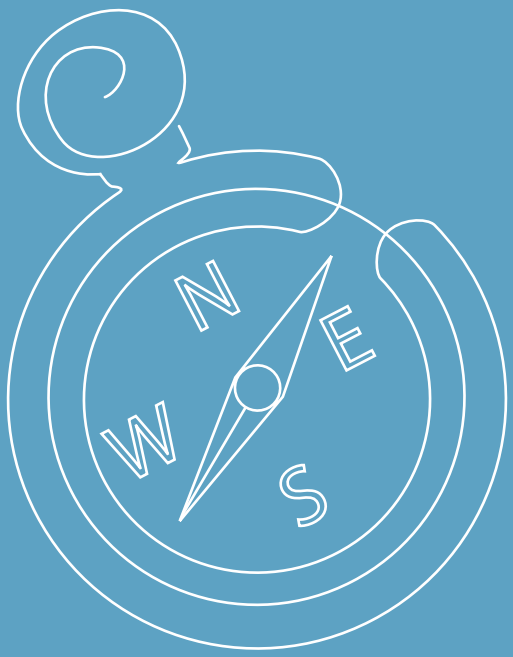
PRIMARY

Social, Environmental and Scientific Education: Geography

Guidelines for Teachers of Students with

MILD

General Learning Disabilities



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SESE: General introduction

Social, Environmental and Scientific Education (SESE) is presented through three subject areas in the *Primary School Curriculum*. These are history, geography and science.

Introduction

This is one of three documents designed to enable students with mild general learning disabilities to access SESE as presented in the *Primary School Curriculum*. In presenting these guidelines, recognition is given to the fact that the aims and objectives of the guidelines are the same as those outlined in the *Primary School Curriculum*. Given the breadth of the subject matter, differentiation may be necessary at many levels. The primary school SESE curriculum, however, remains the curriculum statement for this group of students and these guidelines are intended as a supplement to it rather than a replacement for it. These guidelines therefore should be read in conjunction with the primary school SESE curriculum.

The curriculum states that an understanding of the term 'environment' is essential to an appreciation of the nature of SESE and it offers the following:

The word 'environment' is used in this curriculum to denote the surroundings or external conditions with which an individual (human or other living organism) or community interacts. (*Primary School Curriculum*, 1999.)

Within this definition 'environment' is categorised into two broad groups, natural environments and human environments. While presented as three discrete subjects in the curriculum, history, geography and science are closely related and each seeks to provide for the students an understanding of one aspect of 'environment' both at local and global level.

By studying the constituent subjects of SESE, students are enabled to develop an awareness and appreciation of the natural, human, social, cultural and historical dimensions of life. They are also encouraged to develop an understanding of the physical world, the relationship of humans with their environment, and the historical process through which that relationship has grown.

Curriculum planning

When planning the curriculum in SESE for students with mild general learning disabilities the core principle of maintaining a balance between skills and knowledge while reflecting a spiral approach is preserved in these guidelines. There should be specific teaching of the language of history, geography and science. The following additional points should be considered.

- Students' direct experiences, fieldwork, and trips and work in the environment will be the starting point for all activities.
- Time and chronology are relevant to all three subjects in SESE and often pose a particular challenge to the student with mild general learning disabilities. The practice of recording the passing of time, of establishing classroom routines that draw the students' attention to the measurement of time, and teaching and practising the language of time are important for senior students as well as those in the junior classes. This should be done in an age-appropriate manner.
- Integration of areas within SESE and with other areas of the curriculum is important. Schools will also need to take into account that there is considerable overlap between the skills area of geography and science, and that particular skills can be developed through either curriculum.
- Time should be allocated to practise new skills and to develop competence using new equipment.
- The use of a range of methodologies for each topic will be important.

Organisational planning

In order to ensure successful planning for students with mild general learning disabilities, particular structures need to be put in place at a whole school level, in order to facilitate successful curriculum planning and to ensure agreed practices that enable the student to engage fully with the curriculum. Particular attention should be given to the following:

- Time should be provided for collaboration between class teachers, resource or learning support teachers, the principal, parents/guardians and relevant professionals to establish the strengths, areas of need and priorities of individual students. It will also be important to have agreed procedures for the use of information in psychological reports, for gaining information from previous class teachers, and for record-keeping.
- There should be agreement on the range of assessment tools and methods to be used with these students, and the resources necessary to implement them. For example, oral reports may require the student to use a dictaphone or small tape recorder.
- Working in the environment is central to the delivery of the SESE curriculum. In order to ensure that students with mild general learning disabilities engage with purpose in these activities, regular short trips that focus on the skills required to work outdoors are necessary.
- Routines common to all classes, especially those involving activities in the environment should be developed. These can be introduced to the students at the early stages of learning and developed further as they mature. They would cover issues such as safety, looking after belongings, equipment, responsible behaviour when working out doors, etc.
- Agreement should be reached on the role of school personnel such as special needs assistants or classroom assistants, given that SESE content incorporates such a high level of activity.
- Areas and sites in the environment that are appropriate areas of study at each class level and for each subject area should be identified.

- A stock of resources should be acquired, including items such as pictures, videos, computer software, artefacts, materials, tools and equipment necessary to carry out investigations in science and geography, junk material and construction toys for designing and making local maps and plans.
- A policy should be agreed on the role and use of textbooks, The SESE curriculum provides for a balance between knowledge and skills acquisition, and an essential element of SESE is that student learning is active and concrete. This feature makes the curriculum particularly accessible to students with mild general learning disabilities. Given that the vast majority of these students will experience difficulties with literacy skills, a textbook approach to SESE will only serve to exclude them.
- Environmental awareness and care should be an aspect of all activities relating to the human or natural environments.
- Identify as many ways of recording findings and presenting ideas as possible, for example oral reports, photographs, drawings, models, video, student demonstrations, role play, diagrams, charts using writing or symbols, and information technology.

