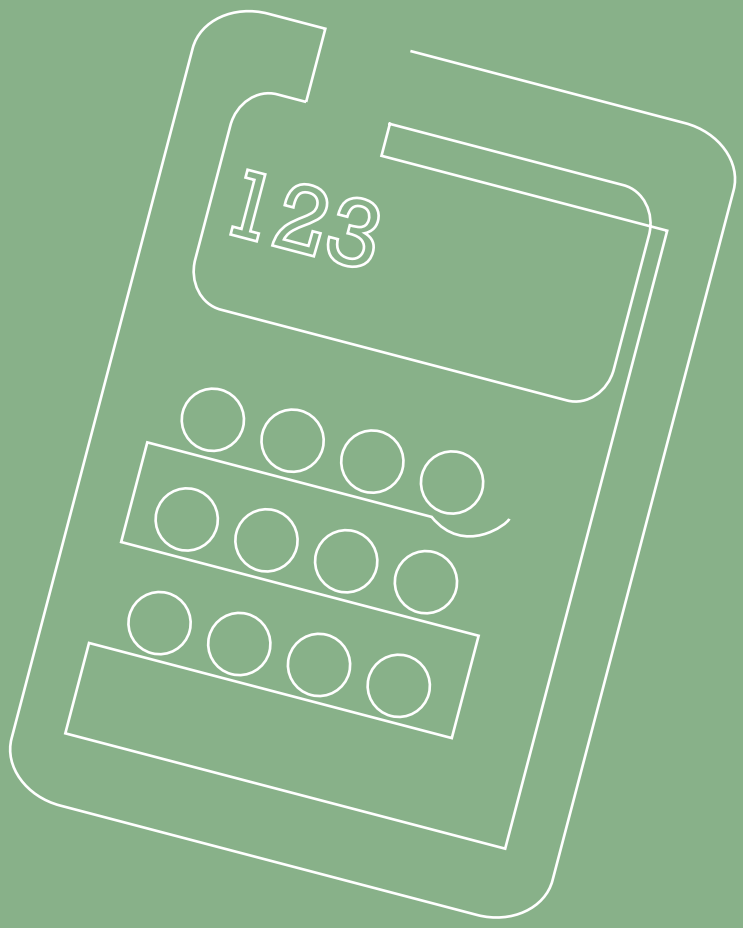
PRIMARY

Mathematics

Guidelines for Teachers of Students with

MODERATE

General Learning Disabilities



NCCA
National Council for Curriculum and Assessment
An Chomhairle Náisiúnta Curaclaim agus Measúnachta

Contents

Introduction

Mathematics provides the student with a wide range of knowledge and skills that enable him/her to develop an understanding of particular and important dimensions of the physical world, his/her physical environment, and social interactions. It provides the student with the means of manipulating, recording and communicating concepts that involve magnitude, number, shape and space, and their relationships to each other.

Mathematics, therefore, caters for both the cognitive and the social development of the student, and enables him/her to think quantitatively and spatially and to recognise situations in which mathematics can be applied.

The mathematical activities outlined in these guidelines aim to provide a variety of experiences and opportunities for all students with moderate general learning disabilities to develop their sensory awareness as well as their ability to reach out, explore and solve problems. This, in turn, can lead to a comprehension of basic mathematical concepts. The ability to solve problems is an essential building block for all learning. These guidelines give particular consideration to the social importance and relevance of mathematics. They emphasise the value of real contexts for mathematical activity in school. The student is involved in the practical manipulation of numbers and materials in real-life situations and in learning through guided discovery methods.

Mathematics offers exciting possibilities for stimulating interaction between adult and student. It also lends itself to the structuring of activities to promote interaction with peers.

Play and mathematics

Play is an essential part of the student's early mathematical development. It provides a variety of experiences, and opportunities for all students to develop their sensory awareness. Exploration and development of the senses through the use of a wide range of three-dimensional materials are an important part of the curriculum. Play allows the student to develop new skills through observation, exploration, discovery, conjecture, and imitation.

Much of the early work in mathematics will consist of building up the student's awareness of similarities and differences in the properties of familiar objects. A student who has difficulty with verbal expression will need to hear verbal descriptions of what is being discovered as he/she discovers it. Therefore, it is important to use correct mathematical language to accompany the student's discoveries.

Early mathematical activities help to develop the student's ability to imitate, and also facilitate the development of symbolic understanding. They allow the student to explore the properties of objects and facilitate awareness of concepts such as cause and effect and object permanence. As the student learns to discriminate between objects, he/she will need to be able to express choice. The development of the ability to indicate choice and preference is an essential foundation skill for early learning in mathematics, as in many areas of the curriculum.

Students with moderate general learning disabilities often need guidance to stimulate and maintain their interest in play. It will be important therefore that opportunities are provided to develop and apply mathematical knowledge and skills in both structured and unstructured play situations, for example in water and sand play, home corner activities (shopping and cooking), or in an adventure playground.

Overview of content

The strands of the *Primary School Curriculum, Mathematics* are as follows:

- Early mathematical activities
- Number
- Pattern and sequence
- Shape and space
- Measures
- Data.

Early mathematical activities

This strand concentrates on alerting the student to the similarities and differences between objects. Essential concepts such as object permanence and one-to-one correspondence are introduced, and students are enabled to work on the skills of classifying, matching, comparing, and ordering.

Number

All number work is based on students' everyday experiences. It reinforces the concept of one-to-one correspondence and enables the student to develop an appreciation of quantity. Introducing a formal system of counting, when relevant, will support students' increasing awareness of number. This development, in turn, may be supported by appropriate activities that involve manipulating numbers in concrete situations at first, then mentally, and finally symbolically. Students become familiar with patterns of number and are introduced to the use of number games and numerals in play and functional situations. The language used to support the development of number skills should be focused on essential vocabulary.

Pattern and sequence

Students become aware of patterns and sequences in their immediate environment. They become aware of the pattern and sequencing of familiar events and activities and use this understanding to anticipate and take turns. They also use their developing awareness to anticipate and predict changes. They are enabled to observe and make patterns and sequences using familiar equipment.

Shape and space

Spatial awareness for students with moderate general learning disabilities begins with the awareness of the position of their own bodies and parts of the body. Language associated with body position and movement is very important, as this will enable some students to regulate and control their movements. The ability to reach out and explore is developed, with an initial emphasis on examining the shape of three-dimensional objects, and how they move and interact with each other. As students develop the ability to discriminate, matching and sorting activities progress from using three-dimensional to two-dimensional objects.

Measures

This strand introduces the student to the concepts of length, weight, capacity, area, time, and money in a way that is meaningful to his/her everyday life. The emphasis at first is on noticing differences in the length, weight and capacity of familiar objects. The concepts of area, time and money are introduced in playful or functional situations, with a view to enabling the student to make sense of and gain more control over his/her environment. Using everyday events and games that are well-established, as well as new activities, give opportunities for noticing changes and differences in quantity, pattern, sequence, and time.

Data

This strand seeks to enable students to understand that information about objects and people can be collected, sorted, classified, and represented visually. The ability to interpret data is introduced by encouraging the student to look at charts in order to find out information about familiar events that have been recorded.

Communication

Students may communicate their mathematical understanding through a range of modes, for example:

- **Physical:** pointing, touching, manipulating, hand squeezing, giving eye-contact, eye blinking, moving towards/away, miming, signing systems (Lámh), displaying, matching, sorting, cutting, pasting
- **Written:** pre-writing, large print, computer-assisted typing programmes
- **Verbal:** vocalising, speaking
- **Visual:** circling, underlining, drawing, and using books and diagrams
- **Augmentative:** roller balls, switches, adaptive technologies, symbol systems.

School planning

The school planning section in the *Primary School Curriculum: Mathematics, Teacher Guidelines*, pages 18-21 gives advice on this aspect of planning, much of which will also be applicable when planning for students with moderate general learning disabilities. This section of the guidelines describes additional aspects of planning for students with moderate general learning disabilities.

Curriculum planning

Some extra issues that may need to be discussed as part of the school's planning for mathematics include the following.

The purpose and nature of mathematics in the school

Schools need to agree clearly what aspects of mathematics/numeracy are to be taught and how they are going to be taught, including aspects that can be reinforced through other curriculum areas and aspects that are to be taught discretely during the daily mathematics lesson. These decisions are very important and need whole-school policies if continuity in students' learning is to be ensured and knowledge, skills and understanding taught in ways that match and challenge the students' abilities.

There may be a need to alert all school staff to the aims of the mathematics curriculum in the school, so that each can play an active role in enabling students to become aware of the functional uses of mathematics in their environment. Parents should also be involved in this process so that they can use natural opportunities at home to support awareness of mathematics. Parents could help by

- encouraging play with sand, water, and three-dimensional objects
- emphasising one-to-one correspondence when giving out items to students or siblings
- using natural opportunities to point out similarities and differences or to play matching games
- pointing out interesting shapes and patterns in everyday objects
- using natural opportunities to emphasise number patterns in a fun way with rhymes and songs.

Language and mathematics

The correct use of mathematical language is essential for all students. It is crucial to mathematical thinking and it allows students to talk precisely about their experiences and to reflect upon them. Through early play experiences students encounter natural and constructed shapes, develop an awareness of colour, form and texture, and through their own mobility, explore position in space. These experiences form the basis for more precise descriptions of space and shape.

Students with moderate general learning disabilities are less likely than many other students to develop concepts through loosely structured free play and exploratory learning. During his/her early years the student may have had different experiences to his/her more able peers. Restricted mobility, poor motor control, or limited understanding may have resulted in fewer opportunities to use the language of mathematics, for example counting stairs, judging distances or heights, and learning number rhymes. Teachers should be aware that students may not have learned these things incidentally. They may need verbal descriptions of what they are discovering as they discover it, and what they observe of other students' discoveries.

In mathematics, as with every aspect of the curriculum, students with moderate general learning disabilities need to understand what is being asked of them. While concrete materials are used extensively in the early years, the instructions that accompany tasks are almost invariably given verbally so that their understanding of language and short-term memory are the first skills to be developed. If instructions are only given verbally the student may not retain them. They may dedicate more processing time to remembering what they have to do, thus limiting their capacity for completing the task. All instructions, therefore, should be accompanied by visual reminders and mathematical concepts should be represented visually as much as possible.

Distributing the milk, books or pencils can be a very valuable activity that allows for modelling language such as, *'Are there enough pencils for all of your group?' 'How many do you need today?'*. The teacher can actively manipulate this activity by not giving enough pencils to the student and then asking how many more are needed. For students with moderate general learning disabilities, it is important to have consistent mathematical language used by all those helping to teach the mathematics curriculum. It would be helpful to agree this at whole school level and a sharing of ideas on approaches and methodologies found to be successful would also benefit all staff members. A discussion on mathematics will also help to clarify how best to use available materials and equipment, and will assist in identifying new resources that may be needed for the school or individual classrooms.

Using mathematics meaningfully

In order to be meaningful and relevant for students with moderate general learning disabilities, activities in mathematics should be based on the student's own everyday experiences. Mathematics has much to offer the student who is struggling to make sense of the world around him/her. For one student, mathematics may open his/her eyes to exciting colours, shapes and patterns. For another, it may enable him/her to improve his/her functional understanding of objects, and some students may learn to use numbers functionally in play or real-life situations. The range of experiences offered to the student should not be limited by his/her ability to reach the *'next step'*. Through mathematics the teacher seeks to improve the student's understanding of the environment, to increase his/her interest in it, and to improve his/her ability to interact with it.

The social value of mathematics is of prime importance to students with moderate general learning disabilities; activities that encourage the use of social mathematics in real-life situations and in solving real problems should be emphasised. It is necessary to ensure that young children are taught coin recognition and are provided with practical addition and subtraction experiences, such as using cent and euro when shopping in the play corner. Care should be taken not to formalise the activities too early by using abstract symbols. For older students, managing money, reading timetables, and using measuring for real purposes such as cookery or DIY tasks will help their transition to the world of work and leisure. The challenge for these students is to learn that coins and notes represent different values and that this is not based on one-to-one correspondence. There is a need to make sure that parents and the students themselves fully understand what is being taught and the reasons why it is being taught. For example, it may be more useful to teach an adolescent how to recognise numbers and make a telephone call than to have him/her trace sandpaper numerals or attempt to copy them.

Organisational planning

Creating a mathematics-friendly school environment

Ideas for creating a mathematic-friendly environment might include

- the use of large, bright, textured three-dimensional numerals and shapes on walls or floors instead of conventional commercial ones
- a pictorial display in the assembly area linking modes of transport with the students who *'belong'* to each car/van/bus
- display boards illustrating number rhymes, stories, calendars, birthday charts, and charts with photographs linking students to particular buses
- patterns and interesting visual sequences used as decorative borders along school corridors or on doors
- number lines in the playground or along the classroom floor or wall
- marking or highlighting students' belongings (for example chair, table, coat, hook, shelf) using a specific colour or shape
- the provision of a wide selection of number games, such as skittles, dice games, and board games such as *'Bingo'* and *'Snakes and Ladders'*
- numerals to hold up or to stick to magnetic boards
- feely-bag resources and activities in which students are encouraged to feel tactile objects
- organising water or sand play areas
- the provision of a wide range of blocks, bricks, three-dimensional shapes, and other play equipment: Lego, jigsaws, etc.
- the provision of equipment to enable development of spatial awareness, such as a safe play area, soft-play equipment, safe equipment for body movement experiences
- a range of large, colourful dice with appropriate numerals or dots: 1-3, 1-6
- a range of age-appropriate resources and objects to count and match
- the use of a big, bright clock in the assembly area to highlight school starting and finishing times. (It could be made in school and have big hands that can be moved to appropriate times.)

A mathematics-friendly local environment

Ideas for creating a mathematic-friendly local environment might include involving shopkeepers, bus drivers and post office workers in enabling students to learn about money. For example, a local shopkeeper might agree to place the coins required for particular items on a piece of card or to use laminated cards showing clear photographs of the coins. Students could match their coins to the cards before handing over the correct amount.

Classroom planning

Many excellent ideas are to be found in the *Primary School Curriculum: Mathematics, Teacher Guidelines*, pages 24-27. The following outlines some additional aspects of planning that may need to be considered.

Curriculum planning

Providing for individual differences

Mathematics can be described in a logical, sequential developmental order. However, students rarely learn in a linear manner and need to revisit and develop previous learning. Task analysis of the skill sequence will show a need for finer detail and adaptations. It is essential that the important factor is the student's learning needs and that all work is based on accurate assessment of *'where the student is at'* at any particular time. The sequence outlined in these guidelines includes a wide range of learning experiences, as different students will be at different developmental stages at different times. Individual schools and teachers, in both mainstream and special settings, will choose and modify the activities and learning outcomes to suit the individual learning needs of their particular students. For some students it may be useful to use material from the *Guidelines for Teachers of Students with Severe and Profound General Learning Disabilities* or the *Guidelines for Teachers of Students with Mild General Learning Disabilities* in order to facilitate progress, and to allow students to demonstrate achievement and experience success.

Flexibility

In each of the mathematical areas, component skills will need to be explicitly taught and students will require sufficient repetition to consolidate their learning. Students with moderate general learning disabilities require more time to achieve mastery of mathematical skills. They typically require special instruction and extra practice to generalise their learning to settings other than the classroom. Extra practice may not necessarily be enough for some students. Some will never learn to generalise in new situations and all new situations may need to be taught by the teacher in a learning or role-playing situation. Many of these students will need direct teaching in the skills required to perform the activities outside of the school environment.

It is important that the range of experiences offered to students is not limited by their ability to achieve the *'next step'*. Some students may require more practice at certain stages than at others, particularly in the area of number, but this should not preclude them from taking part in and progressing in other areas such as shape, space, or pattern and sequence.

