thorough and comprehensive coverage of geographical facts, concepts, key ideas, processes and explanations</td>
<td>• detailed coverage of the geographical facts, major concepts, key ideas, processes and explanations</td>
<td>• basic coverage of the geographical facts, major concepts, key ideas, processes and explanations</td>
<td>• partial coverage of geographical facts, concepts and key ideas</td>
<td>• minimal coverage of geographical facts, concepts and key ideas</td>
</tr>
<tr>
<td></td>
<td>• spatial information is thorough, accurate and relevant</td>
<td>• spatial information is detailed, accurate and relevant</td>
<td>• spatial information is accurate and relevant, but has limited detail</td>
<td>• spatial information is incomplete with some relevance</td>
<td>• spatial information is fragmented or inaccurate</td>
</tr>
<tr>
<td>2. Analytical processes</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
</tr>
<tr>
<td></td>
<td>• in-depth identification and explanation of geographical patterns and processes</td>
<td>• detailed identification and explanation of geographical patterns and processes</td>
<td>• identification and explanation of some geographical patterns and processes</td>
<td>• identification of simple geographical patterns and processes</td>
<td>• identification of some simple geographical patterns</td>
</tr>
<tr>
<td></td>
<td>• insightful transformation, interpretation and extrapolation of geographical information</td>
<td>• effective transformation, interpretation and extrapolation of geographical information</td>
<td>• some transformation, interpretation and extrapolation of geographical information</td>
<td>• superficial transformation, interpretation and extrapolation of geographical information</td>
<td>• unsubstantiated geographical information</td>
</tr>
<tr>
<td></td>
<td>• accurate identification and thorough explanation of simple and complex relationships, including anomalies</td>
<td>• mostly accurate identification and significant explanation of simple and complex relationships</td>
<td>• identification and explanation of simple relationships</td>
<td>• identification of some simple relationships</td>
<td>• relationships are inadequately identified or established</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>3. Decision-making</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
</tr>
<tr>
<td></td>
<td>• comprehensive and thorough evaluation of alternative proposals, strategies, solutions and plans</td>
<td>• detailed evaluation of alternative proposals, strategies, solutions and plans</td>
<td>• evaluation of alternative proposals, strategies, solutions and plans</td>
<td>• some evaluation of alternative proposals, strategies, solutions and plans</td>
<td>• some unconnected conclusions about the geographical problems</td>
</tr>
<tr>
<td></td>
<td>• insightful and balanced application of a range of appropriate criteria to the decision</td>
<td>• effective and balanced application of appropriate criteria to the decision</td>
<td>• application of some criteria to the decision</td>
<td>• some connections to factors affecting the decisions</td>
<td>• no decisions evident</td>
</tr>
<tr>
<td></td>
<td>• well reasoned and logical arguments to justify decisions</td>
<td>• supported arguments to justify decisions</td>
<td>• justification of decisions</td>
<td>• decisions are stated without justification</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Research and</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
<td>The student work has the following characteristics:</td>
</tr>
<tr>
<td>communication</td>
<td>current, valid and reliable information from a wide variety of sources and settings</td>
<td>current, valid and reliable information from a variety of sources and settings</td>
<td>information from relevant sources and settings</td>
<td>information gathered and recorded from restricted sources and settings</td>
<td>unsubstantiated information</td>
</tr>
<tr>
<td></td>
<td>clear, concise and fluent expression, using accurate language and geographic conventions</td>
<td>clear expression, using appropriate language and geographic conventions</td>
<td>mostly clear expression, using basic language and geographic conventions</td>
<td>unclear expression, using restricted language and geographic conventions</td>
<td>obscure expression with little or no use of language and geographic conventions</td>
</tr>
<tr>
<td></td>
<td>highly effective organisation and presentation of information with correct use of genre</td>
<td>effective organisation and presentation of information with mostly correct use of genre</td>
<td>appropriate organisation and presentation of information</td>
<td>organisation and presentation of information completed but it is inappropriate to the genre</td>
<td>inappropriate presentation of information</td>
</tr>
<tr>
<td></td>
<td>proficient integration of maps, diagrams, statistics and referencing, adhering to geographic conventions</td>
<td>effective integration of maps, diagrams, statistics and referencing, mostly adhering to geographic conventions</td>
<td>integration of maps, diagrams, statistics and referencing with some adherence to geographic conventions</td>
<td>minimal integration of maps, diagrams, statistics; referencing of geographic conventions is inappropriate</td>
<td>little use of maps, diagrams, or statistics to support information</td>
</tr>
</tbody>
</table>
8.8 Requirements for verification folios