Classroom planning

Planning for SESE at classroom level for students with mild general learning disabilities poses particular challenges for the teacher. The sheer scope of the three subject areas means that careful selection of content and opportunities to develop skills will be required. Classroom planning can be divided into two areas, classroom management and planning units of work. Teacher behaviour is also a significant factor in the successful delivery of the curriculum to this group of students at classroom level. The following teacher behaviour can assist the student with mild general learning disabilities to follow instructions more successfully. Teachers should

- be aware of their own language use, adjust their rate of speech, use simple vocabulary, and demonstrate word meanings
- give instructions one at a time, pointing and directing and using visual cues
- model appropriate language usage and skills, such as thinking aloud, questioning, speculating, making observations, making predictions based on simple observations, drawing attention to and commenting on similarities and differences
- demonstrate skills and activities by verbalising their actions in clear simple language
- demonstrate using the senses to make observations in an incidental manner during the school day
- make deliberate errors and self-correct out loud, showing that trial and error is an essential aspect of learning in SESE.

Classroom planning must address the issues outlined in the curriculum planning at school level, as well as planning for differentiation in the classroom to suit the particular needs of individual students with mild general learning disabilities. In order to do this the teacher will need to

- take into consideration the individual language profile of each student
- use all available information to identify the particular strengths and areas of difficulty of each student
- use this information when designing tasks, to make decisions about differentiating activities in terms of skills, content and outcomes
- plan for the fact that students with mild general learning disabilities will need additional opportunities to practise new skills and to develop competence in using new equipment, and that they will need to over-learn new content and language
- plan suitable methods for individual students to present their work.

The most important aspect of the curriculum in SESE is the interdependence of its subject areas, and its links with other areas of the curriculum. The *Primary School Curriculum* recommends an integrated theme approach to the three areas of SESE, particularly in the junior classes. It is important that an integrated theme approach is the primary method used with students at the senior end of the school also. This approach has a number of features that make it attractive for students with mild general learning disabilities:

- it is more efficient in terms of teaching and learning time
- it allows for the transfer of knowledge and skills from one area to another
- it allows the teacher to plan themes that begin with a context very familiar to the student, and then to extend that theme outwards into unfamiliar contexts
- in planning for learning through themes, the teacher can more easily strike a balance between the presentation of the historic, the geographic, and the scientific aspects of content.

Assessment

The purpose of assessment for students with mild general learning disabilities, as for all students, is to provide information on student progress and to plan for further learning. The tools used by teachers will be the same as those used for the general population of students but may need to be adjusted in order to facilitate individual student needs.

Classroom management

Classroom management issues are those organisational issues that maximise participation and learning in the classroom. Structures should be put in place that encourages the student to work as independently as possible at all stages of the learning process. Those that may be relevant to the SESE subjects are as follows:

- Match the needs of the student to the activity and employ a variety of seating arrangements to suit these. At times students may work best in pairs, in groups or individually. Students with attention difficulties may benefit from having access to a quiet work area where individual work can be carried out and timed. This area should be partially enclosed and completely free from all visual distractions such as pictures, displays or windows.
- Students can be taught to use checklists to guide them through regular work routines in the classroom. They can begin using simple steps outlined on a chart with pictures, symbols or words. Over time the students can come to verbalise these and to monitor their progress as they work. Predictable routines are particularly important for working in the environment as they provide a structure for the student.
- Students need to have access within the classroom to resources that enable them to participate in hands-on activities relating to history, geography and science. Some of these are outlined in detail in the subject areas.
- Safety is an important issue for all students. Advice on student safety while working in the environment and carrying out investigations in geography and science is offered in the *Primary School Curriculum*. For students with mild general learning disabilities it is important that safety rules are explicitly taught and practised regularly. Symbols representing hazards and the safe use of equipment and tools should also receive regular attention. Much of this work can be practised and extended through SPHE.

- Planning for appropriate and varied methods of communication of ideas and understanding is an essential part of planning work units for students with mild general learning disabilities. This may require easy access to suitable equipment such as a tape-recorder, a camera, a video camera, a computer, and construction or art materials, as well as appropriate writing materials.
- The methodologies suggested for SESE are entirely activity based. In order to implement these, careful consideration needs to be given to the best use of extra personnel such as special needs assistants and classroom assistants.
- Initiating investigations arising from students' own questions is a key aspect of the SESE programme. Students with mild general learning disabilities may be less likely to pose questions relating to phenomena spontaneously, but the teacher can promote this by deliberately arranging situations, which lead to observations and questions. For example, placing tools or vessels made of paper in the sand or water play areas could lead to questions as to why they don't work, and to an investigation of the most appropriate materials for use with water etc.

Geography: Rationale and introduction

In the *Primary School Curriculum*, geography is presented as one aspect of Social, Environmental and Scientific Education, and is intended to complement the development of the students' historical and scientific skills.

Rationale

Geography is described as *'the study of the earth, its inhabitants, and the inter-relationship between them in the context of place, space and environment'* and '*it brings its own unique perspective to bear on the study of environments and peoples'* (*Primary School Curriculum: Geography, Teacher Guidelines* p.2). By examining natural and human features in a range of settings—local, regional, national and global—students can develop a greater understanding of how human and natural environments inter-relate and depend on each other. Through geography students can also develop a distinct set of skills that will enabled them to explore and record aspects of the environment, in particular mapping and graphicacy skills.

The inclusion of geography in the curriculum for students with mild general learning disabilities is important. In particular, it contributes to the student's understanding of his/her own locality and community and enhances their sense of belonging, which is critical to the development of their social competence and self-esteem.