Teaching implications and practical considerations

- All significant adults need to be alerted to ways of using incidental opportunities to reinforce priority aspects of the mathematics curriculum for each student, for example by drawing attention to one-to-one correspondence as instruments are given out in a music session.
- It will be important to ensure that the classroom is a responsive environment so that students can learn incidentally about concepts such as object permanence, for example during drama, visual arts, and language lessons.
- Short, clear instructions and commands, including verbal, signed and written, should be used so that the student has to deal with only one instruction at a time.
- Students should be provided with opportunities to demonstrate understanding of an activity before moving on to independent practice.
- Concrete examples work best when teaching new skills.
- Where possible, use real-life settings so that the students learn the skills in as naturalistic a situation as possible.
- Teaching activities and materials should be functional and age-appropriate as much as possible.

Good practice for students with special needs is good practice for all students.

Organisational planning

Materials

Age-appropriateness

It is very important that the materials used are age-appropriate. Brightly coloured counters and interlocking cubes may be appropriate for younger students but students often come to associate them with infant classes. Using football cards or coins can make a counting activity more appropriate for older students. *'Jobs'* which include counting can be incorporated into the mathematics lesson and are usually good motivators, for example counting out information notes for distribution to other classes or costing and buying food items for cookery classes.

Accessibility

Another important feature of using materials in the classroom is that they must be stored in ways that make them easily accessible to students. Clearly labelled and colour/shape-coded boxes, a routine tidy-up session, and the development of a sense of pride in keeping materials neat and clean will encourage students to use the materials appropriately and responsibly. Providing a mathematics table where the materials needed for the lesson are easily accessible is important. It can be changed according to the topic being covered, for example *'Our yellow table'*, *'Our measures table'*, etc.

Health and safety issues

Safety procedures will need to be drawn up for field trips in the locality. Preliminary visits by teachers to the site can be used to ensure that it is accessible to all students and to identify potential hazards.

Mathematics—Overview of content	
Early mathematical activities	■ classifying ■ matching ■ comparing ■ ordering
Number	■ counting ■ comparing and ordering ■ addition ■ subtraction ■ place value
Pattern and sequence	■ observing and using pattern and sequence
Shape and space	■ spatial awareness ■ 2D and 3D shapes
Measures	■ length ■ weight ■ capacity ■ time ■ money
Data	■ collecting and processing data ■ recognising and interpreting data

Early mathematical activities

Classify

The student should be enabled to
select from an assortment of objects one similar to a given object.

Phase 1	Phase 2	Phase 3
Develop his/her ability to explore objects: *have opportunities to look at visually stimulating objects, interact with objects that respond when touched, listen to the variety of sounds that objects can make, be helped to rub/hold/squeeze/ poke objects.* Attend to activities involving object permanence: *games of 'peek-a-boo', an object of interest being partially covered/fully covered with a cloth and then re-emerging, pushing a train through a tunnel, putting toy cars in a garage, looking at a jack-in-the box.* Find with decreasing assistance objects or people that are partially or fully hidden: *look for a hidden favourite food/drink/object (at first partially hidden while he/ she watches, gradually moving to games of hide and seek with people/objects).*	Experiment with the properties and use of objects: *show curiosity about objects, independently examine and interact with them.* Select objects according to one attribute, such as colour, shape: *with appropriate prompting, put all marbles in one box and all tennis balls in another.* Choose only the objects with wheels out of a toy box to roll along the table. Sort objects in everyday situations: *tidy away all small cars into one box after play, put his/her own cup with all the other cups.* Develop awareness of the terms 'same as', 'not the same as', 'big', 'small', 'light', and 'heavy': *feel similar/different textures, sizes or weights while listening to the language of comparisons.* Put a brick in the box with all the other bricks while tidying up with an adult after play (sorting some objects but not applying appropriate criterion consistently).	Select from an assortment of objects one similar to a given object: *find matching pairs from a collection of socks.* Select silver coins only from an assortment of silver and copper coins. Pick out all the shells from his/her *'sorting box'* and mount them on a picture frame in an art lesson. Use the terms 'same as', 'different', 'big', 'small', 'light', 'heavy'.

The student should be enabled to
classify objects on the basis of one attribute for example colour, shape, size, texture.

Phase 1	Phase 2	Phase 3
Observe, feel and compare objects that are the same in one attribute, such as texture, smell, colour, shape, size, length, weight: *observe and feel a bag of soft materials or a box of red objects, have the opportunity to smell and taste (if appropriate) a collection of things that have a similar smell/ taste (such as real strawberries, strawberry jam, strawberry jelly, strawberry ice-cream).* Observe, feel and compare objects that are clearly different in one attribute as above: *a marble versus a tennis ball, a beanbag of sand versus a beanbag of Styrofoam.*	Classify objects on the basis on one attribute: *put all the red objects on the 'red table', find objects that rattle.* Show an understanding of the terms 'same as', 'different', 'big', 'small', 'light', 'heavy': *respond to requests to 'show me the big ball', 'show me a brick the same as'.*	Identify when an object is different and does not belong to a given familiar category: *removing odd items from sets, put dishes away in the press according to size.* Communicate about the sizes of the different types of flowers he/ she has collected as they are being arranged in a vase.

The student should be enabled to
classify objects on the basis of two attributes for example colour, shape, size, texture.

Phase 1	Phase 2	Phase 3
With assistance, thread all the small, yellow beads on a string. Observe and explore a box of soft, yellow objects.	Choose a big star-shaped pastry cutter in cookery class.	Find all the small/large/green/ yellow T-shirts in the storage press for the class team on Sports Day.

The student should be enabled to
select from an assortment of objects one that serves the same function as a given object.

Phase 1	Phase 2	Phase 3
Look for his/her own belongings from a selection of items: *pick out/ look for his/her own coat at home-time.* Indicate a relationship between an object and self: *indicate his/ her own coat, bag, toothbrush, hairbrush when asked, laugh or push away a wrong item given by mistake.* Develop awareness of the uses of some very familiar objects. Respond correctly to instructions: *'Show me something you eat/drink' (accepting pointing, signing, yes/no responses).*	Respond correctly to instructions: *'Show me something that you wear on your feet' (using physical, gestural and verbal guidance as appropriate).*	Sort through pictures of transport to choose pictures of those that travel in the air, by land, on sea.

The student should be enabled to
classify socially related objects.

Phase 1	Phase 2	Phase 3
Develop an awareness of the relationship between objects and self, given visual, tactile and verbal clues: *awareness of his/her own belongings, such as coat, bag, hairbrush.* Have an awareness of the relationships between familiar objects: *observing that a drumstick goes with a drum, a lid goes on a jar of sauce.* Relate objects appropriately and functionally: *put a straw in a cup, brush hair with a brush.*	Match familiar related objects on request: *show that a cup goes with a saucer, a sock goes with a shoe.* Match related objects functionally and in play: *take out a drumstick to play a drum, set a table with a knife and fork.*	Put paint and brushes in the art press, put balls and hoops in the PE press, put the CD player and the CD in the music press. Select appropriate cleaning materials from the storage cupboard to clean tables in the canteen.

Early mathematical activities

Matching

The student should be enabled to
match pairs of identical concrete objects in one-to-one correspondence.

Phase 1	Phase 2	Phase 3
Respond to a request to 'find me one the same as this' while observing and assisting the teacher in building a tower using one colour of bricks. Match objects or pictures by placing one next to one placed by an adult.	Match pairs of identical objects in play situations: *matching objects in a feely bag, Kim's game, etc.* Play card games: *Snap, Happy Families.*	Match pairs of objects in functional situations: *put two socks/gloves together to make a pair.*

The student should be enabled to
match sets of identical objects in one-to-one correspondence.

Phase 1	Phase 2	Phase 3
Observe and attend to the matching of identical objects in one-to-one correspondence: *bricks, toys, utensils, clothing.* During free play or activities in the home corner match objects: *knives to forks, spoons to bowls, lids to pots, students to seats.*	With decreasing help match identical objects in one-to-one correspondence on request. While dressing himself/herself or dressing toys, match shoes to feet, hat to head, button to buttonhole.	Match several pairs of socks by colour, fold them together, and put them in a drawer.

The student should be enabled to
match equivalent sets of concrete objects in one-to-one correspondence.

Phase 1	Phase 2	Phase 3
Attend to situations where non-identical one-to-one correspondence is used: *one cup for each student at break time, one coat for each student when going for a walk.* Listen to stories such as 'Goldilocks and the Three Bears': *act out the story giving one bowl to each bear, etc.*	With decreasing help carry out tasks where non-identical one-to-one correspondence is used: *find one hat for each member of the class to wear from the dressing-up box.*	Independently use one-to-one correspondence of non-identical objects in play and functional situations: *put one percussion instrument in front of each student for a music session, serve one potato for each plate at dinner-time.*

The student should be enabled to
match non-equivalent sets of concrete objects in one-to-one correspondence.

Phase 1	Phase 2	Phase 3
Hand out one straw for each carton of milk: *'Have we enough?'*, '*Do you need more?'.*	Choose teams in the PE class.	Lay the table correctly for meal times.

The most important aspect of these sorting activities is the discussion and language development that takes place.

Discussion would introduce a lot of vocabulary:

a) names of objects – *beads, pegs, bricks*

b) words associated with sorting by size – *big, small, long, short*

c) names of colours – *red, blue, green, yellow*

d) words associated with texture and shape – *flat, straight, rough, smooth.*

Early mathematical activities

Comparing

The student should be enabled to
compare objects according to length, width, height, size and weight.

Phase 1	Phase 2	Phase 3
Attend to terms 'big', 'small', 'light', and 'heavy': *feel similar/ different textures, sizes or weights while listening to the language of comparisons.* Listen to stories that encourage comparisons: *'The Three Little Pigs'*, *'Goldilocks'*, *'The Enormous Turnip'*.	Imitate the ordering of three objects according to size, length, height, or weight: *cubes, balls, bags filled with substances of contrasting weight.* Place three or more objects in order according to size, length, height, or weight. Line up in class: *boys/girls, respond to the question, 'Which line is longer?'* Compare the heights of two students: *respond to the question, 'Who is taller?'* **Language:** *same as* *bigger than*	Compare two plants placed side by side and indicate the tall one. Compare the overall size of one object with that of another where the difference is not great: *identifying the bigger of two Russian dolls or nesting cubes.* Compare trouser lengths, shoe sizes, etc. in department stores. **Language:** *small* *medium* *large* *extra large*

Early mathematical activities

Ordering

The student should be enabled to
order objects according to length, size, weight, or height.

Phase 1	Phase 2	Phase 3
Measure himself/herself against class height: *observe a photograph stuck on a chart, that indicates his/her own height.* With assistance and prompting, order Montessori equipment.	Observe the teacher holding up a range of objects, for example ribbons, string, rulers, balls, boxes. Guess or estimate which is longer/shorter/heavier/lighter than the other, using the language of comparison, then check to confirm.	Weigh himself/herself regularly and discuss whether he/she has lost weight or is heavier. *(Integration with SPHE: healthy diet and exercise.)*

Number

The student should be enabled to
experience and show understanding of the idea of *'one'* as opposed to *'a lot'.*

Phase 1	Phase 2	Phase 3
Become aware of difference in quantity: *look and listen as objects are added to and taken away from a collection, watch as sand is poured on a small pile to form a bigger pile, have attention drawn from one object to another.* Participate in activities where the difference between 'one' and 'a lot' is emphasised: *feel and observe one ball versus a bag full of balls, one sweet versus a bag full of sweets.*	Actively explore the difference between 'one' and 'a lot': *give an adult one item from a selection when asked, indicate the box with a lot of cars in it.* Show awareness of increasing and decreasing quantities: *show reaction when objects are added to or taken away from a collection.*	Use understanding of the difference between 'one' and 'a lot' in functional situations: *take a sweet when offered a selection, take a bigger bag of sweets if offered the choice.*

The student should be enabled to
experience and show understanding of terms such as *'some'* and *'more'.*

Phase 1	Phase 2	Phase 3
Attend to the use of terms such as 'some', 'more': *'You have some biscuits there on the plate, I'll give you one more'.* Give 'some' items to adults on request: *'Show me some toys'.* Indicate a desire for items and then ask for or show a desire for 'more': *sweets, biscuits, toys.*	Respond to an adult's request for 'some' blocks and then 'more' blocks: *indicate if he/she would like more when asked.* Compare two towers of blocks: *indicate when requested which has 'more'.*	Show understanding of the term 'more than': *while dividing out chips at dinner time communicate that one plate has 'more than' the other, during cooking activity respond appropriately to a request to add 'more' milk/water, etc.* Share out fairly, recognising when sharing is unfair. Show understanding of the term 'more than': *two students using construction materials, who has 'more than' the other?*

The student should be enabled to
observe and show understanding of one-to-one correspondence.

Phase 1	Phase 2	Phase 3
In the play corner, give each teddy a plate. Develop awareness of the concept of the invariance of number: *know that if two bricks are posted into a shape box two will come out.*	Use one-to-one correspondence in meaningful contexts: *match two equal sets, give each student a milk carton at dinnertime, put out one chair for each student at circle time, give each student a pencil.* With decreasing assistance use tokens or marks to tally events or scoring in games.	Develop further the concept of the invariance of number: *recognise that two/three bottles are always the same no matter how they are arranged.* Match two unequal sets: *match knives and forks, respond to questions such as 'Have we enough?', 'Are there too many?'.* Deal cards to players during a game of snap.

The student should be enabled to
rote count.

Phase 1	Phase 2	Phase 3
Experience number patterns in a variety of contexts: *feel beats of one and two on a resonance board, see another child jumping one, two, and three times.* Participate in a range of number related action rhymes/songs as appropriate: '*Five Currant Buns*', *'1,2,3,4,5 Once I Caught a Fish Alive'*, *'Five Little Speckled Frogs'*. Have experience of patterns of numbers: *listen to number rhymes and stories, listen to the use of numbers in games such as 'one, two, three, go', feel a pattern of numbers as it is tapped out on his/her hand.*	Count objects up to three. Count objects up to five. Participate in singing and acting out number rhymes. Respond to familiar number sequences by expression, vocalisation or action: *indicate recognition that some of a number rhyme is left out or needs to be continued, recognise a mistake as the teacher counts 1,2,3,5, supply missing numbers on request.* Count to ten before finding friends in a hide-and-seek game.	Count to five before playing cymbals in the school band. Count the number of beats while listening to musical extracts.

The student should be enabled to
develop an awareness of number in his/her environment.

Phase 1	Phase 2	Phase 3
Observe two items being hidden in sand/water/bubbles and search for both of them, or indicate an awareness that there is another by looking towards its location. Attend to the use of number in the context of the classroom and school: *the number of students in the class/group, the number of students out sick today.*	With decreasing help respond to a request to count out a number of items up to five in familiar situations: *'Give me two crayons.', 'Put three bricks on the table.', 'Count the students in the class.', 'Count out five paint-brushes for painting lesson.'* Attend to the use of numbers in the context of the classroom and school: *number of students, chairs, tables, groups.*	In visual arts lesson create a monster with five tails (or three legs, or four heads).

The student should be enabled to
develop an awareness of number in stories.

Phase 1	Phase 2	Phase 3
Respond to stories that involve number by expression, vocalisation or action: *'Goldilocks and the Three Bears', 'The Three Little Pigs'.*	Develop awareness through listening to stories that involve use of number: *'The Very Hungry Caterpillar', 'Noah's Ark', etc.*	Bake a gingerbread man with two eyes, five buttons, two legs, one head, etc. Demonstrate an ability to recognise number in stories: *Roald Dahl's 'George's Marvellous Medicine', 'The Twits'.*

The student should be enabled to
listen to, respond to, and participate in number rhymes, stories and games.

