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# Surabaya European School

## Montessori

Children Ages 3 to 5

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# Overview

Preschool children possess a remarkable ability to absorb the world that surrounds them. Maria Montessori believed that the years from three to five are the most critical period for nurturing a child's natural curiosity and for laying the foundation for all future development.

## Goals

To foster independence and to support children in moving toward a mastery of self and the environment. The Montessori classroom is a prepared Montessori environment designed to encourage children in their self-directed discovery of the world. Interest-based activities encourage children to develop a love of learning and trust in their own ability to learn.

The main goal of the Montessori program is to help children develop a rapport with their environment and to support them as they develop physical, social and intellectual independence. The Montessori teacher intensely follows each child, presenting carefully designed lessons and material on a one-to-one basis, as the child is ready.

## Pillars of Montessori

Fundamental to the Montessori theory is the multi age classroom. Each Montessori classroom includes children age three to five, and children may work either individually or in small groups, learning from and sharing with one another. Surabaya European School's Montessori is held in a bright classroom with big bay windows. Two fully trained Montessori along with two teaching assistants guide students in their learning. Specialist teachers for Bahasa, PE and dance support the children's learning.

## Areas of Study:

### Practical Life:

Practical life exercises are the first exercises introduced to the child when he comes to the prepared environment. They serve as the foundation to all other work and are revisited throughout a child's time in the Montessori classroom.

The exercises encompass all the tendencies and sensitive periods of the child, with special emphasis on specific ones. For example, the tendency for work and movement. Movement in these exercises is directed towards an intellectual end. The child does not just move for the sake of moving. Movement is essential in the development of intelligence and is the key to all learning.

The tendency for order and self-perfection are also provided for in the practical life exercises, for

these tendencies are important in the development of self-confidence.

Exercises follow a definite pattern. They have a beginning, middle, and an end and are broken down into small parts. Thus facilitating the completion of a complex sequence of action efficiently, and in turn increasing the child's self-confidence.

The exercises are prepared, arranged and presented in a way which is appealing to the child, thus leading the child to wanting to repeat the action, and in turn increasing the child's concentration and help the child gain inner discipline and self-control.

Practical life exercises lead the child towards physical and intellectual independence, thereby enabling him to fulfill himself.

### *Areas of Practical Life:*

1. Care of Self
2. Care of Environment (both indoor and outdoor)
3. Grace and Courtesy
4. Control of Movement

Exercises are done with real objects found in the child's environment and are considered as being 'real work'

These exercises are practical and have a definite goal for they help in the development of the coordination of the mind.

### *Reasons for Practical Life Exercises:*

- The exercises help teach the child to assimilate his own environment and the customs of his own group.
- They help develop and coordinate the child's motor system through purposeful movement.
- Precision, efficiency and order are encouraged through methodical work.
- The final goal of the exercises of practical life is that of physical and intellectual independence. For the child who is able to develop intelligence can help himself.
- The exercises allow the child to attain better physical coordination. Thereby enabling him to use his body as a sensory functional tool.
- These exercises have a calming effect on the child and are especially effective with 'problem children'. For example children that are sad, tense, disorderly and hyperactive.
- They are the first exercises to be introduced at the beginning of the year and are to be utilized or presented throughout the year for they serve as the basis for all future development.

### Grace and Courtesy:

Grace and Courtesy exercises help children adapt to courteous behavior within their culture. These exercises are offered during the time when the child is refining small movement and is not self-conscious. Thus enabling the child to feel comfortable and confident in social relations within and

out of the classroom. It is imperative that these exercises are offered as a preventive means and not at the specific problem moment. Students must not be forced to demonstrate a certain behavior. Knowledge of how to act provides the child with the freedom to choose whether to act or not. His action must come from his own reflection or when his little heart prompts him to do so. The implications of a child's courteous behavior coming from his heart are far greater than if an adult imposes them upon him.

Through practical life activities, children acquire many daily living skills: preparing food, fastening clothes and caring for the environment. These activities also help children extend their powers of concentration and develop coordinated movement.

## Sensorial Activities:

Through interaction with sensorial materials, which isolate a quality—such as color, shape, sound, smell or taste—children experience the world through their senses, in a way that establishes the physical and mental foundation for further learning. The sensorial material is designed to give the child the means or opportunity to organize and re-organize sensorial information into precise concepts thus refining his capacity to think in a clear and orderly way. Through systematically working in logical sequential steps with the materials the child is building a solid foundation for intellectual functioning. The materials help the development of the child who is going through a highly sensitive period of the refinement of the five senses.

