

Creative Children's Montessori School

Creating a world of unlimited possibilities and exploration

THE MONTESSORI METHOD

Montessori education assists the child in developing the self-confidence and self-motivation he/she needs to fulfill his/her potential. This is accomplished by providing activities that meet individual needs, nurturing enthusiasm and building interests.

This system of education is both a philosophy of child growth and a rationale for guiding such growth. It is based on the child's psychological need for freedom within limits; and a carefully prepared environment (which guarantees exposure to materials and experiences) aids in the development of intelligence as well as physical and psychological abilities. Through self-motivation, the child directs himself to such activities to reach his/her full potential.

Key premises of Montessori education are:

- Children are to be respected (no differently than adults) as individuals who differ from each other.
- The child possesses unusual sensitivities and psychological abilities for absorbing and learning from his environment that are unlike those of the adult, both in quality and capacity.
- The most important years of growth are the first six years of life, when unconscious learning is gradually brought to the conscious level.
- The child has an innate love and need for purposeful work. Unlike an adult who works for profit and completion of a job, the child works for the indulgence of the activity itself. It is this activity which helps him/her accomplish his/her most important goal: the development of his/her independence, concentration and self-esteem. Repetition of an activity is therefore welcome and encouraged.

Its Beginning

Dr. Maria Montessori, the first woman to graduate from the University of Rome Medical School, became interested in education as a doctor treating “retarded” children. After returning to the university for further study, she began her work with children in 1907 when she was invited to organize schools in a “reconstructed slum” area of San Lorenzo, Italy. Throughout this time, she began approximately fifteen volumes and numerous articles about education. She died in 1952.

Her medical background led Dr. Montessori to approach education not as a philosopher or educator in the usual sense, but as a scientist. She considered the classroom a laboratory for observing children, and tested and re-tested for the validity of ideas and practices for aiding them in their growth. This open-minded attitude, and the respect for the child which it implies, is the most fundamental aspect of Montessori education.

Montessori education was introduced to this country in 1912, with one of the early schools being established by Alexander Graham Bell in his own home. There are now approximately 500 Montessori schools in this country and these numbers are quickly increasing.

The Children

Children of mixed age (2½ through 6) and abilities work together in a Montessori class. Un-graded groupings permit independent development, discourage individual competition, and allow the children to teach each other. The child may choose whatever activity suits his particular stage of development; he progresses from that point, at his own pace, in his own pattern. Children may work at a task uninterrupted for as long as they wish provided they do not disturb others. They may join groups for music, outdoor play, and certain lessons. While they are not required to work together, the non-competitive character of the class encourages easy social relationships.

The Directress

A Montessori directress has a Bachelor's Degree followed with one year of specialized training at a Certified Training Centre. The Directress works with individual children, presenting materials, and giving guidance where needed. Her primary task is careful observation of each child in order to determine his needs and to gain the knowledge she needs in preparing the environment to aid his growth. Her method of teaching is indirect in that she neither imposes upon the child, as in direct teaching, nor abandons him as in a non-directive, permissive approach. Rather, she is constantly alert to the direction in which the child himself has indicated he wishes to go, and she actively seeks ways to help him accomplish his goals.

The Classroom and Materials

Designed for independent work, the room is equipped with chairs, tables, bookcases, easels and sinks; all child-sized. Low shelves around the room are filled with materials from which the child can choose. The teaching materials also are designed for independent work; each piece of apparatus isolates a particular purpose and is self-correcting. Materials include letters cut from sandpaper; exercises such as an introduction to Botany, Zoology, History, Language and Science; matching-cards; jigsaw maps of the world and metal insets for the development of the pincer grip and lightness of touch. Since movement is intimately connected with learning, many activities engage the child's large and small muscles, as well as his senses and his mind. Many materials are used on mats on the floor.

PRACTICAL LIFE

Practical Life exercises emulate activities which are usually carried out by adults on a daily basis. In a Montessori classroom, these activities have been modified accordingly for the children. There are four areas within the Practical Life area that have been designed to help the children learn:

1. Care of Self
2. Care of the Environment
3. Grace and Courtesy
4. Control and Inhibition of Movement

Preliminary activities, such as pouring and spooning, isolate a specific skill and encourage the child to practice the control of movement. Preliminary exercises also include classroom routines like tucking in a chair, walking,

carrying a mat or tray, and closing a door. After learning a number of basic skills, the child is then able to work with more complicated activities.

