A PARENT’S GUIDE TO MONTESSORI

Montessori
Child Development Center
THE PURPOSE OF MONTESSORI EDUCATION

Dr. Maria Montessori believed that “no human being is educated by another person. She or he must do it him/herself or it will never be done.” The goal of early childhood education should not be to fill the child with facts from pre-selected course of studies but rather to cultivate the child’s natural desire to learn by:

1. allowing the child to experience the excitement of learning by his/her own choice rather than being forced
2. by helping the child perfect all her natural tools for learning, so that his/her ability will be at a maximum for future learning.

HOW CHILDREN LEARN

The use of the materials is based on the child's unique aptitude for learning, which Dr. Montessori identified as the Absorbent Mind. The child's mind is like a sponge that absorbs information from the environment. It is evident in the way a young child learns his/her native language, without formal instruction, conscious, and tedious effort. Acquiring information this way is a natural and delightful activity for the young child who employs all his/her senses to investigate his/her interesting surroundings.

Since the child retains this ability to learn by absorbing until he or she is almost seven years old, Dr. Montessori reasoned that the child’s experience is enriched by a classroom where he or she could handle materials and demonstrate the basic educational information.

Dr. Montessori always emphasized that the hand is the chief teacher of the child. In order to learn, there must be concentration, and the best way a child can concentrate is by fixing his or her attention on some task s/he is performing with his/her hands. All equipment in the Montessori classroom allows the child to reinforce his/her casual impressions by inviting him/her to use his/her hands for learning.

SENSITIVE PERIODS

These are the periods of intense fascination for learning a particular characteristic or skill. It is easier for the child to learn a particular skill during the corresponding sensitive period than at any other time in her/his life. The Montessori classroom takes advantage of this fact by allowing the child freedom to select individual activities, which correspond to his/her own periods of interest.
AREAS IN THE CLASSROOM

Practical Life

Using the child’s natural inclinations as a point of departure, Dr. Montessori structured several exercises for the classroom to help the child satisfy the need for meaningful activity. Familiar objects are used such as pitchers, jugs, water, and many other things, which the child recognizes from this home experience. These are exciting exercises that allow the child to imitate adults. Imitation is one of the child’s strongest urges during his/her early years.

Practical Life exercises build a foundation for:

1. Independence
2. Self-confidence
3. Concentration
4. Coordination of Movement
5. Refinement of Movement

Although the Practical Life Exercises may seem simple and commonplace, they are actually a very important part of the Montessori program. Each of the tasks helps the child perfect his/her coordination so that s/he will be able to work later with the more intricate academic materials. No learning takes place without concentration and attention. The child prepares to learn by performing exercises, which will help him/her to gradually lengthen the time in which s/he can focus his/her attention on a specific activity.

Sensorial Exercises

The Sensorial Materials in the Montessori classroom help the child to become aware of details. Each material isolates one defining quality such as color, weight, shape, texture, size, sound, smell, etc. The equipment emphasizes this one particular quality by eliminating or minimizing other differences.

A young child can remain unmoved by the myriad of sensory impressions in her everyday environment. What s/he needs is not more and more impressions but the ability to understand what s/he perceives. The materials help the child to distinguish, to categorize, and to relate new information to what he/she already knows. Dr. Montessori believed that this process is the beginning of conscious knowledge. It is brought about by the intelligence working in a concentrated way on the impressions given by the senses.

1. foundation for intellectual growth
2. awaken, refine, and cultivate the senses
3. develop of the mathematical mind
4. develop vocabulary
**Sensory Training**

These are exercises in perception, observation, fine discrimination, and classification that play a major role in helping our children to develop their sense of logic and concentration. They begin at age 3 and are a major area of concentration typically through age 5.

- Discrimination of length, width, and height
- Discrimination of volume
- Discrimination in multiple dimensions
- Discrimination among color tones
- Discrimination among geometric shapes for shape and relative size
- Discrimination among solid geometric shapes by sight and touch
- Solving of complex abstract puzzles in three dimensions
- Discrimination of intensity and nature of sounds
- Discrimination among musical tones
- Discrimination of texture by touch
- Discrimination of weight by touch
- Discrimination of temperature by touch
- Discrimination of scents

**LANGUAGE**

This area teaches children spoken and written language. The child has the optimum freedom to converse with peers and adults. This speech is generally spontaneous and therefore reflects the child’s own unique vocabulary. Through conversations, s/he is exposed to the unique and varied patterns of the speech of his peers. The Montessori environment encourages expression of ideas, sharing of plans, and mutual solving of problems.

