# 

# Geography in

**Years 1 to 10**

**Studies of Society and Environment**

**Key Learning Area**

### Occasional paper prepared for the

##### Queensland School Curriculum Council

by

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### Introduction

This paper has been prepared in association with the development of syllabuses within the Studies of Society and Environment (SOSE) key learning area, a curriculum intended to prepare students for adult life well into the next century.

The emphasis of SOSE is on understanding relationships between people and environments, and developing the skills, processes, concepts and values needed to sustain and improve these relationships. Geography, one of the traditions of inquiry from which SOSE is drawn, makes a significant contribution to the values, skills, processes and concepts of this learning area and to a student’s ability to demonstrate core learning outcomes from Levels 1 – 6.

This paper deals with geographical skills, processes and concepts, which are relevant to a student’s demonstration of outcomes across the four strands and throughout the six levels of Studies of Society and Environment.

1. **The Value of Geography to Learning in Studies of Society and Environment**

Geography makes a unique contribution to an understanding of the human experience within the natural environment. One of geography’s continuing strengths is that it straddles the social and physical sciences. The content, cognitive processes, skills and values promoted in its study to help students to better explore, understand and evaluate the social and environmental dimensions of their world.

Because we all live, think and act in places in a spatial framework, we need to understand what the properties of that framework are, what opportunities it offers and what constraints it may impose on others and ourselves. We need to develop this understanding in order to act as sensible and successfully as possible in our personal lives, as voting citizens and as members of the global community[[1]](#footnote-1).

**1.1** **Key values**

Geography promotes the four key values that are central to SOSE: democratic process, social justice, ecological and economic sustainability and peace. Geography’s content has long included such areas as environmental campaigns, inequities in resource allocation within and between countries, and the impact of people on environments. Within areas such as these, student critically evaluate the range of views (values analysis) and review their own attitudinal stance (values clarification), fostering students’ personal commitment to the key values.

**1.2 Cross-curricular priorities**

Geography makes important contributions to the cross-curricular priorities in the SOSE syllabus:

***Literacy***

Geography presents varied and stimulating opportunities for language development, talking, reading and writing. Students engage in purposeful reading and writing tasks in a variety of forms, ranging from reports to poetry. Constructive talking is encouraged in eg. role plays, presentations, investigations, debates and discussions. Geography strongly supports the development of graphicacy through students producing, interpreting and evaluating maps, photographs, diagrams and graphs. Geography leads to an appreciation of the diversity of cultures and therefore encourages student sensitivity in cross-cultural contexts.

***Civic literacy***

Civic literacy is fostered in geography as students develop personal skills of perception, problem solving and community involvement through analysing the social and environmental implications of political decisions, evaluating alternative forms of social action, and participating in positive community action for a sustainable and socially just world.

***Numeracy***

Geographical study presents students with many opportunities for the practice and development of their numeracy skills in contexts that may involve real life situations. A class which has collected data on a traffic survey, for example, will be processing and analysing numerical data, perhaps using spreadsheets, producing graphs to present their findings, and perhaps problem solving. In using maps and diagrams, students work with scale, distance, coordination, direction and area.

***Lifeskills***

The study of geography helps students in their many roles in life – citizen, consumer, producer, recreator, social being, learner. The examples of this are many and varied: planning journeys; building, buying or renting appropriate accommodation; understanding daily weather patterns; making purchasing decisions. Whatever the situation they are facing, geography teaches students how to follow through with a reasoned inquiry to draw soundly-based conclusions and plan appropriate actions.

***Futures***

Geography develops critical thinking, a key skill for shaping the future. It develops an appreciation of the differences of viewpoints within and between groups, cultures and regions, which is an appreciation essential to conflict avoidance and resolution at a local, national or global scale. By developing geography skills, processes and concepts, students can predict probable futures based on patterns and trends, and visualise and act on preferred futures, thus developing optimism about their future.

***Work education***

Through geography fieldwork, students have practice in carrying out investigations in and of the real world. Geography can offer a solid grounding in specific skills, processes, understandings and attitudes essential to a growing range of work areas eg. people / environment relationships, spatial perspective, places and regions and the links between them. Geography deals with all the key competencies specified by business as needed in the workforce, that is, students: collect, analyse and organise information; communicate ideas and information; plan and organise activities; use mathematical ideas and techniques; solve problems; and apply an understanding of cultures.

**1.3 Geographical inquiry**

One of the distinctive features of a discipline lies in the procedures that are used to create new knowledge. In geography, this methodology of inquiry has a clear association with key questions. Table 1 indicates their relationship with the sequence of phases of an inquiry in the SOSE syllabus.

**Table 1 Geographical key questions**

|  |  |  |
| --- | --- | --- |
| **Key questions in geographical inquiry** | **Associated skills / processes** | **SOSE syllabus phases of inquiry** |
| What and where are the issues or patterns being studied? | observation (direct and indirect)  recording  description | framing and focusing questions |
| How and why are they there? | comprehension  validation | locating, organising and analysing evidence |
| What are their impacts or consequences? | application  analysis  synthesis | evaluating, synthesising and reporting conclusions |
| What can be done to improve the situation? | evaluation  decision making  communicating findings  action where appropriate |  |

1. **Characteristics of Geographical Skills, Processes and Concepts**

Within the methodology outlined in Table 1, geography uses and develops a range of cognitive *processes* and *skills* to build *concepts*.

Students’ experiences of rainforest ecosystems illustrate the connections between these three. Students have a *concept* of rainforest that has been built up from, for example, watching TV, reading books, surfing the net, perhaps a family picnic.

After introductory work in the classroom, the students use a number of *skills* during geography fieldwork to add to their understanding of rainforest ecosystems. They:

* *listen* to forest noises, *look* at the clouds and decomposition of litter, *smell* the must forest smells, and *feel* the texture of different barks;
* *sketch* epiphyte growth on trees, *note* aspect, and *photograph* leaf shapes;
* *measure* the girth of trees, *count* and *identify* different species in a quadrant;
* *carry out* soil and water quality tests;
* *collect* data to carry out nearest neighbour analysis.