A verification folio is a collection of a student’s responses to assessment instruments on which the level of achievement is based. Each folio should contain a variety of assessment techniques demonstrating achievement in the criteria of Knowledge, Analytical processes, Decision-making processes and Research and communication over a range of topics. The variety of assessment techniques is necessary to provide a range of opportunities from which students may demonstrate achievement.


Students’ verification folios for Geography must contain:

- a minimum of five and a maximum of eight summative assessment instruments
- at least one piece of work based on or exhibiting use of information and communication technologies (ICTs)/spatial technologies
- short-response tests assessing all units studied. The knowledge component from each focus/elective unit needs to be discrete
- a practical exercise completed under test conditions, e.g. manipulation of data, graphic/cartographic presentation of data
- a stimulus response essay
- report writing based on primary data (including maps) and/or data gathered in the field.

Table 15, derived from the exit assessment plan, indicates the minimum number of performances in each of the criteria essential for providing evidence of the students’ achievements.

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Semester 1</th>
<th>Semester 2</th>
<th>Semester 3</th>
<th>Semester 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>✔ ✔</td>
<td></td>
<td>✔</td>
</tr>
<tr>
<td>2</td>
<td>✔ ✔</td>
<td></td>
<td>✔ ✔</td>
<td>✔</td>
</tr>
<tr>
<td>3</td>
<td>✔ ✔</td>
<td></td>
<td>✔ ✔</td>
<td>✔</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>✔ ✔</td>
<td></td>
<td>✔ ✔</td>
</tr>
</tbody>
</table>

✔ performances required for verification

8.8.1 Post-verification assessment

In addition to the contents of the verification folio, there must be subsequent summative assessment in the exit folio.
Sample monitoring profile

School: ________________________________________________________________
Student’s name: ________________________________________________________________ Entry year/Exit year: ________ / ________

<table>
<thead>
<tr>
<th>Task</th>
<th>Semester I</th>
<th>Semester 2</th>
<th>Monitoring</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Knowledge</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Analytical processes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Decision-making processes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Research and communication</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Requirements for exit levels of achievement

- VHA — 3 As and nothing less than a B
- HA — 3 Bs and nothing less than a C
- SA — 3 Cs and nothing less than a D
- LA — 3 criteria at D standard
- VLA — Standard E in three or more criteria

Comments: Comments:
Sample verification profile

School: ________________________________________________________________
Student’s name: ________________________________________________________________
Entry year/ Exit year: __________ / __________

<table>
<thead>
<tr>
<th>Task/Date</th>
<th>Semester 3</th>
<th>Semester 4</th>
<th>Verification</th>
<th>Exit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Analytical processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Decision-making processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Research and communication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Requirements for exit levels of achievement
- VHA — 3 As and nothing less than a B
- HA — 3 Bs and nothing less than a C
- SA — 3 Cs and nothing less than a D
- LA — 3 criteria at D standard
- VLA — Standard E in three or more criteria

Comments:

Comments:
9. Educational equity

Equity means fair treatment of all. In developing work programs from this syllabus, schools should incorporate the following concepts of equity.

All young people in Queensland have a right to gain an education that meets their needs, and prepares them for active participation in creating a socially just, equitable and democratic global society. Schools need to provide opportunities for all students to demonstrate what they know and can do. All students, therefore, should have equitable access to educational programs and human and physical resources. Teachers should ensure that particular needs of the following groups of students are met: female students; male students; Aboriginal students; Torres Strait Islander students; students from non–English-speaking backgrounds; students with disabilities; students with gifts and talents; geographically isolated students; and students from low socioeconomic backgrounds.

Subject matter chosen should include, whenever possible, the contributions and experiences of all groups of people. Learning contexts and community needs and aspirations should also be considered. In choosing appropriate learning experiences teachers can introduce and reinforce non-racist, non-sexist, culturally sensitive and unprejudiced attitudes and behaviour. Learning experiences should encourage the participation of students with disabilities and accommodate different learning styles.

