



Montessori Early Years Learning Programme

First Plane of Development from Birth to Six Years

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Montessori Early Years Learning Programme for the First Plane of Development from Birth to Six Years

The Montessori Early Years Learning Programme: Introduction

The First Plane of Development

The first six years of life is a period of profound transformation, from apparently helpless newborn to capable, active and articulate six-year-old. This period of life lays down the foundation on which is built the future adult's potential.

From *birth to three years* of age the physical development of infants is remarkable, inspiring the attention and care of both family and community. In tandem with their physical development, infants are developing psychologically, socially, intellectually and spiritually. During this time, they acquire the culture and language of the community into which they are born. This multi-faceted development is accommodated in the Montessori environments prepared for children of this age. Specifically, Montessori learning environments for this age group are designed to foster independence, psycho-sensory-motor development and language development.

Between the ages of *three to six years* children continue the process of self-construction, consolidating, refining and adding to the skills and knowledge they accumulated before the age of three. From the age of three children become conscious of what they are learning through their own freely chosen activity, especially activity with their hands. Montessori environments prepared for this age group provide children with *motives for activity* through which they refine their perception, movement and language, and become independent in everyday life. The extensive repertoire of meticulously designed Montessori materials and exercises offered to the children represent a learning programme organised as an incremental progression of activities. Within this framework children are free to choose their own work, once they have been shown how to use the materials and how to do the exercises.

Children's learning in Montessori early childhood settings falls within the following definition of play-based learning found in the *Early Years Learning Framework for Australia* (DEEWR 2009: 6):

... learning through which children organise and make sense of their social worlds, as they engage actively with people, objects and representations.

In addition, the advantage of the distinctive features of Montessori early childhood settings are supported by evidence emerging in the research literature. For example, children at age seven show improved language development and cognitive outcomes if they have participated in early childhood settings where activities are child-initiated and selected from a wide variety of available equipment and materials, and where free choice predominates over whole group activities (Montie, Xiang and Schweinhart 2006). Furthermore, the incremental repertoire of Montessori materials and activities addresses some of the concerns raised by researchers in early childhood education in relation to the difficulties teachers can experience in implementing a play-based curriculum (Bennett, Wood and Rogers 1997; Wood and Bennett 2000).

Characteristics of the First Plane of Development

The *first plane of development* spans the period from birth to approximately age six. During this stage children become functionally independent; they learn to control their movement, to communicate and to work with their hands. Children during this period are also sensory explorers. They use their senses to absorb every aspect of the environment, their language and culture, in the process constructing their own intellects.

Development during this plane is shaped by the special capacity children of this age have for learning and absorbing vast amounts of information, a capacity described by Montessori educators as the *absorbent mind*. The way young children learn is unique to this stage of life. During this plane of development, without being conscious they are learning, children ‘absorb’ impressions from the environment, impressions that construct their mind and intellect and enable them to adapt to their time and place in history.

Throughout this plane of development children experience periods during which they display heightened sensitivity to, or interest in, particular aspects of the environment. These periods, named *sensitive periods* by Montessori educators, represent windows of opportunity during which children’s intense interest, and the spontaneous activity this interest generates, enable children to learn the corresponding knowledge and skill with ease and enjoyment. Montessori educators observe children closely for signs of sensitive periods. They use these observations as a guide to help them choose the optimum time for offering children lessons and activities in, for example, social skills, the refinement of movement and sensory perception, language and mathematics.

The first plane of development is a time of enormous *physical development*. By the age of six, children have gained a *functional independence*; they can talk and communicate their needs; they can walk, climb, run and jump by themselves, feed and dress themselves and manage their own toileting. They move with balance and coordination and are refining the precision and dexterity with which they use their hands. Children’s hands, Dr Montessori (1982/1949: 23) argued, are the ‘instruments’ of their intelligence. In other words, as children refine control of their hand, they are also refining the development of their minds. The importance of having activities in the environment that interest children and that involve the use of their hands is described by Dr Montessori in the following way:

The ability of a thing to attract the interest of the child does not depend so much upon the quality of the thing itself as upon the opportunity it affords the child for action ... it is not enough that a thing should be interesting in itself but that it must lend itself to the motor activity of the child if it is to be interesting to him. There must be, for example, small objects that can be moved from their places. It is then that a child begins to move his hand rather than the objects. A child is delighted to make and unmake something, to place and replace things many times over and continue the process for a long time. A very beautiful toy, an attractive picture, a wonderful story, can, without doubt, rouse a child’s interest, but if he may simply look at or listen to, or touch an object but dares not move it, his interest will be superficial and pass from object to object. That is why the environment is so arranged that it lends itself to a child’s desire to be active (1967/1948: 104).

Aligned with physical development is *social and emotional development*, development that is enhanced by nurturing, secure environments at home and in early childhood settings. Learning how to be social emerges naturally and spontaneously in the multi-age, mini-communities found in Montessori environments. In these communities older children have the opportunity to be sensitive to the needs of others, while younger children feel able to seek help at any time. In addition, lessons in *grace and courtesy* provide opportunities for young children to practice appropriate social behaviour in a fun and instructive way without public reprimand.

Children from birth to the age of six learn through their senses. Using their senses, they gain first impressions and understandings of the world, impressions and understandings that become woven into the fabric of their minds. This principle, first proposed by Aristotle, is traditionally summarised in the following way: ‘There is nothing in the mind that is not first in the senses.’

The first six years of life is a time of rapidly expanding *mental development*. In recent times neuroscientists have begun to describe the development of neurological networks in young children (OECD CERI 2007) and to emphasise the importance of favourable social and physical environments to support this development. Montessori prepared environments provide children with an environment that enhances the construction of the mind and the intellect, for example, by providing concrete materials through which children begin to classify

the world around them while learning language for talking about these early classification systems. This work becomes the foundation for learning during the primary school years when ordered systems of abstract knowledge and the imagination become the tools children use for thinking.

Babies are born with a strong urge to *communicate* and to express themselves. By age six, children have acquired language, not only spoken language, but also the fundamental skills of writing and reading. At the same time children are using a *mathematical mind* as evidenced by their need for order and sequence and the drive for precision and accuracy. During the first six years of life children construct a foundation for later studies in arithmetic and geometry.

In summary, during the first six years of life young children learn to function independently, to move with control, to communicate and to concentrate. At no other time in children's lives will they be able to develop in so many significant ways so easily and well. By the age of six children have become socially adapted to their time and place in human history and culture.

Montessori Prepared Environments for the Early Years

Beautiful, orderly, child-sized environments and sensory play are part of Montessori's legacy... Montessori thought that early childhood teachers should: provide real tools that work; keep materials and equipment accessible to the children so they can find and put away what they need; and create beauty and order in the classroom (Mooney 2000: 25).

The Nido and Infants Community: Environments Prepared for Infants and Toddlers under Three

Montessori environments for infants and toddlers are prepared to be as homelike as possible, and to involve small children in a round of daily activities including quiet times and rest periods. The characteristics of these environments include:

- continuity of care
- an ordered physical environment
- consistency of activity and expectation.

In environments with these characteristics, infants build a sense of security, a sense of order and a sense of time.

Continuity of care lays the foundation for emotional and social wellbeing. If infants interact with the same people day after day, they feel secure, and they have the opportunity to build lasting relationships and social bonds they can depend on.

An ordered physical environment lays the foundation of an ordered mind. If infants find things in the same place day after day, they learn to recognise those things and where they belong. In such an environment, children grow confident in their ability to know and memorise things, in other words, they become confident in their own intellectual capacity.

Similarly, consistency of activity contributes to children's security and intellectual confidence. A daily routine develops in infants an understanding of the passing of time. If, day after day, infants follow the same routines at the same time and the same places, they have further opportunity to discover that they know something when they recognise familiar things and events. If infants take part in the same activities, in the same order day after day, they further consolidate their sense of security, order and time.

There are two prepared environments for infants and toddlers under the age of three years:

- The Nido, or nest, is a nurturing home-like environment for infants from 2 to 3 months until they are walking independently (around 15/18 months).

- The Infant Community is an educational environment prepared for toddlers from the time they are walking independently until they are approximately three years of age. It is a nurturing environment where very young children experience their first structured contact with other children. The focus of the environment is to offer children activity that supports the development of voluntary, controlled movement, spoken language and independence in daily life.

Both these environments are organized and directed by a Montessori trained adult called an *Assistant to Infancy*. *Nidos* and *Infant Communities* can be prepared so children can attend on their own (for example, in sessional or long day care) or so parents can accompany the children. When parents accompany children to the *Nido*, the group is often called a 'parent-infant group'. When parents accompany children to the *Infant Community*, the group is often called a 'parent-toddler group'. The accompanying parents gain information about ways to interact with children based on the modelling of this behaviour provided by the staff. In addition, in this environment parent and child experience a protected time in which their relationship to each other can deepen and grow.

Activities in Montessori environments for children under the age of three are related to real life. They provide children with opportunities to develop voluntary, controlled movement, independence in daily life and spoken language.

Order is a feature of all Montessori early childhood environments. The ability of the child to create order from the stimuli of the environment is an essential factor in normal development from birth to three years.

In addition, parent information sessions and literature also provide an essential component of Montessori early childhood environments prepared for infants and toddlers.

The Children's House: An Environment Prepared for Children Aged from Three to Six Years

The Montessori environment prepared for preschool children from three to six years of age is called the *Children's House*. The *Children's House* is prepared to be homelike, welcoming, aesthetically pleasing and orderly so children come to think of the setting as a 'mini-community' where they learn skills they can apply at home and in the wider community. Cooperation, rather than competition, is encouraged.

The ordered *Children's House* environment provides children with structure and predictability and helps them orient themselves both to the physical environment of the *Children's House* and to the multi-age 'mini-community' within the environment. There is a strong emphasis on children developing the independence, cooperation and skills for daily living that enable each one to become a valued and independent member of the *Children's House* community. The resources and activities in the *Children's House* are designed to:

- develop coordination of movement
- develop independence
- develop the ability to make informed decisions
- lengthen the amount of time a child can engage in deep concentration
- refine the use of the senses
- encourage exploration
- build social skills
- develop oral communication skills
- develop written communication and the foundations of joyful reading
- develop an understanding of mathematical concepts

The materials in the *Children's House* are displayed on open shelves, always accessible to the children. The children work with these materials during work sessions that are ideally a minimum of three hours in duration with no fixed breaks. In this way children are able to develop and follow their own natural rhythm of activity and rest without unnecessary interruptions.

The prepared environment of the *Children's House* incorporates indoor and outdoor spaces. Both spaces complement each other and are available to the children at all times. The majority of Montessori educational materials are commonly displayed in the indoor environment, but their use is not restricted to the indoor environment. *Practical life* activities are part of both the indoor and outdoor environments. Children may also choose to work with materials in the *sensorial*, *mathematics* or *language* areas in the outside environment as long as they are using the materials for the educational purpose for which they have been designed. In addition, the outdoor environment includes gardens (both wild and planted), which children care for, and in which they develop a growing awareness of the importance of the natural environment to the well-being of all living things. Activities in the outdoor environment of the *Children's House* develop in children an appreciation of the natural world and an awareness of its importance to the wellbeing of all living things including themselves, as well as a beginning understanding of the important role of human beings in caring for the natural environment.

For this age group lessons are usually given to individual children. Once children have been given a lesson, the activity is added to their repertoire of possible activities and they are free to choose that activity whenever they wish. Small group activities include games used to extend earlier lessons, and language games. Children are invited to join group activities but are not required to participate. In a mixed age group, older children can validate their learning by becoming the 'experts' in the room. Peer teaching occurs when the older children share their knowledge and skills, take on the role of the caretakers of the classroom and provide role models for younger children. Younger children find a group of willing people ready to help them when help is required. They are also further inspired and motivated to learn as they see older children working on the next step in the progression of lessons.

Freedom of choice is a central feature of the *Children's House* environment. Children learn that free choice carries with it both responsibilities and consequences, understandings that become increasingly important as they move through the later school years towards adult life.

There is a strong emphasis in the *Children's House* on the development of independence, cooperation and the skills for daily life that will enable each individual to become a valued and autonomous member of his or her community. For example, in the *practical life* area of the *Children's House*, children can choose from activities such as preparing snacks for themselves and others, laying and clearing the table, and cleaning up. They learn, under strict adult supervision, to use child-sized tools, including knives and glassware, safely and effectively. In the *sensorial* area children fine-tune perception, discrimination and judgement. In the *language* and *mathematics* areas children are introduced to literacy and numeracy skills. As they work through the language activities, children extend emergent and beginning literacy skills leading to fluency in both writing and reading. Mathematics activities lead children from early counting and matching experiences towards increasing understanding of number patterns, the four operations, number facts and two- and three-dimensional shapes. In general teacher/child ratios are carefully planned in the *Children's House* so there is just enough support for the children, but not too much interference from adults in the children's activity. Children are encouraged to be self-reliant, or to solve problems with their peers with as little adult intervention as possible. In this way children develop self-assurance and self-esteem.