Phase 1	Phase 2	Phase 3
Respond to simple number rhymes by expression, vocalisation or action: *'Baa Baa Black Sheep', 'Three Blind Mice'.* Respond to requests: *'Show me three big hops', 'Do two small jumps'.*	Participate in shopping and race type games using number sequences. Ask for and recite number rhymes, verbally or non-verbally. Perform actions with an adult/ another student for number rhymes and stories: *'Five Little Speckled Frogs'.* Have access to number rhymes and stories: *on tape, on video, on computer.* Participate in group number games: *Simon says 'Show me five fingers', 'Take two steps back', (playing skittles) 'How many did you knock down?'.*	Participate in board games: *Ludo, Snakes and ladders, Dominoes, use board games with a dice, count along a track.* Point or tag as each item is counted or communicate the sequence of number words.

The student should be enabled to
talk about numbers of personal significance.

Phase 1	Phase 2	Phase 3
'I am seven.'	*'I am in class 4.'* *'I have three sisters.'*	*'I live at 24 Beech Grove.'* *'I go to town on the number 19 bus.'*

The student should be enabled to
understand that numbers are used for counting.

Phase 1	Phase 2	Phase 3
Develop awareness that quantity can be represented by a number: *listen to the language of number as quantity is tapped out on his/her hand, listen/look/feel as one, two, three objects are counted out.* Respond to a request to count out number of items in familiar situations: *'give me two blocks'*, *'put two pegs in the board'*.	Count objects, pushing them aside while counting out loud: *communicate that there are three objects after having counted them.*	Ask questions involving numbers: *'How many pages can I have?'* Count reliably to ten and recognise that 'one more' is the next number in the sequence and 'one less', the number before. Count out snacks and drinks.

The student should be enabled to
develop an awareness of numerals.

Phase 1	Phase 2	Phase 3
Attend to the use of numerals in the context of the classroom and school: *numerals on classroom walls/doors, numerals in stories and games. (Visually striking and texturally interesting numerals should be used where possible.)* Observe and feel 3D and 2D numerals: *participate in making 3D and 2D numerals, attend to his/her fingers outlining shape/being traced over a sandpaper numeral.* Develop an awareness that quantity can be represented by a numeral: *have an appropriate number of taps tapped on his/her hand when looking at or feeling numerals 1-3, look at and feel numerals as the number is said, look at and feel numerals as one, two, three objects are counted out.*	Identify numerals of personal importance: *age, class number manipulate and handle 2D and 3D tactile representations of them.* Respond to familiar numerals: *indicate numerals on request, find his/her way back to a numbered team in a game.* Show interest in observing and manipulating 2D and 3D numerals: *holding, tracing with the finger, tracing over with a marker, imitating with a finger in air/on surface, with marker on paper.* Write numerals in the sand tray, with paint or crayon, with a pencil: *make numeral shapes from play-dough, papier maché.* Recognise and name, by gesture or verbalisation, numerals up to 5.	Represent numbers using fingers, his/her own tally system of marks, and then conventional numerals. Develop awareness of numerals on different objects: *telephone, bus, cars, TV, cooker, microwave, keyboard, calculator.* Trace over the numerals of his/her own telephone number using fingers, crayons or markers. Match numerals to sets in meaningful situations: *how many students in school today, how many adults are helping today, how many paint-brushes do we need for painting, how many sisters/brothers are in the photograph.* Order numerals to 5, 10.

The student should be enabled to
respond to the language of the ordinal numbers: first and last.

Phase 1	Phase 2	Phase 3
Listen to and observe the use of the language of ordinal numbers 'first' and 'last', used in familiar situations: *games and classroom/ school routines, show delight at coming first in a race.*	Respond appropriately to being asked to go first/last in familiar situations. Show awareness of the end of an activity when the last piece is placed or the last song is sung.	Use the language of the ordinal numbers 'first' and 'last' in functional and social situations: *ask to be first/last in particular activities, tell who came into school first/last today, participate in planning the day's activities* ('What shall we do first?').

The student should be enabled to
count the number of objects in a set.

Phase 1	Phase 2	Phase 3
Count five objects touching each item as it is counted: *counting out four milks for friends at break time.* Select and count teams for games: *relay races.* Use number appropriately in functional or play situations: *count out three cups for three teddies when playing, count out six towels for six students when going swimming.*	Count five objects, touching each item, and understand that if they are moved they don't need to be recounted. Count the correct number of chairs to set up for a meeting in the school hall. Select and count teams for basketball. Count the number of objects/ people in a set to 6 by gesture or verbalization: *count the number of students in class today, count a row of objects up to six, count out six cups to be used for drinks at break time.*	Know that the last number in the count gives the size of a set: *different objects or different patterns of the same number presented to the student.* Recognise that the number of objects remains the same when the objects are rearranged or hidden.

The student should be enabled to
recognise numerals.

Phase 1	Phase 2	Phase 3
Respond to familiar numerals: *point to numerals on request.*	Recognise his/her own age. Find his/her way back to a numbered team in a game.	Recognise his/her own phone number, the price tag on a shirt in a department store, size of clothes or shoes.

The student should be enabled to
match symbols to sets.

Phase 1	Phase 2	Phase 3
Place, with prompting, objects in hoops, trays, containers in twos, threes, etc.	Make 'Our book of five' as a group project. Match the number cards to sets of concrete objects.	Recognise that dots can be symbolic of a number: *dots on a dice/playing cards.* Use computer software that enables the matching of numerals to sets and to other numerals.

The student should be enabled to
identify which set has more less objects.

Phase 1	Phase 2	Phase 3
Identify which child has more cars.	Identify which container holds more crayons.	During a shopping outing, identify which packet contains 'more' or 'less'.

The student should be enabled to
trace over/copy numerals.

Phase 1	Phase 2	Phase 3
Trace over sandpaper numerals, draw numerals in sand/wet clay/ paint.	Use crayons, chalk or markers to trace over and copy outlines.	Write down his/her telephone number to give to new friend. Write out emergency telephone numbers: *using pencil, keyboard.*

The student should be enabled to
order numerals.

Phase 1	Phase 2	Phase 3
Place, with verbal and physical prompting, 3D wooden numerals on the floor to form a number line 1-3.	Assemble, with verbal prompting, a hopscotch in jigsaw form.	Put number flashcards in order.

The student should be enabled to
estimate the number of objects in a set.

Phase 1	Phase 2	Phase 3
Respond to an adult's question: *'How many counters have I?'.*	Estimate the number of milk cartons on a tray: *check estimate by counting.* Make a sensible estimate of the number of object up to three and then five in context.	Estimate the number of apples in bag while shopping: *check by counting and make the appropriate purchase.*

The student should be enabled to
Identify empty set—recognise zero.

Phase 1	Phase 2	Phase 3
Respond, with prompting, to questions: *'Which teddy has no cup?'* *'Which cup is empty?'*	Sing songs/chant rhymes that count down to zero. Attempt to solve a problem situation set up by adult: *no straws for milk bottles, be encouraged to communicate his/her difficulties.*	Recognise that a set of objects is empty and write/name the numeral zero.

The student should be enabled to
combine sets of objects.

Phase 1	Phase 2	Phase 3
Put all the dolls/toys/cars together.	Respond to questions from adult: *'John has three crayons. Ciara has two. How many altogether?'.*	Combine sets of objects using appropriate strategies: *counting all, counting on, counting on the number strip.*

The student should be enabled to
partition sets of objects.

Phase 1	Phase 2	Phase 3
Participate in activities such as building towers in which students are asked to 'take one away': *an adult introduces and uses the appropriate vocabulary.*	Participate in singing games where objects are taken away: *'Five fat sausages', 'Ten green bottles'.* Play a game of musical chairs: *taking one chair away at a time.*	Exchange coins as part of shopping activity.

The student should be enabled to
solve simple oral problems.

Phase 1	Phase 2	Phase 3
Respond, with assistance, to questions from an adult: *'Have we enough packets of crisps for the party?'.*	Respond appropriately to questions such as 'Have you enough money to buy the sweets?'. Use 1c in shopping for items up to 10c.	While setting the table respond to questions: *'Have we enough plates?'*, '*How many more do we need?'.*

The student should be enabled to
use the symbols + and = to construct word sentences involving addition.

Phase 1	Phase 2	Phase 3
Record a number sentence using concrete objects.	Record a number sentence pictorially.	Record a number sentence in jumps forward on number line.

The student should be enabled to:
use the symbols – and = to construct sentences involving subtraction

Phase 1	Phase 2	Phase 3
Record a number sentence using concrete objects.	Record a number sentence pictorially.	Record a number sentence in jumps backwards on number line.

The student should be enabled to
explore, identify and record place value.

Phase 1	Phase 2	Phase 3
	Participate in grouping and swapping activities involving tens and units, using concrete materials: *lollipop sticks, an abacus.*	Participate in grouping and swapping activities involving tens and units, using concrete materials: *base 10 materials, Cuisenaire rods.*

Pattern and sequence

The student should be enabled to
attend to repeated sounds and actions.

Phase 1	Phase 2	Phase 3
Attend to repeated patterns of sounds and movements: *listen to repeated patterns with musical instruments, feel a pattern tapped on his/her body, participate in repetitive songs/actions and turn-taking games.*	Listen to and have experience of repetitive songs, actions, action rhymes. Imitate and repeat sounds and movements: *with musical instruments, using voice, during action songs and turn-taking games.*	Listen to and have experience of rap songs, chants, etc. Initiate and create repetitive sound movements: *clapping games, clapping musical patterns.* Correctly sequence two or three familiar events: *preparing for familiar activities, dressing himself/herself, sequencing pictorial stories, sequencing the actions of familiar games.*

The student should be enabled to
respond to repeated sounds, patterns and movements.

Phase 1	Phase 2	Phase 3
Participate in repetitive songs, actions and turn-taking games: *take turns to shake maracas twice.*	Participate in actions songs and rhymes: *show anticipation if the last part of a sequence is unfinished.*	Show awareness of wrong sequencing by expression, gesture or vocalisation.

The student should be enabled to
imitate repeated sounds, patterns and movements.

Phase 1	Phase 2	Phase 3
Imitate sounds made with musical instruments, using voice, during action songs and turn taking games.	Copy simple patterns and movements during action songs and rhymes. Participate in clapping games, musical rhythmics, dance activities.	During dance activities, mirror other students' actions and movements.

The student should be enabled to
initiate and create his/her own repetitive sounds and movements.

Phase 1	Phase 2	Phase 3
Create his/her own sounds: *using voice, a musical instrument, the body.*	Remember learned responses over short periods of time: *repeating an action with a familiar musical instrument.* Participate in the class/school band and choir.	Experience sequence of movement, for example, in dance: *take part/take the lead in aerobics, yoga, drama, and various dance forms (for example salsa).*

The student should be enabled to
attend to the sequencing of two or three familiar activities.

Phase 1	Phase 2	Phase 3
Attend to the sequencing of two or three familiar activities: *develop awareness that he/she will be tickled in game of 'around and around the garden', that a bottle must be opened before a drink is poured, that bags must be packed before going swimming, that socks must be put on before shoes.*	Show understanding that a bottle must be opened before a drink is poured, that socks must be put on before shoes: *show awareness of wrong sequencing by expression, gesture or vocalisation.*	Show understanding that the oven must be switched on before he/she starts cooking.

The student should be enabled to
become aware of the patterns in daily routines.

Phase 1	Phase 2	Phase 3
Indicate awareness of pattern in daily routines: *indicate what comes next, show awareness of wrong sequencing by expression, gesture or vocalisation.* Anticipate an outcome from a preceding event: *anticipate lunch after hearing the rattle of dinner plates, become excited or alarmed when a routine is broken unexpectedly.* Remember learned responses over more extended periods: *remember how to activate a pop-up object from a previous lesson.*	Use a pictorial timetable that illustrates daily events: *assembly, circle time, activities, break, swimming, dinner, etc.* Remember learned responses over increasing periods of time and begin to anticipate known events: *collecting coats and bags at the end of the school day.*	Use the class weekly timetable to plan ahead and anticipate events: *communicate with friends about television programmes and tell times and days that they're on.* Predict a swimming lesson after having been told to bring swimming towel/trunks from home.

The student should be enabled to
correctly sequence two or three events.

Phase 1	Phase 2	Phase 3
Put jumper over head, put arms in sleeves and pull down.	Copy and anticipate everyday sequence patterns in self help routines: *dressing, teeth cleaning, washing.* Take off coat, hang up coat, put bag away.	Put water in the kettle, plug in the kettle, turn on the kettle. Choose a meal in a coffee shop, pay for it, and then look for a table.

The student should be enabled to
demonstrate an understanding of *'first'*, *'next'*, *'last'* (verbally/by signing/by action).

Phase 1	Phase 2	Phase 3
Indicate what comes next in an activity or story.	Communicate about patterns in his/her work: *'Red is first and blue is next'*.	Use and understand first, second and third in everyday situations: *ask to be first/next/last in a game.*

The student should be enabled to
follow the correct sequence in carrying out activities.

Phase 1	Phase 2	Phase 3
Wash face and hands under the supervision of an adult: *roll up sleeves, put the plug in the sink, turn on the cold water tap, turn on the hot water.*	Prepare for familiar activities, for example, swimming*: remove clothing and place in a basket, put on swimming togs, put on swimming cap.* Imitate the steps involved in the routine of cleaning his/her teeth.	Follow the correct sequence of actions to use the computer: *put in the disk, click on the mouse, move the pointer, etc.*

The student should be enabled to
correctly sequence pictures that depict familiar activities.

Phase 1	Phase 2	Phase 3
Put three pictures in the correct order, with physical and verbal prompting from an adult: *simple pictorial stories.*	Arrange the sequence of food items needed to make a sandwich.	Correctly sequence five or six pictures illustrating how to order a meal.

The student should be enabled to
use familiar 2D and 3D objects to a) copy and b) continue patterns in colour, shape and size.

Phase 1	Phase 2	Phase 3
Use pegs and pegboards to copy patterns.	Copy and continue patterns using threading beads, blocks.	Use computer programmes that involve copying and continuing patterns: *know that the third shape in a sequence will be a triangle.*

The student should be enabled to
copy, continue and extend patterns.

Phase 1	Phase 2	Phase 3
During an art lesson, with adult assistance, print with a variety of objects, such as vegetables and leaves: *use parts of body such as the fingers, hands and feet.*	Use 3D and 2D materials to copy and extend patterns in colour, shape and size: *copy patterns already made, make his/her own patterns, with help, using bricks, pegs, art materials.* Copy a colour pattern using potato prints and begin to organise print marks purposefully, discovering how simple prints can be further developed (for example, over-printing).	Use 3D and 2D materials to create and extend patterns in colour, shape, size, and number: *create and extend his/her own patterns using bricks, threading beads, pegs, art materials, computer programs.* Use computer packages to design a print, make T-shirts, posters and cards. Produce more complex and detailed patterns and for a variety of purposes: *explore batik, relief print blocks, and silkscreen prints.*

The student should be enabled to
observe and talk about patterns.

Phase 1	Phase 2	Phase 3
Observe patterns made in colour, shape and size with familiar classroom materials: *patterns made with blocks/shapes from inset boards/rings from ring towers.*	Observe visual patterns in the immediate surroundings: *patterns made in colour, size, shape with familiar classroom materials, on computer, in art work.* Indicate visual patterns in the immediate environment: *point to the pattern on a jumper, patterns made in art class.*	Notice and ask about visual patterns in the environment: *the pattern of frost on the window, footprints on snow/in mud, patterns in flowers.* Observe and discuss patterns on clothing, posters, football jerseys, wallpaper during shopping trips.

Shape and space

The student should be enabled to
have an awareness and understanding of the position of his/her own body and body parts in space.