Resource materials used should recognise and value the contributions of both females and males to society and include social experiences of both genders. Resource materials should also reflect cultural diversity within the community and draw from the experiences of the range of cultural groups in the community.

To allow students to demonstrate achievement, barriers to equal opportunity need to be identified, investigated and removed. This may involve being proactive in finding the best ways to meet the diverse range of learning and assessment needs of students. The variety of assessment techniques in the work program should allow students of all backgrounds to demonstrate their knowledge and skills related to the criteria and standards stated in this syllabus. The syllabus criteria and standards should be applied in the same way to all students.

Teachers should consider equity policies of individual schools and schooling authorities, and may find the following resources useful for devising an inclusive work program:

- ANTA 2004, A guide to Equity and the AQTF, available from Australian Training Products Ltd www.atpl.net.au
10. Resources

Text and reference books
A wide variety of textbooks and resource materials that could be used as sources of information about Geography are available. Book suppliers provide information regarding current publications.

World Wide Web
Many interactive and static websites can be used to enhance a course in Geography and often include useful resources. Some particularly useful sites include:

- About Geography
  www.geography.about.com
- Australian Bureau of Statistics
  www.abs.gov.au/
- Eduspace
  www.eduspace.esa.int/
- Esri Australia
  www.esriaustralia.com.au
- Geography in Action
  www.geographyinaction.co.uk
- Georesources
  www.georesources.co.uk/
- Geoscience Australia
- Google Earth
  www.googleearth.com
- Information Queensland
  www.information.qld.gov.au
- MapZone/GISZone
  mapzone.ordnancesurvey.co.uk/
- National Aeronautics and Space Administration
  worldwind.arc.nasa.gov
- New Internationalist Magazine
  www.newinternationalist.com
- ReefBase
  www.reefbase.org/
- World mapper
  www.sasi.group.shef.ac.uk/worldmapper/
- Whereis
  www.whereis.com.au
- WWF WildFinder
  www.worldwildlife.org/wildfinder/

Newspaper reports
Many national and local newspapers carry regular pages, columns and features about Geography. The compilation of news files on particular topics can broaden the knowledge base of students and provide a valuable source of material for developing assessment instruments. Current Social Issues and Current Environmental Issues are compilations of current news files that would be useful for the study of Geography.
Periodicals

Journals and periodicals provide current, relevant information. Journals and periodicals relevant to Geography may include:

- *Geographical Education*, the national journal of the Australian Geography Teachers’ Association.
- *Queensland Geographer*, the state Geography Teachers’ Association journal. The GTAQ also publish newsletters. These journals and newsletters often contain specific details and information about free materials, teaching kits, worthwhile commercial packages and in-service opportunities for teachers.
- CSIRO publications such as *Ecos* and *Rural Research*.
- *Australian Natural History* and *Habitat*.

Publications from consumer and conservation organisations provide useful recent information for geographical studies.

School librarians should also be able to provide assistance with identifying and locating other useful periodicals.

Electronic media and learning technology

A wide range of DVDs and television recordings are available on a variety of topics related to Geography. A variety of computer software programs and CD-ROMs may be useful for a course in Geography, both as learning tools, to gain access to information presented in a variety of forms and to assist students in gaining ICT skills. Educational program distributors are able to supply updated resource lists. DVDs relevant to Geography may include:

- *The Future Eaters* — Tim Flannery’s documentary takes a longitudinal examination of the management of natural resources
- *Planet Earth* — David Attenborough’s celebration and investigation of the biodiversity of our planet Earth.

Continuing television series such as *Catalyst, Four Corners, Foreign Correspondent, Dateline* and *Landline* usually contain items of value.

Documentaries produced by the ABC, the Weather Channel, the National Geographic Society and similar bodies are telecast frequently, and copies of these programs are available for educational use at a reasonable cost.

The internet and other information services provide access to sites containing up-to-date information.

Information searches and retrieval are also possible by subscribing or paying a fee to such databanks as QNIS, operated by Queensland Newspaper. NASA provides a free service, including a written information service.