Incorporated into the four areas of the *Children's House* curriculum are materials, activities and exercises that introduce children to *visual arts*, *music*, *physical education*, *science*, *geography* and *history*. Montessori educators sometimes say that the *Children's House* is designed to bring the world to the child. For example, in the *Children's House* children listen to stories and learn songs and dances from their own country and around the world, while participating in related *visual arts* activities. They also work with globes, maps, land and water forms, and collections of pictures of life in different cultures. Cultural studies of this type are interspersed within the four main areas of the *Children's House*, particularly within the *sensorial* and *language* areas.

The Montessori Early Years Learning Programme

Birth to Three Years: *The Nido and Infant Community*

The Montessori Early Years Learning Programme from birth to three years focuses on the development of movement, language and independence. Attention is also paid to parent education, family support and community outreach. The *Nido*, the Montessori environment prepared for infants who are not yet walking, focuses especially on the development of movement and language. Structured language activities and activities to promote independence and continued development of movement are a feature of the *Infant Community*, the Montessori environment prepared for toddlers. Development of movement continues to be very important in the *Infant Community*, particularly in the outdoor activities. There is also a focus on continued refinement of hand skills.

Overall, the Montessori Early Years Programme aims to provide infants and toddlers with learning environments in which they are valued and contributing members of a mini-community. Within this nurturing community infants and toddlers have the opportunity to develop confidence and a love of learning. In addition, the environment provides many opportunities for children to learn how to communicate with others in spoken language, and for early explorations of the wider natural, social and cultural world.

Development of Movement

Montessori environments prepared for infants and toddlers emphasise the development and refinement of voluntary movement. Activities are designed to help infants and toddlers bring their movement under the control of the mind, at the same time as they increase their independence in the environment. These activities include exercises for building whole body coordination, control of the hand and hand-eye coordination.

Montessori infant-toddler settings include activities designed to support *psycho-sensory-motor development*. The term *psycho-sensory-motor development* refers to the changes in the infant's brain brought about by sensory-motor experiences. As infants build motor skills, and use their senses to explore the environment, there are corresponding changes in the developing brain. Repetition of movement and the use of the senses help to strengthen neural pathways, thus, enhancing the infant's potential in all areas of development.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
NIMV010 Development of equilibrium: in supine position	01 Move head and eyes to look at an object 02 Transfer objects from hand to hand 03 Bring knees then feet up to mouth 04 Roll onto front using left/right side 05 Cross the midline	Resources include: <ul style="list-style-type: none"> - movement mat - mobiles - interlocking circles - interlocking rings - mirror - grasping mobiles.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
<p>NIMV020</p> <p>Development of equilibrium: in prone position</p>	<p>06 Lie with arms and legs tucked under body</p> <p>07 Put weight on elbows</p> <p>08 Lift head</p> <p>09 Put weight on one elbow and play with other hand</p> <p>10 Roll onto back using left/right side</p> <p>11 Commando crawl using diagonal cross pattern</p> <p>12 Get up on all fours</p>	<p>Resources include:</p> <ul style="list-style-type: none"> - movement mat - rattles - mirror - floor space.
<p>NIMV030</p> <p>Control and coordination of body movement</p>	<p>Learn to control and coordinate movement of body:</p> <p>01 Put self into sitting position</p> <p>02 Pull to stand</p> <p>03 Crawl</p> <p>04 Cruise</p> <p>05 Stand</p> <p>06 Walk</p> <p>07 Sit on a chair</p>	<p>Resources include:</p> <ul style="list-style-type: none"> - punch ball - cylinder with ball - ottoman - bar and mirror - low heavy table - kiosk with bars - push cart - pull cart - stairs - weaning chair - low slatted chair.
	<p>Develop and consolidate skills including:</p> <p>01 Running</p> <p>02 Jumping</p> <p>03 Climbing</p> <p>04 Swinging from arm to arm (brachiation)</p>	<p>Resources include:</p> <ul style="list-style-type: none"> - ramps - climbing frames - ropes - swings - ladders - beams - balls - wagons - wheelbarrows - brachiation bars - pulley lifters and weighted bags - Implements for sweeping, mopping, raking and gardening.
<p>NIMV040</p> <p>Development of the hand grasp</p>	<p>01 Develop control of the hand</p>	<p>Resources include batting and grasping mobiles made of, for example:</p> <ul style="list-style-type: none"> - soft balls - wooden balls - wooden figures - bell or ring on a ribbon.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
	<p>02 Explore and develop the capacities of the hand leading to development of the hand grasp and fine motor control</p>	<p>Resources include:</p> <ul style="list-style-type: none"> - ball and tray or drawer - rings on a spindle - box with bins - cube in box - containers to open and close - peg box - balls - preparing food - sand play - cutting with scissors.
	<p>03 Hold and shake rattles successfully</p>	<p>Resources include handmade rattles small enough for a baby's hand to grasp, hold and shake.</p>
<p>NIMV050 Tactile stimulation</p>	<p>01 Discriminate objects by sense of touch</p>	<p>Resources include tactile objects for manipulation, for example:</p> <ul style="list-style-type: none"> - interlocking discs - beads on a strap - interlocking rings - wooden articles in a variety of shapes - objects from the home.
<p>NIMV060 Eye-hand coordination</p>	<p>01 Develop control of the hand (from batting to a mature pincer grip)</p> <p>02 Coordinate eye and hand movements</p> <p>03 Cross the midline while working</p> <p>04 Use two hands together</p> <p>05 Transfer objects from hand to hand</p>	<p>Resources include psycho-sensory-motor materials, for example:</p> <ul style="list-style-type: none"> - punch ball - box with knitted ball - box with other balls - ring on rocking base - ring on stable base - rings on a peg - rings on a spindle - graded rings - nuts and bolts - furniture with drawers, locks and keys - peg box - cubes and discs on vertical and horizontal dowels - egg in a cup - cube in a box - beads for stringing - box with different shapes for mailing - slotted box and chips - puzzles - range of fastenings - objects for opening and closing - sewing - materials and implements for cutting and gluing.

Content Strand	Knowledge, Skills and Understanding	Material/Activity
	<i>Typically, children will:</i>	
	06 Develop concept of object permanence	Resources include: - box with ball and tray - box with ball and drawer.
	07 Sort objects	Resources include collections of three-dimensional objects for sorting.

Language

Maria Montessori was one of the earliest researchers to observe and describe in some detail the development of language in infants (see, for example, Montessori 1982/1949). She recognised that the foundation for language development is established before birth. After birth, the innate human tendency to communicate with others drives infants to engage with the language used by those around them. Through observation, listening and interaction they learn the language and culture of their community. In the Montessori view this development is related to the development of movement. As infants become able to move about more and more, their field of interest and activity expands, and so does their need for language. The Montessori approach to language for this age group, therefore, starts not with the word but with the child's concrete experiences.

Language development in infants is described by Montessori educators as having the following two phases:

- the prelinguistic phase from birth to twelve months when infants may not use words with meaning but are absorbing and internally constructing the rhythms and patterns of language, and training vocal muscles and auditory perception of the sounds of the language in the environment
- the linguistic phase from twelve months to three years when infants progress from saying their first intentional words with meaning to complex phrases and simple sentences.

Initially, receptive language in infants is more developed than expressive language so they understand a great deal more than they can say. At about two years of age the indirect and direct preparation of the pre-linguistic and early linguistic phases results in an 'explosion' into language. At this time, instead of using single words and words fused together, young children suddenly combine words into grammatical patterns in order to express their meanings. From this point, language use typically expands rapidly.

In Montessori environments prepared for infants and toddlers Montessori early childhood educators strive to create an enriched language environment. Adults in the environment provide infants and toddlers with good models of language use at all times. They listen attentively, respectfully and responsively to all attempts made by the children in the environment to communicate. They also initiate interactions, ensuring language is directed toward the child, particularly during the pre-linguistic phase.

In the language-enriched Montessori environments children have many opportunities to expand their vocabulary and language use in their first language. They also benefit from hearing speakers of other languages if the use of other languages can be integrated meaningfully into the daily routine of the setting. At this age, this works best for children if the adults in the environment each speak only one language to the children. For example, one adult speaks only English and another adult speaks only Chinese when interacting with the children.

Content Strand	Knowledge, Skills and Understanding	Material/Activity
	<i>Typically, children will:</i>	
NILA010	01 Communicate verbally and non-verbally	Language-enrichment activities include: - being listened to attentively

Content Strand	Knowledge, Skills and Understanding	Material/Activity
Oral language acquisition and development	<p><i>Typically, children will:</i></p> <p>02 Use spoken language to make meaning, with support if needed</p> <p>03 Link words and meanings</p> <p>04 Increase and extend vocabulary</p> <p>05 Extend language use from words to word groups, phrases and simple sentences</p> <p>06 Explode into language around 2 years of age</p> <p>07 Communicate confidently</p>	<ul style="list-style-type: none"> - varied, real, everyday activities that involve incidental language use - adults speaking directly to children, modelling language use children can understand and imitate - listening to and telling stories - questioning exercise - opportunities to speak and hold conversations with others - naming objects; naming pictures of objects; identical and similar matching of objects to cards including naming - fishing bags: general, classified and paired objects - songs, rhymes, games, finger plays, stories, poems - access to and being read to from quality children's books. <p>Resources include:</p> <ul style="list-style-type: none"> - an enriched language environment - good models of language use that children can understand and imitate if they wish.
	<p>08 Begin to use language appropriately in different situations to guide their own and others' behaviour</p>	<p>All activities in the environment offer and encourage vocabulary enrichment and language experience.</p> <p>Specific activities include:</p> <ul style="list-style-type: none"> - seeking assistance - waiting - taking turns - helping another child or an adult - preparing food - making a contribution to the prepared environment. <p>Resources include good models of language use and social interaction that children can understand and imitate if they wish.</p>
<p>NILA020</p> <p>Preparation of the hand for writing</p>	<p>01 Develop a pincer grip and good hand control</p>	<p>Activities include all practical life and fine motor movement activities including:</p> <ul style="list-style-type: none"> - puzzles - hand/eye coordination activities - food preparation. <p>Resources include functional objects and implements matched to the children's size, strength and dexterity.</p>

Content Strand	Knowledge, Skills and Understanding	Material/Activity
	<i>Typically, children will:</i>	
	02 Learn how to hold and use a pencil, paint brush and needle	Activities include: <ul style="list-style-type: none"> - scribbling - gluing - painting - sewing. Resources include functional implements matched to the children's size, strength and dexterity.

Development and Education of the Senses

Infants and toddlers make contact with and explore their environment through their senses. They then strive to organise in an ordered way the myriad impressions they gain through this exploration. Through sensory exploration infants and toddlers develop the ability to discriminate variation in colour, form and shape, dimension, texture, temperature, volume, pitch, weight and taste. This ability is further refined in the *Children's House* and becomes the basis for the future ability to work with abstract concepts.

Content Strand	Knowledge, Skills and Understanding	Material/Activity
	<i>Typically, children will:</i>	
NISS010 Sensorial exploration	01 Discriminate objects using the senses	Activities include: <ul style="list-style-type: none"> - practical life - food preparation. Resources include psycho-sensory-motor materials.
	02 Gain impressions of colour, shape/form, weight, length, dimension, texture, taste, sound	Resources include psycho-sensory-motor materials.
	03 Develop a sense of aesthetics	The environment and all materials are beautifully designed and arranged with just enough carefully-chosen objects to create just the right amount of stimulus.
	04 Begin to classify objects	Activities in which children are given the names for general categories of items in their environment Resources include: <ul style="list-style-type: none"> - nomenclature objects - nomenclature cards and objects - nomenclature cards.
NISS020 Visual discrimination	01 Discriminate objects by sight	Activities include: <ul style="list-style-type: none"> - observing and batting mobiles - observing and grasping varied objects - matching.
NISS030	01 Refine the sense of touch	Activities include: <ul style="list-style-type: none"> - sorting

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
Tactile discrimination	02 Discriminate objects by the sense of touch	<ul style="list-style-type: none"> - fishing bags - food preparation. <p>Resources include:</p> <ul style="list-style-type: none"> - objects for tactile stimulation - objects for tactile discrimination.
NISS040 Auditory discrimination	01 Listen to the sounds of objects 02 Identify objects by sound	Resources are objects for auditory discrimination, including: <ul style="list-style-type: none"> - rattles - balls with a rattle inside - shakers.
	03 Experience timbre, rhythm and beat	Activities involving music and movement, including: <ul style="list-style-type: none"> - singing - using percussion instruments.
NISS050 Olfactory and gustatory	01 Experience and identify different foods by smell, taste and sight	Activities include: <ul style="list-style-type: none"> - food preparation - work with nomenclature objects.
NISS060 Stereognostic sense*	01 Gain knowledge of an object by feeling around it	Activities include: <ul style="list-style-type: none"> - general fishing bag - classified fishing bag - paired objects fishing bag.

* The word 'stereognostic' comes from 'stereo' meaning 'around' and 'gnostic' meaning 'to know'. The term refers to sensory perception that combines visual and muscular exploration and memory. When used in Montessori contexts, it refers to the means through which young children gain knowledge by feeling around an object.