By developing students' awareness of the inter-relationship between human activity and the environment, geography offers each student an opportunity to develop a sense of citizenship and responsibility for the environment. Examining human environments at regional, national and global levels allows students to appreciate the diversity of cultural, ethnic, social and religious groups and also to recognise and value the similarities that exist amongst them. Finally, geographical skills overlap considerably with the skills associated with science, and with mathematical and language development. The study of geography complements and supports learning in these areas.

Introduction

The geography curriculum has a number of features that make it attractive for students with mild general learning disabilities. Firstly, the structured way in which geographical content and skills are presented in the curriculum, particularly at infant level, makes it very helpful when planning for these students. Secondly, the spiral approach to the curriculum, which takes a number of common themes through from infant to senior level, allows the teacher to plan different and appropriate points of access to the same topic, particularly where there is a wide range of ability in the class. Thirdly, all three strands of this curriculum feature local studies. For students with mild general learning disabilities it is extremely important that they investigate their personal and the immediate environment, and progress from there to investigate their local environment. It is also important that these students develop an ability to compare and contrast their own local environment with other larger environments, including the global environment. At infant level, for example, the global environment is introduced through story, relationships, and personal experiences of travel. Finally, the geography curriculum provides a wide range of opportunities for integration with other subject areas.

Strands and strand units of the geography curriculum

Strand	Infant classes	First and second classes	Third and fourth classes	Fifth and sixth classes
	Strand unit	Strand unit	Strand unit	Strand unit
Human environments	■ Living in the local community ■ People and places in other areas	■ Living in the local community ■ People and places in other areas	■ People living and working in the local area ■ People living and working in a contrasting part of Ireland ■ People and other lands ■ County, regional and national centres	■ People living and working in the local area ■ People living and working in a contrasting part of Ireland ■ People and other lands ■ County, regional and national centres ■ Trade and development issues
Natural environments	■ The local natural environment ■ Weather ■ Planet Earth in space	■ The local natural environment ■ Weather ■ Planet Earth in space	■ The local natural environment ■ Land, rivers and seas of my county ■ Rocks and soils ■ Weather, climate and atmosphere ■ Planet Earth in space	■ The local natural environment ■ Land, rivers and seas of Ireland ■ Rocks and soils ■ Weather, climate and atmosphere ■ Planet Earth in space ■ Physical features of Europe and the world
Environmental awareness and care	■ Caring for my locality	■ Caring for my locality	■ Environmental awareness ■ Caring for the environment	■ Environmental awareness ■ Caring for the environment

A sense of place

A sense of place refers to the student's understanding of and feeling for the essential character of a place. It requires the student to assess how natural processes and human activity have shaped a landscape, and then to develop some appreciation of what it might be like to live there. In the geography curriculum the students' sense of place is first developed in the home and locality and then extended to explore human and natural environments in local, national and international contexts. For students with mild general learning disabilities this aspect of the curriculum is very important since it provides opportunities for the teacher to identify important aspects of understanding relating to locality and community, which the students have not learned incidentally, and to plan for them.

A sense of space

This refers to the student's perception of the position of objects in space and how they are interconnected. By exploring his/her surroundings the student acquires knowledge of both location and spatial awareness. Through experience and study this eventually leads to the development of a cognitive map of the world. The geography curriculum acknowledges that a sense of space is a '*very distinctive geographical skill'* and is important in the development of directional and mapping skills. An understanding of spatial relationships is also important for learning in mathematics. For the student with mild general learning disabilities problems of perception, be they visual, auditory, tactile, or kinesthetic, may interfere with how the student interprets information about the world, and lead to poor spatial awareness. In addition, difficulties of gross or fine motor control may already have impaired the student's ability to explore and receive relevant information through tactile and kinesthetic channels.

Maps, globes and graphical skills

The use of maps, diagrams, photographs, models, plans and globes to record, interpret and communicate spatial information is another distinctive skill that is developed through the geography curriculum. This skill can contribute to social competence, and offer the student with mild general learning disabilities mechanisms to communicate information by other means than through written texts.

Geographical investigation skills

Certain skills relating to geographical investigation are also common to other areas of the curriculum, such as language and communication, mathematics, and the visual arts. However, the most significant overlap is with the science curriculum, which has in common with geography the skills of questioning, observing, predicting, investigating, estimating, measuring, and analysing. Appendix 1 outlines the progression envisaged in the development of geographical skills as presented in the geography curriculum. Teachers may find it useful to refer to this when planning a starting point for students with mild general learning disabilities.

Addressing potential areas of difficulty for students with mild general learning disabilities

▲ Potential area of difficulty	= Implications for learning
Delayed language development/poor vocabulary	*This may result in the student having* • inadequate development of his/her geographical skills.

+ Possible strategies

- Teach the language of geography directly.
- Provide opportunities to practise naming words.
- Model the use of skills, such as predicting, observing, analysing, etc.

▲ Potential area of difficulty	= Implications for learning
Understanding of spatial relationships	*This may result in the student having* • a poor sense of direction • difficulty in understanding where things are in relation to each other • problems with drawing and interpreting maps/ plans.

+ Possible strategies

- Use PE to develop spatial awareness/direction.
- Teach and demonstrate spatial language: beside, over, near.
- Use drama to construct imaginary homes/ buildings using boxes/PE equipment, verbalising these activities.

▲ Potential area of difficulty	= Implications for learning
Interpreting or creating symbolic material/ representations	*This may result in the student having* • a lack of understanding of symbols used in the human environment • a lack of ability to interpret maps and plans.