**LEARNING TO WRITE**

To be able to write the child must develop a two-fold skill.

1. Commit to memory the shape of the letters and their corresponding sounds
2. Develop the muscular skill necessary for using the pencil with control.

The materials, which Dr. Montessori designed, offer the child the opportunity to learn the shapes and sounds of the letters in a way that is completely independent from perfection of the motor skill. The child, therefore, in the Montessori classroom learns to write **not by writing**, but by performing a number of purposefully structured activities, which prepare him both indirectly and directly for the facility in handwriting.

**LEARNING THE SHAPES OF THE LETTERS WITH THE SANDPAPER LETTERS**

The child meets the alphabetical symbol by using Sandpaper Letters. Each letter is outlined in sandpaper on an individual card, the vowels on blue and consonants on red. The teacher shows the child how to trace the letter with two fingers following the same direction in which the symbol is normally written.
Use of this material gives the child a three-fold impression:

1. Sees the shape
2.Feels the shape
3. Hears the sound

The repetition of this exercise fixes the path of each of the letters in the child’s muscular memory.

**LEARNING THE SOUNDS OF THE LETTERS WITH THE SANDPAPER LETTERS**

In a Montessori classroom, the child learns the phonetic sounds of the letters before he learns the alphabetical names in sequence. The phonetic sounds are given first because these are the sounds he hears in words. The child first becomes aware of these phonetic sounds when the teacher introduces the consonants with the Sandpaper letters.

In the first introduction of the vowels, the teacher gives the short vowel sounds such as apple, egg, insect, ostrich, and umbrella. As soon as the child learns a few vowels and consonants, s/he is ready to begin constructing three letter words, which have a short vowel sound.

**PEREETING THE MOTOR SKILLS WITH THE METAL INSETS**

The child learns to control a pencil by filling in outlines. S/he uses the equipment called the Metal Insets. Each inset represents a different geometric shape. After selecting a figure and tracing it on paper, the child fills the outline with a colored pencil on his/her own choosing.

At first the strokes are erratic and often extended beyond the outline. By degrees they become more accurate and uniform. Progress in muscular control can be noted by comparing the child’s designs from week to week and from year to year. Eventually s/he makes more intricate designs by superimposing two or three other shapes on the original figure. Although work with the Metal Insets gives the child an opportunity to experiment with color and design, it is not considered creative art. Crayons and paints are not used for this activity because the purpose is always pencil control.

**WRITING**

Sometime during the years when a child is in a Montessori class, an exciting thing happens. After s/he has worked for a while with the Metal Insets and the Sandpaper Letters, a day comes when s/he realizes that he is able to make words and numerals with a pencil. Montessori called this phenomena the “explosion to writing.”

When writing begins in this spontaneous way, the child is spared many tedious hours of forced effort. Writing is fun. Because s/he has already learned control, the repetition necessary for developing neatness and style does not tire him/her.
FROM WRITING TO READING

WORD BUILDING

Dr. Montessori always pointed out that the young child has a natural sensitivity for language development, which follows closely on the years when s/he learns to speak in his/her native language. The child at three, four, and five has a unique fascination for words, both printed and spoken. This fascination often enables him/her to begin reading and writing before the age at which it is traditionally taught.

The individual presentation of language materials in a Montessori classroom allows the teacher to take advantage of each child’s greatest periods of interest. Reading instruction can begin on the day when the child wants to know what a word says or when s/he shows interest in using the Sandpaper Letters. Writing – or the construction of words with movable letters – nearly always precedes reading in a Montessori environment.

THE MOVABLE ALPHABET

After the child has learned the Sandpaper Letters, s/he is ready to make words with the Movable Alphabet. For this activity the teacher prepares a box of small objects representing three letter words with the short vowel sound, such as bed, fan, cup, etc. and says the name very slowly so the child can hear each sound. The child selects the letter for each sound.

The child often refers to such word construction as writing. The fact that s/he is manipulating material at this stage is important because s/he still concentrates best on something s/he is doing with his/her hands.

