

Council of the Institute of Australian Geographers

Response to questions on Towards a National Curriculum for Geography

This document is a response from the Council of the Institute of Australian Geographers (IAG) to the questions on Towards a National Curriculum for Geography. The comments largely concern geography in the secondary school, not because primary school is less important, but because the Council has limited knowledge of primary school geography.

1 How should geography be defined in the curriculum?

Academic geographers frequently refuse to define geography, on the grounds that the discipline is too diverse and too contested to be able to define, or that definition confines the subject and constrains innovation (Bonnett 2008, p. 112, who also refers to geography's 'awkward nature'). However, such a position is unhelpful in any attempt to promote geography in the school curriculum, as parents and decision makers want a description of the subject that they can immediately understand, and which demonstrates the value of a geographical education. Yet as Holloway, Rice and Valentine (2003, p. xiv) wrote: 'Sociologists have society, biology living things, economists the economy and physicists matter and energy. But what is at the very core of geography?' Their answer was to identify the core of geography as a set of concepts, but we do not believe that this is an acceptable definition for a school subject. Geography needs a definition that is similar to other disciplines with which it is competing for time in the school curriculum, and this requires a subject matter as well as concepts and methods of inquiry.

A starting point in formulating a definition is an examination of statements about geography in current Australian senior secondary school syllabuses. Extracts from these are reproduced below.

Victorian Essential Learning Standards

Geography is the study of physical and human environments from a spatial perspective. It provides students with the knowledge and skills to observe and describe places on the surface of the Earth and to analyse and provide explanations from a spatial perspective of human and physical phenomena and their complex interactions.

New South Wales Board of Studies, Geography Years 7-10

Geography is a rich and complex discipline involving two key dimensions:

- the spatial dimension – where things are and why they are there
- the ecological dimension – how humans interact with environments.

South Australia SSABSA, Years 11 and 12 Geography Curriculum Statement

Geography is the study of the spatial interrelationships of people, places, and environments. Geographers are concerned with place, with differences in features on the Earth's surface and with explaining these differences.

Geographers pose and seek answers to the questions ‘Where?’, ‘Why?’, and ‘How?’, and evaluate alternatives. Geography develops an understanding of how people interact with environments differently in different places and at different times, and of the opportunities, challenges, and constraints of different locations.

Victorian Certificate of Education Study Design, Geography

Geography is the study of where geographical features are located and why they are there, and what makes one place different from another, and how and why these differences matter. It looks at the interaction between human activities and natural processes, and develops understanding of the distribution of human and natural phenomena on or near the surface of the Earth from a spatial perspective.

Queensland Studies Authority, Senior 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.

Western Australia Curriculum Council, Senior Secondary Geography

Geography is a field of inquiry that brings together the human and physical dimensions of the world in the study of people, places and environments. This includes the study of interrelationships between natural and human environments and the spatial patterns that result from and account for these processes over time.

Tasmanian Certificate of Education, Senior Secondary Geography

Geography is the study of patterns and interactions between people and their environments.

None of these statements is entirely satisfactory, for the following reasons:

- A number emphasise the study of the interrelationship between people and the biophysical environment as the core of geography. While this is an important aspect of the discipline, it is not the only one and not even the dominant one in contemporary geography.
- The terms ‘spatial’ and ‘spatial perspective’ are not ones that students, their parents and the general public readily understand, and defining geography in these terms does not help to promote the subject. Furthermore, the spatial perspective, like human-environment relations, is only one aspect of contemporary geography.

- ‘Human environments’ is another term that needs considerable explanation to be of any meaning to the general public.
- The phrase ‘people, places, and environments’ implies that the only aspects of places that are studied in geography are people and environment, which again excludes many of the topics studied in contemporary geography.
- Most statements will convey the impression that geography studies concrete objects like environments and settlements. There is little to indicate that geographers also study economies, communities, populations and politics.
- None of these statements identify the core of geography in a single clear concept, other than human-environment relationships.
- None of them provide much scope for studies of topics such as culture, identity, community, gender, sport and music, which may be of interest to young people and which can be studied geographically.
- Five of the seven statements identify geography with the study of places, but do not describe this study in ways that allow for the wide range of contemporary geographical inquiry.

The following definition starts with the identification of geography as the study of places, and attempts to express this in ways that incorporate the varying descriptions of geography in the syllabus statements above.