Back in class, the students apply processes to further develop their understanding of this concept. They:

* *compare* their recorded observations;
* *study* their locations on a map;
* *analyse* reasons for difference;
* *predict* possible changes in species diversity with global warming;
* *justify* limited road development through rainforest conservation areas;
* *reflect* on the sustainability of rainforest in areas of changing land use.

They now have a *much-revised concept* of rainforest and the complexity of the ecosystem. They use skills to communicate this understanding. They:

* *write* a report;
* *present* an audiovisual comparison of features of a rainforest and a previously-studies vegetation to fellow students;
* *Email* their water quality results to schools in their Waterwatch network;
* *plant* food species for endangered rainforest butterflies.

**2.1 Geographical skills**

Skills are activities with a significant practical component. They are sets of operations leading to some achievement. Individuals learn skills because they make it possible to achieve goals. For example, we learn to use a street directory so we can find a particular place.

Many activities that are regarded as skills are complex combinations of subskills. For example, drawing a map, either manually or using computer software, is often regarded as a skill, but comprises many skills, including: establishing a scale, drafting the outline, selecting appropriate fonts, applying colour and / or symbols. Table 2 gives examples of geographic skills and links them with inquiry phases.

**Table 2 Geographical skills**

|  |  |  |
| --- | --- | --- |
| **Inquiry phase** | **SOSE syllabus processes** | **Geographic skills** |
| investigate by direct and indirect observation | investigate  participate  create | * look, listen, touch, taste, smell * using measuring instruments * create proformas and carry out interviews in the field * use maps, photos, statistical databases, printed material, Internet sites * collect samples / specimens where appropriate |
| record data | communicate  create  investigate  participate | * draw sketch maps, field sketches * record interviews * take photographs / videos * record readings from instruments, data from surveys * make notes, fill in observation schedules * enter measurements in a database |
| communicate findings | create  communicate  participate | * use a clear, concise expression in varying forms, eg., submissions, reports, letters, leaflets * make oral presentations to groups within and outside the school * present information in maps, diagrams, flowcharts, statistical tables, GIS output * produce (individually or in groups) graphics, models, posters, videos, websites |

**2.2 Geographical processes**

Process refers to the cognitive abilities commonly associated with study and thinking. Some educators refer to these as ‘thinking skills’. Each time a person uses a higher cognitive process, a form of problem solving takes place because the intellectual activity involves more than simply repeating an action or recalling a fact. The processes adopted in the SOSE syllabus of understand, think, create, investigate, participate, communicate and reflect fit very well with geography’s emphasis on active learning and student inquiry. Table 3 outlines geographical processes.

**Table 3 Processes used in geography**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Process** | **SOSE syllabus processes** | **Key questions** | **Terms associated with CLOs** | **Plain language meaning / action required** |
| comprehension | understand  think  investigate  communicate | what?  where?  how?  why? | discuss | * debate the reasons for and against |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  | outline | * give the main points or general principles omitting minor details |
|  |  |  | participate | * participate in collecting data for an investigation |
|  |  |  | identify | * list, select name or recognise |
|  |  |  | interpret | * make the meaning clear and explicit, often requiring an opinion |
|  |  |  | trace | * identify and describe the development of … |
|  |  |  | summarise | * present the essential ideas and information in fewer words than the original, keeping to the appropriate sequence and omitting details |
|  |  |  | explain | * make clear the cause or reason |
|  |  |  | generalise | * infer a general principle from facts |
| validation | think  understand  investigate  communicate | what?  where?  how?  why?  what impact?  what can be done? | demonstrate | * show by use of examples |
| estimate | * calculate roughly |
| illustrate | * explain and make clear by use of specific example |
| justify | * provide sound reasons/evidence for your decision |
| prove | * show by providing evidence that something is true or false |
| application | create  think  investigate  participate | how?  why?  what impact? | apply | * use concepts learnt in one situation in a new situation in order to be able to answer key questions |
|  |  | judge | * appraise or assess results using known results from parallel examples, eg. judge the effects of... |
|  |  |  | measure | * work out the extent of something, especially by comparison with a standard |
|  |  |  | examine | * present something in depth and investigate the implications / significance very carefully by comparison with known examples, eg. examine the possible effects of… |
| analysis | think  investigate  communicate  create | how?  why?  what impact? | analyse | * show the meaning of something by breaking it down into its important parts and examining each part in detail |
|  | compare | * look for, recognise and present similarities and differences |
|  | contrast | * highlight the differences between two or more positions, ideas or plans |
|  | classify | * put into groups on the basis of criteria |
|  | relate | * narrate / show how things are connected to each other and to what extent they are alike or affect each other, eg. what is the relationship between… |
|  | integrate | * bring together ideas or arguments into a whole |
| synthesis | think  investigate  create  communicate  participate | what impact?  what can be done? | design | * draft, outline or sketch something new based on specifications developed from prior work |
| develop | * produce a new plan or proposal logically, step-by-step |
| devise | * construct, design or work out an original solution to a stated problem, eg. devise a way to overcome… |
| propose /  present / suggest | * put forward for consideration or judgement an original plan or recommendation |
| evaluation | think  investigate  reflect  create  communicate | what impact?  what can be done? | argue | * present a case for and/or against a particular plan or proposition |
|  | critique | * give judgement about the merit of theories or opinions, about the truth of facts, and back your judgement by a discussion of evidence |
|  |  |  | evaluate | * make a judgement about the worth of something, looking at values, quality, merit, relevance, importance or appropriateness, and using criteria |
|  |  |  | expound | * present a clear and convincing argument for a definite and detailed point of view or opinion |
|  |  |  | justify | * defend or provide sound reasons for your decisions or conclusions based on the application of criteria |
|  |  |  | reflect | * examine critically your own thought processes and conclusions |
|  |  |  | reflect | * explain why your understanding or attitude about an issue has changed or remains the same |
| decision making | think  investigate  participate  communicate  create  reflect | what can be done? | assess | * appraise, evaluate, or judge by weighing up all the evidence and arriving at a considered conclusion |
| decide | * make a decision about something where you clearly state your opinion and support it with reasoned argument and evidence |
| determine | * arrive at an answer, showing the required steps / strategies / reasoning used |
| participate | * act on a suggested solution to an identified problem[[2]](#footnote-2) |

**2.3 Geographical concepts**

A concept is an idea or notion developed by studying a number of particular cases sharing some characteristics and generalising the result. Concepts are not fixed but develop as we live and learn. Every discipline has a body of key concepts to guide its inquiry.