+ Possible strategies

- Use concrete objects to symbolise large objects—'*Let's pretend this is my table …*'.
- Use simple pictures as symbols of everyday objects/places and ask the students to match them.
- Use picture symbols to indicate classroom activities, involving the students in the design of the symbols.

▲ Potential area of difficulty	= Implications for learning
Visual perception	*This may result in the student having difficulty* • recognising symbols • with map reading.
+ Possible strategies	
■ Present symbols on flashcards and teach them as sight words are taught. ■ Allow the student to trace, colour, draw, and construct with marla/plasticine/symbolic material. ■ Use maps with relief effect where possible. ■ Remove unnecessary clutter from maps, reduce content and focus on teaching one symbol at a time.	

▲ Potential area of difficulty	= Implications for learning
Memory	*This may result in the student having difficulty* • retrieving language/labels associated with geography.
+ Possible strategies	
■ Provide pictures as clues.	

▲ Potential area of difficulty	= Implications for learning
Transfer to real-life situations	*This may result in the student having difficulty* • applying the skills that she/he has learnt to real life situations.
+ Possible strategies	
■ Always begin at a concrete level. ■ Present as many opportunities as possible for the student to practise geographical skill in the environment.	

▲ Potential area of difficulty	= Implications for learning
Personal organisational skills	*This may result in the student having difficulty* • engaging with purpose in activities outside in the environment • finding a starting point for activities and following them through.
+ Possible strategies	
■ Develop routines for aspects of activities which reoccur frequently, and teach them. ■ Ensure the student has easy access to all required resources for activities.	

Geography: Approaches and methodologies

An essential element of any geography programme is the use of a wide variety of approaches and methodologies.

The approaches suggested in the geography curriculum are designed to engage students in processes which will enable them to ask questions, collect evidence, search for patterns, and draw conclusions through engaging them in purposeful activity in the environment and in the classroom.

Approaches and methodologies

Students come to school as infants with varying degrees of experience and knowledge of their own locality. Much of this knowledge will have been picked up incidentally through the students' interactions and experiences. The capacity of students with mild general learning disabilities to learn in this way may be limited. The emphasis in the curriculum on fieldwork in the local environment makes it particularly attractive for all students with mild general learning disabilities. This approach also facilitates co-operative learning and will help students develop a sense of curiosity and responsibility towards the environment.

Learning about places: a framework

Investigating places

Learning about a place, where it is, what it is like, and why it is like this, is central to geography. This section of the guidelines outlines a range of approaches that may be used to investigate the human and natural aspects of any given place, and the processes, both human and natural, that have contributed to its development. Exemplar 3 (*Primary School Curriculum: Geography, Teacher Guidelines,* page 66) outlines seven key questions that geographers use to provide a framework for their investigations of environments. Exemplar 3 also provides further questions that derive from each of these key questions. This framework is extremely useful and is appropriate for all students. However, given the importance of geography in contributing to the social understanding and competence of the student with mild general learning disabilities, the following question should also be included in this framework:

Are there any pieces of information or experiences relating to this particular place, which are essential to the development of the student's social skills?

Exemplar 1: **Geography**

Topic: Our school
(Based on Exemplar 3 in the Primary School Curriculum, SESE: Geography – Key questions in the study of places)

This exemplar demonstrates how the framework might be used in investigating the school environment.

Key question	Questions to consider
1. Where is this place?	→ What is the name of this place? → What do we do here? → Where is it in relation to my home? → Is it in an urban/rural area? in a town/city/village/estate? near a river/an airport/a shopping centre? → In which county are we?
2. What is this place like?	→ Is the building single storey, two storey? → How old is it? → Are the walls brick, pebble-dash, smooth, rough? → What shape is it? → What is the inside like? → What natural features are in the grounds? → What plants grow in the grounds? → What do people do here? (Students and staff.)
3. Why is this place as it is?	→ Why are the classrooms shaped as they are? → Why is the area around the sink covered in linoleum? → Why is this play area covered in grass and this area covered in tarmacadam? → Why are teachers' cars parked here rather than there? → Why are these spaces as they are? → What are the safety features in the school?
4. How is this place changing?	→ What changes have taken/are taking place to the building/extensions/prefabs/play areas/grounds, etc?

Exemplar 1: **Geography**

5. How is this place linked to other places?	→ How do the students travel to school? → How do staff members travel to school? → If I wanted to go to town from here how would I go? → Is there a bus stop, train station, airport nearby? → What kind of road network is around the school? → What kinds of deliveries come to the school on a regular basis—post, lunches, books, equipment? → Who brings them and how? → What links do we have with other schools—sports, quizzes, internet?
6. How is this place different from or similar to other places?	→ How is the school building used, compared with other buildings in the area? → Is it underused/overused?
7. What would it feel like to be in this place?	→ How do you feel about your school? → What do you like/dislike? → What changes would you like to make to improve it?
8. What are the knowledge/skills relating to this place that are important for the social development of the student?	→ What is the precise name of the school? → What is the precise address of the school? → What is the name of the principal? → What are the names of the teaching and ancillary staff? → What are the functions and titles of all staff members? → Who are the relevant staff members to be approached if in need of help? → Can the student name, locate and direct others to areas within the school—office, staff room, library, computer room, parents'/guardians' room, toilets, PE hall, kitchen, storage areas for art and PE equipment? → Can the student read social sight words around the building (*exit, staff only, office* etc)? → Can the student distinguish between the primary and the secondary school?