Care of Self exercises help the child learn to take care of himself/herself, and thereby become an independent being. The Dressing Frames, for example, provide the child with the opportunity to work with one kind of fastening at a time, such as buttoning or zipping. These exercises link the child's home with the classroom. This provides children with a context they are familiar with and gives them a sense of pride when they can accomplish what was once an "adult task".

Exercises classified as **Care of the Environment** offer the child the opportunity to help maintain and beautify his classroom. These activities include washing tables, dusting, and polishing. The child comes to respect the environment and to understand that he is an important part of it. These activities will also help him develop his co-ordination and movement, and compliment his sense of order.

Lessons in **Grace and Courtesy** are received through living by example, not by role-playing. The children are always treated, and expected to treat others, with respect. In class, it is demanded that they respect themselves, the environment, and others around them.

Maria Montessori developed activities, such as walking on a line, which help the child to **Control and Refine his Inhibition of Movement**. She created "The Silence Game" to challenge the children to be aware of their movements and to listen to sounds going on around them while working. In doing so, she discovered that they enjoyed and encouraged creating silence.

Practical Life exercises help the child to control his movements and to become more independent. These activities also lay the foundation for other work that the child will do in the Montessori classroom. Children, in completing the exercises of Practical Life, aim to achieve the following:

1. **Development of Independence** – by not having to rely on the adults in their environment to complete simple tasks for them. Independence fosters further growth both of the child's morale and willingness to learn other tasks.
2. **Development of Concentration** – by learning the exercises, the child's concentration pattern is increased. The longer the exercise, the longer the need to concentrate. Exercises generally graduate by degrees of logical sequencing (few to many).
3. **Development of Motor Skills and Co-ordination** – with each exercise, the use of gross and small motor control is required, therefore creating a greater awareness of movement. The Montessori system believes in growth through movement.
4. **Development of Self-Esteem** – by completing each task successfully. The child experiences a sense of pride through not only mastering a new task, but through the realization that he has just seen an exercise through to completion, as well as in giving lessons to classmates.
5. **Development of Grace and Courtesy** – by observing others in the same situation, and by working with other children to achieve the completion of the task.
6. **Development of Social Skills** – with interaction comes the awareness of appropriate behaviour.

7. **Awareness of the Immediate Environment** – simple physics and the laws of nature are discovered. The child, most importantly, learns how to adapt in different situations.
8. **Development of Language Skills** – through presentations of different exercises, the child's vocabulary is increased. Proper vocabulary, as opposed to simplified words, is always presented to the children.
9. **Development of Self-Discipline, Control and Order** – there is only one of each apparatus allowed in a Montessori Classroom. Children have to learn to wait their turn and work with others, thus gaining a sense of respect for the materials and their peers. They also learn that order in the classroom (and therefore in life) is very important. A Montessori classroom must be kept orderly and clean at all times, which complements the child's innate need for order.

In the exercises of Practical Life, the child is preparing for the "real world"; therefore the items used must be objects that the child will encounter in his/her daily life. The objects (though child-sized for manageability) must be real objects; not representations of real objects.

and the demonstration of each exercise must be clearly shown, step by step. Observation is the key word, and hurried actions or inconsistent and/or incomplete presentations must not confuse the child.

SENSORIAL EXERCISES

Through Dr. Maria Montessori's observations, she designed and developed a series of materials that she called Sensorial Materials. These materials specifically develop and refine the senses. They are introduced to the child in the classrooms from the ages of 2½ to 6. During this period, they have many sensorial impressions stored subconsciously. To put order to the myriad of stimuli, the mind needs education to develop the intellect and to be able to discriminate and appreciate the environment. This education can only come about through ordered activity and this is why the sensorial materials are of such benefit. Dr. Montessori observed that cognitive development is connected with movement, in particular the use of the hands. As the hands are kept constructively active, the intelligence is set to work and the mind matures. This is the inner aim of the sensorial education. Through working with the sensorial materials the child discovers and becomes much more aware and sensitive to tactile, visual, auditory, chromatic, olfactory, baric and stereognostic impressions. By working with these materials, it gives a good foundation that makes all subsequent education easier.