There are many commercially available computer packages suitable for use in schools. These include databases, GPS units, interactive computer-assisted learning packages, climate and weather data loggers (when used with GIS software) and laboratory interfacing kits. For information on a variety of open source GIS, please visit opensourcegis.org/.
Organisations and community resources

A variety of government and community organisations provide personnel, advice, resources and information to assist in constructing and implementing a course in Geography. Some of these include:

- Geography Teachers Association Queensland (GTAQ)  
- Geography Teachers Association Victoria (GTAV)  www.gtav.asn.au/
- Australian Geographic Society editorial.australiangeographic.com.au/
11. Glossary

Adaptive capacity: the ability of people to modify their environment so it is suitable for their needs.

Aerial photograph: a photograph of a portion of the earth’s surface taken from a high altitude, often from an aeroplane.

Biodiversity: the number of species present in a given ecosystem.

Biogeography: the branch of Geography that studies the distribution of plants and animals on the earth.

Block diagram: a pictorial representation of some process or model of a complex system.


Catchment: the total area from which a single river system collects surface runoff; the intake area and all areas which contribute surface water to the intake area.

Carbon sequestration: a process whereby trees and other plants, through photosynthesis, remove carbon dioxide from the atmosphere and turn it into plant material.

Choropleth map: a theme-based map using data shaded proportionally to density. The darker shading is usually indicative of higher values.

Climatology: the study of the climates of the earth.

Conurbation: an extensive urban area formed when two or more cities, originally separate, coalesce to form a continuous metropolitan region.

Cooperative processes: working together to shape an environment or society.

Competitive processes: where conflicts of interest (usually over resources or space distribution or ownership) shape an environment or society.

Conservation: the preservation of an environment, space or use of that space.

Development: used in the social and economic context to describe the state of progress or extent to which natural resources have been brought into the productive process. Development is usually measured by a set of indicators that measure social, environmental, economic, cultural and political changes, and welfare measures which describe the distribution of wealth, income and goods.

Deforestation: to clear a landscape of trees, specifically areas of forests.

Distance: the space between different locations on earth. The absolute or linear distance is measured in units such as metres and kilometres. The relative distance is the length of time it takes to travel from one location to another, cost involved and the convenience of the journey.

Distribution: the arrangement of things at or near the earth’s surface viewed at a variety of scales.

Ecology: the study of the interrelationships between life forms and their environment.

Environment: the natural environment; including landforms, vegetation, climate and animals.

Built environment: the artefacts created by people in the evolution of the cultural landscape.

Social environment: the characteristics that make up the social identity of an area, e.g. class, ethnicity and employment levels.
**Fuel cell technology:** a pollution-free electricity generation technology that is expected to compete with traditional methods of creating and distributing electricity. It is also expected to be used in electrically powered cars, trucks and buses.

**Gentrification:** a process in which low-cost, deteriorated neighborhoods experience urban restoration and an increase in property values, along with an influx of wealthier residents. Gentrification changes the demographics of neighborhoods, and can include the displacement of low socioeconomic groups.

**Geology:** science of the earth’s crust, strata, origin of rocks, etc. Geology is closely related to the subdiscipline of physical geography, especially geomorphology.

**Geomorphology:** the study of the landscapes of the earth and their development.

**Global dimming:** the gradual reduction in the amount of solar energy (sunlight) reaching the earth’s surface because of particle pollution from burning fossil fuels. Global dimming creates a cooling effect that may have partially masked the effect of greenhouse gases on *global warming*.

**Global warming:** the effect greenhouse gases have on the earth’s climate. Greenhouse gases include, but are not limited to, carbon dioxide and methane.

**Greenhouse effect:** the warming of the earth’s atmosphere attributed to a build-up of carbon dioxide or other gases. Some scientists think that this build-up allows the sun’s rays to heat the earth, while making the infra-red radiation atmosphere opaque to infra-red radiation, thereby preventing a counterbalancing loss of heat.

**Hydrology:** the study of the movement, distribution and quality of water throughout the earth, addressing both the hydrological cycle and water resources. A practitioner of hydrology is a hydrologist, working within the fields of either earth or environmental science, or civil and environmental engineering.