The child continues the word-building process for a long period of time. The classroom offers a wide variety of small objects and pictures for which s/he can build the names. Gradually the difficulty of the nouns increases from three letter words to four letter words.

MATCHING WORDS AND PICTURES

Reading very naturally follows the word-building exercises. After making lists of words for several days, or even weeks, a child gradually realizes that he can go back over the list and pronounce the words he has constructed. However, pronouncing words, which he has constructed himself, is not really reading. Reading implies the understanding of words, which someone else has constructed. The opportunity to take this step comes when he matches a set of objects with a set of cards on which the names of the objects are already printed. To place the correct card beside each of the object he must read the word on the card. Later he matches the pictures and words – still using his hands while making visual perceptions.

COMMAND CARDS

Verbs are introduced by a set of red cards with a single action word printed on each one. The children enjoy these because as they read each Command Card, they must perform the appropriate action. Words such as run, hop, skip, clap and wave appear in the beginning set.
Later the children follow directions, which tell them to “Set the map on the desk” or “Sit on the red mat.” The teacher increases the difficulty of the command cards according to the progress of the children.

**PHONOGRAMS**

Two different colored Moveable Alphabet are used for building words containing phonograms. A phonogram is a special combination of two or more letters, which pronounces a single sound different from the regular sequence of sounds of these letters. I.e. oy, chi, tion. The particular phonogram which they child is learning is constructed in a color different from the rest of the word. For example, when learning sh, the child can make words like ship, shell, and fish. Each time he puts the sh in one color, and the remainder of the word in another color. The teacher uses two colors to print small phonogram booklets, word cards, or word lists for the children to read.

**READING DEVELOPMENT**

Gradually the child learns the irregular words, and words with two or three syllable, by doing many reading exercises, which offer variety rather than monotonous repetition. Also available in the classroom are many attractive books using large number of phonic words. Proceeding at his/her own pace, each child is encouraged to read about things which interest him. His/her skill in phonics gives him/her the means of attacking almost any new word, so that he not limited to a specific number of words, which he has been trained to recognize by sight.

Some children read at four, some at five, and some at six. The actual age is not as important as the right moment of readiness. If a child begins to early, he will be discouraged. If he forced to wait until he passed his initial period of interest, then will miss the golden opportunity when he is propelled by his own natural enthusiasm. The freedom of the Montessori classroom allows each child’s own interest to determine his progress.

The child’s interest in reading is never stifled by monotony. Rather, it is cultivated as the most important key to future learning. S/he is not asked, which may or may not interest him at the moment. S/he is encouraged to explore books for answers to his/her own enjoyment.

**MATHEMATICS**

Mathematics can be learned by:

- Using concrete materials during the years when s/he enjoys manipulating equipment
- By abstract methods when s/he is in the elementary grades.

Dr. Montessori demonstrated that if a child has access to mathematical equipment in the early years, s/he can easily and joyfully assimilate many facts and skills in arithmetic. She designed concrete materials to represent all types on quantities. A child not only sees the symbol for 1, 1000, or 1/2, s/he can also hold the corresponding quantities in his/her hand.
Later by combining this equipment, separating it, sharing it, counting it, and comparing it, s/he can demonstrate to him/herself the basic operations of arithmetic. This activity gives him/her the satisfaction of learning by discovering rather than by being told. Eventually s/he develops an early enthusiasm for the world of numbers.

In Montessori, great attention is given to helping the child develop his/her mathematical mind. The difference can be found in the fact that the exercises of Practical Life provide an indirect preparation to build exactness and logical sequence. The Sensorial materials provide experience of progression and the reverse, gradation, and its possibilities. Mathematical materials provide the means for the discovery of mathematics and the fundamental skills to calculate. Concepts are understood by the use of concrete forms before abstract theories. After understanding has been achieved, memorized learning is meaningful.

**LEARNING MATH**

*Introduction to quantity and symbol* (at age 3) learning the numbers and number symbols one to ten: the red and blue rods, sand-paper numerals, association of number rods and numerals, spindle boxes, cards and counters, counting, sight recognition, concept of odd and even.