Geography is the study of the places¹ that constitute the world. It examines why places are like they are, the meaning and significance of their characteristics, why places differ from each other, and how and why they are changing. A place can be a suburb, a town and its hinterland, a river catchment, a coastal zone, a metropolitan area such as Melbourne, a region such as the Wheatbelt of Western Australia, or a whole country.² The characteristics of places that geographers study include both their biophysical environment—climate, landforms, soils, vegetation, water resources, minerals and scenic quality—and their populations, built environment, economy, communities and culture.

The characteristics of a place can be understood through a variety of geographical methods of inquiry. One of these is an integrative perspective, which studies how various phenomena and processes interact to create the unique character of each place. For example, the economy of a place is influenced both by its environmental resources and by the knowledge and culture of its population. Another is a spatial perspective, which examines how individual phenomena vary from place to place, creating distribution patterns across space that can be understood as the result of environmental and social processes. For example, the economy of a place is also influenced by its location relative to other places, and its position in a hierarchy of settlements. Through these and other methods geography examines not only the characteristics of places, but also the significance of location and place in human life, how environmental features and human activities are spatially distributed across places, and the interrelationships between humans and their biophysical environment.

Geography builds on this knowledge to examine some of the significant contemporary issues affecting places, such as environmental change, natural hazards, land degradation, sustainability, outmigration, rapid population growth,

planning of the built environment, regional economic trends, the effects of globalisation, inequalities in welfare and opportunity, and the changing nature of community. It also seeks solutions to these issues that are specific to particular places, because generic solutions that do not take account of the different conditions in each place are unlikely to be fully successful. Geography therefore not only develops a knowledge and understanding of the real world in which we live and work, through the study of the places that constitute that world, but also of ways of managing and improving that world.

The features of this statement are:

- It starts with a single definition of geography that is intelligible to students, parents, teachers, politicians and the community generally.
- It is a definition that connects school geography to the popular geography displayed in magazines and television programs, as persuasively argued by Bonnett (2003).
- It identifies a distinctive area of inquiry for geography (places), one not shared with other school subjects.
- It encompasses all the approaches to geography in the existing syllabuses.
- It provides scope for the full range of contemporary geographical inquiry, from landforms to sport.
- It encourages an integrative perspective, that is, an understanding of how some of the characteristics of a place are connected,³ as well as the spatial perspective that has been a longstanding part of school geography syllabuses in Australia.
- It identifies a field of study that has both practical as well as educational value, and which can be a preparation for a range of careers.

How places are conceptualised is a contentious issue in geography. In this response we follow Jackson (2006, p. 200) in viewing places as ‘characterised by porous boundaries and inter-connections rather than fixed identities and impenetrable borders’⁴. The unique character of each place is determined both by local conditions and by the relationships of its environment, people and economy with other places, with the blend of internal and external influences varying from place to place as well as from person to person within a place.

Defining geography as ‘the study of place’ is consistent with the definition of history as ‘the study of the past’ in the framing paper for the national curriculum for history (National Curriculum Board 2008a). It has a long tradition in geography, beginning with the writings of Greek, Roman, Islamic and Chinese scholars about the world as known to them. In the second half of the 1700s Immanuel Kant identified history as the description of things and events in time, and geography as the description of things and events in space. More recently ‘place’ has been put forward as a focus for geography by Johnston (1991 and 1996) and Unwin (1992).

However, the contemporary study of place is not the same as the earlier study of regions, which was widely criticised as excessively descriptive, with severely limited ways of understanding and explaining. What is advocated here is not a geography organised place by place, but a geography that is focused on understanding the characteristics of and differences between places through the integration of a study of places into each of the topics within the geography curriculum (Johnston 1991). A

very recent example of this approach is the *Companion encyclopedia of geography*, which is focused on ‘... the concept of place and the tensions of writing about local responses to different scales of change. It explores the nature of places, documents and exemplifies forces and actors producing different kinds and rates of change, and considers the role of the geographical imagination and responses to challenges of the future’ (Douglas, Huggett and Perkins, 2007, p. xxxiii).