Sensorial material consists of a series of objects arranged according to a specific order, which is evident. For example the pink tower can only be constructed by putting cubes in a certain order (biggest to smallest). The Montessori teacher does not verbalize instructions; she only shows how various materials are used. The child intuitively grasps the concept of order in each material by looking at it as a whole. The child thus becomes intuitively aware or interested in the principle of order laden within each piece of material.

The hands and mind work together thereby making the learning experience active rather than passive. The child becomes an active participant enthusiastically absorbing knowledge through his senses and classifying impressions with what Maria Montessori called the 'inner conceptual framework'.

### *Qualities of the Sensorial Materials:*

1. Didactic: The material brings the child to observe the materials in order to learn to make comparisons, distinctions and judgments. It also pushes the child to make relationships and to ultimately be more abstract in his reasoning.
2. Control of Error: Self-correction is inherent in some of the exercises, but not in all the material. It gives the child feedback of being correct or incorrect. Making the correct choices builds the child's confidence and autonomy. This happens while the child is trying to perfect his performance and master the task.
3. Modes of Activity: This meets the child's needs and tendencies (order, movement, language and exploration) for the sensitive period he is in. The child is drawn to the materials to repeat

and reflect. It is exactly in the repetition of the exercises that the education of the senses exists.

4. Movement is attached: Movement is an integral part of our lives. Maria Montessori believed that movement was important in every aspect of learning. Once the child makes a choice and acts upon it, the will is developed and through this, he obtains knowledge. Knowledge is the prime motivator for the will to act.
5. The more purposeful movement there is involved in an activity, the more complex the child's degree of awareness. The child is naturally stimulated to feed, look, and experiment, arrange and rearrange, and taste. These are beneficial movement with definite purpose; this kind of movement is called 'synthetic movement'. The orderliness of the material actually gives the child more energy to do the work.
6. Isolation of Stimulus: The concept that is to be learned is isolated to the exclusion of all other stimuli in the environment. For example, nothing varies in an exercise except length. As a result, the child's mind zeros in on one aspect, the aspect being taught.
7. For the education of the senses, the child is blindfolded so that he can feel without his eyes. In other words, he is reading with the mind. Isolation of a quality is very different from conventional teaching.
8. Refinement of the senses, gradation and arranging in series: The child is in a sensitive period. He is very attentive to the smallest of details. Matching, fitting fascinates him, and so do grading by size/shape/sound and so on. All the exercises gradually lead to finer and finer distinctions.
9. Vocabulary and Language: The concept being taught through the sensorial material requires and enormous amount of physical involvement on behalf of the child. The seal to his activity is vocabulary. Vocabulary or language is given after extensive manipulation and hands on experience.
10. The language or words serve as a crown to the child's experience by giving a clear and accurate expression to go with the activity. Now the child is free to operate in the abstract, recalling the characteristics of an object and the image by name.
11. Materialized abstraction: No concept is grasped that is not first understood and presented in a concrete sense. It is a concrete representation of an abstract concept. In Montessori, we always give the concrete first. It is through manipulation that the child understands abstract terms.
12. Aesthetically Appealing: We present the materials in the most beautiful way, and we maintain i.e. Material has a specific place in the environment and order is evident in every corner of the classroom.
13. Indirect preparation for further learning: All the exploration of the sensorial traits forms a broad foundation for the child's subsequent growth. As the child begins the process of differentiation of objects within specific categories with fine distinctions, the child is indirectly preparing the intellect for things, which will be given or taught to him later. For example, the sensorial material has indirect preparation for geometry and hand writing to name a few. The greater the refinement, the greater the understanding.
14. Repetition: This aspect of the material satisfies the child's task to perfect his performance according to this own ability. The saying "Practice makes perfect" comes to mind as the

child fulfills an innate urge to practice.

15. Diagnostic Value: The Montessori directress can use the materials as a guide in identifying visual or auditory disabilities, which would go unnoticed otherwise. The education of the senses, a child who is having problems can overcome his disability.
16. Games—Memory Training: Games are to aid the child in extending and sustaining interest in the materials. They are used to reinforce vocabulary, to develop memory training and to encourage the child to make relationships in the environment.

**Summary:** The sensorial material enables the child to order the contents of his mind. It serves as a guide for observation and abstraction, for it classifies the impressions that the senses has or will perceive (i.e. color, form and so on) in their daily lives. These exercises lead the child to pay careful attention to himself and his environment. The refinement of the senses makes the child a greater observer of life.