*Introduction to the decimal system* (age 3 or 4) Units, tens, hundreds, thousands are represented by specially prepared concrete learning materials that show the decimal hierarchy in three dimensional form: units = single beads, tens = a bar of 10 units, hundreds = 10 ten bars fastened together into a square, thousands = a cube ten units long ten units wide and ten units high. The children learn to first recognize the quantities, then to form numbers with the bead or cube materials through 9,999 and to read them back, to read and write numerals up to 9,999, and to exchange equivalent quantities of units for tens, tens for hundreds, etc.

**Linear Counting:** learning the number facts to ten (what numbers make ten, basic addition up to ten); learning the teens (11 = one ten + one unit), counting by tens (34 = three tens + four units) to one hundred.

**Four basic mathematical operations:** addition, subtraction, division, and multiplication through work with the Montessori Golden Bead Material. The child builds numbers with the bead material and performs mathematical operations concretely. (This process normally begins by age 4 and extends over the next two or three years.) Work with this material over a long period is critical to the full understanding of abstract mathematics for all but a few exceptional children. This process tends to develop in the child a much deeper understanding of mathematics.

**Development of the concept of “dynamic” addition and subtraction** through the manipulation of the concrete math materials. (Addition and subtraction where exchanging and regrouping of numbers is necessary.)

**Memorization of the basic math facts:** adding and subtracting numbers under 10 without the aid of the concrete materials. (Typically begins at age 5 and is normally completed by age 7.)

**Development of further abstract understanding of addition, subtraction, division, and multiplication** with large numbers through the Stamp Game (a manipulative system that represents the decimal system as color–keyed “stamps”) and the Small and Large Bead Frames (color–coded abacuses).
Skip counting with the chains of the squares of the numbers from zero to ten: i.e., counting to 25 by 5’s, to 36 by 6’s, etc. (Age 5-6) Developing first understanding of the concept of the “square” of a number. Skip counting with the chains of the cubes of the numbers zero to ten: i.e., counting to 1,000 by ones or tens. Developing the first understanding of the concept of a “cube” of a number.

Beginning the “passage to abstraction,” the child begins to solve problems with paper and pencil while working with the concrete materials. Eventually, the materials are no longer needed.

Introduction to Geometry

Sensorial exploration of plane and solid figures at the Primary level (Ages 3 to 6): the children learn to recognize the names and basic shapes of plane and solid geometry through manipulation of special wooden geometric insets. They then learn to order them by size or degree.
- Stage I: Basic geometric shapes. (Age 3-4)
- Stage II: More advanced plane geometric shapes-triangles, polygons, various rectangles and irregular forms. (Age 3-5)
- Stage III: Introduction to solid geometric forms and their relationship to plane geometric shapes. (Age 2-5)
- Study of the basic properties and definitions of the geometric shapes. This is essentially as much a reading exercise as mathematics since the definitions are part of the early language materials.

CULTURAL ARTS SUBJECTS

Subjects include Physical Science, Astronomy, Meteorology, Geology, Geography, Botany, Ecology, Zoology, History, Biology, Music Appreciation, Art Appreciation, and Spanish. Lessons are interrelated to Core Academic Subjects, Sensorial, and Practical Life Exercises.


Astronomy – Universe, Solar System, Sun, Meteors, Crates, Milky Way, Moon, Comets, Asteroids, Stars, Constellations

Meteorology – Seasons, Climates, Weather, Water Cycle, Measuring Temperature

Geology – Rocks, Minerals, Gems, Ores, Fossils

Geography – Mapping, Continents, Oceans, Directionality, Land, Air, Water, Transportation, Land and Water Forms, Earth, Hemispheres, Zones, Regions

Botany – Care of plants, Parts of Plants, Parts of a Leaf, Kinds and Shapes of Leaves, Parts of a Root, Parts of a Seed, Life Cycle of Plants, Parts of a Stem


Zoology – Care of animals, living and non living things, Vertebrates and Invertebrates, Kinds
of animals, Homes of animals, Parts of animals, Life Cycle of Animals, Classification of Animals

**History** – Calendar, Timeline of Life, Months, Days, Clock, Dinosaurs

**Biology** – Parts of the Body, Skeleton, Muscular System, Nervous System

**Art Appreciation** – Study of Art masters, medium, and art expression.

**Music Appreciation** – Discussion of Music masters, kinds of instruments, and classical music appreciation.