Table 4 illustrates one way of structuring geographical concepts. Other ways are to link concepts to geography’s key questions, as described in the Years 9-10 Draft Optional Syllabus in Geography, or to the categories shown in the Core Content of the SOSE syllabus.

**Table 4 Structure of concepts in geography**

|  |  |
| --- | --- |
| **There are four basic and related SPATIAL CONCEPTS in geography:** | **Subsidiary CONCEPTS or ASPECTS of the four include:** |
| **LOCATION**  **↓**  *Location refers to a particular place; many locations may be grouped together to form a distribution.*  **↓**  **DISTRIBUTION**  **↓**  *The distribution of one thing may overlap with other distributions and produce areal association.*  **↓**  **ASSOCIATION**  **↓**  *Characteristic associations help differentiate areas. Movement occurs when materials, people or ideas flow between areas.*  **↓**  **MOVEMENT** | Direction, distance, site, situation, centrality, isolation  Pattern (ie. line, node, surface, scatter), scale, density  Place, environment, habitat, landscape, region, interaction, interdependence, process, system, casual relationship, energy  Direction, continuity, intensity, means, connections, cycles, circulation, diffusion, flow, confluence |
| Other concepts interact with the four spatial concepts:  Change over time: dynamism, trend, duration, development, stage, impact, sequent occupance  Perception: images of places and phenomena, power, divergent views  Values: democratic process, social justice, ecological and economic sustainability, peace | |

Students need an understanding of concepts to:

* Master content in a structured and meaningful way;
* Minimise the need to learn specifics;
* Provide a framework in which to give knowledge a context;
* Develop awareness of the organising themes that help confer a distinctive approach to the study of geography;
* To inform decisions made in and about social, natural and built environments.

1. **A Classroom Environment to Foster Development of Geographical Skills, Processes and Concepts**

The emphasis in education today is largely on the activities of learners as they acquire and use skills, processes and concepts. Children are natural geographers. They have been exploring their world and asking questions about their environment since the y first opened their eyes. They bring with them to the classroom personal geographies of varying levels of sophistication and a keen interest in their world.

The promotion of skills, processes and concepts must be set in a framework of understanding the changing attributes and abilities of children as they mature. For example, research shows that some concepts, physical geography terms in particular (eg. erosion), are conceptually difficult and may not be fully understood in the primary years.[[3]](#footnote-3) The same applies to skills and processes. For example, children’s ability to make complex value judgements develops significantly at puberty. Current research into children’s use of maps and photographs demonstrates the relevance of an understanding of maturation. Children as young a s four years old have significant ability to work with maps without formal teaching[[4]](#footnote-4). In interpreting photographs, younger students tend to focus only on elements in the foreground while junior secondary students are able to view and interpret the photograph as a whole[[5]](#footnote-5). An understanding of varying competence within and between levels is vital to teachers as they plan strategies to suit their students’ particular levels and individual differences, and consider the way these strategies relate to the whole curriculum.

The task for teachers is to provide children with a well-rounded, structured opportunity to observe, understand, respond to and interact in their world while preserving and enhancing a spirit of inquiry.

**3.1 Inquiry learning settings**

As inquiry learning is central to geography, it is important to be familiar with the roles that teachers and students each have in inquiry-learning settings. Inquiry learning focuses on four basic components, as shown in Table 5. In any one inquiry, teachers and students may negotiate different proportions of responsibility for different stages of the inquiry.

**Table 5 Inquiry components**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topic selection** | **Question / problem** | **Inquiry process** | **Solution** |
| Proposed by pupils | Spontaneous from pupils | Autonomous pupil activity | Achieved through open inquiry |
| Jointly devised by teacher and pupils | Arose in structured discussions in class | Joint initiative on parts of teacher and pupils | Closed inquiry |
| Presented by teacher | Asked by teacher | Prescribed by teacher | Knowledge facilitated by teacher |

Inquiry is a state of mind that may be satisfied by numerous learning experiences: various discovery learning strategies; creative activities; laboratory practicals; and field studies.

Inquiry permeates all of these learning experiences, although some may be more structured than others. One survey [[6]](#footnote-6)of 1000 classrooms showed only 1% of teacher talk invited students to give more than recall. Whether this is reflected in out Queensland schools or not, it provides a clear message that learner-centred classrooms and fostering thinking skills do not come automatically and need to be planned into our curriculum and teaching practices.

**3.2 Reflection**

Teaching for reflection or metacognition enables students to think about how they learn, and what their understandings, values and abilities are before, during and after learning. Planning, remembering and self-monitoring are aspects of metacognition that apply to the acquisition of skills, processes and concepts such as those used by geographers. In general, these approaches are aimed at helping students to become more keenly aware of what they are learning and to improve their strategies for learning. Teachers may help with this by making students aware of the questions to ask themselves (see p. 13) and of the value of asking these questions, by observing the students at work, and by offering comments on progress, especially when students ask for feedback.

It can be helpful for teachers to concentrate on what comprises effective thinking. Table 6 highlights the differences between effective and ineffective thinking.