Fundamental Life Skills in the Infant Community

Learning fundamental life skills, called *practical life* by Montessori educators, is the component of the Montessori Early Years Learning Programme that links Montessori settings for toddlers with the home. The activities in this area of the environment exploit the desire of toddlers to imitate the adults around them, particularly in self-care, food preparation and care of the environment.

Toddlers love order and strive for independence. Both these impulses find expression in Montessori practical life activities designed for this age group. Through these activities toddlers build and refine motor skills, including whole body equilibrium and coordination, as well as fine motor skills, specifically the transition from palming to pincer grip. *Practical life* activities for children of this age originate in the home and capitalise on very young children's intense interest in food and their desire to imitate adults. Independence is fostered and movement refined through the use of these activities.

The child will be shown how to do a *practical life* activity and is then free to choose this activity at any time. When toddlers are engaged in self-chosen *practical life* activities, they strive to execute precise movements to achieve a goal, in the process building and refining voluntary control of both movement and attention through repetition and the opportunity to work at their own pace uninterrupted. When toddlers are free to complete cycles of work without interruption, they learn to bring their attention under voluntary control, to exercise the *will* in Montessori terms, and they are able to concentrate for longer and longer periods. They also experience feelings of satisfaction and achievement that contribute to the development of confidence.

Practical life activities, and the equipment and utensils used in the activities, are already familiar to the children as they are the activities and implements that are used in the culture in which the children are living. They are matched to the children’s size, strength and level of independence. *Practical life* exercises and activities are modelled by adults in lessons presented to individual children at point of need.

Content Strand	Knowledge, Skills and Understanding	Material/Activity
NIPL010 Transition (from home to Montessoriarly childhood settings)	During transition, typically, children will:	
	01 Become familiar with an environment outside the home	Activity within the setting, which is familiar, home-like and a culturally appropriate environment
	02 Shake hands and greet another	Activities include: <ul style="list-style-type: none"> - observing good models of adults greeting and shaking hands - opportunities to interact with others, using culturally appropriate greetings.
	03 Remove shoes	Resources include: <ul style="list-style-type: none"> - a place for shoe removal and storage - a low bench to sit on.
	04 Store bag and clothes	Resources include hooks or a cubby for clothing and bag.
	05 Pour a drink 06 Choose and prepare food for themselves	Resources include pre-measured portions located within reach.
	07 Choose an activity 08 Set up a mat or table as a workspace 09 Wait and take turns	Activities are organised within reach on low shelves. Adults model behaviours. Resources include: <ul style="list-style-type: none"> - child-sized tables and chairs - work mats.
	10 Develop a sense of belonging, being and becoming 11 Imitate the social norms of society	Resources include: <ul style="list-style-type: none"> - a multi-aged group of children within same developmental phase - a supportive adult to observe, model and with whom to interact.
	12 Develop more precise control of voluntary movement and hand/eye coordination	Activities for learning how to: <ul style="list-style-type: none"> - carry furniture and equipment, e.g., chair, tray, mat, buckets, jugs - pull out and push in a chair - roll and unroll a mat - prepare drinks and food. Resources include functional objects and implements matched to the children’s size, strength and dexterity.
	NIPL020 Care of person	Typically, children will develop and consolidate independence in:
01 Drinking	Resources include water source and glass within reach	

Content Strand	Knowledge, Skills and Understanding	Material/Activity
	02 Food preparation and eating	<p>Food preparation activities including:</p> <ul style="list-style-type: none"> - cutting - grating - juicing - mixing - shelling - kneading - peeling - modelling by adult and more expert children. <p>Resources include utensils matched to children's size, strength and dexterity.</p>
	03 Toileting	<p>Resources include:</p> <ul style="list-style-type: none"> - accessible toilet matched to children's size and level of independence - adult support.
	04 Dressing and undressing	<p>Activities that include:</p> <ul style="list-style-type: none"> - washing hands - cleaning teeth - blowing nose - brushing hair - cleaning shoes - role-modelling by adults and more expert children. <p>Resources include:</p> <ul style="list-style-type: none"> - storage hooks/cubbies and furniture matched to children's size and strength - grooming area with mirror matched to children's size - dressing frames for learning how to use buttons, zips and Velcro - implements matched to children's size, strength and dexterity.
<p>NIPL030</p> <p>Care of the environment (indoor and outdoor)</p>	<p>Typically, children will be able to:</p>	<p>01 Clean and care for the indoor environment</p> <p>Activities include:</p> <ul style="list-style-type: none"> - dusting - cleaning mirrors and windows - polishing wood - washing cloths - washing and drying dishes - sweeping - beating rugs - scrubbing tables - role-modelling by adults and more expert children. <p>Resources include implements matched to children's size, strength and dexterity.</p>

Content Strand	Knowledge, Skills and Understanding	Material/Activity
	02 Clean up spills	Activities include: wiping, mopping and sweeping using implements matched to children's size, strength and dexterity.
	03 Care for plants and garden 04 Observe and appreciate nature	Activities include: <ul style="list-style-type: none"> - dusting and wiping leaves - arranging flowers - planting and watering plants - growing seeds - raking and sweeping. Resources include implements matched to children's size, strength and dexterity.
	05 Care for animals	Activities include: <ul style="list-style-type: none"> - learning appropriate behaviour around animals - feeding animals - caring for animals' habitat.
	06 Develop a connection with reality and purposeful work	All <i>practical life</i> activities
	07 Develop a responsibility for the environment	All <i>practical life</i> activities
NIPL040	<i>Typically, children will:</i>	
Social relations	01 Acquire appropriate language	Resources include: <ul style="list-style-type: none"> - modelling by adults and other children - supportive adults and other children to observe, imitate and with whom to interact.
	02 Experience interactions with others	The resources are adults and other children in the environment.
	03 Begin to acquire culturally appropriate customs and manners	Adults model behaviours at point of need.
	04 Develop awareness of self and others 05 Experience taking turns	Children are respected as individuals and are free to choose and complete their own work. The environment is prepared so children have space for their own work. The number of each set of materials is limited, generally only one of each set. In this way children learn to value each activity and to take turns.
	06 Preparing food for others to share	Activities include: <ul style="list-style-type: none"> - making bread - cutting up fruit.

Mathematics

One of the human tendencies is to measure the world and to calculate quantities. Infants are born with this tendency, which is called the 'mathematical mind' by Montessori educators. From birth infants observe and respond to measurable physical relationships in their environment in order to be able to orient themselves to the environment and to make sense of it. They assess, measure, hypothesise, order and classify as they explore their environment with their senses and learn to operate in their environment. To crawl or walk from A to B involves assessment and calculation. Up to three years of age this is done unconsciously and by using the senses.

Many of the activities in Montessori settings prepared for infants and toddlers provide sensory experience of mathematical relationships. Some examples are:

- The Montessori materials provide experiences with dimension and form, sequencing, patterns, order and comparison. They also encourage reasoning and calculation.
- The Montessori environment and programme provides experiences in shape and space, time and predictability and enhances working memory.
- Food preparation activities provide experience with measuring, quantity, weight, volume, sequencing and fractions.
- Puzzles, exact matching of nomenclature objects and cards, table setting, and flower arranging provide one-to-one correspondence.
- Language materials provide classification experiences.
- Washing hands, dishes and cloths provides experience with volume, weight and sequencing.
- Sand play provides experience with quantity, volume, weight, measurement and area.
- Songs, poems and fingerplays provide experience with numbers.
- Counting books provide number experience
- Mathematical language pervades the environment – 'more/less', 'right/left', 'up/down', 'high/low', 'in/out', 'big/little', 'large/small', 'heavy/light', 'some', 'open/close', 'today/yesterday', etc.

These experiences in the *Nido* and *Infant Community* provide indirect preparation for the introduction of more formal concrete mathematical materials in the Montessori preschool setting, the *Children's House*.

Science, Geography and History

Children from birth are interested in the world around them. They observe the natural world and absorb the culture of the society into which they are born. Children are fascinated by the way the world works, by the life of plants and animals, by the features of the places they find themselves in and by the customs and stories of the people around them.

In later educational contexts these interests are taken up formally in the study of science, geography and history. In the Montessori Early Years Learning Programme they are integrated across the curriculum. Often children pursue their interest in science, geography or history as an extension of the exercises of the senses, because it is through the senses that children first perceive, observe and explore phenomena related to these fields of study.

In the *Nido* and *Infant Communities*, children experience nature informally through sensory experiences inside and outside the classroom. Many experiences happen spontaneously in the garden, for example:

- planting seeds
- watering plants
- cleaning leaves
- raking leaves
- arranging flowers
- observing animals

Creative Arts

Music

Music, in the Montessori view, is like language; it is an aspect of human expression that is integrated into daily life. From birth, children delight in and respond to music. Often this delight is expressed through movement. The exercises of practical life build foundation skills in whole-body and fine motor control of movement and hand-eye coordination children can use to participate more effectively in musical activities and exercises.

In *Infant Communities* music and movement are integrated in activities that include:

- listening activities in which children move to music
- playing simple percussion instruments
- sense exercises in auditory discrimination
- games involving singing and movement.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
NICA010 Music: auditory discrimination	<p>01 Listen to the sounds of objects</p> <p>02 Identify objects by sound</p> <p>03 Experience timbre, rhythm and beat</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - singing - identifying different voices. <p>Resources include:</p> <ul style="list-style-type: none"> - rattles - balls with a rattle inside - percussion instruments - sounds in the environment.
NICA020 Music: timbre	<p>01 Listen to and play simple instruments</p>	<p>Resources include a range of percussion instruments.</p>
NICA030 Music: self-expression	<p>01 Develop the skills to express themselves</p>	<p>Activities involving self-expression in music, movement and drama, including:</p> <ul style="list-style-type: none"> - singing - movement and dancing - playing percussion instruments - movement games - finger plays.

Movement and Dance

The development and refinement of movement is an integral part of the child's development from birth to six years of age. The ability to appreciate dance and to be able to move one's body as a form of expression is an important facet of children's development. The focus on specific movements can assist children's development in many other areas, for example whole-body coordination. Dance is also an important aspect of health and physical exercise. Young children have a natural sense of rhythm and often lack inhibition, so dance comes naturally and spontaneously to them.

In *Infant Communities* movement is one of the most critical components of the environment. Dance is experienced through movement and music activities.

Visual Arts

Artistic expression was considered by Dr Montessori to be one of the fundamental needs of humans. In particular, she encouraged children to draw. She felt that if children have fine motor control of the hand, learned through the exercises of practical life, combined with trained skills in perception, learned through the exercises of the senses, they would be able to create visual artworks of a high quality.

In *Infant Communities* art activities include sewing, cutting, painting, gluing, drawing, working with clay and flower arranging.

Parent Education

Montessori education is *an aid to life* and is not restricted to the prepared environment. An important part of Montessori education is working with parents, families and the community to foster understanding and appreciation of the extraordinary development of young children from birth to three years of age.

Montessori educators provide parents with as much information as possible about child development at this stage, how parents can nurture that development and the way the Montessori approach can support that development. The ways this is achieved include:

- parent information evenings
- open days
- provision of videos, DVDs, books and articles
- discussion groups
- home visits.

Throughout the year there are regular individual meetings offered to parents and prospective parents.

When parents attend with their children in the parent-infant or parent-toddler groups, they can:

- observe the development of the children in the group
- engage with their child in the environment
- seek guidance from and be guided by the Montessori trained adult.

Adults awaiting the birth of a baby and those waiting to adopt may also be invited to attend these environments to observe and gain understanding of infant development. It is part and parcel of the role of the trained Montessori *Assistant to Infancy* to promote understanding of development at all times. For this reason, parent information sessions are not restricted to parents of children attending Montessori centres.

Family Support

Early childhood settings are often the first point of contact for families needing additional support. Montessori early childhood settings aim to be a welcoming community centre, a place of learning, and a safe place for children. The Montessori approach recognises that children come from widely-varied family settings, and that culture, home life and family situation all affect learning and development. Family support may include consultations in the home or at the centre, referrals to other services, support in crisis situations, and informal information and advice.

Community Outreach

The role of Montessori *Assistants to Infancy* includes sharing their knowledge and expertise in the field of early childhood development, with other professionals and the wider community. This may involve formal or informal presentations and talks including the following:

- speaking at public conferences and workshops

- speaking to other early childhood professionals and professional organisations, such as nursing mothers associations, paediatricians, paediatric nurses, speech pathologists, occupational therapists and child psychologists
- building links with non-government organisations who work with children, particularly disadvantaged children
- giving talks to adolescents to prepare them for future parenthood.

The Montessori Early Years Learning Programme

Three to Six Years: *The Children's House*

The scope and sequence of the Montessori *Children's House* curriculum is embodied in the sets of materials displayed on open shelves at the children's level in the *Children's House* and in the sequence in which these materials are typically presented to the children. The resources and activities in the *Children's House* are organised into four main areas:

- the exercises of practical life
- the exercises of the senses
- language
- mathematics.

Also incorporated into these areas are resources and activities that introduce children to visual arts, music, physical education, science, geography and history.