Exemplar 1: **Geography**

Learning about the local environment

Undertaking fieldwork in the local environment is central to the study of the three subjects that make up SESE. The teacher guidelines that have been written for each of these subject areas describe in detail the different approaches and methodologies that can be used when carrying out fieldwork investigations in the local environment. In *Primary School Curriculum: Geography, Teacher Guidelines* (pages 68-80), for example, detailed advice is given on how to prepare students for fieldwork, and on how to conduct an environmental audit of the school locality. The nature and content of the advice given in these pages of the geography guidelines is applicable to fieldwork in all three subject areas and is particularly relevant for students with mild general learning disabilities, for whom the importance of working in the environment cannot be over-stated. In addition to this advice, and in order to enable students with mild general learning disabilities to work in a purposeful and focused way in the environment, the following issues might also be considered.

Developing skills

Apart from developing the particular skills related to the SESE subjects, working in the environment also facilitates the development of students' personal and social skills. In the *Primary School Curriculum* it is envisaged that these will develop as the students engage with the particular task and/or the subject content. However, it is important to provide students with mild general learning disabilities with opportunities to develop skills in advance of any new content, because specific skills training will enable them to approach the acquisition of new knowledge in a more confident manner.

Short regular activities in the school grounds or in the immediate locality, where students can carry out very simple tasks, will provide opportunities for the teacher to observe the students' strengths and areas of difficulty when working outside the classroom. The purpose of these initial activities may not necessarily be the introduction of new knowledge, rather an opportunity to practice learning outdoors. In this context the teacher should observe the individual student's ability to

- follow instructions outdoors
- to stay focused on the task as outlined by the teacher
- behave in a safe manner and recognise hazards
- to work successfully outdoors with others in pairs or groups.

Through engaging in regular short activities students can learn to

→ follow instructions
→ use a simple checklist to guide him/her through a task in sequence
→ use new equipment and materials
→ develop recording skills appropriate to fieldwork
→ respect the environment
→ consider the rights of other people while working
→ practise safety skills, such as walking safely from place to place, observing boundaries and safety rules, and identifying hazards
→ experience learning from follow–up work in the classroom.

Exemplar 1: **Geography**

Preparation for investigations in the environment

Students need to be prepared for fieldwork on two levels. Firstly, they need to be able to communicate when, where, how, and why they are going to a particular place. Indeed, planning for short outings in the immediate environment should be treated in the same way as planning for longer outings away from the school locality. The emphasis should be on rehearsal and practice, particularly in relation to the purpose and detail of the trip. Secondly, it is essential when preparing students for the fieldwork investigation that the teachers should observe the following guidelines:

- Begin preparations well in advance of the trip in order to avoid overloading the student with information about the task and the necessary preparations.
- Offer small chunks of information over a period of time through a series of short sessions. At the beginning of each session the teacher should allow the students to repeat the information they have already been given, and check that the information has been picked up accurately and that the students have focused on the appropriate detail.
- Use pictures, videos, books, magazines and discussion to provide images of the place and the objects, phenomena, buildings, plants or animals under investigation. This should be done before the task is outlined to the student.
- Teach the relevant language and give students opportunities to practise using it.
- Introduce new skills and allow the student to practise them, for example using new equipment or using new ways to record findings.

Task

The task should be differentiated for students with mild general learning disabilities by taking into consideration their strengths, learning style and experience. Fieldwork usually involves skills of observation, classification and recording. When assigning tasks to this group of students the teacher should ensure that

→ points of observation are clearly discernable, selecting or beginning with gross rather than fine differences between items (buildings, habitats, street furniture, animals, plants)

→ classification of any item can be carried out by observing one characteristic

→ the method of recording is manageable

→ the task encourages the use of all the senses.

Exemplar 1: **Geography**

Recording

A critical aspect for any student undertaking fieldwork is finding manageable and meaningful methods of recording information. Recording findings through written work or drawings is a generally accepted method for older students in primary school. For students with mild general learning disabilities this aspect of outdoor investigation needs careful consideration. Even if these students have achieved a suitably competent level in writing or drawing in the classroom, they may find it difficult to transfer these methods to the field. Teachers might find the following recording suggestions useful for these students:

- Provide the student with a teacher-designed record sheet containing pictures or photographs that will help them identify items or gather information.
- Provide the student with a record sheet containing partially completed pictures. These pictures should provide them with enough information to clearly identify the required items. Ask them to complete the pictures.
- Provide the student with record sheets that simply require them to tick boxes or to use tallies (i.e. bunches of five).
- Provide disposable cameras and/or dictaphones.
- Ask them to take samples for later examination in the classroom. This will require preparatory work on appropriate measurements, transferring and labelling.

When the task has been introduced the following questions will help the teacher to assess the student's level of readiness for the activity:

- Can the student communicate the purpose of the investigation or activity?
- Can the student show and assemble the materials required for the activity?
- Can the student outline the stages of the task and sequence them in order?
- Can the student demonstrate how findings will be recorded?
- Can the student communicate what records/samples/findings will be brought back to the classroom and how these will be treated?
- Can the student identify partners and adult helpers assigned to him/her?

Exemplar 1: **Geography**

Maps and mapping

The construction and use of maps is a skill central to geography. Maps and plans are encountered regularly in a range of contexts in everyday life. Developing competency and confidence using and interpreting them is, therefore, an essential skill. The geography curriculum outlines a number of concepts and skills that are used simultaneously when using maps:

- A map is a two-dimensional representation of a three-dimensional landscape—a drawing from an *aerial perspective*—which students will rarely experience.
- Maps use a variety of *symbols* some of which are not consistent to all maps, and the user is required to *discriminate* between the symbols, *interpret* them, and *select* those appropriate to his/her needs.
- *Orientation* is the skill of aligning a map with the landscape.
- Locating a place on a map requires the use of a grid reference or *co-ordinates*.
- An understanding of the concepts of *scale* and *distance* is important for the construction of maps as well as for their use.