2 Why is it important for students to study geography?

The value of studying geography at school can be summed up in the following:

1. Geography responds to and develops the natural curiosity of young children about their world, both the places of their own direct experience and the places they experience through television, books and other media.
2. Through its long tradition of fieldwork, geography takes students out of the classroom to study the real world, and this has been shown to contribute not only to their geographical knowledge but also to their personal development.
3. To develop their personal sense of identity, students need to understand their place and its significance to them, and how their place relates to the wider world.
4. To develop their identity as Australians, students need a knowledge of the geography of their nation and its distinctiveness.
5. To understand the conditions and events that influence their lives, students need to know about the environmental, economic, demographic and social characteristics of the places in which they live, work, study and play, and how and why these characteristics are changing. They should also have a knowledge of the places with which they are connected through environmental processes, population movements, trade and investment, tourism, cultural influences and political relationships.
6. Geography teaches students about the significance of environment and location in human life and economic activity.
7. Through a study of geography students can examine some of the important issues facing individuals, communities and governments in Australia. With this knowledge they will be better equipped to make informed decisions on personal, local, regional and national issues in the future. These issues include:
 - the effects of human settlement on Australian environments, and the ways in which these effects are being managed
 - how and why different cultural groups (e.g. indigenous, settler, immigrant) understand and engage with the Australian environment differently
 - the management of water resources and drought
 - the management of coastal areas, where human pressures interact with physical processes to threaten some of Australia’s most popular environments
 - the sustainability of the use of environmental resources
 - why Australia’s population is so highly centralised in a few cities, and how the problems resulting from the growth of these cities might be managed

- regional differences in economic and social well-being, and the implications of these differences for individuals, communities and governments
- the impact of globalisation on Australian places
- the movement of Australians between places, the causes of these movements, and their demographic, economic and social effects
- the changing nature of ‘community’ and ‘identity’ in Australia, as a result of greater population mobility, international migration and settlement, the increased use of telecommunications, and social change
- the governance of places and environments
- the ways in which our knowledge of places is shaped.

8. Geography gives students a knowledge and understanding of the places that constitute the world outside Australia, and of the ways they are connected to these places. It also provides them with the opportunity to examine global issues such as:

- world population growth
- international migration
- globalisation
- water resources
- climate change
- urbanisation
- development
- land degradation
- environmental sustainability.

9. A unique feature of geography is that it combines knowledge from the natural sciences (as in the study of the hydrological cycle), the social sciences (as in the application of the concepts of agglomeration economies or environmental perception) and the humanities (as in studies of the personal meanings of places), in order to gain an understanding of the characteristics of places and of the spatial distribution of these characteristics. This gives the subject considerable value in broadening a student’s education, and in developing the multidisciplinary capability sought by the National Curriculum Board.

10. Similarly, geography students learn to be open to a wide range of explanations and to take a more holistic view of issues than is the case in most other disciplines, which again helps to develop multidisciplinary capability.

3 What should be the objectives of a geographical education?

Some generic objectives of a school education, to which geography will be expected to contribute, have already been identified by the National Curriculum Board (NCB), in its document on *The shape of the National Curriculum: a proposal for discussion*. These originate in a statement by the Ministerial Council on Education, Employment, Training and Youth Affairs in its *National Declaration on Educational Goals for Young Australians – Draft*. Selecting from the NCB document those objectives that seem of relevance to the subject, a national geography curriculum should contribute to the ability of students:

- to develop ‘the essential skills in literacy and numeracy’
- ‘to think critically, analyse information and solve problems’
- ‘to learn and plan activities independently, collaborate and communicate ideas’
- to have ‘the capacity to make sense of their world and think about how things became the way they are’
- to be ‘on a pathway towards further education, training or employment, and acquire the skills that support this, including an appetite for life-long learning’
- to ‘value their culture and place in Australia and have a strong sense of identity’
- to ‘be creative and productive users of technologies, particularly information and communication technologies’
- to be ‘able to embrace opportunities, make rational and informed decisions about their own lives, and accept responsibility for their own actions’
- to ‘have an understanding of Australia’s system of government and civic life and appreciate its diversity of culture and history, including the special place of Aboriginal and Torres Strait Islander cultures’
- to be ‘able to relate and communicate across cultures, especially in relation to cultures and countries of the Asia-Pacific’
- to have a desire and capacity to work for the common good, including stewardship of the natural environment’
- to be ‘responsible global and local citizens’.