**Table 6 Qualities demonstrating effective thinking vs qualities inhabiting effective thinking**

|  |  |
| --- | --- |
| **Qualities that demonstrate effective thinking** | **Qualities that may inhibit effective thinking** |
| Welcoming problematic situations; being tolerant of ambiguity | Searching for certainty; being intolerant of ambiguity |
| Being sufficiently self-critical; looking for alternative possibilities and goals; seeking evidence on both sides | Not being self-critical; being satisfied with first attempts |
| Being reflective and deliberative; searching extensively when appropriate | Being impulsive; giving up prematurely; being overconfident of the correctness of initial ideas |
| Believing in the value of rationality and the effectiveness of thinking | Overvaluing intuition; devaluing rationality; believing that thinking won’t help |
| Being deliberative in discovering goals | Being impulsive in discovering goals |
| Revising goals when necessary | Not revising goals |
| Being open to multiple possibilities; considering alternatives | Preferring to deal with limited possibilities; not seeking alternative to an initial possibility |
| Being deliberative in analysing possibilities | Being impulsive in choosing possibilities |
| Using evidence that challenges favoured possibilities | Ignoring evidence that challenges favoured possibilities |
| Consciously searching for evidence against the possibilities that are initially strong, or in favour of those that are weak | Consciously searching only for evidence that favours strong possibilities |

**3.3 Fieldwork**

Fieldwork is another essential component of fostering geographical skills, processes, concepts and attitudes. The field is the geographer’s laboratory and is represented clearly in the SOSE syllabus, both generally and specifically (eg. core learning outcomes TCC 1.4, PS 3.3, PS 4.3, PS 6.3). A close association exists between practical work and student understanding. Fieldwork:

* is highly student-centred;
* arouses student curiosity;
* brings students in contact with the real world;
* provides opportunities for testing perceptions;
* develops skills and processes;
* brings abstract concepts alive;
* contributes to the formation of values and attitudes;
* helps to develop aesthetic awareness;
* encourages participation in community / environmental action.

Fieldwork can be done in the school grounds or the local community for 15 or 30 minutes, or over two or three days. It may be an initial collection of data, the final investigation to validate findings, or citizen action. Teaching strategies range between the extremes of field teaching and field research as indicated in Table 7. The relevance of each approach depends on the:

* purpose of the field study;
* experience and confidence of the students;
* time available;
* equipment available;
* level of community participation.

**Table 7 Field teaching and field research**

|  |  |
| --- | --- |
| Field research ← ------------------------------------------- → Field teaching | |
| Identification of a problem as the result of direct observations or from class work or from special interests of students  Formulation of a hypothesis as a result of reading, discussion, thinking  Field activities, involving data collection and recording  Data analysis – processing information  Hypothesis – accept or reject  Field action may result | Study of a geographic topic or theme in class – teacher talk, textbook study, note-taking, slide viewing  Observations, often teacher-directed, and recording of information in the field – some field interpretation  Further interpretation and explanation in class: writing up field experiences  Final action may result. |

Field action may result from either approach. However, effective involvement in working with the community for a better environment is more likely to be a part of field research. Field action can be a tool to promote values such as ecological and economic sustainability, associated concepts such as stewardship; and associated processes such as values clarification. This may be an end product of field research and field teaching eg. becoming a bushwalker or joining an action group to protect a valued place.

**3.4 Technology**

Changing technology provides a number of opportunities to create a classroom environment that fosters the development of skills, processes and concepts. Students can use computers to record data in the field, map, analyse data, communicate with other students and institution, access information, present data – in ways that interest students and contribute to their ability to function in the real world.

**4. Practical Steps for Learning Geographical Skills, Processes and Concepts**

Geography skills, processes and concepts can be acquired by students through:

* a process of inquiry where motivated students will seek their own approaches to problem solving, recognise issues and seek to resolve them, ask questions and attempt answers; or
* direct reception of, and interaction with, information from teachers or textual materials, that is, listening, observing and reading.

While the SOSE syllabus promotes an inquiry-oriented approach to learning, the two approaches, that is, finding out for oneself or being taught, can both be applied to the acquisition of skills, processes and concepts. The two methods can be blended to enable learning, and to suit individual student learning styles.

In most student-based learning, there is still a role for teacher demonstration of skills, but with a changed emphasis to the activities of learners as they acquire and use skills. This changed emphasis does not mean that students cannot ask, and even expect, teachers to demonstrate clearly the steps involved in acquiring a skill, process or concept. Teachers are an essential part of effective learning, both as a resource and part of the student’s monitoring process. However skills are taught, to be meaningful to students, they need to be connected to the larger learning context that is occurring. Also, teachers are important in developing students’ metacognition (reflection) by teaching students to plan, remember and self-monitor their learning of skills.