Fundamental Life Skills in the *Children's House*

Learning fundamental life skills, or *practical life*, is the component of the Montessori Early Years Learning Programme that links the home environment and the *Children's House*. Children love order, and they love to be independent, and this desire finds expression in the *exercises of practical life*. During these exercises children use a variety of materials and activities to support increased control and refinement of:

- whole body equilibrium and coordination
- fine motor skills
- voluntary control of attention and the ability to concentrate
- the ability to sequence the steps of a task in order to achieve a goal
- everyday living skills.

To achieve the goal of a *practical life* exercise, children must use precise movements. As they strive for precision of movement, children develop their *will*, that is, they develop self-control, the ability to self-regulate, voluntary control over movement, as well as voluntary control over attention, the foundation of the ability to concentrate. If they are free to work at their own pace uninterrupted, children gradually extend the period of time they are able to concentrate. When they have completed a cycle of work, without being disturbed, children typically experience feelings of great satisfaction and increased confidence in their own abilities.

Practical life for children aged between three and six years in the *Children's House* encompasses four main areas:

- control of movement
- care of person
- care of environment
- grace and courtesy/social relations.

In the *Children's House* the skills needed to succeed at the exercises in these areas are developed initially in a series of 'transitional' exercises in which children practise 'preliminary movements'. These exercises build on the skills learnt by children in the *Infant Community*.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1PL010 Transition or preliminary movements	<p>01 Repeat precise hand movements leading to concentration and self-mastery</p> <p>02 Develop control and coordination of whole-body movement</p> <p>03 Develop hand-eye coordination</p> <p>04 Make responsible and appropriate choices</p> <p>05 Wait, share, take turns</p> <p>06 Prepare for later work in the environment</p> <p>07 Develop confidence in own ability in both whole body and fine motor movement</p> <p>08 Develop orientation to the physical space and accepted expectations</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - activities familiar from home that demand hand-eye coordination - water play - art activities such as glue, cutting and painting - language and music activities such as singing and storytelling. <p>Resources include:</p> <ul style="list-style-type: none"> - simple puzzles - sandpit play - building blocks and other construction materials - activities with clay and/or 'play dough' - modelling provided by adults and other children.
	<p>09 Widen social contacts and interact in a group</p> <p>10 Verbally or non-verbally express their needs</p>	Children interact with adults and other children in the environment.
C1PL020 Preliminary activities	<p>01 Develop more precise control and coordination of movement</p> <p>02 Repeat precise whole body and hand movements leading to concentration and self-mastery</p> <p>03 Prepare for later work in the classroom</p> <p>04 Develop confidence in own ability to complete simple everyday tasks</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - spooning and pouring - carrying chairs, trays, mats, buckets, jugs - folding cloths - opening and closing different types of containers - threading. <p>Resources include prepared sets of functional objects and implements, as well as furniture matched to children's size, strength and dexterity.</p>
C1PL030 Care of person	<p>01 Preparing food</p> <p>02 Eating</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - hand washing - preparing and serving food - eating meals with others. <p>Resources include prepared sets of functional objects and implements matched to children's size, strength and dexterity.</p>
	03 Personal care	<p>Activities include:</p> <ul style="list-style-type: none"> - blowing nose - washing face - brushing and combing hair - toileting - washing hands.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
		Resources include prepared sets of functional objects and implements matched to children's size, strength and dexterity.
	04 Dressing and undressing	Activities include: <ul style="list-style-type: none"> - grooming - caring for clothes - sewing - dressing and undressing - cleaning and polishing shoes. Resources include dressing frames to practise a variety of fastenings, as well as prepared sets of functional objects and implements matched to the children's size, strength and dexterity.
C1PL040 Care of environment: <i>indoor and outdoor</i>	01 Experience caring for plants and animals 02 Observe nature and gain an appreciation for the natural world	Activities include: <ul style="list-style-type: none"> - arranging flowers - wiping leaves - watering plants - gardening - caring for animals - range of experiences enabling children to connect with the natural environment. Resources include prepared sets of functional objects and implements matched to children's size, strength and dexterity.
	03 Develop responsibility for self and others 04 Connect with reality 05 Develop a sense of giving back to the community, leading to feelings of self-confidence and empathy	Activities include: <ul style="list-style-type: none"> - dusting and polishing - sweeping and mopping - beating rugs - washing and drying dishes, washing cloths - ironing - washing windows - washing and scrubbing, for example, tables, chairs, floor. Resources include prepared sets of functional objects and implements matched to children's size, strength and dexterity.
C1PL050 Movement: analysis and control	01 Develop control and coordination of movement 02 Develop equilibrium 03 Develop self-control and the ability to self-regulate (in Montessori terms, develop the will) 04 Experience social cohesion	Activities include: <ul style="list-style-type: none"> - walking on the line - balancing - walking up and down steps - silence game and exercises. Resources include: <ul style="list-style-type: none"> - a large elliptical line drawn on the floor for the initial walking on the line exercises

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
	05 Experience reflection and silence	- designed-in elements of the environment to provide opportunities for practise.
C1PL060 Social relations	01 Develop a language for effective and positive interaction with others 02 Experience interactions with others 03 Begin learning culturally appropriate customs and manners 04 Develop awareness of self and others	Activities include: - peer teaching and modelling - celebrations - how to lessons e.g., how to introduce, greet, interrupt, request, apologise. Resources include: - adults in the environment - a multi-age group of children - visitors from the community.
	05 Experience and understand sharing and turn taking	Activities and Resources include: - a limited quantity of each material - a multi-age group - modelling by adults and peers.

Development and Education of the Senses

Young children use their senses to explore their environment. Through sensory exploration they receive a myriad of sensory impressions from birth. From about the age of three, the developing human mind, together with the sensitive period of order, naturally strives to discriminate similarities and differences resulting in young children sorting, arranging and classifying the many sensory experiences they have collected so far. The inventory of sensory experience they construct at this age becomes a resource they use both for thinking and creating.

The Montessori materials children use to fine-tune sensory perception and discrimination, the *sensorial* materials, are some of the most distinctive and iconic of all the Montessori materials. The *sensorial* materials are sets of definitive or graded objects designed to precise specifications. Each set isolates one sensory quality only in regular and measurable ways. The qualities isolated by the Montessori *sensorial* materials include: texture, colour, shape, dimension, mass, taste, smell, temperature, pitch and intensity of sound. Children are taught a precise vocabulary to talk about the sensory qualities, and their variations, embodied in the materials. They learn these words in contrasting sets, for example, *red/blue/yellow; loud/soft; long/short; rough/smooth; triangle/square/circle; cube/sphere*. In addition, children are introduced to the superlative and comparative language for example *longer/shorter, longest/shortest*. This vocabulary then becomes a resource children can use to make more precise meanings about their world. Children use the sensorial materials in the *exercises of the senses*.

The *exercises of the senses* provide children with keys to exploring the world, as well as a means to refine perception and to construct a foundation for abstract thinking and creative expression. Initially, the exercises provide children with opportunities to use each sense to distinguish contrasting perceptions. Later, the children use the exercises to discriminate between increasingly fine variations in order to grade the objects in each set.

The Montessori exercises of the *senses* support and develop skills and dispositions such as exploration, observation, order, questioning and speculation. These exercises prepare for learning in school subject areas, including mathematics, language, science and geography. For example, *exercises of the senses* can be used as a foundation for the following *Years F-2 Curriculum* described in the *Shape of the Australian Curriculum: Science* (Commonwealth of Australia 2009: 7).

Curriculum focus: awareness of self and the local world

Young children have an intrinsic curiosity about their immediate world and a desire to explore and investigate things around them. Asking questions leads to speculation and the testing of ideas. Exploratory, purposeful play is a central feature of their investigations. Observation, using the senses in dynamic ways, is an important skill to be developed in these years. Observation leads into the idea of order that involves describing, comparing and sorting.

The *exercises of the senses* include exercises through which children learn to attend to their perceptions and to discriminate between finer and finer variation using the following senses:

- visual (dimension, colour, shape)
- tactile (texture, mass, temperature, stereognostic)
- auditory (pitch, timbre, rhythm, style, intensity of sound)
- olfactory (smell)
- gustatory (taste)

The *exercises of the senses* help children order sensory impressions in a mental inventory, or classification system, accompanied by a precise vocabulary, which they can use as a resource for thinking and creative expression. These exercises complement children's work with puzzles and construction materials. It culminates in the children's ability to apply the skills they gain in sensory discrimination and judgement to phenomena in the wider environment. The use of the *sensorial* materials also develops children's skill with the precise use of the hand in increasingly exact and controlled movement.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1SS010 Visual discrimination: <i>dimension</i>	<p>01 Perceive fine variation in dimension</p> <p>02 Learn to use a vocabulary to talk about variation in dimension, including <i>large/small, thick/thin, long/short</i>, as well as the related comparative and superlative adjectives</p> <p>03 Prepare indirectly for counting, solid geometry and later mathematical work</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - opportunities for children to choose and continue working with the materials without interruption. <p>Resources include:</p> <ul style="list-style-type: none"> - cylinder blocks - pink tower - brown stair - red rods.
C1SS020 Visual discrimination: <i>colour</i>	<p>01 Match and grade colours</p> <p>02 Learn a vocabulary of colour</p> <p>03 Develop a sense of aesthetics</p> <p>04 Prepare indirectly for visual arts</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - opportunities for children to choose and continue working with the materials without interruption. <p>Resources include <i>colour boxes 1, 2 and 3.</i></p>
C1SS030 Visual discrimination: <i>shape (form)</i>	<p>01 Explore and discover variation in two-dimensional shapes and the relations between them</p> <p>02 Prepare indirectly for the study of plane geometry</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - opportunities for children to choose and continue working with the materials without interruption.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
		Resources include: <ul style="list-style-type: none"> - geometry cabinet and cards - geometric solids - botany/leaf cabinet and cards.
C1SS040 Visual discrimination: <i>mixed</i>	01 Apply knowledge, skills and understandings of dimension, colour and shape, as well as relations between them	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - opportunities for children to choose and continue working with the materials without interruption - art and design work. Resources include: <ul style="list-style-type: none"> - knobless cylinders - superimposed figures/graded geometric figures - objects in the environment.
C1SS050 Tactile discrimination: <i>texture</i>	01 Experience, match and grade variations in texture 02 Prepare indirectly for handwriting	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - opportunities for children to choose and continue working with the materials without interruption. Resources include: <ul style="list-style-type: none"> - touch boards - touch tablets - fabric boxes.
C1SS060 Tactile discrimination: <i>mass (baric sense)</i>	01 Experience, match and grade variation in mass 02 Prepare indirectly for measuring mass	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - hefting and weighing activities - using scales. Resources include: <ul style="list-style-type: none"> - the baric tablets - simple scales - objects in the environment.
C1SS070 Tactile discrimination: <i>temperature (thermic sense)</i>	01 Experience, match and grade variation in temperature 02 Prepare indirectly for measuring temperature	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - applying knowledge in the environment. Resources include: <ul style="list-style-type: none"> - thermic bottles - thermic tablets - objects in the environment.
C1SS080 Tactile discrimination: <i>stereognostic*</i>	01 Use perception of tactile qualities to identify three-dimensional objects 02 Prepare indirectly for the study of solid geometry	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - sorting activities.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
		Resources include: <ul style="list-style-type: none"> - geometric solids - stereognostic bags - mystery bags.
C1SS090 Auditory discrimination: <i>dynamics/intensity of sound</i>	01 Explore variation in sound and its qualities 02 Learn to use a vocabulary to talk about variation in sound (loud/soft, as well as the related comparative and superlative adjectives) 03 Prepare indirectly for the study of music, dance and poetry	Activities include: <ul style="list-style-type: none"> - listening games - playing percussion instruments - listening to different instruments - listening to different types of music - listening and moving to poetry - moving to music - singing - dancing. Resources include: <ul style="list-style-type: none"> - sound boxes - <i>Montessori bells</i> (accurately pitched; diatonic C major scale, plus the five sharps/flats that will turn the C major scale into a chromatic scale) - percussion instruments - live and recorded music and poetry.
C1SS100 Auditory discrimination: <i>pitch</i>	01 Perceive, match and grade variations in pitch 02 Distinguish and label high and low 03 Play known tunes 04 Compose own tunes	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - opportunities for children to choose and continue working with the materials without interruption. Resources include: <ul style="list-style-type: none"> - the <i>Montessori bells</i> (accurately pitched; diatonic C major scale, plus the five sharps/flats that will turn the C major scale into a chromatic scale) - card material.
C1SS110 Auditory discrimination: <i>timbre</i>	01 Experience and identify the timbre of different instruments, voices and non-musical sounds	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - listening games and activities (indoors and outdoors). Resources include: <ul style="list-style-type: none"> - musical instruments e.g., percussion instruments - music and sounds in the environment.
C1SS120 Auditory discrimination: <i>rhythm</i>	01 Experience, identify and create different rhythms and beats	Activities include: <ul style="list-style-type: none"> - playing instruments, including percussion instruments - listening to different types of music, songs and poetry - dancing - moving to music.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
		Resources include: <ul style="list-style-type: none"> - musical instruments e.g., percussion instruments - music and sounds in the environment.
C1SS130 Auditory discrimination: <i>style</i>	01 Experience and identify different styles of music	Activities include listening to different songs and types of music from within the children’s own culture and to music of different cultures. Resources include live and recorded music.
C1SS140 Olfactory discrimination: <i>smell</i>	01 Distinguish, identify and name different smells	Activities include: <ul style="list-style-type: none"> - preparing food - arranging flowers. Resources include: <ul style="list-style-type: none"> - smelling bottles - a range of items in the indoor and outdoor environment.
C1SS150 Gustatory discrimination: <i>taste</i>	01 Identify, distinguish between and name the main tastes (sweet, sour, salty, bitter) 02 Experience relations between the senses of smell and taste	Activities include preparing and eating food. Resources include: <ul style="list-style-type: none"> - tasting bottles - a range of different foods.