The inclusion of values and attitudes in the list needs some comment, for it has been a matter of some debate in both geographical education and the media. Standish, commenting on the geography curriculum in the UK, writes:

...the only value that matters is knowledge. Other values, such as concern for the environment, empathy, a sense of social justice, and respect for diversity, are about moralising and have no place in a curriculum with the goal of intellectual and personal development of the individual. (Standish 2004)

The role of teachers, he argues, is to teach students ‘the facts and theories about the world they live in’, and leave students to construct their own values and attitudes.⁵ Others disagree, and argue that values and attitudes cannot be divorced from many of the topics and issues that are studied in school geography (Huckle 2002; Kriewaldt 2003; Wood 2005). Issues such as land degradation, water management, environmental sustainability, the management of large city growth, and global inequality all involve different opinions about what is the problem and how it should be managed, and are therefore the subject of debate and disagreement. Avoiding discussion of these issues, which are regularly reported in the media, will simply leave students frustrated. We therefore suggest that one important objective of a geographical education should be to help students to develop informed opinions on geographical questions and issues through a combination of study, discussion and a critical analysis of different viewpoints, including their own.⁶ The role of the teacher should be to ensure that opinions are informed and debated. There should be no pre-determined view of what is responsible, moral or ethical, particularly when there is no agreed position in the general community.⁷ Any other approach is likely to be counterproductive with young people. Geography provides some good examples of the difficulty of making moral judgements when issues are examined from several perspectives.

The most important part of a statement of objectives will be to identify the specifically geographical elements of knowledge, understanding and skills that students of the discipline should possess—what students should have learned that is geographical rather than generic. What should students of geography be able to do, using their knowledge and skills, that distinguishes them from students who have not studied geography? The statement below is one suggestion about what a student of geography should be able to do by the end of Year 10, the last year in which geography is likely to be a compulsory school subject.

By the end of Year 10 geography students should be able to understand and explain the environmental, demographic, economic and social characteristics of their own place, and how and why these are changing. They should be able to have an informed discussion with community leaders about their place and what is happening to it, about the key geographical issues of their place, and about how their community is adapting to and managing these issues. They should also have a wide knowledge of other places in Australia and throughout the world, of the relationships between their place and other places, and be able to compare their place with others. They should have an understanding and appreciation of the role of places in their own lives. They should also be able to demonstrate an understanding of how and why phenomena are spatially distributed across places, and of the role of location in human life and economic activity. They should understand the significance of the environment in human life, and the effects of human activities on the environment. Through these studies they should have developed a knowledge of the world, and of some of the significant issues of their own and other places. They should also have learned the concepts, skills and methods of geographical inquiry that will enable them to continually renew their knowledge of the world.

4 What are the core geographical concepts that must be included in the curriculum?

Place	Processes
Region	Cycles
Location (incorporating proximity and distance, centrality and remoteness)	Sustainability
Scale	Patterns
Integration (and interdependence)	Spatial organisation (incorporating agglomeration and dispersal)
Interaction (incorporating movement, flows, connections, links)	Change
Systems	Culture
	Perception
	Power

These concepts have been drawn from existing syllabuses in Australia and the UK, Gersmehl (2005), Holloway, Rice and Valentine (2003), and Jackson (2006), with additions. They could be progressively introduced in the curriculum, with the more difficult concepts only used in Years 11 and 12.

5 What skills should a geographical education develop?

An important feature of school geography is the emphasis placed on learning a wide range of transferable skills, possibly wider than in any other subject. These include the ability to communicate in written, numerical, graphical, cartographic and oral forms; to observe; to collect and analyse a very diverse range of information; to work collaboratively; to think critically; and to be open to a wide range of causes and consequences of the phenomena being studied. In some states geography students also have the opportunity to learn about geographic information systems. These are all skills that are valued by employers. Geography makes an important contribution to the development of all of the four key capabilities identified in a report on an Australian Certificate of Education (reading literacy, mathematical literacy, written English and ICT literacy), and all of the 'employability skills' identified by the Australian Chamber of Commerce and Industry and the Business Council of Australia, as also listed in the report (Australian Council for Educational Research 2006, pp. 77-84)

These skills are well covered in the existing geography syllabuses, and the Council has no additional comments to offer other than to support the value of fieldwork, and the incorporation of GIS techniques in the teaching of geography. We also suggest that there may be scope to incorporate some basic techniques of quantitative data analysis in Years 11 and 12, of phenomena such as rainfall, migration, population change and settlement systems, using readily available software such as the Analysis ToolPak in Microsoft Excel.⁸

6 What are the core areas of geographical knowledge that need to be included?

The answer to this question again starts with a critique of the current upper secondary syllabuses in Australia.