Phase 1	Phase 2	Phase 3
Spatial awareness Develop awareness of the position of his/her own body and parts of the body in space: *become aware of various body positions such as lying, sitting or standing, become aware changes in position, observe the body in a large mirror.* Have an awareness of the shape of his/her own body and parts of his/her body: *look at his/her image in a large mirror, observe and feel shape of the whole body or parts of the body pressed onto damp sand, observe and participate in making hand or foot prints with paint, observe an outline image of a student projected with light on a wall.*	**Spatial awareness** Participate in body awareness activities: *touching/naming body parts, stretching/curling/relaxing, listening to his/her own breathing, playing mirror games, imitating adult actions.* Develop awareness through activities in the playground or during the PE class: *climbing a ladder, using a slide, walking on the bench/on stepping-stones, changing body position to see things upside down, spinning on a swing.* Follow instructions related to the movement and position of parts of the body.	**Spatial awareness** Experiment with body movement and parts of body: *changing body position to see things upside down, spinning on a swing.* Use gestural, pictorial or verbal language related to movement and the position of parts of the body.

The student should be enabled to
have an awareness of the shape of his/her own body and body parts.

Phase 1	Phase 2	Phase 3
Spatial awareness Respond to changes in the position of the body or parts of the body: *watch and control the movement of limbs, react by expression, gesture or vocalisation to activities such as bouncing and rolling.* Observe and feel the shapes of parts of the body pressed onto damp sand. Observe and participate in making finger/hand/foot prints with paint, clay, plaster of Paris.	**Spatial awareness** React to activities that emphasise the shape of the body or parts of body: *laugh, observe intently, point to or outline with a finger the shape of the body or parts of the body.* Compare his/her own body shape and the shape of parts of his/her body with those of other students: *lie on floor while others outline his/her body shape, communicate about similarities and differences.* Show understanding of body parts: *making jigsaws of a boy/girl/man/woman, sticking or drawing features on a face, responding to an adult's questioning, 'Am I finished?', 'What's missing?'*	**Spatial awareness** Experiment and explore his/her own body and the shapes of parts of the body: *make body shapes in the PE class, create prints of parts of the body.* Compare his/her own body shape with those of adults and other students: *use light to project an image of another student's head onto a wall, observe and draw an outline, cut out and mount the end product (with/without aid).*

The student should be enabled to
explore the movements of different parts of the body and the ways in which the body can move in space.

Phase 1	Phase 2	Phase 3
Spatial awareness Explore different ways of travelling: *walking, running, skipping, and jumping.* Explore different ways of walking: *small steps, wide steps, giant steps, fast walk, tired walk.*	**Spatial awareness** Use different pathways and form different shapes in space: *travelling close to the floor, going forwards/backwards, moving in straight lines/in a circle, finding his/her own space.*	**Spatial awareness** Develop further the basic movement actions of balancing, rolling, turning, twisting, stretching, and transferring weight using various parts of the body while exploring space.

The student should be enabled to
attend to and respond to the language related to movement and positioning.

Phase 1	Phase 2	Phase 3
Spatial awareness Attend to an adult's language during active play: *up/down/off climbing frames, up/down on a slide, up/down/on a see-saw, through/in a play tunnel.*	**Spatial awareness** Participate in action songs and rhymes: *'Hokey, Pokey', 'Head, shoulders, knees and toes'*, *'Simple Simon says'*.	**Spatial awareness** Respond to the request to keep the head *in* the water and to kick the legs *up* and *down* during swimming a session.

The student should be enabled to
follow instructions related to movement and positioning.

Phase 1	Phase 2	Phase 3
Spatial awareness Follow actions and listen to instructions during circle games: *'Ring-a-ring-a-roses we all fall down'.*	**Spatial awareness** Show understanding of words, signs or symbols that describe positions, by responding to requests: *'Throw the beanbags into the basket'*, '*Crawl under the table'*.	**Spatial awareness** Follow instructions to negotiate his/her way around obstacle courses incorporating benches, ladders, hoops, chairs, and tables during a PE lesson.

The student should be enabled to
use language, symbolic or verbal, related to movement and position of body parts.

Phase 1	Phase 2	Phase 3
Spatial awareness Up, down, in, on, under	**Spatial awareness** Over, top, bottom, in front of, behind, beside, between	**Spatial awareness** Through, around, middle, next to, inside, outside, open, closed, forward, backwards

The student should be enabled to:
observe and describe people and objects in different positions in space, verbally or using sign.

Phase 1	Phase 2	Phase 3
Spatial awareness Demonstrate interest in position and the relationship between objects: *stacking or joining objects, using construction materials.* Communicate the position of an object/a student verbally or by using sign: *'Teddy is in bed' 'Keith is under the table.'*	**Spatial awareness** Respond to instructions and ask questions to find an object/a hidden student during hide-and-seek games. Describe the pathway taken in a follow-the-leader activity to other students.	**Spatial awareness** Communicate about activities: *'The cake is in the oven.' 'I put the icing on the buns.' 'The plant is in the pot.' 'The seeds are under the soil.'*

The student should be enabled to
follow instructions to position objects in relation to other objects.

Phase 1	Phase 2	Phase 3
Spatial awareness Explore the position of objects: *place objects in and out of containers, place objects inside and outside a hoop, fit as many objects as possible into a box.* Respond to simple commands: *'Put the knife on the plate.'*	**Spatial awareness** Follow more complex commands: *'Put the knife on the plate and the bowl beside the jug.'*	**Spatial awareness** Put groceries away after shopping, following instructions. Clear the table after a meal. Put away clean dishes.

The student should be enabled to:
give and follow simple directions

Phase 1	Phase 2	Phase 3
Spatial awareness Show understanding of word signs and symbols that describe positions: *respond to a request to put an object in, on, under, inside another object, 'Put the dolly on the chair.'*	**Spatial awareness** *'Take your lunch out of your bag and put it in the box.'*	**Spatial awareness** Use board games, mazes, computer programmes that involve following instructions.

The student should be enabled to
follow instructions to position themselves in relation to others.

Phase 1	Phase 2	Phase 3
Spatial awareness Respond to an adult's instructions: *'Sit beside Emma.'* Move to front/back/middle of the line on request.	**Spatial awareness** Follow instructions during games: *pair work, circle and group games.*	**Spatial awareness** Take part in a game of Twister and follow instructions to position himself/herself in relation to others.

The student should be enabled to
recognise, in practical situations, right and left.

Phase 1	Phase 2	Phase 3
Spatial awareness Respond to an adult's requests: *'Stand over there on the left.'*	**Spatial awareness** Give directions verbally or by using sign to a visitor: *'The kitchen is on the left.'* Respond to requests *'Get your right shoe and put it on'.*	**Spatial awareness** Follow directions when out and about in town, going to the shop, in the post office.

The student should be enabled to
participate in activities that involve observing and manipulating 3D and 2D objects, both regular and irregular, and develop an awareness of various shapes.

Phase 1	Phase 2	Phase 3
Shape	**Shape**	**Shape**
Participate in activities that involve feeling and observing objects of various shapes: *reach out and touch/rub/hold with one hand and both hands. (Use objects with strong lines and corners such as large blocks and pyramids.)* Change the positions of objects: *move them around with hands/ feet, push/pull/roll objects and observe what changes occur.* Participate in putting objects into containers: *put bricks into a large box/tin/bag, put toys or books into schoolbag, build and stack bricks/ cubes/rings/cups/plates.* Attend to the properties of various objects and shapes: *observe and feel that bricks can be stacked but spheres cannot, observe and feel that certain shapes have corners and others have not, some have more corners than others.*	Show interest in putting objects into containers: *put shapes into large open containers, help to fit large or awkward shapes into containers/bags, engage in shape-posting activities with decreasing help.* Manipulate a variety of 3D and 2-D materials to increase awareness of regular and irregular shapes: *bricks, balls, play-dough, clay.* Observe and feel that certain shapes have corners and others have not, some have more corners than others, etc. Manipulate objects: *rolling and squeezing 'soft' dough, banging and stacking bricks that are 'hard', discovering that blocks can be stacked but balls cannot.* Discover the properties of shape by throwing, rolling and bouncing objects: *balls, rings, hoops.*	Explore the shape of objects: *independently manipulate and play with objects of different shapes, move them around confined and unconfined spaces such as in a box/on a floor, try to fit all the bricks/toys into a medium-sized box and close the lid.* Take shapes apart, fit them together again, and stack different objects. Manipulate clay into different shapes during a pottery lesson. Using construction kits, make a model, take it apart and make a different model: *explore which objects make strong/weak structures.*

The student should be enabled to
attend to and participate in the matching of 3D shapes.

Phase 1	Phase 2	Phase 3
Shape Manipulate 3D shapes: *put shapes into a shape sorter.* Hit a mathematical shape on the concept keyboard to make it appear on the screen.	**Shape** Participate in posting/matching games. Identify objects by touch that are hidden in a 'feely bag'. Guess the name of the shape of a 3D object hidden under a cloth. Sort toys into boxes after play.	**Shape** Discover through an adult creating problem situations that, for example, some things will not build or stack: *a solid ring on a post, a large milk bottle in a small milk crate.* Packs items according to shape: *tins, boxes.*

The student should be enabled to
attend to and participate in the matching of 2D shapes.

Phase 1	Phase 2	Phase 3
Shape Observe and attend to the matching and sorting of 2D shapes in the immediate environment: *participate in matching games, with physical and verbal prompting complete an inset puzzle.*	**Shape** Respond to requests: *'Find me a shape like this.', participate in 'I- spy' games.* Independently place shapes in an insert board (circle, square, triangle). Choose a printing block to produce a particular shape to continue a sequence of shapes.	**Shape** Match coins: *search in a moneybox for coins to insert in vending machines (car park/stamp machines).* Fit lids to saucepans while tidying up in the kitchen. Use computer software to match shapes.

The student should be enabled to
attend to and respond to the language related to the movement, positioning and shape of objects in familiar situations.

Phase 1	Phase 2	Phase 3
Shape Participate with decreasing help and begin to imitate an adult/ another student in changing the positions of objects. Respond to requests: *'Put the bricks in the box'.* Respond to a request to make a big circle for game: '*The Farmer Wants a Wife'*.	**Shape** Demonstrate understanding of simple shape vocabulary: *round, flat, top, bottom, inside.* Use gestural, pictorial or verbal language related to the movement, positioning and shape of objects.	**Shape** Demonstrate understanding of more complex shape vocabulary: *'When you have all the pastry out of the bowl, you roll it out into a big circle'.* Use movement language to describe the properties of shapes: *'Roll all the balls over here'.*

The student should be enabled to
combine 3D shapes to make other shapes.

Phase 1	Phase 2	Phase 3
Shape Use blocks to make shapes: *make a 'bridge', 'house', 'garage'.* With assistance, use basic shapes, such as circles, squares, triangles, to form faces and body shapes.	**Shape** Create 3D shapes from a variety of materials: *construct figures/ vehicles from Lego/Stickle bricks.*	**Shape** Take part in group activity: *work collaboratively to construct a 'totem pole' or 'robot' from cardboard boxes.* Make a mosaic with other students using small mosaic tiles.

The student should be enabled to
sort a variety of 3D shapes—regular and irregular.

Phase 1	Phase 2	Phase 3
Shape Respond to requests to 'find all the shapes like this' when shown: *a cube or a cone.* Match 3D shapes in one-to-one correspondence on request: *posting activities, insert boards, putting shapes on outlines, matching shapes to shape cards.*	**Shape** Participate in directed sorting activities with different criteria: *things that roll/do not roll, bounce/ do not bounce.* Match and sort shapes in play situations: *play shape-matching games with another student.*	**Shape** Sort objects in ascending and descending order of size. Match and sort shapes in functional situations: *put everything that is likely to roll away safely into a box or bag.*

The student should be enabled to
sort a variety of 2D shapes, both regular and irregular.

Phase 1	Phase 2	Phase 3
Shape Respond to requests to 'find all the shapes like this' when shown a circle.	**Shape** Indicate familiar 2D shapes on request. Sort biscuits by size and shape after baking.	**Shape** Participate in directed sorting activities with different criteria: *shapes that have corners, shapes that have four corners.*

The student should be enabled to
create 2D shapes from a variety of materials.

Phase 1	Phase 2	Phase 3
Shape Participate in the construction of 2D shapes at a tactile-visual level: *with verbal and physical prompting from an adult make circles from play-dough.*	**Shape** Make shapes with art straws, on pegboards, using blocks, etc. Make a range of shapes with plasticine/dough/clay and combine them to produce new shapes.	**Shape** Using scissors cut around shapes: *hearts for Valentine's Day cards.* Imitate adult drawing of a variety of shapes. Use various mediums/tools to produce a variety of 2D shapes: *pastry cutters, rolling pins.*

The student should be enabled to
combine 2D shapes to make pictures.

Phase 1	Phase 2	Phase 3
Shape Complete simple two-piece, four-piece or six-piece jigsaws. Stamp shapes in sand and describe them.	**Shape** Make pictures using gummed paper shapes stuck on in random order.	**Shape** Make pictures using gummed shapes in a more organised fashion: *put out a square and a triangle to make a house.*

The student should be enabled to
sort, describe, compare, and name 2D shapes: square, circle, triangle, rectangle.

Phase 1	Phase 2	Phase 3
Shape Sort according to size and shape.	**Shape** Sort according to the number of sides and corners and use mathematical vocabulary such as 'straight', 'triangle' to describe 2D shapes.	**Shape** Identify 2D shapes in the environment: *road signs, shop signs, pictures, posters.*

The student should be enabled to
construct 3D shapes from 2D shapes.

Phase 1	Phase 2	Phase 3
Shape Make 2D prints with the surfaces of 3D shapes and discuss the results.	**Shape** Make Hallowe'en witch hats, i.e. cones out of circles.	**Shape** Construct home-made boxes to hold presents for Mother's Day. Make a puppet theatre from cardboard boxes.

The student should be enabled to
trace and copy 2D shapes.

Phase 1	Phase 2	Phase 3
Shape	**Shape**	**Shape**
With guidance, trace around the outline of a variety of shapes. Join dots to outline a shape with the finger, crayon or marker.	Draw round objects, trace shapes, use templates, walk/wheel around objects. Join dots to draw the outline of a square.	Trace over/around the outline of a variety of shapes using pencil, crayon and marker. Using templates and stencils, create and extend patterns.

The student should be enabled to
identify halves of 2D shapes.

Phase 1	Phase 2	Phase 3
Shape	**Shape**	**Shape**
Participate in fold-over painting activities.	Guess the 2D shape hidden under a cloth: *an adult uncovers the shape gradually until just half of the shape is exposed.*	Use computer games and puzzles that involve matching and identifying shape halves. Fold paper shapes in half and cut to make new shapes.

The student should be enabled to
make constructions with 2D and 3D shapes using scrap and commercial materials.

Phase 1	Phase 2	Phase 3
Shape	**Shape**	**Shape**
Visual Arts: *construction activities—collage*	Visual arts: *construction activities—making simple models.*	Visual art: *construction—pottery*

Measures

The student should be enabled to
develop an awareness of the concept of length through exploration, discussion and the use of appropriate vocabulary.

Phase 1	Phase 2	Phase 3
Length Attend to the length of objects by observing and feeling during play activities: *an adult provides sets of materials in two sizes only to enable gross distinctions to be made.*	**Length** Develop an awareness of length through listening to stories: *'Jack and the Beanstalk'.* Copy sets of long/short materials in a variety of floor/table top activities and later make such sets independently.	**Length** Show understanding of the sizes and lengths of planks in the woodwork class: *find a long/short, wide/narrow piece of wood.*

The student should be enabled to
identify which of two objects is long/short.