* The word ‘stereognostic’ comes from ‘stereo’ meaning ‘around’ and ‘gnostic’ meaning ‘to know’. The term refers to sensory perception that combines visual and muscular exploration and memory. When used in Montessori contexts, it refers to the means through which young children gain knowledge by feeling around an object.

Language

Dr Maria Montessori designed an early childhood language programme in which all the elements of spoken and written language are taught in an incremental, yet integrated, way. In the *Children’s House* the spoken language children have been developing since birth is further elaborated and refined through a variety of language enrichment activities that include songs, games, poems, stories and sets of classified picture cards. The multi-age grouping of children means younger children have many opportunities to watch and listen to older children reading both story and factual books.

The first, indirect preparation for mastering written language begins with the *exercises of practical life* and the *exercises of the senses*. The *exercises of practical life* develop fine motor skills and the *exercises of the senses* prepare children to distinguish between the different sounds of the language and the different shapes of the letters.

When children first work with the letters of the alphabet, they use *sandpaper letters* as part of activities in which they simultaneously hear the sounds of the letters, and see and trace the shape of the letters. When children know enough letters, they are introduced to a *movable alphabet* made out of wooden or cardboard letters. Children use the letters to compose and write down their own words, phrases, sentences and finally stories. Because children are using their own language to compose with the *movable alphabet*, they may discover that they can read their own writing, especially when the *movable alphabet* work is accompanied by activities that provide children with structured opportunities for decoding practice. They soon transfer their skills to reading books, both to themselves and others. They are later introduced to word study materials and materials for

exploring spelling patterns. To increase reading fluency and comprehension, children work with materials that draw their attention to the grammar patterns of the language.

All elements of the Montessori language programme provide children with a platform for building self-confidence and using language creatively across a variety of modes of communication. Children also have the opportunity to enjoy a wide range of good quality and varied literature, as well as factual and reference books.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1LA010 Spoken language: <i>Vocabulary enrichment</i>	<ol style="list-style-type: none"> 01 Experience both non-verbal and verbal communication 02 Experience a variety of communication modes (spoken and written language, non-verbal communication, visual images, interactive technologies) 03 Expand and extend vocabulary 04 Understand the spoken language of others 05 Learn to listen to and use spoken language effectively (age appropriate) and with increasing confidence in a variety of situations for both social interaction and self-expression 06 Learn to take turns in a spoken exchange 07 Learn to appreciate language diversity in others e.g., through experience with languages other than English 08 Recognise and generate rhyming words, alliteration patterns, syllables and sounds (phonemes) orally 09 Articulate the sounds of language effectively 10 Use the prosodic features of spoken language effectively, e.g., rhythm and intonation 11 Prepare indirectly for working with written language e.g., informal experience with reading, vocabulary and word study and the grammar of the language e.g., tense, singular/plural, collective nouns 	<p>Activities include:</p> <ul style="list-style-type: none"> - a variety of real-life experiences to talk about e.g., excursions, visitors to the classroom from the community, animals in the classroom - a variety of opportunities for communication e.g., conversations, retelling real-life events, describing, expressing opinions, explaining - opportunities to enjoy quality literature and to tell and read stories - opportunities to use age-appropriate factual and reference books - singing and playing music - activities involving rhyme and poetry - finger plays - sorting and matching sets of objects and pictures cards - the <i>spoken question game</i>, a spoken presentation scaffolded by an adult. - memory distance games - listen and do games - bring me games - names of objects in environment activities <p>Resources include:</p> <ul style="list-style-type: none"> - adults and other children in the environment - vocabulary enrichment picture cards - sets of classified picture cards. - I spy game
C1LA020 The mechanics of writing and reading: <i>sound-letter correspondence,</i>	<ol style="list-style-type: none"> 01 Learn the correspondence between sounds of the language and the letters of the alphabet 	<p>Activities include:</p> <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - scribbling, painting, cutting and gluing - designing with the metal insets - the sound game

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
<i>letter formation, decoding, handwriting</i>	<p>02 Arrange the letters of the alphabet to make words, phrases, sentences and paragraphs</p> <p>03 Decode written words using knowledge of letter-sound correspondence (single letters, digraphs)</p> <p>04 Develop pencil grip, adaptation of space, lightness of touch and muscular control of the hand</p> <p>05 Use a variety of writing implements and surfaces</p>	<ul style="list-style-type: none"> - matching labels to objects in the environment, miniature objects or pictures in card sets - modelling by adults, or other children - phonetic reading (objects and labels, labels without objects, cards) - blends/digraphs (moveable alphabet, booklets, charts, labels to match objects) - sight words/puzzle words. <p>Resources include:</p> <ul style="list-style-type: none"> - sandpaper letters, moveable alphabets, metal insets - a variety of writing surfaces, including sand, chalkboards, different types and colours of paper - a variety of writing implements, including chalk, crayon, pencil, brush.
<p>C1LA030</p> <p>Written expression: <i>preparation</i></p>	<p>01 Gain an appreciation of written language in all its forms e.g., literary, factual, reference</p> <p>02 Build confidence in ability to engage with written expression</p> <p>03 Express themselves in writing</p> <p>04 Become familiar with the patterns of written language in preparation for written composition and reading comprehension</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - reading aloud by adults or other children - writing with the moveable alphabet - vocabulary building across the curriculum <p>Resources include:</p> <ul style="list-style-type: none"> - quality children's literature, factual books and a range of other appropriate written material - sandpaper letters, moveable alphabets.
<p>C1LA040</p> <p>The functions of words: <i>parts of speech and their work</i></p>	<p>01 Experience and gain an understanding of the grammar patterns used to organise words into text</p> <p>02 Experience and understand that word order affects the meaning of written language</p> <p>03 Enhance and extend reading skills and reading for meaning</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - functions of words games and exercises. <p>Resources include:</p> <ul style="list-style-type: none"> - a 'mini' environment, e.g., house, farm, zoo, streetscape, and labels - grammar symbols.
<p>C1LA050</p> <p>Reading: <i>analysis and synthesis</i></p> <p>Sentence analysis: <i>words, groups and phrases, clauses and sentences</i></p>	<p>01 Build knowledge and understanding of the grammatical patterns of language</p> <p>02 Explore and understand the importance of verbs</p> <p>03 Explore the structure of a sentence</p> <p>04 Enhance and extend reading skills and reading for meaning</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - phonetic reading (objects and labels, labels without objects, cards) - blends/digraphs (moveable alphabet, booklets, charts, labels to match objects) - sight words/puzzle words - reading/sentence analysis games and exercises. <p>Resources include:</p>

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
		<ul style="list-style-type: none"> - sentence analysis part 1 & part 2 set including charts and moveable material - prepared sentences in increasing order of complexity - objects in the environment - labels - phonetic object box and cards - phonetic action words - quality literature and factual books - opportunity to compose sentences independently.
<p>C1LA060</p> <p>Word study</p>	<p>01 Extend their knowledge and understanding of English vocabulary</p> <p>02 Build words using knowledge of, for example, prefixes and suffixes, compound words, singular and plural</p> <p>03 Build families of words</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - word <i>study</i> games and exercises <p>Resources include:</p> <ul style="list-style-type: none"> - <i>moveable alphabets</i> in two or more colours - sight words on cards - puzzle words - word lists and charts.
<p>C1LA070</p> <p>Spelling</p>	<p>01 Explore and refine spelling</p> <p>02 Begin making the transition from invented spelling to correct spelling</p>	<p>Activities include precise and engaging demonstrations offered by the adult</p> <p>Resources include:</p> <ul style="list-style-type: none"> - moveable alphabet - phonogram cards and booklets - word study - personal word lists - dictionaries - books.
<p>C1LA080</p> <p>Reading commands: <i>Interpretive reading</i></p>	<p>01 Read for meaning with increasing fluency</p> <p>02 Prepare for drama activities including emotional content of literature</p> <p>03 Experience and understand the effect on meaning of mood and style in literature</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - acting out increasingly complex written commands - acting out extracts from children's literature. <p>Resources include:</p> <ul style="list-style-type: none"> - command cards - extracts from quality children's literature - quality literature and factual books - poetry - <i>Who am I?</i> riddles.
<p>C1LA090</p> <p>Reading across the subject areas</p>	<p>01 Practice and consolidate reading skills</p> <p>02 Use reading skills to gain information and to research topics of interest</p> <p>03 Extend their vocabulary</p> <p>04 Discover and use accurate terminology for phenomena in the world around them</p>	<p>Activities include a range of opportunities to enjoy and practise reading and to extend reading skills across all areas of the curriculum.</p> <p>Resources include:</p> <ul style="list-style-type: none"> - visiting experts - objects, labels, picture cards, jumbled definitions and control booklets

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
		- quality age-appropriate reference books.
C1LA100 Punctuation	01 Explore the conventions of punctuation, including use of capital letters, full stop and commas	Activities include: - precise and engaging demonstrations offered by the adult - <i>punctuation</i> games and exercises. Resources include: - moveable alphabet - punctuation cards.
C1LA110 Musical notation	01 Experience and discover musical notation as a means of recording sounds 02 Use musical notation for composition 03 Read notes in order to play back another person's musical ideas	Activities include: - precise and engaging demonstrations offered by the adult - musical notation games and exercises. Resources include: - moveable music notation symbols (e.g., treble and bass clefs, notes, rests, dynamics, tempo) and wooden board with painted staff - rhythm charts - card material.
C1LA120 Cultural extensions: language across the subject areas: - History - Geography - Science - Art and Music appreciation	01 Respect and recognise differences across families, the community and the world 02 Explore social relations in a range of contexts 03 Experience other cultures 04 Appreciate the natural world 05 Respect all life forms 06 Develop the aesthetic sense	Activities include: - caring for plants e.g., dusting, planting, potting, harvesting - caring for animals - preparing food from around the world. Resources include: - artefacts from a range of cultures, including, for example photographs, artworks and wall hangings; songs, poetry and stories; tools and musical instruments; food and clothing - land and water form models, picture cards, labels, definitions and booklets - globes, maps and flags - geography and history folders of classified pictures i.e. sets of picture cards, labels and booklets representing different types of clothing, food, shelter, transportation, defence, animals and plants, in different cultures and countries.

Mathematics

The study of mathematics is a reflection of the human tendencies for investigation and orientation, for order and classification, for reasoning and making judgements, and for calculating and measuring. In the Montessori *Children's House*, when mathematical concepts are first presented to children, they are embodied in concrete materials.

Mathematics in the *Children's House* builds on and extends the *exercises of practical life* and the *exercises of the senses*, as well as the many mathematical experiences children encounter incidentally in their daily lives, including experiences with:

- visual representation of mathematical concepts
- pattern and order
- problem solving
- cardinal and ordinal numbers
- place value
- operations (addition, subtraction, multiplication, division)
- fractions
- spatial relations e.g., placement of objects, spatial patterns, one-to-one correspondence of objects and two-dimensional shapes
- measurement e.g., length, mass, time, temperature, volume, perimeter, area
- word problems (addition, subtraction, multiplication, division)

As they work with the exercises of the *senses*, children are making judgements in relation to distance, dimension, graduation, identity, similarity and sequence. Building on this foundation, the Montessori mathematics materials introduce children to:

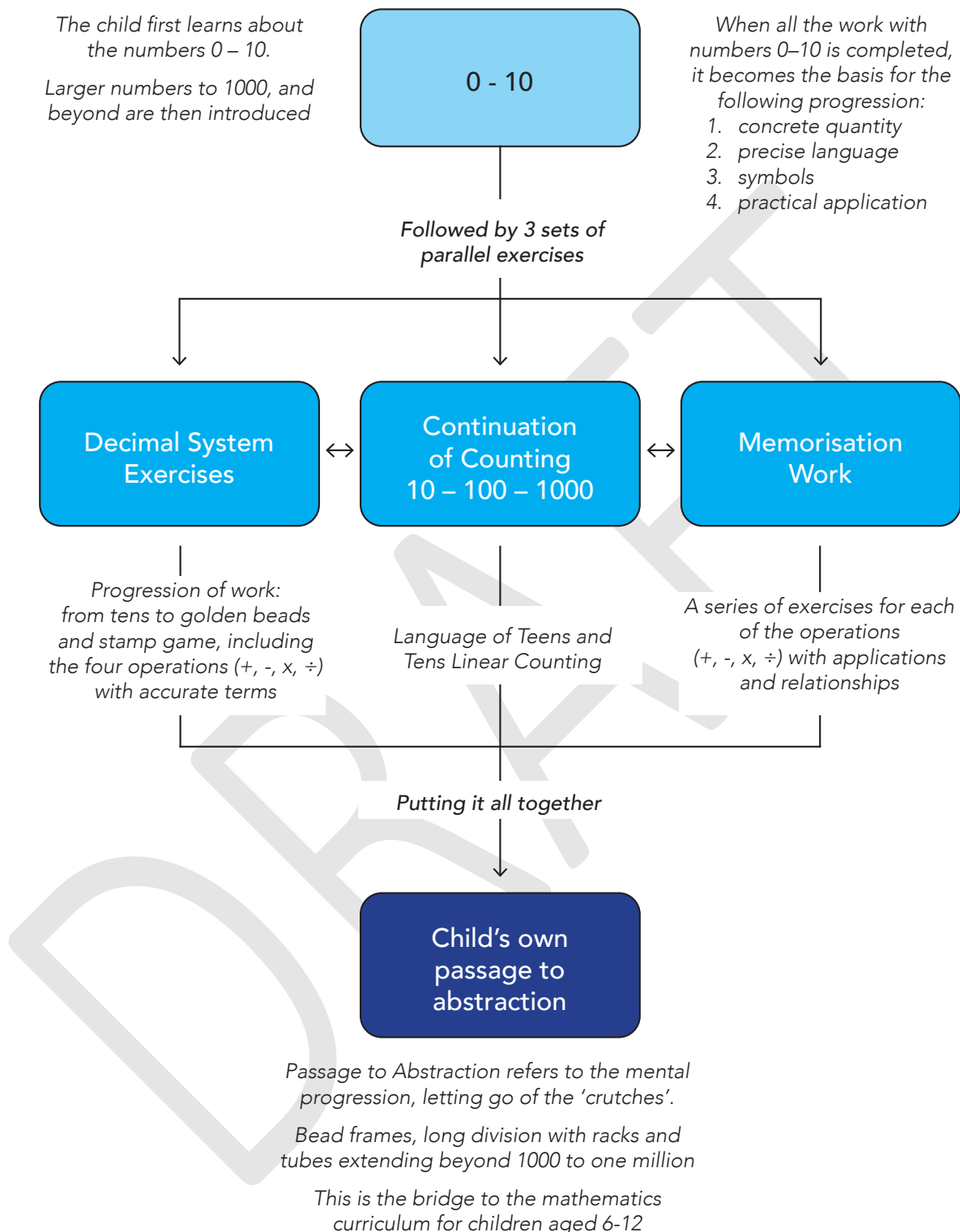
- counting (from 1 to 10, 10 to 90, linear 1 to 100 and 1000, and skip-counting as an introduction to multiplication)
- place value to four digits
- number operations (addition, subtraction, multiplication, division).

The base ten number system is represented for children in concrete form using *golden beads* organised so they vary simultaneously in quantity, size, mass and geometric shape. Children are also given the corresponding symbol for each quantity. In this way, children experience relations between the hierarchies of the system in multiple ways. Using this material in active and enjoyable games, children learn to add, subtract, multiply and divide. This material supports the heightened sensitivity for number children tend to experience around the age of four.

The progression of the Montessori mathematics curriculum in the *Children's House* follows a five-step sequence.

1. *Introduction of Concrete Materials:* (The quantity is presented in isolation.)
Concepts are presented in a concrete form children can manipulate. Children are given accurate language to talk about the concrete impressions. Only after they have experienced the concrete material are they given the symbolic mathematical notation.
2. *Introduction of Symbols:* (The visually recognised symbols are offered in isolation.)
When the child is comfortable with the concrete representation and the oral language, mathematical symbols are introduced.
3. *Association of the Concrete with the Symbols:* (Accurate language is the link.)
Only after the child has completed the first two steps are the concrete materials and symbols combined.
4. *Practice*
After being presented with new information children need the opportunity for repetition. Children are offered a way to practise using and remembering this new knowledge and integrating it with what is already known. They have the opportunity to build and consolidate the knowledge through use of the materials, until it becomes automatic.
5. *Self-Assessment*
Children are given exercises to affirm or verify their own understanding and knowledge, and to establish whether they are ready for the next exercise.

An overview of the mathematics curriculum is represented in the following diagram:



Children work through the Montessori mathematics exercises and games in a supported and incremental way. There is no pressure for children to move onto a new topic before mastering the one they are working on.

Students are free to progress through the mathematics curriculum following their own interests, so not all children complete the activities in the same sequence or in the same timeframe.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1MG010 Language of mathematics	01 Understand mathematical terms, for example, long/short, more/less, share	Activities include: <ul style="list-style-type: none"> - everyday tasks - preparing food - gardening - singing and finger plays. Resources include the sets of objects in the environment.
C1MG020 Mathematical concepts: <i>indirect preparation</i>	01 Know materials have a purpose 02 Understand beginning, middle and end 03 Have established work habits 04 Experience mathematical concepts incidentally, informally and/or indirectly e.g., spatial awareness, one-to-one correspondence, geometry, classification, measurement, set, order, seriation, sequence, matching, grading	Activities include: <ul style="list-style-type: none"> - movement activities for development of gross and fine motor skills - practical life exercises - exercises of the senses - language/communication activities - singing and finger plays - classifying, sorting, matching, sequencing and grading - everyday tasks (one-to-one correspondence of, for example, sock to foot, cutlery and place on table setting) - preparing food, including measuring, sequencing actions - puzzles, construction, stereognostic bags. Resources include the sets of objects in the environment.
C1MG030 Quantities and symbols 1 to 10	01 Learn to recognise, sequence and count numbers 0 to 10 02 Experience and understand the function of 'zero' as an empty set and as a placeholder 03 Experience 9 as a counting limit	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - <i>numbers to 10</i> games and exercises. Resources include: <ul style="list-style-type: none"> - number rods and cards - sandpaper numbers - spindle box - cards and counters - memory game of numbers - games with zero.
C1MG040 Decimal system	01 Understand the concept of units, tens, hundreds and thousands 02 Make and read composite numbers.	Activities include forming numbers with beads and number cards. Resources include <i>golden bead</i> material and number cards.
C1MG050 Language of Numbers larger than 10	01 Compose and count 'teen' and 'ten' numbers to 100 02 Use the language of 'teen' numbers and 'tens' to 100	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - games and exercises with teen and ten numbers.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
		Resources include: <ul style="list-style-type: none"> - <i>ten boards</i> and coloured beads - <i>ten boards</i> and coloured beads.
C1MG060 Counting: <i>continuation</i>	01 Count numbers 1-10, 10-19, 1-100, 100-1000 02 Recognise recurring patterns across hierarchies	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - counting games and exercises. Resources include: <ul style="list-style-type: none"> - <i>ten boards</i> and coloured beads - <i>ten boards</i> and coloured beads - <i>100-chain, 1000-chain</i> and skip counting chains (1-9) in the <i>chain cabinet</i>.
C1MG070 Operations	01 Experience, understand and apply the operations and their relationships (addition, subtraction, multiplication, division)	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - games and exercises with concrete material. Resources include: <ul style="list-style-type: none"> - golden bead material and number cards - dot game - stamp game - word problems.
C1MG080 Expanding the decimal system: <i>beyond 1000</i>	01 Recognise number patterns recurring across hierarchy 'families': simple, family of thousands, family of millions 02 Experience and work with large numbers to millions, consolidating earlier work with addition subtraction, multiplication and division	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - games and exercises with concrete material. Resources include: <ul style="list-style-type: none"> - wooden hierarchical material - small and large <i>bead frames</i> - racks and tubes materials
C1MG090 Memorisation	01 Memorise and apply the essential number facts for addition, subtraction, multiplication and division	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - games and exercises with concrete material. Resources include: <ul style="list-style-type: none"> - snake games - addition and subtraction <i>strip boards</i> and <i>finger charts</i> - box of bead bars - multiplication <i>bead board</i> and charts - division <i>bead board</i> and charts.
C1MG100 Geometry	01 Recognise and explore 2- and 3-dimensional shapes and their relationships 02 Learn and apply accurate terminology	Activities include: <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - games and exercises with concrete material and objects in the environment. Resources include:

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
	03 Experience, discover and explore the constructive power of triangles	<ul style="list-style-type: none"> - simple puzzles - folding cloths - shapes in the inside and outside environments - geometry cabinet and cards - botany cabinet and cards - geometry solids and bases - superimposed geometric figures/graded geometric figures - constructive triangle boxes.
C1MG110 Algebra	01 Prepare indirectly for algebra	<p>Activities include:</p> <ul style="list-style-type: none"> - precise and engaging demonstrations offered by the adult - games and exercises with concrete material. <p>Resources include:</p> <ul style="list-style-type: none"> - binomial cube - trinomial cube - sensorial decanomial - constructive triangle boxes.
C1MG120 Time and sequence	<p>01 Experience sequence, order and routine</p> <p>02 Begin to understand the concepts of today, yesterday, tomorrow, past, present, future</p> <p>03 Begin to tell the time using o'clock, half past, quarter to, quarter past</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - daily and weekly routines - experiencing order and sequence in the environment - celebrating seasons and festivals. <p>Resources include:</p> <ul style="list-style-type: none"> - clocks and card material - calendars.
C1MG130 Fractions	<p>01 Experience cutting up and sharing a whole</p> <p>02 Learn the language of fractions (quantities <1)</p> <p>03 Begin to use operations (addition, subtraction, multiplication, division) with fractions</p>	<p>Activities include</p> <ul style="list-style-type: none"> - preparing food - sharing. <p>Resources include fraction circle insets and labels.</p>

Cultural Subjects: Science, Geography and History

Children enter the *Children's House* when their interest in observing natural and social phenomena is at its peak. They are in the process of building a framework for classifying the features of the world around them. The *exercises of the senses* develop and refine children's powers of observation and sensory perception. Children learn to appreciate the natural world and social world through their senses.

Activities that provide children with experience of the natural and social world are presented in the same integrated way as all Montessori activities. Knowledge is presented to children in concrete form they can manipulate in purposeful ways. Activities allow for freedom of choice and repetition. Lessons can be given individually, or in small or large groups.

A systematic approach to the study of nature and society in the *Children's House* lays the foundation for *Cosmic Education*, which is the major focus of studies for children aged from six to twelve years.

The curriculum below covers the Montessori Early Years Learning Programme for the *Nido*, *Infant Communities* and the *Children's House*, but most of the activities are designed for the *Children's House* specifically.

Science

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1CE010 Practical life	01 Care for plants and animals	<p>Activities include:</p> <ul style="list-style-type: none"> - developing precise hand control - <i>how to</i> lessons e.g., how to clean up - gardening, cleaning, sweeping, raking, watering and cleaning leaves. - providing pets with an appropriate habitat or shelter - feeding pets. <p>Resources include sets of functional objects and implements needed for the care of plants and animals and matched to children's size, strength and dexterity.</p>
C1CE020 Sense exercises	01 Refine and develop powers of observation and perception	<p>Activities include relevant <i>exercises of the senses</i> i.e. pairing then grading dimension, colour, shape, texture, sound.</p> <p>Resources include the Montessori sensorial materials and the indoor and outdoor environment.</p>
	02 Recognise very small differences and similarities	
	03 Begin to classify nature	<p>Activities include:</p> <ul style="list-style-type: none"> - tracing and naming leaf shapes in the <i>botany cabinet</i> - matching leaf cards and booklet with real leaf specimens - art and craft activities. <p>Resources include:</p> <ul style="list-style-type: none"> - the botany cabinet - card material - plants in the environment.
	04 Distinguish the four fundamental tastes	<p>Activities include relevant <i>exercises of the senses</i>.</p> <p>Resources include:</p> <ul style="list-style-type: none"> - tasting bottles - smelling bottles.
	05 Distinguish scents of, for example, herbs and spices	
C1CE030 Physical Science: <i>simple physics and chemistry, time, weather, astronomy</i>	<p>01 Observe and respond to natural phenomena to gain an impression of the scientific properties of such phenomena</p> <p>02 Explore the many features of the world</p> <p>03 Investigate their surroundings by observing, questioning, exploring and reporting</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - using a magnifying glass - undertaking simple experiments, e.g., magnets, sink/float, air, sound, gravity, light - collecting rocks - telling the time - monitoring the daily weather - observing and learning about clouds - learning about the sun, moon, stars and constellations - cooking - mixing colours