**Table 8 Practical steps in learning skills, processes and concepts: an overview**

|  |  |  |
| --- | --- | --- |
|  | **Learning through investigation** | **Learning from teacher** |
| **Skills** | 1. Motivation is a basic condition for effective learning of skills and for sustaining autonomous learning. 2. Learners should know about the principles on which the skill rests. 3. Learners should understand the practical aspects of the skill. 4. Learners need to be able to appraise different strategies fro completing the task and to choose among them. 5. Learners should try one of the strategies, provide their own commentary on what they are doing, describing what is being learned and how the learning is happening. 6. Self-monitoring of the learning is important. Learners should set up criteria by which to judge the success of their performance. 7. Persistent rehearsal is required along with continuing evaluation. 8. The approach to developing the skill should be changed in the light of what is learned from the evaluation. 9. Continued self-questioning about the skill will enhance its transferability. | Teachers make a task analysis of the skill to identify its components. Determine about the readiness of students to undertake each component task. Help students who experience difficulty.   1. Clarify the learning context in which the skill will be needed. 2. Demonstrate the whole, then the parts, then the whole again, making sure students can see the demonstration clearly. 3. Give a commentary during the demonstration. Provide guiding notes or require students to record their own notes. 4. Allow time for practice straight after the demonstration. 5. If the skill is complex, apply the demonstration and practise to sub-skills in turn. Provide comments on the work of individual students. 6. Apply to relevant context. 7. Devise several ways of practising the same skill and build it into more complex operations like problem solving. 8. Help students formulate criteria of effective performance and encourage self-analysis. |
| **Processes** | Geographical processes may be developed by students as:   * individual exercises following known steps / criteria applied to fresh information similar to stages in skills above; or * working within a phase of an inquiry or following through the general sequence of phases of an inquiry;  1. frame and focus questions; 2. locate, organise and analyse evidence; 3. evaluate, synthesise and report conclusions; 4. possibly take action; 5. develop processes, with an emphasis on reflection eg. students analyse the nature of questions developed and reformulate these where necessary. The degree of individual responsibility for learning will be negotiated between students and teacher. | Ensure that students comprehend the nature of the process involved. This may take the form of a careful definition, or of a detailed analysis of the task to reveal its components. The student should understand just what is involved.   1. Provide a demonstration of a situation in which the process is involved. This involves teacher and students jointly working an example. 2. Provide an opportunity for students to practise in context the use of this process activity until they show sufficient competence to undertake it without intervention by the teacher. 3. Help students to know how successful they are. |
| **Concepts** | Students:   1. brainstorm what a particular concept means; 2. examine a set of written and / or pictorial examples that illustrate the concept, and a set that do not; 3. work out the characteristics that define the concept; 4. share ideas with fellow students and refine defining characteristics; 5. test conclusions against new examples. | 1. Introduce the concept; establish the topic in class with some motivational activity; 2. Define the concept; 3. Using direct teaching methods identify distinguishing features of the concept; 4. Examine examples highlighting essential / distinguishing features; 5. Students practise using the concept, recognising essential features. |

* 1. **Reflecting**

In learning through investigation, students apply metacognitive principles to the development of skills, processes and concepts. Metacognition emphasises describing and analysing one’s own learning and using these descriptions and analyses to decide how to proceed with the learning. The need to learn is based on personal recognition of the contribution such as an activity can make to understanding. Planning, remembering and self-monitoring are aspects of metacognition that can be applied to the acquisition of skills, processes and concepts. Students may enhance their development of these when they are encouraged to ask such questions as:

* Why have I chosen to acquire this particular skill / process / concept?
* How will it help my studies?
* Where should I begin?
* What have I done so far?
* What strategies have been effective in the past?
* Is there something I need to change?
* I find this part of the task easy (or difficult). Why?
* Do I need to go back over that step to check it?
* How can I summarise the sequence of steps I have taken?
* How does my own evaluation of my performance compare with the teacher’s evaluation of it?
  1. **Reception learning**

Reception learning principles are applied to learning skills, processes and concepts from the teacher. Reception learning typically occurs when a full statement of what is to be learned is presented to the student. This often occurs when passages of text are read or when teachers tell a story or present information. Such statements should be organised but the following principles to encourage meaningful learning:

* The presentation should begin with a brief overall outline of the topic, perhaps a couple of sentences in all.
* Then the topic should be progressively developed, so that a typical structure in the material is: brief outline → more specific statements → explanations → details → examples → case studies. This has been called progressive differentiation.
* Advanced organisers should be built into the statement at appropriate places. An advance organiser is a brief reference to an idea that is developed later. It serves to link different parts of the whole and to help learners anticipate what will follow.

Reception learning obviously differs from discovery learning. However, it is far from passive because it requires considerable thought by learners.

* 1. **Fieldwork**

As mentioned in the previous section, fieldwork is an important focus for the development of skills, processes, concepts and attitudes in geography. teachers may take the more traditional field teaching approach or a more student-orientated field approach (see p. 11) as appropriate to the circumstances.

**5. Sample Modules**

Two modules are briefly outlined that suggest ways of incorporating the development of geographical skills, processes and concepts into classroom practice.

|  |  |
| --- | --- |
| **Level 1: This is my place**  **Elements of the local environment** | |
| At Level 1, students investigate elements of their local social, natural and built environment, building on prior knowledge as they observe, measure and record; identify features and elements of their familiar environment; suggest evidence of change; examine relationships; and use categories. Students work with features of their classroom, school and local area environments, spending time outside the classroom. They work together to gather information and communicate through maps, diagrams, photographic and evidence displays, and oral and written reports. They may become involved in action supporting some aspect of their familiar environment. The following activities are suggested ways of delivering the core learning outcomes listed. | |
| **PS 1.4** Students organise and present information about places that are important to them. | Teacher assists students to **create a three-dimensional representation** of a place eg. use boxes and Lego to represent their homes. Use an area on the floor to create a 3D map, using a box representing the school as the starting point. Place houses in the general location relative to the school. Students stand on chairs to **gain a bird’s eye or plan view**. Teacher models how a two-dimensional map can be made on the plan view. |
|  | Repeat the above activity regularly and **consider** **questions** such as: What does the map show that we can’t see normally? What doesn’t the map show that we can see? What’s useful about a map? What’s useful about a three-dimensional representation (model)? |
|  | Use literature such as *Rosie’s Walk* to **develop language** **about location and places**. Use cut-outs of people on a large map and **orally describe** how they can move from one place to another eg. How do you find the library? What do you walk past to get there? How else could you get there? |
|  | Students are introduced to the **notion of classification**. Students list or draw a range of features of places and **find ways to group** them eg. large or small, living and non-living, old and new, colour, shape, things on the ground and in the sky, can be placed on or not played on. Teacher uses language like “Can you organise it this way?”. [When classifying, no one answer is necessarily right…learning to use criteria is the skill being developed. Also, the definition of old will vary according to context. Teachers need to consider what is old in relation to the experiences of students. Seek reasons from students eg. this sandwich is old because it is stale, this tree was here when my grandfather was born, the building that was built last year is old because we are in the new building.] |
|  | Students develop **field skills** as they work in groups, moving around the school, **observing the social, natural and built features including boundaries**. The teacher collaborates with the students to create a simple map and **students create symbols** to place on the map to represent observed features. They describe the location of features using words like to, under, above, next, up, down, between. |
|  | They develop numeracy skills as they **describe distances** eg. far away, below, close, and measure distances using familiar units eg. steps, paces. |
|  | They choose their preferred place in the school and **develop a sense of place** by describing it in words and drawing a picture of it. **They locate it on their map** and compare their choice with others in the class. |
|  | They **list places that they value** and collaborate with the teacher to tally this information on a chart. They list reasons they and others like various places. They mark important places on a prepared simple map of the school and **draw conclusions** from this information. |
|  | They **develop literacy skills** and **processes of investigation** to build concepts. Games like Hunt the Picture are used: students view photographs or pictures of features around the school grounds eg. basketball post, the tree beside the front gate, the sandpit, then **locate these features**. With teacher assistance, students mark these on a prepared large simple map. |
| **TCC 1.4** Students describe the effects of a change over time in a familiar environment. | Students move around the school to **identify changing elements in the social, natural and built environment** eg. seasonal changes, natural growth and decay, built environment changes, changing social patterns. They **describe the effects of changes** in various ways eg. drawing, photographs, concept map, evidence display. |