Phase 1	Phase 2	Phase 3
Length Attend to the language associated with describing, comparing and ordering objects according to length: *during play with plasticine, play-dough or clay make a 'long' worm or snake.*	**Length** Respond to instructions involving length: *'Show me the long ruler.' 'Give me the long pencil.'*	**Length** Investigate and make comparisons about objects in relation to length: *find out that certain items are too long to fit into a container, select the appropriate size of box for a gift, put on long jacket when requested by an adult.*

The student should be enabled to
compare and order objects according to length or height.

Phase 1	Phase 2	Phase 3
Length Investigate and make comparisons about objects in relation to length: *discover that certain items are too long to fit into a container.* *(Provide materials in three or four sizes to enable finer distinctions to be made. Materials that can be manipulated and changed may also be used, for example play-dough.)* *Choose longer/shorter when asked.*	**Length** Order objects according to length or height: *order objects in stories such as 'The Three Bears'.* Compare the height of himself/herself with peers/classroom objects: *decide who is the tallest in the class.* Communicate about comparisons in height using 'bigger than', 'smaller than'. Take part in competition to make the longest paper chain decoration at Christmas.	**Length** Compare trouser lengths in clothing shops: *choose a longer or shorter pair when asked.* Select the longest cucumber while shopping for fruit and vegetables. Set up the hall for a meeting: *estimate how many chairs will fit along the wall.*

The student should be enabled to
estimate and/or measure length in units.

Phase 1	Phase 2	Phase 3
Length Use cut-out hand shapes to measure by hand spans, foot lengths, etc.	**Length** Estimate and check by measuring, using non-standard units: *how many straws will fit along this table?* Estimate in non-standard units how far he/she can throw a bean bag: *throw and measure the result by pacing or striding.*	**Length** Discuss which toy car rolled the further and whether it was the biggest one. Predict whose feet will be bigger/smaller than his/her own. Appreciate the need for accuracy and the meaning of graduations on measuring instruments: *use measuring tapes/rulers in woodwork and other functional situations.*

The student should be enabled to
develop an awareness of the concept of weight through exploration, discussion, and the use of appropriate vocabulary.

Phase 1	Phase 2	Phase 3
Weight Develop an awareness of the weight of objects by feeling and lifting during play activities: *an adult provides a wide range of objects of varying weights to enable gross distinctions to be made.*	**Weight** Investigate and make comparisons about objects of differing weight: *discover that some things are too heavy to lift, look around for help to lift PE equipment.*	**Weight** Respond to instructions involving weight in woodwork class/ horticulture: *'Give me the heavy bag.' 'Don't lift that pot, it's too heavy.'*

The student should be enabled to
identify which of two objects is heavy/light.

Phase 1	Phase 2	Phase 3
Weight Respond to questions: *'Which is the heavy bag?'*, *'Show me the bag that is light.'*	**Weight** Make sets of light objects and display them in class: *'These are easy to lift'*. Identify pairs of objects that are heavy and light.	**Weight** Compare, by lifting, the weights of different food items and packages. Use a balance to compare objects: *predict which of two objects will be the heavier.*

The student should be enabled to
compare and order objects according to weight.

Phase 1	Phase 2	Phase 3
Weight Handle a range of equipment to develop understanding of the concept of 'heaviest/lightest', listening to teacher using the phrases such as 'this one is heaviest/lightest'.	**Weight** Choose heavier and lighter objects when asked: *check using a balance, discuss.*	**Weight** Order three objects according to weight by handling: *check using a balance, discuss.*

The student should be enabled to
estimate and measure weight in non-standard and standard units of measurement.

Phase 1	Phase 2	Phase 3
Weight Explore simple problems with the teacher: *how many children will balance the teacher on the seesaw? Estimate and then check.* Explore weighing objects using a bucket balance.	**Weight** Begin to show understanding of the need for accuracy in measuring: *weigh ingredients, during cookery class, using measuring spoons/cups/jugs/ scales.*	**Weight** Appreciate the need for accuracy and the graduation on measuring instruments: *weigh goods in supermarket before purchasing, use a weighing scale to measure class weights.*

The student should be enabled to
develop an understanding of the concept of capacity through exploration, discussion, and use of appropriate vocabulary.

Phase 1	Phase 2	Phase 3
Capacity Develop an understanding of capacity through sand and water play: *have practical experience through play/leisure activities of filling/emptying containers, using smaller containers to fill larger containers. (Students are facilitated to talk about their activities using appropriate vocabulary. Sets of containers provided should be of varying sizes to enable gross distinctions to be made.)*	**Capacity** Find by pouring which of two containers holds more or less. Mix water and orange concentrate together: '*Do we need more?' 'How much more?'.* Order a set of objects according to capacity, showing awareness of the vocabulary 'holds more/less'.	**Capacity** Develop an understanding of capacity in functional situations: *fill pots with compost for potting in horticulture.* Fill the sink with hot and cold water for washing dishes. Appreciate that containers of different shapes can hold the same amount and objects of the same size can be different weights in functional/play activities.

The student should be enabled to
identify which of two objects is full/empty.

Phase 1	Phase 2	Phase 3
Capacity Respond to questioning from an adult by gesturing/pointing/ verbalising.	**Capacity** Identify full or empty containers by gesturing/verbalising. *An adult emphasises that 'full' means full to the top.*	**Capacity** Show understanding of the terms full/empty by responding 'I've finished that pot, it's full', during gardening activity.

The student should be enabled to
compare and order objects according to capacity.

Phase 1	Phase 2	Phase 3
Capacity Explore by filling and emptying a range of containers to develop understanding of the concept of a container holding 'more/most', listening to the teacher/an adult using phrases such as *'this one holds the most'*.	**Capacity** Compare two or three containers: *which holds more/which holds most?* Use the same unit to fill two different containers: *work in pairs and record results using one counter for each cup/jug poured.*	**Capacity** Compare drinks containers: *large, medium, regular, glass, pint.* Observe all the different shapes of containers that hold one litre.

The student should be enabled to
estimate and measure capacity in non-standard units.

Phase 1	Phase 2	Phase 3
Capacity Estimate and check by measuring, using arbitrary measures: *how many spoons of peas will fill the cup?*.	**Capacity** Estimate how much fruit punch to make for a Hallowe'en party.	**Capacity** Estimate with a peer how many pots can be filled from a bag of compost during a recycling project activities.

The student should be enabled to
select and use appropriate non-standard units to measure capacity.

Phase 1	Phase 2	Phase 3
Capacity	**Capacity**	**Capacity** Use measuring cups and spoons in cooking and other functional situations: *measure detergent before putting on a wash.* Appreciate the need for accuracy and the meaning of graduations on measuring instruments: *measure a pint/litre of milk during a cookery class.*

The student should be enabled to:
develop an awareness of specific times in school.

Phase 1	Phase 2	Phase 3
Time Respond appropriately to language associated with certain times of the day: *move to the dining hall when 'lunchtime' is indicated, respond appropriately at time to go home, understand that when toys are out he/she can play.*	**Time** Attend to the concept of time by experiencing events associated with certain times and listening to the language associated with that time: *today, yesterday, tomorrow, morning, evening, lunchtime, bedtime, now, later, next.* Indicate awareness of the days of the week: *show excitement when a favourite day is mentioned, indicate awareness of days when given gestural/pictorial/verbal clues.* Anticipate routine activities affecting himself/herself, family and friends. Anticipate non-routine activities for which the students have prepared orally/visually. Respond to questions about when routine and non-routine events happen.	**Time** Have an understanding of time in relation to himself/herself, family and friends: *know what time his/her bus comes, know what time a friend will arrive into school, know what day he/she goes swimming, know when his/her birthday is due.* Ask questions about 'when' routine and non-routine events will happen: *daily, weekly.* Sequence routine and non-routine events according to time: *daily, weekly.*

The student should be enabled to
develop an awareness of specific times in school.

Phase 1	Phase 2	Phase 3
Time Understand that when the class goes to the hall it is break time.	**Time** Know that when chairs are put out it is circle time.	**Time** Recognise that sport always takes place in the afternoon.

The student should be enabled to
show awareness of day and night.

Phase 1	Phase 2	Phase 3
Time Draw the curtain in Wendy house and pretend to 'sleep'.	**Time** Know that we sleep during the night when it is dark and go to school during the day when it is bright.	**Time** Consolidate understanding of day and night and the sequence of routine daily events.

The student should be enabled to
recognise the daily pattern of familiar events.

Phase 1	Phase 2	Phase 3
Time Associate dinnertime with the sound or appearance of a food trolley.	**Time** Use a pictorial timetable to plan the day's events.	**Time** Use the class weekly timetable to plan ahead and anticipate events. Communicate to friends about television programmes and events in local clubs.

The student should be enabled to
sequence pictures of daily events.

Phase 1	Phase 2	Phase 3
Time Sequence two or three pictures, illustrating preparations for dinner with assistance and questioning from an adult: *putting out cutlery, plates, milk cartons.*	**Time** Make scrapbooks of 'My day': *put the photographs of daily activities in the correct sequence.*	**Time** Sequence pictures illustrating the steps involved in making a cake during a cookery lesson.

The student should be enabled to
recognise present time as today.

Phase 1	Phase 2	Phase 3
Time	**Time**	**Time**
'I'm going swimming today.'	*'It's my birthday today.'*	*'I'm getting my hair cut today.'*

The student should be enabled to
identify things that happened in the recent past.

Phase 1	Phase 2	Phase 3
Time	**Time**	**Time**
Recall episodes from the recent past using prompts: *the journey to school, indicate new clothes/a cut on his/her knee, refer to events that happened 'yesterday'.*	Communicate about events that happened last week: *a visit to the doctor.* Recall events in the correct order.	Communicate about events that happened during the past year: *holidays, weddings, football matches.* Use some chronological language relating to the recent past: *last week/last year/last summer.*

The student should be enabled to
understand that events will happen in the future.

Phase 1	Phase 2	Phase 3
Time	**Time**	**Time**
Look out of the window and ask an adult about going to the playground in the afternoon. Know that swimming is on Tuesdays.	Listen to a story and predict what will happen next. Predict what will happen next week. Communicate about class outings, Santa, holidays, First Communion.	Predict certain events: *it will get dark, if you go swimming you will get wet.* Communicate about future football leagues and fixtures with other schools.

The student should be enabled to
use terms related to times of the day, verbally and non-verbally.

Phase 1	Phase 2	Phase 3
Time	**Time**	**Time**
Use or show understanding of the terms break time, dinner-time, playtime, home time.	Use and show understanding of the terms night, day, bedtime, morning.	Use and show understanding of the following terms today, yesterday, tomorrow, morning, evening, afternoon, soon, not yet.

The student should be enabled to
use the language of time to discuss events.

Phase 1	Phase 2	Phase 3
Time	**Time**	**Time**
Initiate communication about recent events using key vocabulary: *today/yesterday.*	Record the weather for each day on a chart and talk about it: *'today', 'yesterday', 'tomorrow'.* Sequence events in familiar stories.	Discuss significant events, for example holidays, using appropriate vocabulary: *yesterday, tomorrow, today, soon, not yet, seasons.* Extend his/her vocabulary of time further: *last year, next week, a long time ago, when I was small.*

The student should be enabled to
name/sign the days of the week.

Phase 1	Phase 2	Phase 3
Time	**Time**	**Time**
Attend to the language of the days of the week when used in meaningful contexts: *we go swimming on Friday, we get our holidays on Wednesday.* Indicate awareness of the days of the week: *show excitement when a favourite day is mentioned.*	Respond with verbal and physical prompting to the question 'What day is it?': *change the daily calendar.* Read the day from the blackboard or a flashcard.	Write the name of the day to begin a diary entry. Use the names of weekdays in context.

The student should be enabled to
read the time from clocks in one-hour intervals and in half-hour intervals.

Phase 1	Phase 2	Phase 3
Time	**Time**	**Time**
Watch the hands move on the clock on the classroom wall. Turn the hands of a home-made clock and 'read' the time during play in the home corner.	Read the time from the clock in one-hour intervals: *'The big hand says 12 so it's dinner-time'.* Become more familiar with the clock face and hands: *record activities that begin on the half hour.*	Use time functionally: *read the clock for familiar times, look at a timetable of daily events at school, know the opening/closing time of the local shop.* Refer to bus timetables and times of television programmes in a newspaper.

The student should be enabled to
read the day, date and month using calendar.

Phase 1	Phase 2	Phase 3
Time	**Time**	**Time**
Identify birthdays from the class calendar: *indicate photographs of students who have a birthday in January.*	Identify special events: *trips, school outings that are signalled on the class calendar by picture/ symbol/photograph.*	Identify months and seasons.

The student should be enabled to
tell the time using the analogue clock/digital clock.

Phase 1	Phase 2	Phase 3
Time	**Time**	**Time**
Watch the numerals change on a digital watch.	Use time functionally: *read the clock for familiar times, look at the timetable of daily events at school.* Find different types of clocks in the home/class—*video timer, cooker, wall, computer screen, wrist watch.*	Know the opening/closing time of the shop, post office. Identify the times of favourite television programmes. Set the time on the microwave oven.

The student should be enabled to
understand that money is necessary to pay for goods.

Phase 1	Phase 2	Phase 3
Money Look at and hold a variety of coins: *look at a variety of coins, look at their colours, look at and feel the front/back/edges. (Adults should have regard to safety when using small coins.)* Attend to and participate in the exchange of money for goods in play contexts: *give pretend money in exchange for goods during structured play activity.*	**Money** Show interest in a collection of coins: *compare the size and weight of coins.* Respond to the question, 'Show me how much money you have', by taking money out of a bag/ purse/pocket. Give money in exchange for goods in functional and play contexts. Understand that we have to pay for what we buy: *look for/ask for money to use in functional or play contexts.*	**Money** Become familiar with the use of notes (if appropriate): *examine and compare notes, develop the ability to handle notes carefully.* Use money in exchange for goods in functional and play contexts: *show curiosity about money, show a desire to have money in his/her pocket or bag, understand that coins and notes (if using notes) can be exchanged for things in real or play shop situations, show ability to differentiate between notes and coins.* Look for and receive change in functional and play contexts.

The student should be enabled to
sort and match coins.

Phase 1	Phase 2	Phase 3
Money Sort and match silver/gold/bronze coins from a limited selection (using real coins).	**Money** Isolate familiar coin or paper notes from a selection of items. Match the appropriate number of coins to a coin card to buy a soft drink. Discover that some coins are worth more than others: *going to school canteen/shop and discovering that certain coins are needed to buy certain items.*	**Money** Sort and name the coins/notes most frequently used. Insert coins in a vending machine to buy stamps or a snack. Investigate the fact that some coins/notes are worth more than others: *going to shop and finding out that certain coins/notes are needed to buy certain items.*

The student should be enabled to
recognise coins and notes.

Phase 1	Phase 2	Phase 3
Money Name, verbally or non-verbally, coins up to 10 cent.	**Money** Name, verbally or non-verbally, coins up to 20 cent, 50 cent, one euro.	**Money** Choose from a selection of coins/ notes in order to buy certain items: *show recognition of coins/notes up to 5 euro, 10 euro.*

The student should be enabled to
use correct vocabulary.

Phase 1	Phase 2	Phase 3
Money Use appropriate vocabulary while playing 'shop': *'I want …', 'I want to buy …'.*	**Money** Use the correct terminology: *how much, euro/cent/coins.*	**Money** Use appropriate vocabulary: *cost, price, cheap, expensive, change, too much, too little, bill, receipt.*

The student should be enabled to
calculate simple bills.

Phase 1	Phase 2	Phase 3
Money Calculate simple bills involving addition and subtraction to 10 cent: *shopping activities in the home corner of the class.*	**Money** Calculate simple bills involving addition and subtraction to 20 cent/50 cent: *shopping activities in the school shop/canteen.*	**Money** Calculate simple bills involving addition and subtraction to 1, 5, 10 euro: *shopping activities in the local shop, on outings to town.*

The student should be enabled to
make deposits and withdrawals from a savings account, with or without aid.