The child's first contact with the world is through his senses. His attention, since birth, is directed toward his environment. He has an intense and specialized sensitivity to his surroundings that awaken a strong interest and enthusiasm, and they become incorporated in his own existence. That is why we can say that from birth, the senses act as a lifeline to the environment.

Dr. Montessori stated, "*The senses are points of contact with the environment and the mind.*" All the information that comes through the senses at birth helps the child in his understanding of the world. The senses assist the child with adaptation. They assure his survival.

The senses ultimately help the child with social development, for as the child's life unfolds, through his experiences there is new understanding of his surroundings. Each new discovery gives the child an immense satisfaction.

In the Montessori method of teaching children, it is believed that the senses are the purest possible guide to learning. Through Sensorial Education, the following benefits should be derived:

1. The child's sensori-motor skills are put to use to form his own conclusions.
 2. The child works at his own pace, following a step-by-step procedure before moving on to more logically sequenced activities.
 3. The senses are isolated to maximize the learning process, e.g., stereognostic, baric, olfactory, gustatory, auditory, etc.
 4. There is a control of error for self-correction.
 5. Order is encouraged through the materials.
 6. Logical thinking is also encouraged.
 7. Self-discipline is necessary.
 8. Because of the intense use of the muscles, co-ordination is developed and the child is prepared for further tasks.
 9. Vocabulary is developed.
 10. Math, Reading, Science and Music are also a part of the Sensorial activities.
-

CULTURAL STUDIES

Children in a Montessori classroom are introduced to all the life sciences. Ecology draws all the disciplines together as it points to their interdependence. It is important, therefore, to follow the child's interests and step from one science to another. In this way, children are given an introduction to all the sciences.

Each child must adapt to the time and the place in which he lives and to his culture. He/She must also develop an understanding of people who live in other parts of the world. By using the Globes and the Map of the Continents, the child becomes familiar with the shapes and locations of the continents. Mounted pictures depicting the continents of the world and the countries of the world within those continents introduce the child to different lands and cultures.

It is important that the child begin to establish a sense of identity with, and a respect for, the importance of the past. To encourage this, he/she is introduced to history. Pictures taken throughout the child's lifetime (his own history or "time-line") help him feel part of his family and the family of man. By studying changes in clothes and transportation, for instance, the child comes to understand the passing of time. The "events chart" clarifies for him the difference between the past and the present as newspaper articles are moved from one side (present) to the other side (past).

Science

Science activities explain things that occur in our everyday life. For instance, through experimentation with a particular exercise, the young child discovers that some objects sink and others float. Also, the child may use

coloured water to determine what happens when colours are mixed. By doing so, he learns to make comparisons and to establish relationships between things. Children also develop the ability to become good observers and to perceive in more detail what they see and experience.

By going out into a natural environment with the children and showing them how to observe, it is hoped that they will develop a respect for nature and all living things. As children study and care for plants and animals, they become extremely interested in living things. The child is then able to examine nature closely by using pictures and exercises which isolate something specific (such as Parts of a Flower). He is then able to return to nature and connect the living thing with the picture. Precise vocabulary helps the child to describe his experience. He becomes familiar with real leaves, for example, before tracing leaf shapes and learning their names. Again, through all our activities the child first learns in a concrete manner and gradually moves to the abstract.

LANGUAGE

Language development occurs spontaneously in children. From as early as six months, unintentional sounds are uttered. Dr. Montessori emphasized the fact that every child has potential for language acquisition. She wanted us to understand that they do not possess a predetermined language. She observed that the child absorbs language and has the potential to absorb more than one language simultaneously.

The process of acquiring language remains the same all over the world, regardless of time, place, and culture. In an infant, language acquisition is a spontaneous and effortless process. The first period of language production is when the child starts making all the sounds of human speech. In the Montessori classroom we teach initial sounds of words, middle sounds of words, and ending sounds of words. For example, "I Spy" games which ask the child to find the object that starts with the sound "b" (or ends with the sound "t") help the child to isolate and identify specific sounds within a word.

Further exercises of the Language curriculum provide basic knowledge and lay the groundwork for language development. Exercises such as **Metal Insets**, **Sandpaper Letters**, and the **Large Moveable Alphabet (LMA)** teach the child his/her alphabet, how to recognize the letters by sight and sound, and prepare him/her for later writing. These activities show the child that a word is nothing more than an accumulation of sounds.