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| PS 1.3 Students participate in a cooperative project to cater for the needs of living things. | Students reflect on their favourite place. They **give reasons for their choice** and then take a class vote on which accessible place to take responsibility for. If they choose the frog pond, they identify the needs of associated living things and collaboratively decide on **responsibilities and roles** to cater for these needs eg. regularly remove any rubbish from nearby, learn to identify cane toad eggs to remove them, plant frog-friendly vegetation. Discussions are used to **share problems** and **find solutions**. | |
| **SRP 1.1** Students identify how elements in their environment meet their needs and wants. | Students **identify** elements in their environment that meet their needs and wants eg. trees for shade, taps for water, road crossing for safety, money to buy things, particular adults to help. They **reflect** **on their behaviours** in using these elements. | |
| PS 1.5 Students describe the relationships between personal actions and environmentally friendly strategies in familiar places. | They **classify behaviours** that are helpful and not helpful to the class care project. They **reflect on how their actions may affect** frogs in their school and elsewhere in their local environment for good or bad eg. dropping rubbish that is washed down stormwater drains; avoiding the use of chemicals in the area; removing cane toad eggs; informing other students of responsible actions towards this place. Discuss whether it is easy or hard to act in helpful ways towards this place. | |
| **Level 6: Forests for the future** World Environments | | |
| At Level 6, students and teachers may develop a sequence of studies around the theme of *Forests for the future* within the overall area of world environment studies. Using knowledge of physical processes, students investigate and analyse environmental impacts resulting from political, economic or technological change in the Asia Pacific area; they judge the effectiveness of past government policies; they relate this to key values and develop their own position, predicting possible outcomes and creating possible solutions. They may take some responsible social action. They plan and carry out local environmental case studies drawing on a number of viewpoints to develop their position. It is possible to deal with the following as one major study or to make selections from it to cover particular core learning outcomes. | | |
| **PS 6.4** Student use maps, tables and statistical data to express predictions about the impact of change on environments. | | Students and teacher **brainstorm** their present understandings of forests and **identify** the focus for an inquiry. This may include a brief **Internet** and **library** search, and/or stimulus material illustrating **different perceptions** of the **value** of forests. |
|  | | Students gain an understanding of **concepts** of forest types and their distributions by using various land use maps, tables, aerial and other photographs, and by personal experience. With the teacher, they develop and/or extend the necessary skills and processes (eg. **drawing a cross section** and using it analytically) and **review** their knowledge of processes shaping vegetation and landform features. They **study** topographic maps and **compare** cross sections to further **understand** the **impacts** of clear- felling techniques on rates of erosion. They **make predictions** about human behaviour patterns and environmental impacts based on this evidence. |
| **SRP 6.1** Students develop and test a hypothesis concerning a relationship between global economic and ecological systems. | | Students **develop and test hypotheses** as they investigate causes and consequences of the **greenhouse effect** in terms of forest cover and burning, and look at the problems of loss of forest cover. They **reflect on** the **value** of forests as a resource for various groups and **analyse** the impacts of economic and technological change on these resources. They **reflect on their own connection to this relationship** and may decide to change their own consumption patterns or write to the appropriate government minister regarding tree-clearing policies. |
|  | | Students **communicate** their predictions and conclusions on the impact of technological change in written reports that include maps and graphs. They **reflect** on methods used in their investigations, **applying standards of self appraisal**. |
| **PS 6.3** Students initiate and undertake an environmental action research project based on fieldwork. | | Students study **physical processes** that shape vegetation and landforms, **manipulate** data and **interview** significant people to **plan** and **undertake** an environmental case study of their local forestry industry. They **search out** **a range of** **viewpoints** (from industry representatives, environmental organisations, government officials, politicians and residents) on the social and environmental impacts of technological, economic and political changes. |

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| **PS 6.5** Students make clear links between their values of peace and sustainability and their preferred vision of a place.  **TCC 6.4** Students produce a corroborated argument concerning causes of a change or continuity in environments, media or gender roles. | They **reflect** on their personal standpoint in relation to the key **values** of ecological and economic sustainability, peace and social justice, in the context of this experience, by articulating a vision and using their evidence to create a corroborated argument that asserts their position. |
| TCC 6.2 Students use their own research focus to analyse changes or continuities in the Asia-Pacific region . | Students **apply** understandings from these investigations to case studies of forests in a number of Asia-Pacific locations eg. Indonesia, Papua New Guinea, Solomon Islands. They **create focus questions and criteria** and use **geographical inquiry processes** to **consider** **the impacts of technological change** and **the globalisation of markets** on forestry industries. They identify the effects this has on various cultural, economic and environmental interests of various groups. |
| PS 6.2 Students create proposals to resolve environmental issues in the Asia-Pacific region.PS 6.1 Students use criteria and geographical skills to develop conclusions about the management of a place. | Students **make decisions** about a probable and preferred future for this area, **predicting** how this will impact on the people and environments concerned. They create a proposal that **suggests** ways in which change could be managed to lessen adverse impacts. |

**6. Useful Resources**

**6.1 Books**

Allen, A. et al. *Geography: Its Value and Place in the Curriculum*. Melbourne, GTAV, 1996.