When planning map work for students with mild general learning disabilities it is important to be conscious of the fact that for these students the development of skills may not occur same rate or pace as other students. As a result some skills may remain considerably underdeveloped. As a consequence their skills in mapping may appear to be very uneven. The geography curriculum breaks methodologies relating to maps and mapping into two parts: infants to second classes, and third to sixth classes. Some of the map work skills outlined in the curriculum for the early years may still be relevant to students with mild general learning disabilities at the senior end of primary school. If this is the case then the mapping skills activities outlined for infant to second classes should be made age appropriate to older students. The skills required at infants to second class levels involve

- an appreciation that maps are a means of communicating information about our environment
- that they are representations of objects, features, places and spaces, and that they clarify for us where they are located and where they are in relation to each other
- the ability to use spatial language accurately.

Exemplar 9 in *Primary School Curriculum: Geography, Teacher Guidelines* provides a range of excellent activities that can be used to develop the mapping concepts and skills of infant to second classes students. However, many of these begin with the assumption that the very young child will have the ability to represent objects or places in pictorial form. For the student with mild general learning disabilities this skill may be significantly delayed and a more concrete approach may be necessary. The following exemplar takes the suggestions in Exemplar 9 and develops them. This exemplar is intended to complement Exemplar 9, and not to replace it.

Exemplar 2: **Geography**

Title: Early map work–pictures, plans and maps
(additional to Exemplar 9 in the Primary School Curriculum, SESE: Geography)

Structured play

Students with mild general learning disabilities will need extensive opportunities to develop spatial, seriation, classification, and representational skills through structured play. Access to home corners, construction toys, toy farms, and play mats should be provided beyond the infant classes. Activities in these areas should not be random but need to be structured, with the teacher as an active participant scaffolding oral language inputs from the student.

Trails

Using coloured twine or rope to lay trails around the classroom or school can enhance the concept of following a route. This can be elaborated upon as the students become accustomed to this activity. Following a trail the teacher should

- focus the students' attention on the route by verbalising the journey and drawing the students' attention to significant landmarks
- have particular stopping points arranged and make observations at them
- as students become more practiced, begin to draw the shape of the route, allowing students to observe this and to comment on and describe the line representing the route
- agree with students shapes and symbols to represent significant places and landmarks and agree their position on the trail map
- take photos at particular points on the trail and arrange the photos on a map of the trail.

Mazes and matching activities

- A maze painted on the school yard that the students can walk on will assist them in understanding the concept of a line representing a boundary on a map.
- Mazes and matching exercises on paper can be used.
- Appropriate ICT programmes in mathematics and geography using trails and mazes are useful resources.

Photographs

→ Use photographs taken from different positions in the classroom, around the school, and in the school grounds, with students deciding where the photographer was standing.

→ Use photographs taken on school trips to outline the route taken.

Exemplar 2: **Geography**

I spy

- Play '*I spy*' games using a range of positions in classroom and school grounds. Choose contrasting areas where large objects as well as small objects disappear from view. Draw the students' attention to things that can or cannot be seen from particular positions.
- Play '*I spy in my mind's eye'* games, describing places the students are familiar with.

Build models

- Use construction toys.
- Build junk models of streets and building.
- Construct large scale models using PE equipment and other large objects.

Visualisation

- The teacher models the visualisation of a route for the student and describes it, for example the route to the office.
- The teacher keeps his/her eyes closed (listeners should also close their eyes).
- Talk the visualisation through—*'I'm going out the classroom door. Now I'm out in the corridor, I'm turning left and walking down the corridor …'*.

Texture maps

These can be useful as a bridge between models and maps.

- A school map/plan could be designed using a variety of materials such as fabric, sponge or cardboard to represent the different areas of the school.

Symbols

- Allow the students to design symbols for school areas or activities.
- Match symbols appropriately to objects or photographs.

Exemplar 2: **Geography**

Map work for third to sixth classes

Students with mild general learning disabilities will need extensive opportunities to develop spatial, seriation, classification, and representational skills through structured play. Access to home corners, construction toys, toy farms, and play mats should be provided beyond the infant classes. Activities in these areas should not be random but need to be structured, with the teacher as an active participant scaffolding oral language inputs from the student.

The geography curriculum states that, at this level, a broader range of concepts and conventions relating to maps and mapping should be introduced to students. These include

- symbols which are used on maps, for example information transmitted through colour, lines denoting roads or rail links, and symbols relating to human environments
- interpreting the most commonly used keys, for example those on Ordnance Survey maps and atlases
- using the index and grid references
- the orientation and alignment of maps
- scale.

These skills should be developed through the construction of maps and, increasingly at this level, through the use of commercially produced maps to extract information about different environments. In order to do this it is suggested, for example, that students are exposed to as wide a range of maps and plans as possible, e.g. building plans, shopping centre plans, bus route maps, tourist maps of walks and scenic routes, scale drawings of cars, plans for kitchens, bathrooms or bedrooms, maps of local areas such as townlands, towns, estates, as well as Ordnance Survey maps and atlases. Successfully interpreting maps and plans is an essential life skill and students with mild general learning disabilities need to be enabled to develop competence in this area to the best of their ability. The skills outlined above do, however, present particular challenges for these students. In this context teachers might find it useful to be aware of the following issues.

Language

The need to teach subject specific language has already been emphasised in previous sections. Teachers also need to be aware that there are colloquial terms associated with direction and place, which need to be explained as they arise. Terms such as '*down the country*', '*in town*', *'up north*', etc. can cause confusion and need to be explained to this group of students.