Phase 1	Phase 2	Phase 3
Money Be introduced to the idea of saving by buying saving stamps in the post office.	**Money** Open a savings deposit book in his/her local post office with adult assistance, and be encouraged to save on a regular basis. Plan how he/she will spend his/her money.	**Money** Develop an awareness that some products are very expensive and require a lot of savings while others are cheap.

Data

The student should be enabled to
sort by putting objects that are the same together.

Phase 1	Phase 2	Phase 3
Collecting and processing data Become aware that objects can be sorted according to one criterion: *observe that all the red bricks are put into one container, all the small balls are in one basket, all the cups are put on a shelf together.* With gradually decreasing guidance, sort objects according to one criterion: *put all the toy bricks into their box after play, help to sort cutlery after lunch.*	**Collecting and processing data** Sort equipment for physical education into balls, beanbags and hoops. Sort objects in everyday situations: *cutlery into knives, forks, spoons.*	**Collecting and processing data** Independently sort and classify objects in play and functional situations: *sort cutlery into cutlery trays, sort toys into appropriate containers after play, put all the fruit in the fruit basket after shopping.*

The student should be enabled to
make a set of objects with a given property.

Phase 1	Phase 2	Phase 3
Collecting and processing data Put all the teddies together. Put all the farm animals together. Put all the red balls together.	**Collecting and processing data** Make a set of objects that sink or float.	**Collecting and processing data** Sort food into vegetables, fruit, breakfast foods, etc.

The student should be enabled to
sort and classify sets of objects by one criterion.

Phase 1	Phase 2	Phase 3
Collecting and processing data	**Collecting and processing data**	**Collecting and processing data**
Sort blocks into different colour piles before building.	Arrange and sort gummed paper by colour during art class. Sort objects into those that are attracted to magnets and those that are not.	Sort laundry by colour before loading the washing machine.

The student should be enabled to
compare two objects indicating similarities and differences.

Phase 1	Phase 2	Phase 3
Collecting and processing data	**Collecting and processing data**	**Collecting and processing data**
Look at two balls and indicate similarities and differences verbally or by signing: *they are blue, one is big, one is small.*	Look at two cars and indicate similarities and differences verbally or by signing: *they both have wheels, they both roll along the floor, one is red, the other is yellow.*	Look at sports gear in a shop and compare football jerseys: *they both have short sleeves, they're both red, one is a Leeds jersey and the other is a Manchester United jersey.*

The student should be enabled to:
sort and classify, with aid, sets of objects by two criteria

Phase 1	Phase 2	Phase 3
Collecting and processing data	**Collecting and processing data**	**Collecting and processing data**
Thread all big/green beads on a string.	Help to prepare art materials before a lesson: *sort yellow/blue circles.*	Put all the small green pots together in the school potting shed.

The student should be enabled to
sort, without aid, a collection of objects in at least two different ways and indicate reasons for sorting.

Phase 1	Phase 2	Phase 3
Collecting and processing data Sort doll's clothes into dresses, jumpers, shoes.	**Collecting and processing data** Remove all the toy animals from the play corner and sort them into zoo and farm animals.	**Collecting and processing data** Sort biscuits by shape and size after baking. Stack paper cups according to appropriate sizes before putting them back into the press.

The student should be enabled to
choose criteria for sorting sets of objects and apply them consistently.

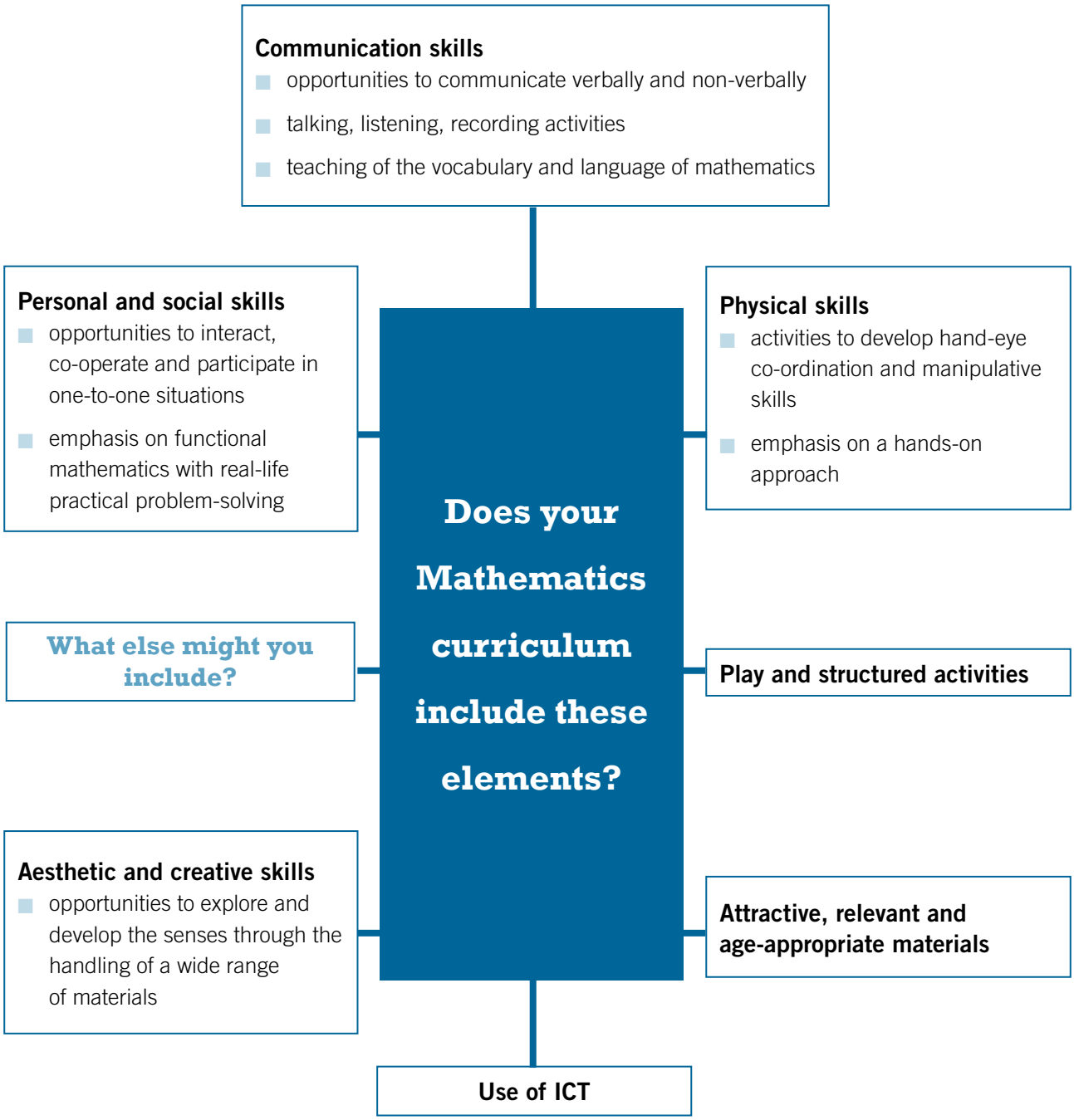
Phase 1	Phase 2	Phase 3
Collecting and processing data Sorts objects in classroom situations: *tidy away all small cars into one box after play, put his/her own cup with all the other cups, use sorting circles to sort shapes/ objects.*	**Collecting and processing data** Put pencils, paper, crayons, scissors away in correct locations after a work session.	**Collecting and processing data** Remove cutlery from the dishwasher and place it in the appropriate sections of the cutlery tray.

The student should be enabled to
record data.

Phase 1	Phase 2	Phase 3
Representing and interpreting data Participate in recording data using real people and objects: *observe the grouping of students into boys/girls, ambulant/non-ambulant students, all adults wearing funny hats.* Observe and participate in recording familiar data using objects of reference or pictures: *observe the placing of students' swimming suits on This Week's Swimming Chart, observe the recording of 'who is in school today?'.* With assistance, record data using pictures of objects: *use pictures of the sun, rain clouds, etc. to chart weather daily/weekly, place his/her own photograph on a class height chart, place photographs of all students on a class attendance chart to show who is present each day.*	**Representing and interpreting data** Respond to instructions for recording data using real people: *respond to the teacher's direction to make sets of boys/girls/all students wearing trainers, help to make a group of all the students who have yoghurt for break, help to group all students who go swimming every Friday.* With gradually decreasing guidance, represent and record familiar data using objects of reference, pictures or symbols: *record his/her journey to school, use pictures to record what was done in school today.* Record data with representative objects, using figurines/dolls to represent the family: *'That's Mammy, Daddy, Derek, and me'.*	**Representing and interpreting data** Seek to represent data with objects of reference, pictures or symbols: *use dolls and teddies to represent his/her own family, have the job of placing photographs of all students in school today on the school attendance chart, represent the day's/week's timetable using objects of reference/pictures/symbols/words, represent the weather today/this week using pictures/symbols.*

The student should be enabled to
represent and interpret a set of data using real objects, models and pictures.

Phase 1	Phase 2	Phase 3
Representing and interpreting data Develop an awareness that representations of data can be interpreted: *become aware that the timetable tells what has happened or what is about to happen, become aware that the attendance chart can reveal who was in school/absent yesterday.* Choose between two types of pet: *the student chooses a picture or model of a pet, pictures or models are arranged in columns or rows in one-to-one correspondence with students' photographs.*	**Representing and interpreting data** Tell how many students were in school/how many rainy days there were last week by looking at the chart. Record further data with real objects or drawings and seek to interpret and communicate about the results, verbally or using sign: *favourite games/food/meals (using pictures from magazines).* Respond to questions about recorded data: *make an effort to answer questions about charts that are made.*	**Representing and interpreting data** Record and interpret data in two or three rows or columns using real objects, models and pictures: *favourite bands/subjects/television programmes.* Seek to interpret and communicate about recorded data: *use the daily or weekly timetable functionally, tell how many students were in school/ tell how many sunny days there were last week by looking at chart.* Discuss and compare results verbally/non-verbally: *identify the most/least popular band/subject/ programme.*


Communication skills
opportunities to communicate verbally and non-verbally
talking, listening, recording activities
teaching of the vocabulary and language of mathematics
Personal and social skills
opportunities to interact, co-operate and participate in one-to-one situations
emphasis on functional mathematics with real-life practical problem-solving
Physical skills
activities to develop hand-eye co-ordination and manipulative skills
emphasis on a hands-on approach
Does your Mathematics curriculum include these elements?
What else might you include?
Play and structured activities
Aesthetic and creative skills
opportunities to explore and develop the senses through the handling of a wide range of materials
Attractive, relevant and age-appropriate materials
Use of ICT

Exemplars

The *Primary School Curriculum: Mathematics, Teacher Guidelines* presents many useful exemplars that can be successfully adapted to meet the needs of students with moderate general learning disabilities. The following pages outline some additional ideas for developing themes and topics in mathematics for these students.

The exemplars of work included are outlines from which teachers can develop a more comprehensive programme. In some instances only minor additions may be necessary to make them suitable for individual classroom environments. Alternatively, the needs of a particular school environment may dictate considerable adaptation before implementation in individual classes. Factors such as the developmental stage and previous experiences of students, the availability of resources (human and material), the nature of the learner, and the local community will need to be considered. The *Guidelines for Teachers of Students with Severe and Profound General Learning Disabilities* and the *Guidelines for Teachers of Students with Mild General Learning Disabilities* also offer some useful exemplars that can be easily adapted to meet the needs of this student cohort.

Exemplar 1: **Mathematics**

Strand: Early mathematical activities	Classifying objects according to colour: Learning about *'blue'*

Learning outcomes

- The student will observe, feel and compare objects that are the same in one attribute—blue in colour.
- The student will notice and learn to appreciate blue in his/her environment.

Resources

- Items that are blue in colour: *blue box, blue scarf, blue glasses (if possible), blue hat, blue balls, blue bricks, blue cards, blue cellophane*

Integration

- **Visual arts:** blue explored through a variety of media, making a blue box
- **Communication and language:** the word *'blue'* emphasised throughout all activities

Preparation

- A blue box can be made in a visual arts lesson, covering a selected or constructed box in blue, using any materials suitable. The attention span of students should be considered when determining the number of students in the group.

Lesson

→ The students sit or stand at a round table, supported by staff where necessary.

→ The *'blue box'* is introduced to the group. Inside the blue box are activities and objects sharing the common attribute of being blue. The following items and ideas are possibilities for this activity:

- The teacher pulls out the blue scarf and plays peek-a-boo by draping it over each student's head, emphasising the word *'blue'*. If blue glasses are available, the teacher wears these so that the student sees them when he/she emerges from under the scarf. *'Where is James?'*, *'He's under the blue scarf!'*
- The students dress a willing adult, with help as required, in a blue scarf and blue hat. This can be extended to dressing another student, doll or teddy, or the student himself/herself in front of a mirror.
- The students can be encouraged to look through blue cellophane, framed with card, to see items and people around them, as well as their own reflections in a mirror.
- The students can be prompted to post blue balls/bricks/cards into the blue box.

Exemplar 1: **Mathematics**

Development and extension of idea

- Classroom staff might decide to wear a striking blue jumper on a particular day to see if it will evoke a reaction from students.
- This lesson format can be used to introduce other colours. In time, one item of a contrasting colour could be introduced into the box to enable students to discriminate between what is blue and what is not. The students can be helped to see that an item of a contrasting colour is different from all the rest and put it to one side.

Further ideas for integration

- **Music:** Songs about blue can be played or created.
- **Physical education:** Big blue shapes could be made and used in a PE class for stepping, sitting or lying on.

Exemplar 2: **Mathematics**

Strand: Data	**Project:** Creating a daily/weekly attendance record

Learning outcomes

The student will

- participate in recording familiar data using objects of reference or photographs
- engage in a one-to-one correspondence activity as each student's presence is recorded with an object of reference or photograph
- participate in counting the students present/absent each day
- become familiar with numerals 1-5.

Resources

- a laminated chart
- an object of reference or clear photograph of each student
- cards with names of the days of the week
- velcro
- an attractive box to hold objects of reference/ photographs.