First, studies of place and community are emphasised in the earlier years of schooling, but are missing from the senior years in all jurisdictions except Western Australia. The growing knowledge of students should be regularly applied to an understanding of their own place and its characteristics and issues, and to an awareness of the significance of place in their own lives.

Second, while many syllabuses study the economic issues of developing countries, most devote little or no time to a study of the economy of Australian localities and regions, although economic issues are central concerns of households, communities and governments. All students completing geography at high school should be able to understand how their local economy functions and how and why it is changing. They should also understand the economic conditions and issues in different parts of Australia, because these are central to informed citizenship. This is a type of economic geography very different to the traditional focus on an industry or an enterprise.

Third, there is an absence of topics such as sport and popular culture, which provide opportunities for geographical study and might be of interest to teenage students. For

example, a potential classroom exercise could be to get students to recommend and justify a location for a new team in one or more of the national sports codes.

Fourth, the syllabuses do not give students much opportunity to learn how to integrate geographical phenomena in particular places.

Finally, the attention paid to geographical methods of inquiry is limited, and needs to be enhanced so that a geographical education will satisfy the NCB's objective of enabling young people to develop a '...deep knowledge within a discipline that shapes the ways in which problems are represented, considered and solved'.

Geographical knowledge can be divided into substantive and procedural knowledge, following the approach in the framing paper on a national history curriculum (National Curriculum Board 2008a). Substantive knowledge is the knowledge of places and their environmental, demographic, economic, cultural and social characteristics and issues, and of the relationships and processes that explain these characteristics and issues. Procedural knowledge is the knowledge of the concepts, skills and methods of inquiry that geographers use to gain substantive knowledge. The curriculum needs to be a blend of these two forms of knowledge, and must not only provide students with a knowledge of the world, but also foster the ability to engage in critical inquiry.⁹

Substantive knowledge

The substantive knowledge that should be taught in a geography curriculum could be divided into core and optional topics. Core topics should be kept to a minimum, so as to leave time for teachers to develop optional topics that fit their location and the needs of their students.

a. Core topics

The following topics are suggested as a common core of knowledge about the characteristics of places that students should have studied by the end of year 10. How much of this content can be sensibly included in the curriculum will have to be carefully considered, in order to ensure that students and teachers are not overburdened with work and that the syllabus is based on 'reasonable expectations of time' (NCB, 2008d, p. 3). We note the NCB's comment that: 'The Board will develop a national curriculum that provides for rigorous, in-depth study and will prefer that to breadth wherever a choice needs to be made' (NCB 2008c, p. 7). One way to meet this requirement is to adopt the approach being advocated in the history framing paper, with overviews introducing each topic, followed by a study in depth of one or more aspects of that topic (NCB 2008a, p. 3).

The topics below have not been classified under physical and human geography, as we believe that students should not be encouraged to see geography as divided in this way.

1. Place¹⁰

- defining place
- personal responses to places (awe, inspiration, attraction, boredom, repulsion)

- perceptions of place by different social groups
 - representations of place in literature, art, music, film and the media
 - the meaning and experience of place
 - place and identity
 - the characteristics of my place
 - how and why is my place changing?
2. The biophysical environment
- climate, vegetation, soils, landforms and water resources
 - flows of materials and energy
 - environmental processes and cycles
 - environmental systems and ecosystems
3. Environment and human life
- environmental resources for human use, including ecosystem services, minerals, scenic quality and heritage
 - perception and use of these resources by different people over time, and by different people at present
 - the influence of the environment on economic activity and human life; environmental opportunities and constraints
4. Environmental change and sustainability
- long-term and short-term environmental change
 - linear and non-linear change
 - past and present human alteration of the environment, both positive and negative
 - future environmental change
 - environmental sustainability
 - environmental management
 - Local Agenda 21
5. Settlement
- types of settlement, and their demographic, economic and social characteristics
 - trends in settlement patterns and growth
 - explanations of settlement patterns
 - effects of changes in transport and communication technologies
 - quality of life in different types of settlement (inner city, suburbs, regional centre, county town, rural)
 - urban biophysical environments
 - climate change and cities
 - planning issues in different types of settlement
 - future settlement patterns
6. Economy and employment
- structure and functioning of regional economies
 - types of regional economy
 - explaining regional economies
 - economic linkages between places (flows of commodities, services and finance)