Exemplar 2: **Geography**

Symbols

The skill of interpreting symbols needs to be taught slowly, introducing one symbol at a time. Allow students to examine the same symbol on a variety of maps and give them extensive practice at filling in or tracing over symbols on maps. The most common symbols that students will encounter are colours representing land and water, those depicting altitude, lines representing roads and railways, and symbols representing human settlements and features. The following activities may also be useful in consolidating the interpretation of symbols for students with mild general learning disabilities:

- Draw students' attention to the way water is represented by the colour blue in picture books. Some picture books will also use brown for high mountains. Practise tracing blue lines for rivers, blue shapes for lakes, and shades of pale to dark brown to represent altitude. Lakes or rivers can cause confusion. A simulation using plasticine or sand and water may facilitate understanding.
- Verbalise imaginary journeys using ordinance survey maps. Concentrate on one or two aspects at a time, for example altitude and water: '*Now we're coming down that hill and we're walking on flat land. Now we're coming to a river. Will we be able to cross?'*. Demonstrate drawing maps of imaginary places, possibly places in stores, or adapting stories such as '*We're going on a bear hunt*'. Verbalise these for the students: '*This is the mountain they had to climb. What colour should I use? A river flows down here, how will I show this?'*.
- Students with mild general learning disabilities will not easily discriminate between a village, a town or a city. Preliminary work should take examples from the students' own experience and pictures need to be provided to help them understand the differences and describe them appropriately. When introducing the dot symbol for villages, towns, and cities the students' attention needs to be drawn to the size and shape of the dot, and whether or not the name of the place is presented in large bold letters. When the significance of this is clear they can then be encouraged to describe villages, towns or cities as small, big or large according to the information on the map.
- Find villages, towns and cities they are familiar with and compare them as they are presented: *'Do you think that Drogheda is bigger or smaller than Dublin?'*.
- Respond to the teacher pointing to an unfamiliar place and speculating about whether it is a village, town or city, given the size of the dot and the way the name is written.
- Play '*I spy*' games: '*I spy a village/a town/a city beginning with …'*.
- The historical dimension is very important when teaching this aspect of mapping. Students living in large cities will encounter the word *'town'* being used to describe the city centre, and '*village*' to describe places well within the city boundaries, such as Finglas Village or Crumlin Village. By including the historical aspect in instruction, students will be more likely to understand why this language is used in this context and it will stimulate discussion on the theme that human environments are constantly changing.
- Great care should be taken when using black and white outline maps such as those used in workbooks. Learning that has already taken place from coloured maps may not automatically transfer, and students will need experience if they are to distinguish between the variety of black lines on these maps. Black and white maps should only be used where students are learning to fill in symbols themselves on blank maps. Maps in workbooks generally present far too much information for students with mild general learning disabilities.
- Have the student make an imaginary journey on a map following instructions given by the teacher, for example *'Get off the bus at the church and walk up towards the park'*, etc.
- Keys on simple tourist maps can be compared with Ordnance Survey maps or sections of road maps to decide which are best at helping a tourist find interesting places to visit.
- Allow students to make maps and to practise using new symbols, for example make a treasure map using the symbols to describe the route to the treasure.

Exemplar 2: **Geography**

Using indexes and grid references

Using indexes in atlases can be combined with work on alphabetical order in literacy and with graphs in mathematics. Both are important for the development of social literacy. Simple games can be devised to develop skills relating to co-ordinates and grid references:

- A mirror game can be played on a screen using two chess boards, adapted with numbers in the horizontal axis and letters on the vertical. Students move pieces to positions that must be imitated by their partner after instruction, for example *'Put the white king on 3f'*.
- Simple maps designed by the teacher with co-ordinates on them should be used to practise the use of grid references.
- When choosing atlases for students with mild general learning disabilities teachers should examine the index and reference grid system to ensure that the information is clear and simple, devoid of clutter, and that a grid system as described above is used rather than lines of latitude and longitude.

Photographs

- Use photographs taken from different positions in the classroom, around the school, and in the school grounds, with students deciding where the photographer was standing.
- Use photographs taken on school trips to outline the route taken.

Scale

The development of an understanding of the concept of scale is covered in detail in *Primary School Curriculum: Geography, Teacher Guidelines* (pages 139-140), and some of what is outlined there can be differentiated for students with mild general learning disabilities. Activities that require the student to use mathematical computations to calculate distance using the scale indicated on a map will be beyond the capability of most students with mild general learning disabilities. Nevertheless, it is important to introduce the concept of scale in order to enable them to use maps successfully. In addition to the suggestions in *Primary School Curriculum: Geography, Teacher Guidelines* the following activities may be useful:

- ICT software that has a zoom effect can be used to draw students' attention to the concept of scale, and how to examine places and details up close.
- Examine photographs of people and places, and then compare them with a close-up version of one small aspect of the photograph. Ask the students to compare the details that can be seen.
- To understand the concept of places within a larger place make shapes that represent different areas joined together, for example '*This is Blanchardstown and next to this is Finglas and then here is Ballymun. Joined together they are all part of Dublin city.'*
- Draw maps of familiar places and make some aspects completely disproportionate in size, for example a map of the classroom with the teacher's desk taking up half of the room. Ask the students what is wrong with the map and get them to correct it. Use items such as windows and doors as benchmarks for the students.

Exemplar 2: **Geography**

Globes

Activities using globes can be a feature of lessons from first class upwards. Students will have seen representations of the earth as a sphere on television from quite a young age. Simple games and discussions can develop the concept of hot and cold places on the globe.

- Students from first class can be made aware of the globe as a model of earth and 'we are here' can be indicated on the globe.
- Students from second class on should be made aware of the hot being the fattest part and the two poles being the coldest parts.
- Going ahead in time and going behind in time can similarly be shown on a globe.
- Take a model airplane and verbalise a journey, always taking off from Ireland.
- How long will it take? Students can be given a rough rule of thumb, for example six hours to America, fifty minutes to London, three hours to the south of Spain.
- Discussion can take place around students' holidays south or north of Ireland.