**Intergenerational equity:** three principles of conservation operate here: firstly, conserving diversity to prevent limiting future generations’ experience of the earth; secondly, conserving the quality of resources for future generations; and thirdly, conserving rights of access to the legacy of past generations and conserving this access for future generations.

**Infrastructure:** the basic facilities, services and installations needed for the functioning of a community or society, such as transportation and communications systems, water and power lines, and public institutions including schools, post offices, and prisons.

**Isoline map:** a map made up of lines that join points of equal value, e.g. a contour map which has lines of equal elevation.

**Liveability:** value people attribute to the factors that contribute to a location’s social, economic and aesthetic qualities.

**Location:** where natural and built phenomena are found on the surface of the earth. A place has an absolute location measured accurately by coordinates, and a relative location measured by distance and direction from one place to another.

**Mega-city:** a recognised metropolitan area with a total population of more than 10 million people. Some definitions also set a minimum level for population density (at least 2000 persons/km²). A mega-city can be a single metropolitan area or two or more metropolitan areas that converge upon one another.

**Mitigation:** steps taken to reduce the likelihood of a disaster occurring, or, in the event that a disaster cannot be prevented, lessen its impact.

**Monoculture:** the cultivation of a single crop on a farm or in a region or country; or a single homogeneous culture without diversity or dissension.
Movement: the change in location of one or more components of landscape, people, goods or ideas across the earth’s surface. Movement includes direction, method, rate, nature and volume.

Natural hazard: a natural event such as an avalanche, blizzard, earthquake, drought, flood, fog, hail, hurricane, landslide, tornado, tsunami or volcano, that impacts on the livelihood of people. Natural hazards may be categorised by cause, such as geophysical and biological. Human activities may contribute to a natural hazard.

Planning: the process of organising an area’s physical environment, land use, communications, transport and utilities.

Region: a definable area of the earth’s surface which contains one or more common characteristics that distinguish it from other areas. Regions may be viewed at different scales, from local (e.g. south Townsville) to global (e.g. tropical regions).

Relative distance: see DISTANCE

Resources: those parts of the environment that are useful to people. Resources become available through the combination of knowledge and technology and changing social demands.

Resource management: a process of decision making whereby natural and cultural resources are used within the framework of society’s economic, social and political systems, and legal and administrative arrangements.

Rural: the areas of a country which show signs of domination by agricultural uses of land now or in the immediate past.

Sea change: a lifestyle shift from a metropolitan area to a regional coastal area.

Spatial association: the degree to which things are similarly arranged over space. Spatial association compares distribution patterns. A strong spatial association occurs where two distributions are similar. Weak association describes little similarity. No association occurs when two distributions are dissimilar.

Spatial change over time: the degree to which an area has changed its geographic characteristics, features or patterns of use over a period of time. Change occurs at varying rates at different times and may be considered at different scales. For example, the redevelopment of the Melbourne Docklands since the 1990s would look at distribution, spatial association between components of landscape, movement and spatial interaction.

Spatial dimension: spatial concepts are the organising concepts common to all branches of Geography.

Spatial interaction: the strength of the relationships between phenomena and places in the environment, and the degree to which they influence or interact with each other. Over time, the impact of people on the environment changes and the environment in turn changes people.

Spatial literacy: having an understanding of a range of general concepts including, but not limited to, range, scale, distance, proximity, direction, relatedness, symmetry, isomorphism and orientation. The essence of spatial thinking includes the concepts of space, reasoning and the representation of visual information.

Synoptic: analysis of data taken simultaneously over a large area for the purpose of weather forecasting.

Sustainable: a term used to describe the use of resources to meet the needs of the present without compromising the needs of future generations. Environmental and social consequences should be considered.

Topographic map: a detailed, large-scale contour map showing human and physical features.

Tree change: a shift from a metropolitan area to a regional rural area.
**Urban:** characteristic of or situated in a city or town, described in terms of size, density and concentration of employment.

**Urbanisation:** an increase of people moving to urban areas or the increased development of an urban area.

**Zoning:** the legal designation of land, property or parcels for a particular type of use, such as commercial, industrial or residential land use.

**Zoogeography:** the biological study of the geographic distributions of animals, especially the causes and effects of such distribution.

**Sources**