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
		<ul style="list-style-type: none"> - reading age-appropriate books about the physical sciences. <p>Resources include sets of functional objects and implements matched to children's size, strength and dexterity.</p>
<p>C1CE040</p> <p>Botany</p>	<p>01 Refine and develop powers of observation and perception</p> <p>02 Explore and observe the world of plants</p> <p>03 Develop an appreciation of the wonders of the plant world</p> <p>04 Begin to understand what plants need to survive, grow and thrive</p> <p>05 Learn to care for plants</p> <p>06 Understand the effect of seasonal changes on plants</p> <p>07 Become aware of the interdependency of all living things and the function of each in the web of life</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - planting and watering - raking and hoeing - weeding, composting, harvesting, repotting - working with leaves e.g., cleaning, matching to botany cabinet shapes, collecting for study; drawing, making leaf collages and prints - experiments including the needs of plants, what seeds need to germinate and grow - nature walks. <p>Resources include:</p> <ul style="list-style-type: none"> - sets of functional gardening implements matched to children's size, strength and dexterity. - selection of age-appropriate books about plants and animals - gardens with planted and wild areas, flowering and non-flowering plants, with garden beds, raised areas and planter boxes - indoor plants (non-toxic) representing a variety of species e.g., one for each leaf shape in the botany cabinet.
<p>C1CE050</p> <p>Botany: <i>language</i></p>	<p>01 Build a vocabulary for talking about plants</p> <p>02 Write and read about plants (4-6 years)</p>	<p>Spoken language:</p> <ul style="list-style-type: none"> - names of plants, leaf shapes, parts of a plant, parts of roots, parts of a flower, parts of a leaf - names of gardening activities and tools - stories and poetry about nature - pictures about plants as motives for spontaneous conversations <p>Written language:</p> <ul style="list-style-type: none"> - labels for botany cabinet leaf shapes; indoor and outdoor plants; wall charts and pictures - picture cards, labels, definitions and control booklets e.g., parts of plants, roots, flowers and leaves, and types of flowers, plants and fruit

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1CE060 Zoology	<p>01 Refine and develop powers of observation and perception</p> <p>02 Explore and observe the world of animals</p> <p>03 Develop an appreciation of the wonders of the animal world</p> <p>04 Begin to understand what animals need to survive, grow and thrive</p> <p>05 Learn to care for animals</p> <p>06 Understand the effect of seasonal changes on animals</p> <p>07 Become aware of the interdependency of all living things and the function of each in the web of life</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - caring for animals (feeding, watering, cleaning) - preparing habitats - studying and sorting different types of shells - observing life cycles e.g., butterfly, frog - learning external parts of the human body. <p>Resources may include animals in the environment, both pets (e.g., guinea pigs; rabbits, bird, fish) and short term visitors (e.g., lizards, snails, ladybirds).</p>
C1CE070 Zoology: <i>language</i>	<p>01 Build a vocabulary for talking about animals</p> <p>02 Write and read about animals (4-6 years)</p>	<p>Spoken language:</p> <ul style="list-style-type: none"> - names of animals, types of animals, animal characteristics, parts of animals - picture cards sets of animals: types, parts of, phases of life cycle - pictures about animals as motives for spontaneous conversations <p>Written language:</p> <ul style="list-style-type: none"> - classified picture card sets, labels, definitions and control booklets e.g., vertebrates/invertebrates, prehistoric animals, herbivorous/carnivorous animals; marine, desert, forest, jungle, mountain animals; types of animals both invertebrate (e.g., arachnids, crustaceans, insects) and vertebrate (fish, amphibians, reptiles, birds, mammals) - labels for phases parts of the life cycle of animals - labels for the external parts and features of animal bodies and the human body - reading and writing descriptions, stories and poetry about animals - word study activities e.g., male/female, animal young, animal homes, animal groups collective nouns

Geography

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
<p>C1CE080 Geography</p>	<p>01 Develop a logical framework to order and store their impressions of the world</p> <p>02 Gain an initial awareness of the importance of ecology</p> <p>03 Gain initial understandings of features of land, sea and air</p> <p>04 Gain initial impressions of how plants and animals are distributed across the earth</p> <p>05 Begin to appreciate what people across the world have in common, as well as the variation among peoples/cultures</p> <p>06 Begin to appreciate the industry, inventions and creativity of humans all over the world</p> <p>07 Become aware of their place in the cosmos</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - working with Montessori globes and puzzle maps - drawing and labelling maps and flags - listening to and playing music and singing songs from around the world - making land and water forms in sand/clay - drawing or tracing land and water forms. <p>Resources include:</p> <ul style="list-style-type: none"> - sandpaper globe of the world (land and water distribution) - painted globe of the world (continents and oceans) - pairs of land and water forms: island/lake, peninsular/gulf, isthmus/strait, bay/cape, archipelago/group of lakes - political puzzle maps of the continents of the world - political map of the states and territories of the children's own country - classified pictures of people, places, plants and animals, products from different countries in each continent - flags of the countries of each continent - picture material of flora and fauna emblems of countries/states - picture material of biomes i.e. life zones with own climate and features such as seasons, plants and animals: forest, savannah, grasslands, desert, ice cap, mountains, wetlands - manufactured and craft items from around the world - clay models depicting land and water forms.
<p>C1CE090 Geography: <i>language</i></p>	<p>01 Build a vocabulary for talking about places and people across the world</p> <p>02 Write and read about places and people across the world (4-6 years)</p>	<p>Spoken language</p> <ul style="list-style-type: none"> - greetings and counting from around the world - names of the continents - names of countries within a continent - names of states and territories in children's own country - names of land and water forms - classified pictures of generic land and water forms - classified pictures of real land and water forms <p>Written language</p> <ul style="list-style-type: none"> - writing names of land and water forms, continents, oceans, countries, states etc with moveable alphabet - labels, control of error cards, definition booklets for land and water forms - labels, control of error cards, definition booklets for continents and oceans - labels for hemispheres - labels for countries in a continent, and states and territories of children's own country

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
		<ul style="list-style-type: none"> - identifying and labelling land and water forms on outline maps of the world (isolation maps) - picture cards and descriptions of people's lives in tropic, desert and Arctic regions of the world - collections of classified pictures and labels for each continent based on the needs of humans (material and spiritual) - booklets for different continents written, illustrated and published by the children

History

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1CE100 History	<p>01 Gain an impression of time passing</p> <p>02 Gain an initial impression of ages past</p> <p>03 Recognise and appreciate the contributions of individuals, past and present</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - telling the time using both analogue and digital clocks - labelling the parts of clocks - sorting, matching and labelling card material. <p>Resources include (according to interest):</p> <ul style="list-style-type: none"> - collections of items from a past time e.g., the time when grandparents were children - classified card sets of historical objects and events - collections of pictures for each continent showing people, places and events past and present - classified cards of, for example, famous people past and present - timeline and picture material for learning about the history of transport, lighting, clothing, housing etc.

Creative Arts

The Montessori Early Years Programme covers the following areas of the creative arts curriculum:

- music
- visual arts
- movement and dance

Music

In Montessori early childhood settings music is integrated into the environment and the curriculum. It is not treated as something separate taught only by music experts. It is a form of human expression open to everyone.

In the *Children's House* children are introduced to four parallel series of music activities and exercises in each of the following areas:

- singing
- music appreciation
- music literacy (pitch and notation) with the Montessori bells
- rhythm (notation)
- playing of instruments

The music materials in Montessori early childhood settings have the following features:

- They are always available for the children to use when they choose (except for the percussion instruments).
- They are prepared so children can use them independently.
- They allow for repetition.
- They are designed to lead to concentration, perseverance, success and confidence.
- They are an integral and constant part of the environment.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1CA010 Music: <i>auditory discrimination</i>	<p>01 Explore differences in sound and sound qualities</p> <p>02 Learn language to talk about sound e.g., <i>soft/loud, high/low</i> and the comparatives and superlatives</p> <p>03 Apply knowledge and understanding about sound to the outside world.</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - sound games e.g., indicating the direction of sound, describing sounds - silence game. <p>Resources include:</p> <ul style="list-style-type: none"> - sounds in the environment - sound boxes.
C1CA020 Music: <i>singing</i>	<p>01 Sing to a range of music</p> <p>02 Sing varying the volume and pitch (<i>loud/soft; high/low</i>)</p> <p>03 Enjoy singing simple songs and melodies</p> <p>04 Sing the scale</p> <p>05 Express oneself through singing</p> <p>06 Develop pitch recognition</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - singing without accompaniment - singing with accompaniment including the Montessori bells. <p>Resources include:</p> <ul style="list-style-type: none"> - simple songs - folk songs.
C1CA030 Music: <i>appreciation</i>	<p>01 Learn to appreciate a variety of music in the world</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - independent listening to recordings of selected pieces of music - learning about the instruments of the orchestra - listening to different instruments - visiting musicians - using musical vocabulary and listening to/reading age-appropriate stories and/or reference material about music and musicians. <p>Resources include:</p> <ul style="list-style-type: none"> - live performances - recordings of many kinds of music from around the world labelled with name of piece, composer and type of music.
C1CA040 Music: <i>timbre</i>	<p>01 Listen to and play simple instruments</p>	<p>Activities include listening to and playing instruments.</p> <p>Resources include percussion and other simple instruments.</p>

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1CA050 Music: <i>pitch and notation</i>	<p>01 Identify pitch</p> <p>02 Hear, match and grade pitch</p> <p>03 Distinguish high/low</p> <p>04 Play known tunes</p> <p>05 Create own tunes</p> <p>06 Use symbol systems to represent musical sounds</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - sensorial matching and grading activities with the bells - playing and singing simple songs - composing using the bells - writing and reading music. <p>Resources include:</p> <ul style="list-style-type: none"> - the Montessori bells (two sets of matching bells accurately pitched diatonic and C Major scale plus the five sharps/flats that will turn the C major scale into a chromatic scale) - moveable wooden notes, G clef, F clef - wooden notation/staff boards - staff paper - musical nomenclature cards.
C1CA060 Music: <i>rhythm</i>	<p>01 Experience and recognise a variety of rhythm patterns</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - walking, running, marching and skipping on the line to music - foot tapping, clapping, swaying during songs - creating rhythms with hands and rhythm instruments. <p>Resources include:</p> <ul style="list-style-type: none"> - Montessori bells or piano or recordings of appropriate music for movement on the line - rhythm cards and charts - a large line on the floor that has long straight lines with gentle curves at the corners for rhythmical movement on the line.

Visual Arts

Artistic expression was considered by Dr Montessori to be one of the fundamental needs of humans. In particular, she encouraged children to draw. She felt that if children have fine motor control of the hand, learned through the exercises of practical life, combined with trained skills in perception, learned through the exercises of the senses, they would be able to create visual artworks of a high quality.

Dr Montessori (1965/1918: 286) observed that during periods of creative drawing and design work children concentrate 'deeply and wholly' with their 'entire intellect at work'. She describes the process in the following way:

To confer the gift of drawing, we must create an eye that sees, a hand that obeys, a soul that feels; and in this task the whole of life must cooperate (Montessori 1965/1918: 289).

Art appreciation is also an important aspect of Montessori early childhood settings. By looking at the artworks of others, children learn that it is possible to create different and unique works while using knowledge, skill and techniques developed by others.

Art is integrated into the Montessori approach in ways that include the following:

- the exercises of practical life and the senses are extended into a range of self-expression activities, including work with clay, collage, chalk, paint, charcoal, crayon, oil pastel, cutting, soft wire, weaving and printing

- written language work, including creative writing and poetry, is illustrated by the children.

In the *Children's House* art activities include drawing, painting, design work, collage, printing, flower arranging, sewing and handiwork, modelling with clay, colour mixing, art appreciation cards, wall pictures, and stories. Techniques and processes for using different media are shown to the children in discrete activities presented individually or in small groups. All the materials for each activity are kept together, and children are free to choose the activity, and explore the media, and processes involved, independently. There should, however, be a limited amount of art available at any given time. Two, or at the most, three different kinds of media at a time are sufficient.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1CA070 Visual Arts	01 Experience a variety of art media 02 Express themselves through a variety visual art media 03 Begin to appreciate artistic expression from around the world	Activities include: <ul style="list-style-type: none"> - extending skills gained in exercises of practical life e.g., how to hold a paint brush, how to clean up, how to hang up painting to dry, how to hold a pencil - extending understanding of colour and shape gained in exercises of the senses e.g., colour boxes, geometry cabinet, botany cabinet, colour boxes - extending design work with metal insets - illustrating and decorating class work - arranging flowers - drawing in a variety of media e.g., pencil, crayon - painting in a variety of media e.g., water colour, acrylic - making collage - printing in a variety of media - sewing and handiwork - modelling in a variety of media e.g., clay, papier maché. Resources include: <ul style="list-style-type: none"> - art appreciation cards - wall pictures - stories about art and artists - art supplies.

Movement and Dance

The development and refinement of movement is an integral part of the child's development from birth to six years of age. The ability to appreciate dance and to be able to move one's body as a form of expression is an important facet of children's development. The focus on specific movements can assist children's development in many other areas, for example whole-body coordination. Dance is also an important aspect of health and physical exercise. Young children have a natural sense of rhythm and often lack inhibition so dance comes naturally and spontaneously to them.

In the *Children's House* there are many *walking on the line* activities that involve control and coordination of movement. The *silence game* involves practice in inhibition of movement and stillness of the body. Additional movement on the line activities call for increasing control when marching, running and skipping/galloping along with recognition of the rhythmical notation that calls for these kinds of movements.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1CA080 Movement and Dance	01 Develop further control of whole-body movement 02 Use movement to express oneself 03 Move to music to express oneself 04 Enjoy dancing to a variety of music	Activities include: <ul style="list-style-type: none"> - movement games for whole body control e.g., moving and stopping to a bell, moving without touching anything, following a leader - movement games for equilibrium e.g., <i>walking on the line</i>, walking, running, marching, skipping, walking with objects such as flags - games for inhibiting movement e.g., <i>silence game</i> - movement for expression e.g., free expression to music both on and off the line; marching variations; arm movements while walking on the line; moving to poetry and songs; rhythmic games - dramatic interpretations of, for example, a seed growing - freeze game - free dancing to a variety of music - basic dance steps such as skipping, stepping, swaying and tapping - folk dances, ethnic cultural dances, bush dances, circle dances. Resources include an environment designed to encourage a range of movement.