Object of reference

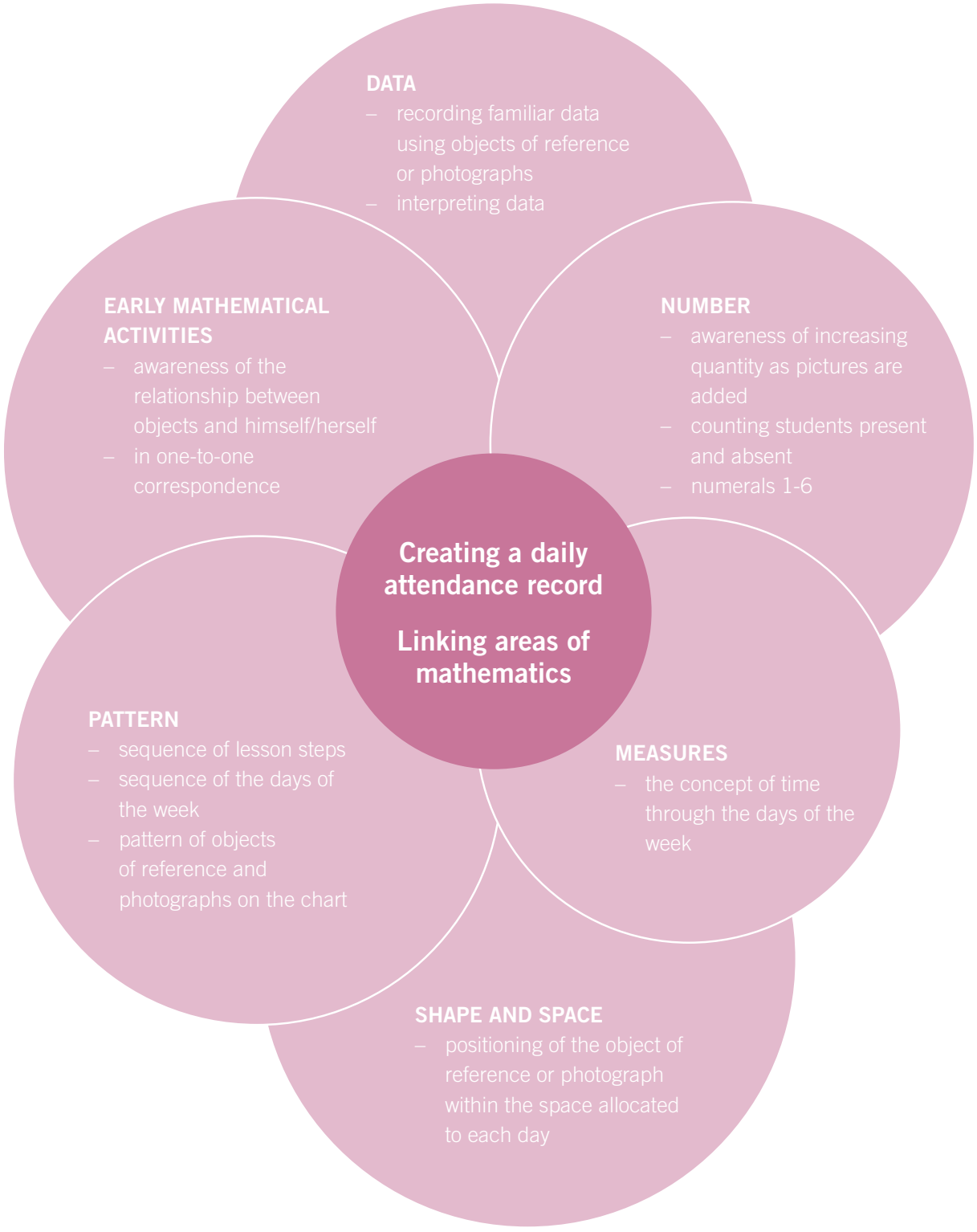
- In this case, the object of reference must be something that the student learns to associate with his/her name. The object of reference should be mounted on a hard, flat background. Since it is to be associated with his/her name, the first letter of the name could be used. For visual learners, the letter could be made with bright, shiny paper on a contrasting background. For students who are visually impaired, the letter could be made from a particular texture that the student will learn to recognise. If the material used makes a particular sound when rubbed, so much the better. For students who may move on to recognise their photographs, it is a good idea to place the object of reference under the photograph, even though the focus will initially be on the sight, feel or sound of the letter. This also helps adults to know whose object of reference it is.
- The chart is designed with as much involvement from the students as possible. It might contain information similar to that outlined below and should be made as attractive as possible on a visual and tactile level.

Daily attendance chart		
Day of the week	*Who is in school today?*	*How many students are here today?*

Exemplar 2: **Mathematics**

Linkage

- **Within mathematics**: The following diagram shows how strands of mathematics can be linked in a lesson such as this.



Exemplar 2: **Mathematics**

Integration

- Objectives in other curriculum areas can also be reinforced in a lesson like this, for example:
  - **Communication and language**: showing a response, awareness of the names of students in class, language of the days of the week, language of counting, awareness of representing himself/herself and other students with an object of reference or picture.
  - **Social, personal and health education**: self-identity, identity of others, awareness of being part of a group.

Lesson

1. Link with a morning greeting session when each student is named and greeted. Students sit in a circle where they can see each other. As the greetings are carried out, or at the end of the greetings, each student is identified by an object of reference or by his/her clear photograph. Students are given as much help as is needed to pick out their objects of reference or photographs from an attractive box.
2. If a student is missing, attention is drawn to this. His/her object of reference or photograph is shown but where is he/she? After some looking and simple discussion of where he/she is, the object of reference or photograph is put back into the box.
3. The teacher then draws attention to the daily chart and introduces it in minimal language such as, *'We are going to show who is in school today'*. The day of the week is named and placed on the chart.
4. *'How many students are here today?'* Students are counted. A rhyme might be used to illustrate this.
5. *'Is Mary in school today?'* Watch and wait for agreed response. Mary is helped to put her object of reference or photograph on the chart.
6. When all students are represented they are counted in reality and on the chart. Students are helped to relate the number of students present in reality to their representation on the chart.
7. Numerals are now taken out if this is appropriate to the students involved. According to each student's ability level, one might be able to name and count the numerals that have been placed in order, another might pick out the correct numeral for today's attendance, or some students might participate by looking at and feeling the appropriate numeral.
8. The chart is placed in a prominent place. It could be used functionally during the day to check that everyone is back in the classroom after an outdoor activity. A recap could be done at the end of the school day, and students could place their objects of reference/photographs back into the box just before they go home.

Exemplar 3: **Mathematics**

Strands: Number, Measure, Shape and space, Data

Thematic approach: Birthday

Learning outcomes

- Further consolidation of early mathematical concepts and language: o'clock, 2D shapes, circles, triangles, squares, numerals 1-5

Resources

- paper plates (large and small)
- paper cups
- coloured candles
- balloons
- patterned wrapping paper
- lemonade
- a one-hand analogue clock
- a calendar
- a large circle, a triangle, a square, a rectangle
- a height chart
- unifix cubes
- building blocks.

Language

- Full/empty, large/small, more/less, heavy/light, young/old, pour, tall, as tall as, short, shorter than, yesterday, now, dark, night, adults, usually, enough
- Language focus will depend on the ability and age range of the students.

Methodology

→ Use a direct teaching method, where appropriate, with the teddy bear's birthday as a starting point. What age is the teddy? Five? Six? What age will he be next year? Will he be older or younger next year? His birthday is today. What day is it today? How many people are coming to the party? Count the boys. How many boys? Count the girls. How many girls? How many candles should we put on the cake? Allow one student to count out the correct number of candles. What colours are the candles? Point to each candle. What colour is it? How many balloons should we tie to the Wendy House door? How many balloons are red? How many are not red?

Exemplar 3: **Mathematics**

Linkage/integration

- What shape is the birthday cake (perhaps made from a circular or square biscuit tin)? At what time does teddy usually go to bed? After teatime? Show the time on a clock.
- **Music:**
  - Sing *'Happy Birthday'*. Clap hands five times. Tap knees six times (and repeat).
- **Visual arts:**
  - Examine a pattern on wrapping paper. Make wrapping paper. Draw a picture of the birthday party.
  - Colour in a cake in the shape of a circle/square/rectangle/triangle.
  - Make birthday cards. Make *'I am 5/6/7'* badges.
  - Using Plasticine, make two sausages for each plate.
- **Language:**
  - See the vocabulary above.
- **SPHE:**
  - The importance of taking care with matches/candles
  - Feelings: happiness *(We are happy when we get nice birthday presents.)*
  - The students are older this year than last year. What can he/she do now that they could not do last year? Skip? Ride a bike? Sing a new song?

Development

- Students can set the table for the party. How many cups are needed? How many plates?
- Reinforce the concept of *'five'*. Students build a tower of blocks with Unfix cubes to represent ages 5/6/7. Is the 7 tower more than the 5 tower? (Yes, a little more) Is the 5 tower less than the 7 tower? (Yes, a little less)

Differentiation

- Use clear, precise instructions with activities. There may be a need to repeat instructions several times. If the students are older make the *'party'* more age-appropriate. For less able students use closed questions. (Is this glass full? Is this balloon red?) Spread the content over several lessons. Broaden the content to include brown, purple, silver, and gold for those students who know the primary colours. Narrow the content to one colour for less able students.

Exemplar 3: **Mathematics**

Assessment

- Can the student distinguish between circle, square, rectangle, triangle?
- Can the student colour in shapes with reasonable accuracy?
- Can the student identify the numeral 5 (6,7)?
- Can the student build a tower of 5 (6,7)?
- Can the student associate the symbol 5 (6,7) with the number group/tower?
- Has the student conservation of number to 5 (6,7)?
- Does the student reverse numerals when writing?

Exemplar 4: **Mathematics**

Strand: A thematic approach to mathematics	Preparing and cooking a meal for visitors or parents

Learning outcomes

- Themes and topics provide meaningful contexts for teaching mathematics. Students can learn to work together on joint projects, with each student engaging in tasks suited to his/her own level of ability.

Methodology

Planning the meal

→ Students discuss and plan what meal to cook. Learning experiences may include:

- identifying ingredients Which are in store? Which will need to be bought?
- making a list (with assistance if necessary) indicating the quantity of each item required, and writing it or printing it out on computer
- allocating different tasks to each student
- estimating final costs
- learning how to determine freshness in fruit, vegetables, bread, and meat
- discussing healthy and unhealthy diets
- exploring how fruit and vegetables are weighed in shops using a scales or by visiting a local supermarket.

Shopping

→ Learning experiences may include:

- walking to the local supermarket or using public transport
- identifying the correct bus number
- identifying the required shop and exploring the layout of the shop
- learning to go around the shop in a logical way, checking the list with items in the basket, comparing prices and bringing the baskets to the check-out
- using appropriate social skills and behaviour while shopping, for example waiting in a queue, asking for help, being polite
- paying for groceries using appropriate amounts of money and putting receipts and change away carefully
- unpacking the goods and storing groceries in appropriate places in the kitchen.

Preparing the meal

→ Students collect all the ingredients together and a plan of work involving all the students is prepared. Tasks can be organised at an appropriate level for each student. Tasks can include

- setting the table and writing out place names and menus for each table
- preparing ingredients for the main course while another group takes charge of dessert.

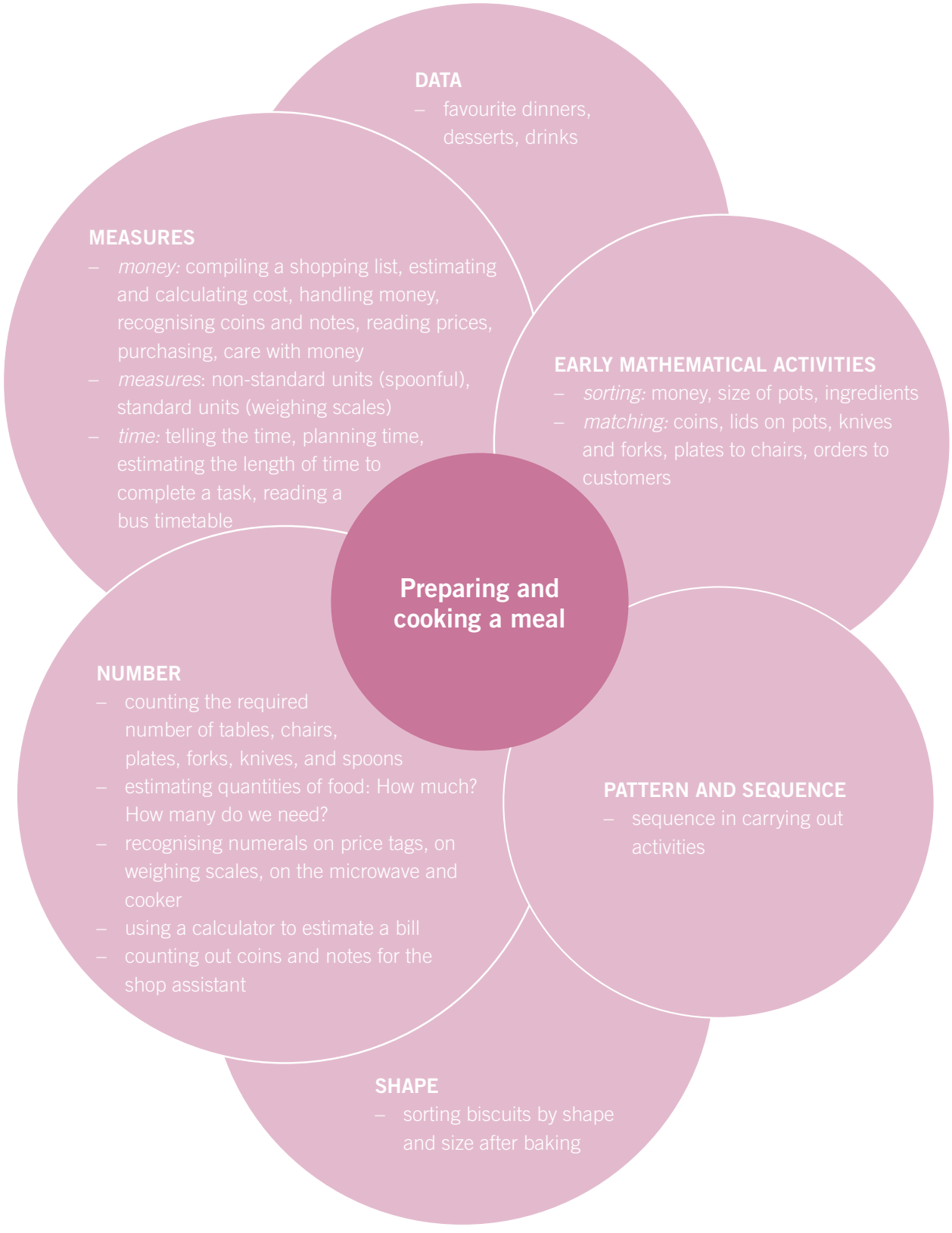
→ The importance of safety in both food preparation and cooking is emphasised. The students work independently and co-operatively following verbal instructions from an adult or using lists that illustrate the sequence of an activity (in written form for more able students or in pictorial form for others).

→ Once the meal is cooked and the visitors arrive, students are involved in the serving of the meal and waiting on tables. Once again, the importance of interacting appropriately will be emphasised. The final activity will be to wash up afterwards and put dishes and equipment away safely and appropriately.