- effects of changes in transport and communication technologies on regional economies
- the global economy: production, services and finance
- regional, national and global economic inequalities
- regional economic change, regional shifts and new economic regions
- the effects of environmental degradation and climate change on regional economies
- employment
- consumption
- future regional economies

7. Population

- population distribution
- population composition
- population mobility within nations; sea change and tree change
- immigration and emigration between nations
- fertility, mortality, migration and population change
- environmental, economic and social issues relating to population growth or decline
- future population scenarios, including the effects of climate change

8. Community and welfare

- types of communities
- virtual communities
- changes in community structure
- the role of place in community identity
- does community matter?
- economic and social advantage and disadvantage
- divided nations
- governing places
- vulnerable communities
- housing and homelessness
- health
- education
- crime
- managing disadvantage
- community planning

A theme that should be common to all these topics is that of change: how the characteristics of places are changing, how these changes can be explained and understood, and the effects of these changes. This could lead to a consideration of reasoned scenarios of the future characteristics of places.

How the teaching and learning of this material should be organised is not a matter on which the Council has a firm view. However, it may be more effective for student learning to integrate the elements of each topic around questions or problems, using an inquiry-based or problem-based learning method,¹¹ than to teach blocks of content. The questions or problems could be specified in the curriculum, or left to teachers to

devise in ways that best suit their students. However, teachers using an inquiry-based approach must ensure that adequate time is devoted to gaining an understanding of the basic environmental and human processes that are involved in the question or problem. An example of a curriculum document that seems to achieve this goal is in the syllabus referred to in endnote 10.

In studying this content students should apply their growing knowledge and skills to an understanding of a variety of places. These should include a student's own place, and other places around the world with which the student's own place is connected through environmental processes, population movements, trade and investment, tourism, cultural influences and political relationships, or which illustrate particular aspects of geography. They should include a balanced selection of examples from around the world, for the aim of the syllabus should be to teach students about the world, and not just Australia. In the teaching of selected places, it will be important to avoid the two 'place study traps' identified by Johnston. These are '... to cover the required places as a unique catalogue of facts and information (the singularity trap) or to see places only as examples for thematic work (the generalisation trap). ... It may be a very real danger, for instance, that Japan is studied only as an example of economic success, that Brazil is merely the background for rain-forest studies, and that Bangladesh is seen as the example of a Third World country coping with flood hazard' (Rawling 1996, p. 261).

The geographical aspects of Indigenous Australians could be integrated into each of these topics, for example with discussion of Indigenous conceptions of place in Topic 1, Indigenous perception of and use of the environment in topic 3, Indigenous alteration of the environment in topic 4, the Indigenous economy in topic 6, Indigenous population distribution and trends in topic 7, and Indigenous welfare in topic 8.

b. Optional topics

The core topics should perhaps form no more than half the curriculum, and time should be left for optional topics, developed by teachers, which extend or develop the core material and allow students to study in depth. These could be:

- additional thematic topics that are likely to interest young people, like sport, recreation, fashion and popular culture, all of which can be studied geographically
- deeper studies of the processes that are changing places, such as globalisation, cultural change, migration, technology, climate change or land degradation
- integrated studies of types of places, such as coastal areas, suburbs, city centres, irrigation regions, arid environments or mining areas
- applied topics like the management of water resources or large cities
- topics with a vocational orientation, such as tourism, business, catchment management or GIS
- topics which extend core material, such as natural hazards and uneven development.

These topics will vary from school to school, depending on the location of the school and the interests of its teachers and students. However, the Council cautions that the

selection of ‘global issues’ topics should be balanced by topics on local issues and themes, as an undue emphasis on global problems can divert attention from the local problems that students will soon have some responsibility for as citizens.