Personal Development, Health and Physical Education (PDHPE)

The Montessori curriculum provides opportunities for students to gain an understanding of their personal development and health while providing opportunities for physical education and fitness.

Dr Montessori was a physician keenly interested in the health of the human body. She incorporated physical activity into her approach to education, devising gymnastic equipment, open-air games and outdoor adventure education for older children. The development of coordinated movement from birth is central to the Montessori approach. Dr Montessori also observed how children's ability to self-regulate, a phenomenon she termed the *will*, develops gradually from infancy through the childhood years if children are supported to become physically and socially independent. The *will* is developed during early childhood, in the Montessori view, when children can choose purposeful activities they find interesting and which involve manipulation, and then are given the freedom to work with those activities for as long they wish. Through such activity, in which the mind and the hand come under voluntary control, children learn how to make appropriate choices, how to accept the consequences of their actions and how to preserve, and how to work towards achievable goals and expectations.

The Montessori PDHPE programme, as in all other areas of the Montessori curriculum, allows children the freedom to choose their own activity and to complete that activity in their own time. The Montessori PDHPE programme includes:

- personal development, incorporating the lessons of grace and courtesy
- health awareness
- physical education.

Personal Development, Incorporating the *Lessons of Grace and Courtesy*

Personal development in Montessori early childhood settings revolves around *the lessons of grace and courtesy*, the Montessori lessons designed to ensure the needs of everyone in the setting are respected and to promote social harmony. These lessons are given to individual children, small groups or to the whole group. The lessons can be given:

- at point of need
- to prepare children for social situations they will experience in the future
- in response to children demonstrating they need more knowledge about how to manage a social situation, but at a later time so not to embarrass the children or make them feel self-conscious

Sometimes *grace and courtesy* lessons take the form of mini-dramas that highlight behaviour and model more effective ways of managing social encounters and interactions. Many *grace and courtesy* lessons are *how to* lessons that model for children how to, for example:

- put a chair under a table without disturbing others
- interrupt politely
- introduce one person to another.

The lessons include information about:

- how to move and use objects with care and control without causing disturbance or harm
- how to gesture appropriately, for example, indicate, smile or shake hands
- what language to use in each situation, for example, politeness terms such as “please” and “excuse me”.

Because there is only one of each set of materials in the environment, children in Montessori settings learn to take turns and consider others. In addition, they learn to respect the time and space others need to complete their work undisturbed.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1PL070 Personal development	<p>01 Acquire and use appropriate social customs and manners</p> <p>02 Accept responsibility for actions and the consequences that follow</p> <p>03 Use communication and cooperation skills to share feelings and meet basic needs when interacting with others</p> <p>04 Identify ways in which to communicate, cooperate and care for others</p> <p>05 Develop respect for self and for others</p>	<p>Activities include <i>grace and courtesy</i> lessons that model and provide practice in appropriate behaviour and manners.</p> <p>Resources include a multi-age setting, in which older children model more mature interactions to younger children and older children assist younger children.</p>

Health Awareness

Montessori environments recognise the importance of psychological security and wellbeing, encouraging children to become independent, curious, courageous and considered risk takers. Dr Montessori was an early advocate for improving children’s health. She emphasised the importance of fresh air, exercise, hygiene and good nutrition for children at a time when these concerns were not yet commonplace. This tradition is maintained in Montessori early childhood settings to this day.

Montessori settings are kept meticulously clean. In the *practical life* area of the curriculum children learn to care for themselves and their surroundings. These lessons begin in the *Infant Community* and continue into the *Children's House*. For example, children learn how to:

- wash their hands, blow their nose, use the toilet, care for their clothes, put on a hat, dress themselves appropriately for the weather, prepare food, eat and clean up after themselves
- keep their surroundings clean, put dirty cloths and clothing into the laundry and ensure equipment, surfaces and work areas are tidy, clean and ready for the next person.

Children are encouraged to plant and care for healthy foods in the school garden and to harvest, prepare and/or cook them, and then serve them to other children and/or family and friends.

Children are engaged in conversations and lessons relating to topics such as nutrition and safety, including sun and road safety.

Children are encouraged to participate in regular physical activity, both indoors and outdoors.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1CE110 Health	<p>01 Recognise that healthy living is important for growth and development</p> <p>02 Become aware of the factors that influence healthy living and well-being</p> <p>03 Recognise that their safety depends on the environment and the behaviour of themselves and others</p> <p>04 Develop an appreciation for a healthy and safe lifestyle</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - regular modelling, discussions and activities related to nutrition, grooming and general hygiene - regular modelling, discussions and activities related to safety e.g., road, sun, water, fire, home, school - protective behaviours programme - small group and individual lessons showing children how to care for hair, clean nails, blow nose, cough hygienically - growing vegetables and fruit to prepare and/or cook. <p>Resources include:</p> <ul style="list-style-type: none"> - adults and older children in the environment modelling and talking about healthy and safe choices - elements of the environment designed to encourage healthy and safe choices.

Physical Education

Regular physical activity is an essential component of Montessori early childhood settings. Young children move constantly and need movement in order to learn. Montessori settings are prepared to allow children freedom of movement while, at the same time, activities are designed to enable children to develop control of their physical movement. Daily free play outdoors extends opportunities for regular physical activity.

Children also need activities that are challenging and require 'maximum effort', and these are provided in the setting, for example, opportunities to move heavy objects in safe ways. These activities are extended in the *Children's House* to help children develop, strengthen and refine their movement further.

Content Strand	Knowledge, Skills and Understanding <i>Typically, children will:</i>	Material/Activity
C1MV010 Physical Education	<p>01 Develop gross motor coordination and skills, flexibility and muscle coordination</p> <p>02 Participate in physical activity, recognising that it can be both enjoyable and important for health.</p> <p>03 Understand the relationship between regular physical activity and health</p> <p>04 Improve physical fitness</p>	<p>Activities include:</p> <ul style="list-style-type: none"> - body control games such as moving and stopping to a bell, moving without touching anything, following a leader (i.e. learning to control movement) - <i>walking on the line</i> movements e.g., walking, running, marching, skipping; walking with objects such as flags (i.e. learning to move with equilibrium) - <i>silence game</i> (i.e. learning to inhibit movement) - free movement within the classroom - practical life activities including cleaning, tidying, gardening, cooking - movement needed to act out reading commands, as well as interpretive reading and functions of words - small group activities to introduce ball skills and games - vigorous games involving a range of movements e.g., running, skipping, galloping. <p>Resources include:</p> <ul style="list-style-type: none"> - outdoor play area, including a variety of surfaces (e.g., hard, sand, grass), shade, fixed equipment (e.g., climbing equipment, sandpit) - sports equipment e.g., balls, bats, hoops, ropes.

Languages Other Than English (LOTE)

In the Montessori view, from birth to the age of six, children are in a sensitive period for language development. For this reason, in Montessori early childhood settings, a great deal of emphasis is placed on supporting and enhancing children's language development. Supporting language development in early childhood settings includes:

- valuing the language/s spoken in each child's home, and the language development achieved by each child when they enter the early childhood setting
- structured support with the development of spoken English, both for children who speak English as a first language and for children for whom English is not the language of the home
- systematic preparation for the development of written English (writing and reading)
- engagement with a language other than English.

Because Montessori educators recognise the special sensitivity to language of children from birth to the age of six, in many Montessori early childhood settings, where possible, children are exposed to a language other than English in order to capitalise on their capacity to absorb whatever language exists in their environment. Montessori educators recognise that young children associate any language spoken in their environment with particular speakers. For this reason, in Montessori early childhood settings where a language other than English has been introduced, the designated adult speaker, ideally a native speaker, speaks only that language to the children without mixing it with English. Young children learn very quickly which language to use whenever they interact with that speaker. Because the use of the language is integrated into the daily activities of the classroom, children use the language unselfconsciously and habitually. They also engage with many of the spoken language enrichment and early literacy activities in the language other than English, in the same way as

they work with them in English, but they do this work with the adult who speaks the language habitually in the environment.

If there is no adult speaker of another language available to spend extended periods of time in the Montessori setting, and especially where there are children whose home language is a language other than English, the teacher will often incorporate awareness of another language into the *lessons of grace and courtesy*, language enrichment and word study activities. For example, in *grace and courtesy lessons* or in language enrichment activities, as well as exploring English expressions and vocabulary, the teacher might ask a child whose home language is not English how they say the same thing at home, or how their parents or grandparents might say it. In word study activities, children might learn that many words used in English have come to us from languages other than English.

Engagement with a language other than English inspires within children an interest in and respect for other cultures, especially when the language, and the culture represented by the language, is integrated into the other areas of the curriculum. For example, activities and artefacts from the culture might be integrated into the *practical life* area, or pictures relating to the language and its culture might be included in picture material placed in the language area.

Digital Technologies and Children Aged from Three to Six

In recent years there has been much debate about the integration of digital technologies, specifically the use of computers, in early childhood settings (see, for example, Edwards 2005). In the view of Montessori educators the disadvantages of computer use in early childhood settings outweigh the advantages. For this reason, computers are generally not found in Montessori early childhood settings for children under six years of age.

In the Montessori view young children learn best through multisensory, concrete experience. This is especially true of children from birth to three years of age, but remains significant for children aged from three to six. During the years from three to six children's development continues to depend on physical movement. Increasingly, children become interested in manipulating real objects to achieve meaningful goals in the concrete and social world around them. During activity of this type, as children learn to regulate and refine the movement of their hands, they are also learning to regulate their mental attention, and thus, their powers of concentration. In addition, purposeful activity that involves manipulating real objects enables children to refine their powers of perception and discrimination using all their senses. During these years children also need to interact with people who are physically present in order to develop the ability to build personal relationships and culturally appropriate behaviour.

When children sit in front of a computer screen, they are not using all their muscles, either large or small. In addition, much of the regulation of the activity is driven by the computer software rather than the children themselves. The range of perceptual and intellectual discrimination and judgement demanded of children is reduced during screen-based activity. Furthermore, children are less likely to interact meaningfully with the people around them because the goals they can achieve with screen-based computer software are less grounded in daily family and community life. In Montessori early childhood settings screen-based activity has the potential to displace children's work with the Montessori materials.

The Montessori approach to the use of screens in early childhood settings is supported by the *Healthy eating and physical activity guidelines for early childhood* (Department of Health and Ageing 2009). In these guidelines screen-time is defined as inactive 'non-productive sedentary behaviour', which over long periods is associated with:

- less active, outdoor and creative play time
- an increased risk of being overweight
- sub-optimal muscle and bone growth

- unhealthy eating habits
- poorer social skills
- fewer opportunities to develop decision-making, self-awareness and self-regulation skills
- slower development of language skills and short-term memory
- television-viewing habits that continue through childhood. (Department of Health and Ageing 2009: 71-3).

For this reason, the guidelines argue for limiting, or even excluding, screen-time from early childhood settings. The limiting of screen time in early childhood settings is also recommended in *I move we move* guide (NSW Health 2009: 7.1).

Montessori educators recognise that there are children who may not have access to digital technologies at home and that this raises questions of equity. Nevertheless, in the Montessori view, the knowledge and skills children develop through work with the Montessori materials prepares them very effectively for later use of digital technologies. Experience in Montessori schools has demonstrated that children who have made the transition from the *Children's House* setting to the next stage of schooling, even if they have not had computer access at home, are able to use computers with ease and success at later stages of schooling. This may be because the skills developed in the *Children's House*, especially in the exercises of *practical life* and *the exercises of the senses*, indirectly prepare children for successful computer use. These skills include:

- fine motor control and coordination that prepare children to use a mouse and a keyboard
- the ability to sequence and to observe
- the ability to manage abstract concepts
- higher order thinking and problem-solving skills
- procedural thinking.

These skills become a resource children apply when they later work with digital technologies. Furthermore, successful engagement with digital technologies demands the ability to be *multiliterate*, in other words, to be literate in 'multimodal ways of communicating through linguistics, visual, auditory, gestural and spatial forms' requiring 'the knowledge and skills needed to read, write and use spoken and written language and sounds and images' (Hill 2007: 56). Montessori educators would argue that the diverse multimodal resources and activities in Montessori early childhood settings equip children *par excellence* with the knowledge and skills that will set them up for success in a world in which digital technologies and multiple forms of literacy play an important role.

Digital technology is, however, a resource used by the adults in Montessori early childhood settings. For example, pictures and information accessed via the Internet are regularly used to prepare and customise resources to meet the specific learning needs of individual children. Digital cameras are also used to record and document children's progress, as well as excursions or other special events. Teachers also use digital technologies to keep records and to communicate with families and colleagues.

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