Exemplar 4: **Mathematics**

Linkage

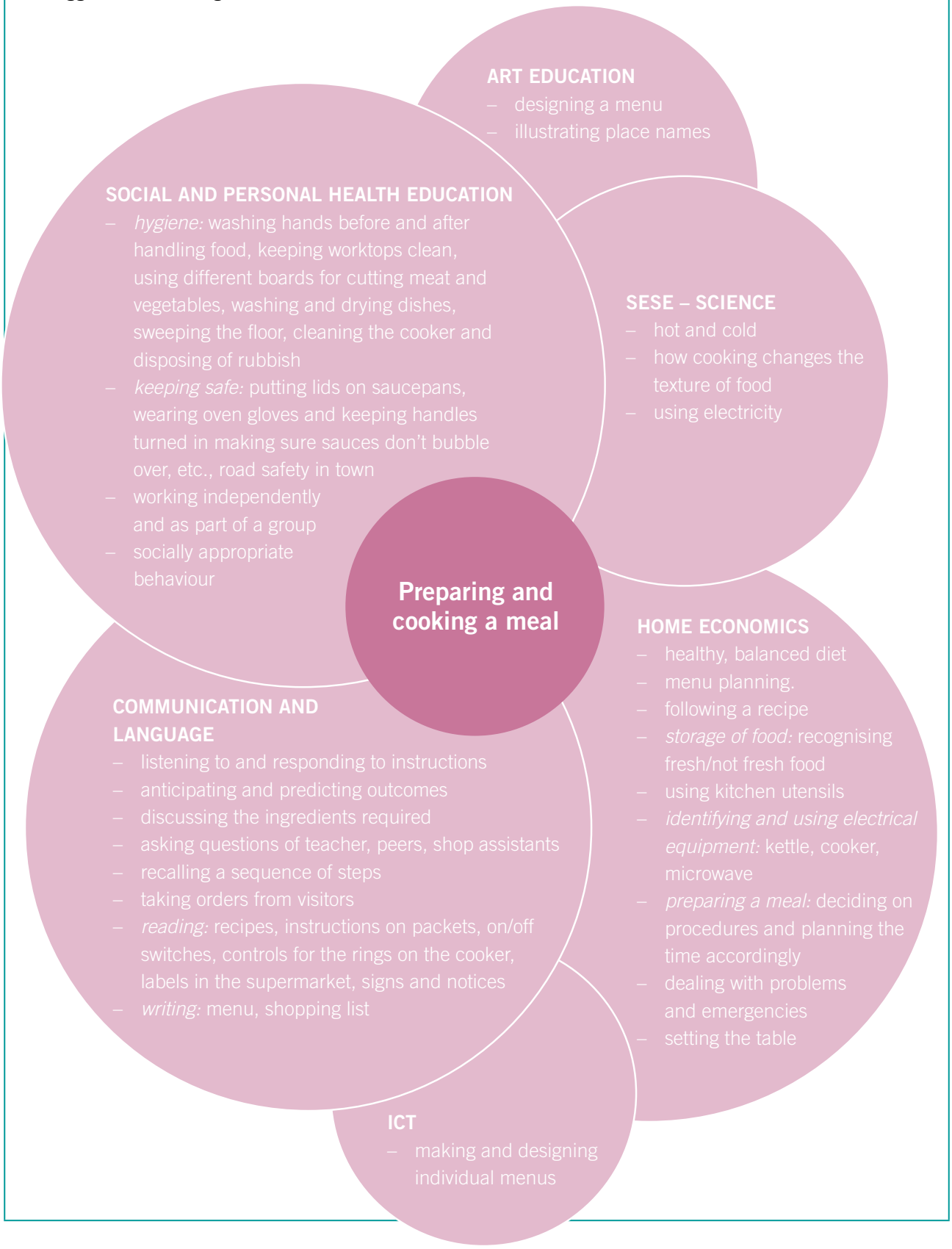
Suggestions for linkage



Exemplar 4: **Mathematics**

Integration

■ **Suggestions for integration**



Exemplar 5: **Mathematics**

Topic: Pattern and sequence

Learning outcomes

- Students will extend their knowledge of pattern according to colour, shape, and size. They will:
  - copy a pattern
  - continue/finish a pattern
  - devise their own patterns.

Resources

- Multi-links, spools, buttons, cubes, blocks, counters, shells, care bears, beads, nuts, toy cars, toy animals, bottle tops, 2D and 3D shapes, laces for threading

Language

- First, next, after, need more, repeat, again, second, last, comes after, loud, soft

Methodology

→ Direct teaching with the group can be used to examine simple patterns. Beads on a string with a fixed beginning can ensure that students are able to add to one end only: *blue, red, blue, red*.

- Students copy the pattern using beads and string. What comes next? Talk and discussion will heighten student awareness of the pattern. Students describe the pattern. Repeat using a variety of materials, colours, shapes, and sizes.
- Students copy a pattern using concrete materials, following a pictorial representation on a card. Repeat using a variety of materials/a variety of cards.
- Students continue/finish a pattern (colour, shape and size).
- Students create their own pattern (colour, shape and size).
- Students separate the colours into bowls, taking turns.

Exemplar 5: **Mathematics**

Linkage/integration

- **Visual arts**
  - Print with a variety of objects, such as vegetables or leaves.
  - Use the same object but different colours or both as he/she becomes more proficient.
  - Use parts of the body such as fingers, hands and feet.
  - Make patterns with gummed paper shapes.
  - Make sponge prints, for example hand/foot prints using different coloured paints.
  - Examine patterns on sweets, for example liquorice allsorts.
  - Decorate the witch's house (Hansel and Gretel) with patterned sweets.
  - Make Granny's pattern bedspread (Little Red Riding Hood).
  - Make Humpty Dumpty's wall.
  - Make Mary, Mary Quite Contrary's garden (bluebells and cockle shells all in a row).
- **Music**
  - percussion instruments: drum beat, xylophone, triangle, (Music patterns will become more complex as students improve.)
  - voice: *loud sound, soft sound, loud, soft, loud, soft*
  - clapping activities
  - song: *'Head, shoulders, knees and toes'*
  - Listen to and imitate rhythm patterns, clapping patterns, voice patterns.
  - Listen to and copy loud and soft patterns.
  - Play a sequence using instruments, for example drums and maracas.
- **SESE**
  - Make patterns with natural objects such as shells, stones, conkers, pine cones, and leaves.
  - Observe and discuss patterns in natural objects such as shells, pine cones and leaves.
  - Use recycled objects such as plastic bottles, yoghurt pots, paper, tins, corks, vegetables.
  - Look for pattern in the classroom, for example the arrangement of activities on the shelves.
- **Communication and language**
  - Listen to patterns in environmental sounds: telephone ringing, birds, skipping, footsteps, ambulance, etc.
- **Early mathematical activities**
  - Make repeating patterns with plastic animals, cars, lego, play people.
  - Draw attention to the patterns when the table is set in the Wendy House.

Development

- Maths trail: *'Looking at patterns'* (walls, wire, paving slabs, railings, flower beds)

Exemplar 5: **Mathematics**

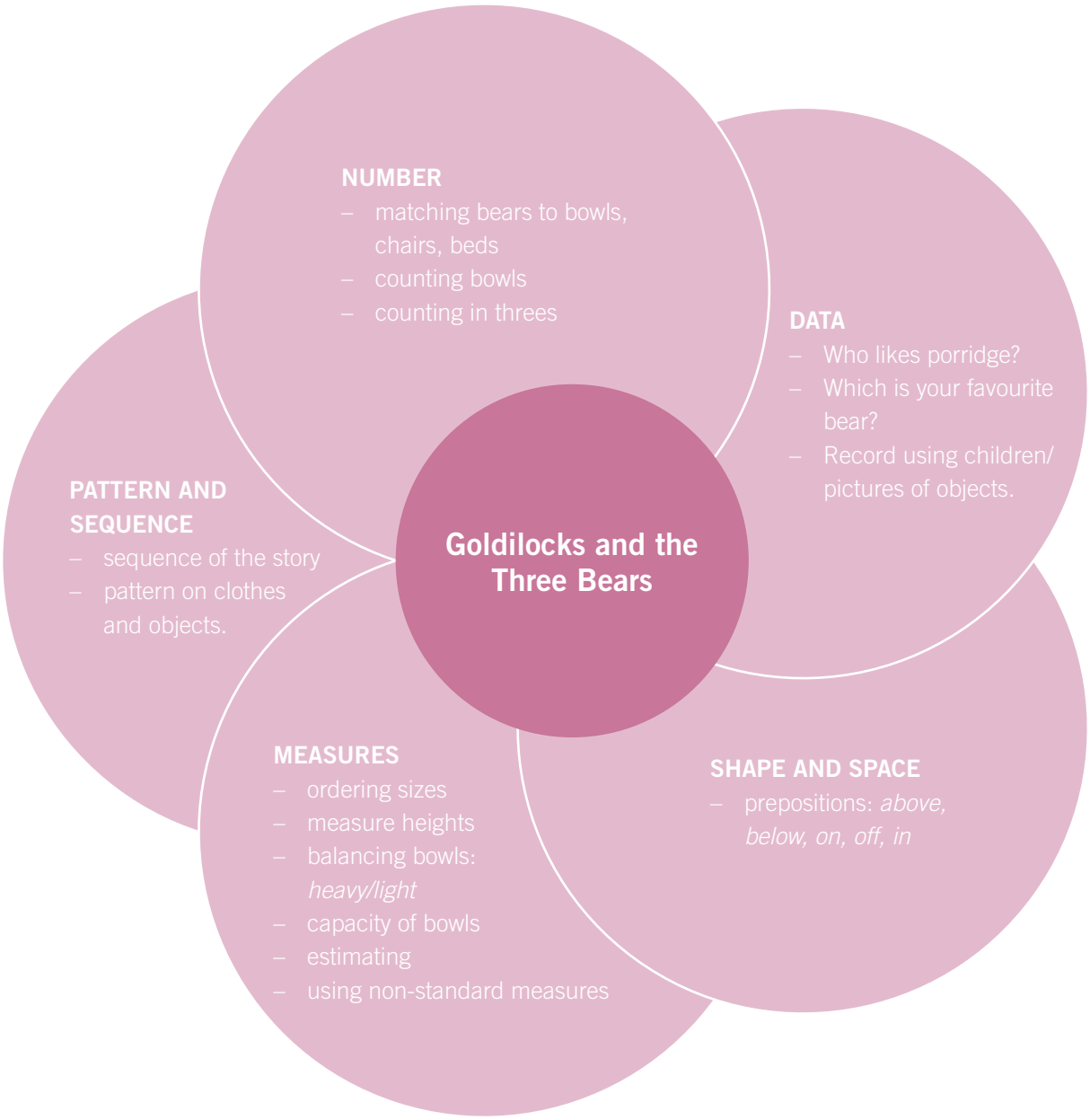
Differentiation

- If students are older use other appropriate objects to form patterns, for example football jerseys, euro coins, attribute blocks.
- The content of the exemplar may be spread over several lessons, depending on the ability of the students.

Assessment

- Has the student difficulty organising a pattern (two colours)?
- Can the student extend a pattern?
- Can the student create a pattern?
- Can the student name the primary colours?
- Can the student recognise and name a circle, triangle, square, rectangle?
- Does the student concentrate well on the task?
- Is hand dominance fully established?

Exemplar 5: **Mathematics**

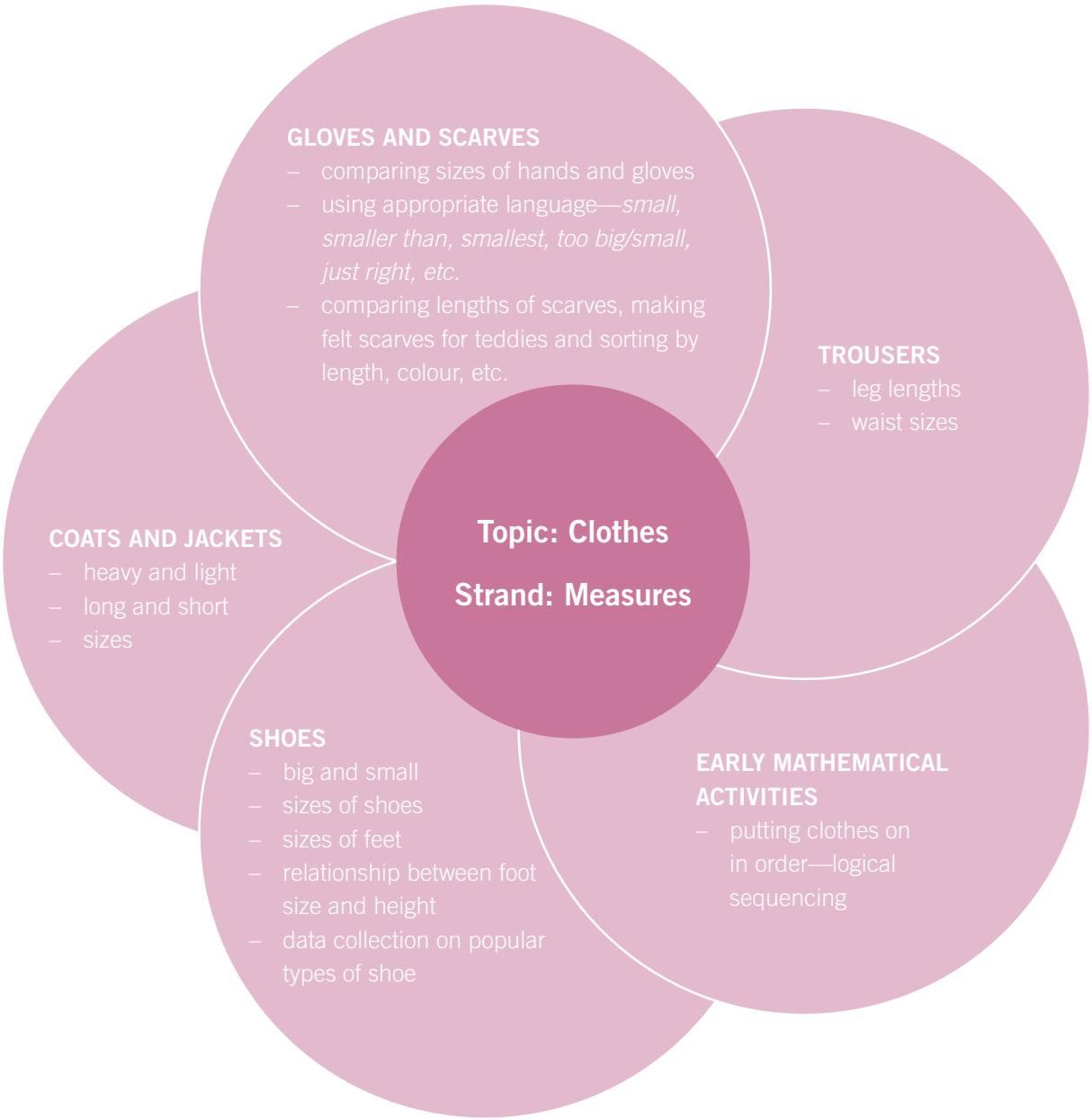


Exemplar 6: **Mathematics**

Strand: Measures | **Topic:** Planning topic work in mathematics: Clothes

Methodology

→ Below is an example of how an area of mathematics (measures) can be explored through topic work. The age-appropriateness of the activities must be considered at all times. Computer software packages and books that support the vocabulary are easily available.



Exemplar 7: **Mathematics**

Strand: Teaching mathematics through story | Illustrating linkage and integration

Communication and language

Activity	Learning outcomes	Resources
• Story: *'The Very Hungry Caterpillar'* • The story is introduced using a sock puppet.	• Listening to and responding to the story • Anticipating and predicting outcomes • Retelling story with or without Lámh signs • Role-playing around the story	• Storybook by Eric Carle • Sock puppet, plastic fruit and food pieces to *'feed'* the caterpillar • Plastic figures illustrating the various stages in the life cycle of the butterfly

Mathematics

Activity	Learning outcomes	Resources
• Days of the week • Numbers 1-5 • Pairing, matching, sorting fruit in logical progression	• Using and applying the language of number • Using and applying mathematics in practical tasks • Counting by rote	• LDA *'Rol 'n Write'* Numbers • Sandpaper numerals • Lámh signs for fruit, days of the week, etc.

Social, environmental and scientific education

Activity	Learning outcomes	Resources
• Investigating living things: caterpillars • Fruit tasting: *apples, pears, plums, strawberries, oranges* (fruit eaten by the Very Hungry Caterpillar)	• Observing • Asking questions • Predicting • Measuring • Recording and communicating • Exploring the senses of touch, smell, taste, and sight through fruit tasting	• The Butterfly Garden Kit: *five live caterpillars, nutrition, flight house (36 cm tall), feeding kit and full instructions* • Fruit for fruit salad

Exemplar 7: **Mathematics**

Social, personal and health education		
Activity	**Learning outcomes**	**Resources**
• Healthy food and lunches • The importance of washing hands before/after eating or preparing food	• Becoming aware of the importance of food for growth and development • Recognising and practising basic hygiene skills	• Fruit as before

Arts education: music, visual arts, drama		
Activity	**Learning outcomes**	**Resources**
• Individual or class collage: *'Our Very Hungry Caterpillars'*	• Making choices about colour and medium	• Paint, crayons, markers, crepe paper, felt, cardboard, etc.