Appendix

Development of geographical skills

The examples provided here can be used to develop skills in the other areas of history and science.

Questioning

Infants

- Ask questions about natural and human features in the immediate environment:
  - *Who lives in this place?*
  - *What will happen if I bring snow inside?*

First and second class

- Ask questions about natural and human features in the immediate environment:
  - *What animals live here?*
  - *What has changed since I was last here?*

Third and fourth class

- Ask questions about natural and human features and processes in the environment and their inter-relationships:
  - *What makes this place different from other places?*
  - *How does the farmer use this land?*

Fifth and sixth class

- Ask questions about natural and human features and processes in the environment and their inter-relationships:
  - *How have humans changed this place and why?*
  - *Why should a factory be located in this place?*

Observing

Infants

- Observe, compare and discuss natural and human features in the local environment:
  - *work and work places of people who help us*
  - *what happens when it rains.*

First and second class

- Observe, compare and discuss natural and human features in the local environment:
  - *colours and textures in the built environment*
  - *different plants and animals in contrasting environments.*

Third and fourth class

- Observe, discuss and describe natural and human features and processes in the environment and their inter-relationships:
  - *shapes and sizes of natural features*
  - *colours and textures of buildings and streetscapes.*

Fifth and sixth class

- Observe natural and human elements and processes in the environment and their inter-relationships:
  - *colours and textures of natural materials*
  - *building styles and materials in urban or rural areas*
  - *varying farm and settlement patterns in rural landscapes.*

Predicting

Infants

- Guess and suggest what will happen next in a situation:
  - *whether the pebbles will float or sink.*

First and second class

- Suggest outcomes of an investigation:
  - *when water in a river will be muddy.*

Third and fourth class

- Offer suggestions (hypotheses) based on observations about the likely results of an investigation.

Fifth and sixth class

- Offer suggestions (hypotheses) based on a number of observations as to the likely results of investigations.
- Make inferences based on suggestions and observations.
- Propose ideas or simple theories which may be tested by experimentation.

Investigating and experimenting

Infants

- Carry out simple investigations set by the teacher, making observations and collect data.

First and second class

- Carry out simple investigations and collect information from a variety of sources:
  - *direct observations in the environment*
  - *classroom investigations*
  - *books, information and communication technologies, other media.*

Third and fourth class

- Carry out simple investigations and collect information from a variety of sources:
  - *observations and experiments in the environment and the classroom*
  - *photographs, books, maps, electronic and other media.*

Fifth and sixth class

- Carry out simple investigations and collect information from a variety of sources:
  - *observations and experiments in the environment and the classroom*
  - *photographs, books, maps and other media*
  - *information and communication technologies.*

Estimating and measuring

Infants

- Estimate and compare distances in an informal way:
  - *the journey from home to school is longer than the journey from home to the park.*

First and second class

- Begin to use simple methods to estimate, measure and compare observations:
  - *non-standard units of length to measure distances*
  - *balance to compare weights of samples collected.*

Third and fourth class

- Use appropriate simple instruments and equipment to collect data:
  - *improvised rain gauge, trundle wheel, compass.*
- Use appropriate standard units of measurement.

Fifth and sixth class

- Use appropriate simple instruments and techniques to collect data:
  - *improvised rain gauge, thermometer, trundle wheel, compass, record sheet.*
- Use appropriate standard units of measurement:
  - *mm of rainfall, distances in m and km*
  - *wind speed using the Beaufort scale.*

Analysing

Infants

- Sort and group objects according to observable features:
  - *rocks, pebbles, mud in soil sample.*

First and second class

- Sort and group people, features, events, and natural phenomena:
  - *people who work in shops, offices, factories*
  - *living things on the seashore, on the farm or in the park.*
- Begin to look for and recognise patterns and relationships in the environment:
  - *connections between dark clouds and rainfall*
  - *links between homes of people and climate.*
- Draw conclusions from simple investigations.

Third and fourth class

- Sort, group and classify data on people, features, events, and natural phenomena using a range of appropriate criteria:
  - *types of plants in an environment*
  - *types of shops or buildings in an urban area.*
- Look for and recognise patterns and relationships in the environment:
  - *seasonal patterns in weather observations*
  - *best places for growing plants in the garden*
  - *water and land masses on maps.*
- Interpret information and offer explanations.
- Draw conclusions from suitable aspects of the evidence collected.

Fifth and sixth class

- Sort, group and classify data on people, events and natural phenomena using a range of appropriate criteria:
  - *grouping buildings according to use in an urban area*
  - *grouping fields according to crops grown on a farm.*
- Look for and recognise patterns and relationships in the environment:
  - *daily patterns in traffic flow on a road*
  - *links between wind direction, temperature and rainfall.*
- Interpret information and offer explanations.
- Draw conclusions from relevant aspects of the evidence collected.

Recording and communicating

Infants

- Describe and discuss observations orally using an expanding vocabulary.
- Represent findings pictorially and in other media:
  - *pictures, weather charts, information and communication technologies.*

First and second class

- Describe and discuss observations orally using an expanding vocabulary.
- Represent findings pictorially or using other media:
  - *friezes, pictograms, information, and communication technologies.*

Third and fourth class

- Record and present findings and conclusions using a variety of methods including oral, written, pictorial, photographic, diagrammatic, and graphical forms, and using information and communication technologies.

Fifth and sixth class

- Record and present findings and conclusions using a variety of methods including oral, written, pictorial, photographic, diagrammatic, and graphical forms, and using information and communication technologies.

Evaluating

Fifth and sixth class

- Review the methods used in the investigation and assess their usefulness.