Sound Games

Sound Games are a pre-requisite for the sandpaper letters. Children enjoy the "I Spy" game, listening to beginning sounds, ending sounds, and then middle sounds.

The Metal Insets

The Metal Insets perfect the child's ability to hold and control a pencil. It consists of a frame and an inset that work together to help the child control and co-ordinate the writing instrument within a specific area. The exercises with the Metal Insets prepare the child's hand directly for the use and control of the writing instrument. The writing instrument is grasped by the first three fingers of the hand (the pincer grip) and is moved up and down (or left to right) with consistent uniformity. The motions we all make with the writing instrument are unique to each other. Each individual has their own particular style of writing. *"Writing becomes a mark of recognition and is one of the clearest and most indelible that we have."*

The Sandpaper Letters

The Sandpaper Letters are the first formal introduction to symbol and sound. The child is given a muscular impression of the letters by tracing them and an auditory impression by hearing the sound associated with the symbol. With the Sandpaper Letters, the child is exposed to learning the letters through three “avenues”: sight, touch, and hearing. The sounds are made visible, so the child retains the visual image of the letter; the child touches the letters, which increases the sensorial impression and establishes the movements necessary for tracing the alphabetical symbols. Touching the letters and looking at them at the same time fixes their images more quickly because of the co-operation of the senses.

The child hears the sounds. He establishes a relationship between the sound and the symbol. This process forms the first preparation not only for writing, but also for reading. It is evident that when the child touches the letters he performs the movement corresponding to the writing of them, and at the same time, when he recognizes them by sight he is reading the alphabet. The child has thus prepared, in effect, all the necessary movements for writing.

Large Moveable Alphabet

The Large Moveable Alphabet teaches the child to put this knowledge to use by building the sounds together. The child’s ear, already educated, is able to recognize the component sounds in a word one by one. The moveable alphabet helps the child to compose words using sounds. When the child is able to establish a relationship between sounds and symbols, he can combine these symbols to make words. When the child looks in the Moveable Alphabet for the symbols corresponding to each separate sound of a word and lays them ...

out one beside the other, he is composing a word. He will be able to create words he thinks himself; he succeeds in breaking them up into their component sounds, and in translating them into a row of signs.

When the child has learned approximately ten sounds, he is then introduced to the letters of the moveable alphabet. The child learns to analyze and compare words.

E.g.

cat

“What is the first sound you hear when I say ‘cat’?”

“c”

“What is the second sound you hear when I say ‘cat’?”

“a”

“What is the last sound you hear when I say ‘cat’?”

“t”

The child listens to the word, finds the letters and puts them in their proper sequence.

Writing (before reading):

It is after the exercises with the Moveable Alphabet that the child is able to write entire words. This phenomenon generally occurs spontaneously. From that moment he continues to write, always gradually perfecting himself. A child can find an intense intellectual interest in being able to represent a word by putting together the symbols of the letters of the alphabet. It is more fascinating for a child at the beginning to create words from letters of the alphabet than to read.

Writing in the Montessori classroom will precede reading. Writing and Reading are very different processes. Writing is a process that develops easily in the child where he translates sounds materially into signs, while reading demands an extensive period of instruction and requires a higher intellectual development. It involves interpreting the signs and modulating the voice in order to understand the meaning of a word and all of this requires cognitive work.

Reading

Reading will occur when the child has successfully learned to place sounds together to form words. Reading in the Montessori classroom begins early with phonetic words. Vocabulary enrichment starts with the use of the Practical Life and Sensorial materials. Many of the words already learned are some of the first words to be read.

After learning phonetic sounds, the child is introduced to phonograms such as **sh**, **th**, and **ch** using the phonogram box, phonogram booklets, phonogram cards and the Small Moveable Alphabet. Puzzle words (words committed to memory such as “the” and “was”) are introduced once the child has a good grasp of both phonetic words and phonograms. The students themselves solicit many of their own advancements in language, as they stumble across words through their adventures in reading.

Grammar Boxes

When the child is able to read, the parts of speech are introduced in the following order:

1. Nouns
2. Articles
3. Adjectives
4. Verbs
5. Adverbs
6. Conjunctions
7. Prepositions

Eventually, the child will be able to compose his own sentences and stories using the Story Alphabet. The child is also shown how to manipulate language aids such as a dictionary and a thesaurus, as well as mastering appropriate use of punctuation.