Clearly set out presentation of geography’s contribution to the curriculum in SOSE with useful coverage of geographic skills and inquiry methods, field investigation and the discipline/ integrated approach.

Carter, R. ed. *Handbook of Primary Geography*. Sheffield, UK, Geographical Association, 1998.

Rich in geographical ideas and practical examples for the primary classroom with a large section entitled ‘Teaching and learning, linking skills, places and themes’. Set in the United Kingdom but the activities are readily transferable.

Conolly, G. *Rediscover Geography*. Sydney, GTANSW, 1997.

Useful presentation of geography’s relevance in everyday life and its contribution to the curriculum in SOSE, covering geographic skills and inquiry methods, field investigation and the discipline/integrated approach.

Donert, K. *A Geographer’s Guide to the Internet*. Sheffield, UK, Geographical Association, 1997.

Practical introduction to the skills required to use the internet effectively in student inquiries. Websites such as Project Globe are of particular relevance to geography students comparing meteorological and other data across the world. (Unfortunately all websites have a regrettable tendency to change their addresses.)

Geography Education Standards Project. *Geography for Life: National Geography Standards*. Washington, National Geographic, 1994.

Comprehensive coverage of subject matter, skills and perspectives essential to geographical literacy. These are defined in detail as benchmarks for United States Grades K-4, 5-8 and 9-12, providing detailed statements of processes of eg. defining, identifying, explaining and comparing aspects of regions and physical systems. They are readily applicable in the Queensland curriculum.

Hay, I. *Communicating in Geography and the Environment*al *Sciences*. Melbourne, OUP, 1996.

Excellent teacher reference, written for university students, on presentation skills used in geography and the environmental sciences.

Head, K. et al. *Geography for Primary Schools: A Resource for Teachers of Studies of Society and Environment*. Melbourne, AGTA, 1996.

Excellent resource containing 26 units on topics such as ‘Care of places’, ‘Interactions within communities’, ’Crops and climate’, ‘Bushfires’, arranged in lower, middle and upper primary sections, as well as detailed treatment of geographical skills, processes, concepts and vocabulary within SOSE.

Hobson, M. & Heck, D. eds. *Landcare People Care: Proceedings of the 14th AGTA Conference*. Brisbane, AGTA, 1995.

Papers contain useful practical material for inquiry-based learning, particularly investigating soils and town planning issues.

Kent, A. et al eds. *Geography in Education: Viewpoints on Teaching and Learning*. Cambridge, CUP, 1996.

Deals with such relevant topics as action research, discovery fieldwork, values education, geography and environmental education.

May, S. ed. *Primary Fieldwork Projects*. (Fieldwork in Action 4). Sheffield, UK, Geographical Association, 1996.

Contains lots of interesting ideas and activities which are widely transferable from UK to Queensland levels 1 and 2. Many make use of the classroom and school site so are easy to manage. Other books in the series also useful.

Scoffham, S. ed. *Primary Sources: Research Findings in Primary Geography*. Sheffield, UK, Geographical Association, 1998.

Contains 22 papers dealing with such topics as ‘Learning from Photographs’, ‘Children as Mapmakers’, ’A Child’s Eye View of Cities’, dealing with recent research findings.

**6.2 Journals**

*Geographical Education*, Adelaide, Australian Geography Teachers Association. Annual.

Articles on the broad scope of geographical education. For example, Vol. 11 1998 focused on geographic skills and contained articles on GIS, using the Internet, mapping and environmental fieldwork for pre-schoolers.

*Geodate*, Melbourne, Warringal Publications. Quarterly.

Articles and exercises written by geographers, dealing with such topics as natural disasters, resources, the Gulf War, super dams, including text, maps*,* graphs and student activities geared to secondary students.

*Geoguide Lesson Plan*, Washington DC, USA, National Geographic Society. Irregular.

Lesson plans relate to specific articles in *National Geographic* and the ‘Geoguide’ at the end of that issue. Each lesson plan defines links with curriculum areas, teaching level and geography themes and provides text and map interpretation exercises. Topics include ‘South China Sea’, ‘Orbit’, ‘Across the Top of the World’, ‘Sustainable Agriculture’.

*Global Eye*, London, Worldaware for Dept. for International Development. Quarterly.

For secondary students but also of use at Level 4. Focus is on world development. Includes useful map, graph and photographic interpretation with separate activity sheet.

*Global Issues*, Melbourne, Geography Teachers’ Association of Victoria. Quarterly.

Includes useful range of materials developed around National Curriculum SOSE outcomes for primary and secondary students. Topics include ‘South Asia’, ‘First Peoples’ and illustrate key values and geographical concepts, skills and processes.Discontinued in 1998 but back copies are still available. Was issued free with geography and other teachers’ associations’ journals.

*Interaction*, Melbourne, Geography Teachers’ Association of Victoria. Quarterly.

Articles on geographical education; samples of teaching units, activities, assessment items; section on geography in the primary school; section on information technology including good website references. For example, Vol. 26(3) 1998 included: developing active and informed citizens; topographic mapping activities; the value of learning by doing.

*International Research in Geographical and Environmental Education*, Clevedon, UK, Multilingual Matters for the International Geographical Union Commission on Geographical Education. 3 per year.

Research reports on teaching/learning from pre-school to university, plus discussion papers focusing on a particular topic. For example, Vol. 7(2) 1998 included an article on the interpretation of geographical photographs by 11- and 14-year olds and the discussion papers focused on values in geographical and environmental education.

*Issues,* Melbourne, ACER. Quarterly.