The geography curriculum in Years 11 and 12 should focus on the further development of procedural knowledge, through topics drawn from both physical and human geography. The Council has no firm opinion on whether these topics should be chosen from an approved list, or left to teachers and schools to develop, but the methods of assessment should ensure that the aim of developing students’ procedural knowledge has been achieved. Some topics could have an ‘applied’ focus, examining areas such as sustainable environmental management, coastal management, regional development, tourism or urban planning. There is a strong case for a compulsory component of fieldwork in Year 11 or 12, although not necessarily culminating in a large project.¹² Students should also apply their growing knowledge and skills to the development of a more sophisticated understanding of their own place.¹³

Procedural knowledge

Procedural knowledge in geography comprises the concepts and skills outlined in the answers to later questions, and the methods of inquiry and explanation described below. The curriculum should show teachers how to use this procedural knowledge in teaching the core and optional topics.

a. Geographical methods of inquiry

We identify ten methods of geographical inquiry, each representing a different way of asking a geographical question and explaining the characteristics of places.¹⁴

1. Analysis of the interrelationships between the components of the biophysical environment, using the concepts of environmental systems, environmental processes, cycles, ecosystems, and interaction.
2. Analysis of the role of the biophysical environment in human life, involving questions such as the influence of environmental resources on human settlement and economic activity, and human perception and use of these resources.
3. Analysis of the causes and consequences of human alteration of the biophysical environment.
4. Analysis of the interrelationships between the human characteristics of places, such as the influence of economic conditions on population migration and composition, or of relative location on employment opportunities.
5. Analysis of the relationships between phenomena in different places (such as the migration of people, trade, or the effects of upstream land use on downstream water quality in a river system).
6. The comparative analysis of places. This can involve a comparison of places that differ in one or more key characteristics, such as rainfall or culture, as a way to

understand the influence of specific variables, or a comparison of places with different responses to similar problems, as a way to evaluate policies.

7. Analysis of the spatial distribution and variation of the same phenomenon across a number of places, in a search for order and for explanations of this order.

8. Analysis of the local and regional effects of global processes like climate change, technological development, or international trade and finance.

9. Studies of the perceptions and experiences of geographical phenomena, and of differences in geographical behaviour, by different groups of people. This could include comparisons of women and men, Indigenous Australian and settlers from Europe, and children and adults.

10. Historical study of how the characteristics of places and the spatial distribution of geographical phenomena have changed over time.

Procedural knowledge is important in distinguishing geography from other subjects. Much of the content of geography listed earlier is shared with other subjects, and teachers must ensure that their treatment of this shared content does not simply duplicate that of other subjects. This differentiation can be achieved by applying one or more of the methods of inquiry above to the material being taught. For example, in teaching about climate change in Australia a geography teacher should not only ensure that students understand some of the science underlying climate change, but also examine how different places in Australia will be affected in different ways by climate change (Method 8), and the potential influence of these differences on the spatial distribution of agriculture and population, and on the populations of cities like Perth, Adelaide and Melbourne (Method 2). Method 6 could be used to compare the policy responses to drier climates in these cities with those in other cities around the world, while with senior students Method 9 could be used to examine the different viewpoints on climate change and its causes, and the different opinions on how to manage climate change within and between nations.

b. Types of explanation

Contemporary geography has a variety of ways of trying to explain phenomena, as well as a variety of opinions on what explanation actually means. Morgan and Lambert (2005) identify four broad approaches in human geography: positivist, humanistic, structuralist and postmodern.¹⁵ They ask different questions, provide different answers, and lead to different solutions or to no solutions at all. They can be used in combination, although the followers of each approach often 'insist' on their own opinion. Holden (2008), writing on physical geography, adds realism as an approach particularly suited to geography's interest in what happens in specific places. Teachers need to be aware of these different approaches to explanation, and of the one or ones they are explicitly or implicitly using, and should help students to understand the strengths and limitations of each approach.

7 Do you favour a curriculum with concepts or topics as an organising structure, and why?

Geography is a study of the real world, and concepts are used to observe, order and explain geographical phenomena. They should therefore be applied to the study of these phenomena in topics, and not be used as the organising structure of the curriculum. This does not prevent a teacher from using a concept to understand one topic, and then developing a deeper understanding of that concept by applying it to a different topic.

8 Which topics engage students, and why; and which topics do not engage students, and why?

No comment

9 How should the delivery of the geography curriculum be organised at the different stages of schooling - early years, primary, junior secondary and senior secondary?