Overall, the Montessori Language Curriculum, if taught in keeping with acute observation methods, is an effective way of encouraging the child in the development of his natural tendencies to read and write.

MATHEMATICS

By working with Practical Life exercises and Sensorial materials, the child has been indirectly preparing himself for math. Practical Life materials are laid out in a specific and orderly way. The child often follows a set procedure as he does each activity. He learns to be exact and precise as he works. The exercises of Practical Life have given the children the opportunity to develop logical and sequential thought patterns.

MATHEMATICS

The logical order of the Practical Life activities has been complemented by the mathematical order inherent in the Sensorial materials. Sensorial materials help the child to organize impressions in his mind. Often, the materials will enable him to visualize a mathematical concept. The Pink Tower, for example, gives the child an impression of cubing. By working with the Red/Long Rods he prepares himself for number work which he will do with the Number Rods.

The Sensorial materials allow the child to work with the quantities one to ten in several dimensions and with the Mathematics materials, they are given their numerical value. With the mathematical apparatus, every piece of material isolates one concept. These isolated concepts integrate to form the basis for a further step in the development of the child's mathematical understanding.

The early Mathematics exercises, such as **Number Rods, Sandpaper Numerals, Number Rods and Cards, and Spindle Boxes** provide the child with tangible apparatus which he can manipulate to feel and see quantities and learn the written symbols. The child first works with math materials, which teach him the quantities and symbols for the numbers from zero to ten. By working with the Number Rods, the child gains experience in fixed quantity from one to ten. He then learns the written symbols used to represent a quantity by using the Sandpaper Numerals. As he uses the Number Rods and Cards, he combines the symbols and quantity. The Spindle Boxes isolate the concept of zero as the child leaves this compartment empty. They also teach the child about moveable quantity and written symbol. The Numerals and Counters test the child's ability to put the numbers in the proper sequence, and later explore the concept of odd and even. When playing the Memory Game of Numbers, the child must remember a specific number and count out the correct number of objects. This shows evidence of his confidence in previous lessons learned.

As the child works with the decimal system, he also uses materials categorized as teens and tens. He uses coloured beads to learn quantities and to memorize addition facts. The **Teen and Ten Boards (Sequin Boards A and B)** allow the child to explore the numbers first from 11 to 19, then from 11 to 99. He combines ten bead bars and coloured bead bars to create teen and ten quantities, learning the symbols associated with the quantity and symbol.

The **Golden Bead Material** introduces the child to the decimal system with concrete representations of the hierarchy of numbers. It introduces the child to concepts in the formation of complex numbers and the

processes of addition, subtraction, multiplication, and division. First, he learns the quantities: 1 Thousand, 1 Hundred, 1 Ten, and 1 Unit. He then works with the cards and comes to recognize the symbols for these quantities. The child learns to combine a quantity with a proper symbol. With this knowledge, the child continues to work with the beads as he learns the processes of all operations.

The **Stamp Game** is introduced after the process of the decimal system. The Stamp Game provides opportunities for individual practice in the operations of addition, subtraction, multiplication, and division. In a step towards abstraction, the quantity and symbols of the decimal system are combined and are represented by each "stamp." This exercise is made up of colour-coded tiles and is more of an abstract activity than the Golden Beads. The child can then progress to the Dot Game, which is more abstract than the Stamp Game. This exercise is always recorded on paper and has no moveable concrete pieces.

NOTE: The colour coding of categories is consistent in all mathematics material, beginning with the Sandpaper Numerals.

The **Bead Cabinet Material** teaches linear counting and skip counting, as well as giving an introduction to squares and cubes. The **100 Chain** provides experience in counting from 1 to 100, reinforces sequence of numbers, prepares the child for counting by 10's, and demonstrates in linear form the square of one hundred.

Similarly, the **1000 Chain** provides experience in counting from 1 to 1000, prepares the child for multiplication and squaring, and demonstrates in linear form the square of 1000. The child visually realizes the actual quantity of 1000 and gains a respect and comfort in further mathematics operations.

The child's knowledge is tested as he uses charts for addition, multiplication, subtraction, and division. After using these materials, the child comes to realize that the arithmetical operations may be done on paper without any concrete materials. In conclusion, regardless of what activity the child is exploring, he is never limited to single digits, but rather given opportunity with no limitations to perform operations (both static and dynamic) up to and including the thousands.