As each edition has a range of articles focusing on one issue, eg. ‘Energy’, ‘Arid Lands’, ‘Woodchips and Forest Management’, they are very useful resources for students working with geographical processes and concepts, developing critical literacy skills, reflecting on values and planning community action.

*Journal of Geography*, Indiana, USA, National Council for Geographic Education. Bimonthly.

Articles on geographical education from pre-school to university. Concentration on research results which are readily applicable, eg.: using slides in assessment, not just teaching (Vol. 97(2) 1998); middle-school students’ map construction (Vol.(3) 1998).

*Primary Geographer*, Sheffield, UK, Geographical Association. Quarterly.

Packed with primary classroom activities. Even the articles contain material directly usable in the classroom. Each issue has a particular theme which might be a topic (eg. rivers, weather) or a set of skills. No. 34 1998 focused on numeracy, No. 32 1998 on language, No. 24 1996 on graphicacy.

*Queensland Geographer*, Brisbane, Geography Teachers; Association of Queensland. Quarterly.

Articles on geographical education; activities for the classroom or in the field; assessment items; section on the internet. For example the Aug 1988 issue included: urban fieldwork activities; an oral presentation assessment item.

*Teaching Geography*, Sheffield, UK, Geographical Association. Quarterly.

Articles, classroom activities, research results, assessment, information technology, eg.: an activity to teach map projection 23(4) 1998; developing numeracy through geography 23(4) 1998; critical thinking in the humanities 23(3) 1988; research on how to help students overcome mapping misconceptions 23(2) 1988. Relates to secondary education.

*Understanding Global Issues*, Cheltenham, UK, Understanding Global Issues. 10 per year.

Includes comprehensive briefing on issues such as ‘Modernising India’, ‘Avoiding Gridlock’, ‘Climate Change’, ‘Indonesia in Crisis’. Data presented graphically in range of forms. Includes a broadsheet copy of graphics.

**6.3 Education centres, websites and other contacts**

**Environmental Education Centres**

They provide structured activities in urban, coastal and rural environments where students can develop geographical skills and processes carrying out inquiries into environmental issues. Contact details for environmental education centres are available from the website:

**www.qed.qld.gov.au/schools/envied.htm**

**Geography Teachers Association of Queensland Inc**

112 Brookes Street, Fortitude Valley Q 4006

Phone/fax 07 3349 5541, email gtaq@powerup.com.au

The Association supports geography teachers and geography teaching in schools. It publishes a journal. It runs inservice seminars, workshops and an annual conference. It sells publications. Information on the Association, plus links, TV program information, photos, etc., is available at its website:

**www.gtaq.webcentral.com.au**

**Geography Teachers Association of Victoria website**

This is a very effective, comprehensive website for geography teachers:

**www.netspace.net.au/~gtav/**

**Griffith University griffithECOHOTline website**

Developed to help secondary school students research and write assignments on environmental topics, this is a valuable resource providing information, a stockpile of lesson plans for teachers and guidance for students as they develop processes eg. of evaluation:

**www.ens.gu.edu.au/ciree/ECOHOT/**

**National Geographic website**

Within National Geographic’s very appealing site there is a specific section on education. Along with lots of other things, it includes classroom activities. Find it at:

**www.nationalgeographic.com/education**

**Queensland Consortium for Professional Development in Education**

P.O. Box 389, Toowong Q 4066

Phone 07 3377 4777, fax 3870 5006, email Consortium@btr.qld.edu.au

They are keen to support professional development of SOSE teachers. They run workshops and conferences. Their website links to database of professional development:

**www.uq.net.au/~zzbtr**

**Queensland Department of Natural Resources**

Community Education and Extension Support

Block A, 80 Meiers Road, Indooroopilly Q 4068

Phone 07 3896 9515, fax 07 3896 9625

They run the programs Saltwatch, Pasture Watch, Waterwatch and Learning though Landcare: Learnscaping your School Ground. Advisers are available to work with schools throughout Queensland. They run professional development courses. They publish education resources. Their website includes information on all these, plus learning activities. This website address takes you straight to the education section – or stop before the first / to get to the DNR home page:

**www.dnr.qld.gov.au/education**

**Royal Geographical Society of Queensland Inc**

112 Brookes Street, Fortitude Valley Q 4006

Phone 07 3252 3856, fax 07 3252 4986, email rgsq@gil.com.au

The Society includes support for geographical education among the ways it promotes geography. It runs teacher workshops to develop fieldwork and other skills. It publishes brochures for teachers to use to encourage students to choose geography. It has a well-stocked geographical library. All the resources listed in this paper are available from there. These are available for borrowing to members but non-members may use them in the library. Information on the Society, its activities, program, publications, geography links, etc. is available at its website:

**www.rgsq.gil.com.au**

1. Bailey, P. & Binns, T. (1987) A Case for Geography, Sheffield, Geographical Association: pp 4. [↑](#footnote-ref-1)
2. Adapted from: McCauley, D. (1995) *Geo prac criteria based exercises for Senior Geography*, Milton, The Jacaranda Press: pp 6-8. [↑](#footnote-ref-2)
3. Ward, H. (1988) ‘Geographical vocabulary’, in *Primary Sources: Research Findings in Primary Geography*, ed. By S. Scoffham, Sheffield, Geographical Association: 20. [↑](#footnote-ref-3)
4. Kwan, T. (1988) ‘Oh! I can use a map to find my way!’, *Geographical Education*, 11:29-36. [↑](#footnote-ref-4)
5. Jones, S. (1988) ‘The interpretation of geographical photographs by 11- and 14-year-old students, International Research’ in *Geographical and Environmental Education*, 7(2): 122-139. [↑](#footnote-ref-5)
6. Wilson, P. (1989) ‘Teaching for thinking in the geography classroom’ in *The Geography Teacher’s Guide to the Classroom*, ed. By J. Fien, R. Gerber & P. wilson, 2nd ed., Melbourne, Macmillan: 44-63. [↑](#footnote-ref-6)