The curriculum must be designed to avoid repetition of content, which students find boring and frustrating. Repetition is known to be a concern in the teaching of history in Australia (Clark 2008) and of geography in the UK (Lambert 2007), and in the absence of documented evidence is assumed to be a problem in Australia. Ideally, each part of the syllabus should build on earlier study, and take students to a deeper level of geographical knowledge and understanding. The Council has no suggestions on how this might be achieved in primary school, but in junior secondary school part of the content of each of the topics listed in the answer to question 6 could be taught in Years 7 and 8, and more of the content in Years 9 and 10, with a brief review session on the material covered in years 7 and 8 at the beginning of the teaching of that topic area in Years 9 and 10. This sequencing would reduce the risk of repetition, enable teachers to build topics like the economy on a knowledge of environmental resources, and population characteristics on a knowledge of regional economies, and hopefully ensure that students who move schools have covered the same basic material as students in the school they join.

Another aspect of timing is the type of study that students should undertake at each stage of their school education. A possible sequence of activities is as follows:

- learning to observe, compare, classify and describe phenomena
- learning how to see relationships between phenomena, and to suggest explanations
- learning how to make generalisations about phenomena, and to suggest explanations
- learning how to explain phenomena by using the methods of inquiry and concepts listed earlier
- learning how to evaluate phenomena, using the criteria of (1) environmental quality and sustainability, (2) economic outcomes, and (3) social equity
- learning how to analyse a problem, propose an answer, and evaluate it.¹⁶

10 Have you found any research papers on geographical education that have been useful in your teaching?

Some relevant papers are referred to in the responses to other questions.

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Endnotes

¹ Note that this definition refers to 'places', specific portions of the earth's surface, and not to 'place', a concept.

² The Macquarie Dictionary defines place as 'a particular portion of space, of definite or indefinite extent'.

³ For an argument in favour of greater integration and unity within geography, see Matthews and Herbert (2004, pp. 373-4).

⁴ See also Castree (2003); Johnston (1996); Matthews and Herbert (2008, pp. 12-13).

⁵ In a very recent and somewhat contentious book Standish (2009) also argues that much teaching about global issues in geography imposes Western values on non-Western societies by failing to view these issues from the perspective of these societies.

⁶ See Kriewaldt 2003, p. 46. In her study of the teaching of Australian history, Anna Clark found that what students most liked was the opportunity to debate opinions and interpretations (Clark 2008, pp. 135-39).

⁷ For example, on some current environmental issues in Australia, what some people regard as an environmentally responsible policy, others consider to be economically irresponsible.

⁸ See Geography Education Standards Committee (1994) for a good account of geographic skills organised by school years.

⁹ In balancing and integrating knowledge and methods, the curriculum should take account of the following statement of the National Curriculum Board (2008c, p. 7):

'... the expansion of knowledge has ... led to a view that it would be better to focus on the processes used in particular domains of knowledge rather than on knowledge itself and to choose the content simply as the vehicle to develop students' understanding of the processes. The result is a focus on scientific investigation rather than science, a focus on historical method rather than history, and a variation in content across schools that is arbitrary or even idiosyncratic.

That kind of separation of content and process is not helpful and will be avoided in the development of the national curriculum. It does not reflect what is known about the differences between experts and novices. Experts solve problems more quickly and efficiently than novices not only because they can call on automated responses honed through considerable experience but because they represent problems in ways that facilitate solution. The problem representations of experts depend on deep knowledge and understandings within the domain from which the problems are drawn.

¹⁰ For an example of a topic somewhat similar to this one, see the OCR (Oxford Cambridge and RSA Examinations) topic GCSE in Geography A J380 (www.ocr.org.uk/Data/publications/key_documents/GCSE_Geography_A_Spec.pdf).

¹¹ See Davidson (2002); Naish, Rawling and Hart (2002), and Pawson et al. (2006).

¹² See Butt, Weeden and Wood 2004 on the gender difference in ability to succeed in large assignments in an English school.

¹³ This concept of using a growing knowledge of the world to better understand one's own place is neatly captured by T.S. Eliot in the following verse:

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know this place for the first time

(Quoted in Haggett 1979, p. 3, and Matthews and Herbert 2008, p. 1)

¹⁴ For discussions of geography's methods of inquiry, or perspectives, see Geography Education Standards Committee 1994, pp. 57-58; Matthews and Herbert 2008; Rediscovering Geography Committee 1997, chapter 3.

¹⁵ While these approaches come from the history of human geography, physical geography is not immune to debates over meanings and explanations. See Trudgill and Roy (2003).

¹⁶ See the suggested structure of the science curriculum in National Curriculum Board (2008b).