## Language:

### *How Does the Montessori Environment Develop Oral Language?*

The Montessori environment hails total freedom and encouragement of conversation within the environment between children and between the children and adults. The child is continuously aspiring to belong to his social group. It is the Directresses duty to help the child integrate and adapt to his new environment. This is done through care, attention and the slow establishment of trust between the Directress and the child.

The Directress mentions the names of objects in the environment to familiarize the child with his surrounding and also to attach vocabulary to experiences. Group activities with songs, poems and stories read by the Directress provide opportunities for children to pick up and absorb language with enjoyment. ‘Grace and Courtesy’ activities provide opportunities for the child to pick up appropriate behavior but also learns ‘how to’ say things, e.g. ‘excuse me’, ‘can you pass me the juice please’.

Classified cards of the home, the neighborhood and the cultural extensions help the child understand and adapt to his cultural environment. The classified cards of the home are usually cards, which the child is familiar with and needs to learn the names of or confirm the names of items he sees in his home.

The News Period provides the opportunity to the child to express himself about a news item concerning the child in a group setting which is open and accepting. This helps the child to build self-confidence, which is necessary for the ability to communicate with other children, and adjusts.

The Question Game is an activity where the child answers questions asked by the Directress in a logical way. Thus the child is steered to think and develop the ability to think logically.

The child's experience with the sensorial materials and learning the vocabulary of the qualities further assists the child in not only understanding the experiences but also acquiring the ability to label them. Each quality in the environment e.g. size, dimension, color, taste, smell texture, temperature, width, sound and form is isolated (where possible) in a concrete material that can actively be explored by the child through his senses.

### *How the Montessori Environment Indirectly Prepares the Child for Reading:*

Along with the rich exposure to oral language, the child is introduced to the 'I spy' game. In this activity the child is made aware that words are made up different sounds. The sounds are further confirmed and provided by a symbolic representation with the Sand Paper Letters. The child learns the phonetic construction of words before the alphabetical name in sequences. This is because the sounds are what is heard in words. The connection of the sounds and letters in the moveable alphabet where the child forms words prepares the child for reading. Consequently, writing prepares for reading and the transition, as was observed by Maria Montessori, is an easy one. She saw that writing perfected speech and reading helped the development of language.

### Reading and writing consist of 4 levels of language:

1. Phonemes: the basic sound units of language. English consists of 40-50 phonemes, e.g. a, ch, sh
2. Morphemes: the smallest meaningful unit of sound. Words are made by combining phonemes, 'c' 'a' 't' (i.e. cat)
3. Syntax: This is the order of words in a sentence. i.e. grammar.
4. Meaning: Semantics. Attributing meaning and understanding to what is in front of you, the combination of words, the inflection and the context.

### Total reading:

#### Stage 1: Mechanical Reading (Preparation with the I Spy and the Sand Paper Letters)

The child starts his first reading experience with object boxes. It is an analytical process where the child first recognizes the letter and reproduces the sounds slowly at first of names of objects familiar to him. With repetition and added speed the child read the words and also comes under the realization that he has just read a word. Reading folders isolate the phonograms and help the child read simple words.

#### Stage 2: Understanding (Preparation by oral vocabulary, News period and Question Game)

With the Action Cards the child is presented with meaningful opportunities to interpret and act out the words confirming his understanding of the word. The Environment Card requires the child to read and match the card to objects in the environment. Here the child is going

from the unknown to the known. This in turn prepares for total reading. Puzzle words introduce non-phonetic words to the child in a fun and easy to remember manner. The exercises with function games give the child a sensorial impression of syntax (the article, adjective, conjunctions, preposition, verb and adverb). The Command Cards offer experience of analysis of words and syntax combined.

### Stage 3: Reading with enjoyment

The child starts to read with enjoyment and emotion stories that are happy, sad and so on. The child is beginning to appreciate language used in different contexts and styles. The child reads for enjoyment relaxation and to obtain information. The environment must provide a variety of books through a class library, online reading and other avenues in order to satisfy the child's needs.

Maria Montessori said, "We must offer the child the help he needs, and be at this service so that he does not have to walk alone". The Absorbent Mind.

### Preparation for Writing:

Writing depends on motor mechanism and work of the intellect. The child must be able to hold and manipulate a pencil and at the same time rely on memory of the shape of the letter symbols representing sounds. Preparation for this begins as soon as the child enters the Montessori classroom.

With the Practical Life activities, the child develops coordination of movement, hand and eye coordination, fine and gross motor control. For example: pouring water from one jug to another helps the mind gain control over the hand through concentration. Work with the button frames helps in developing the coordination of his fingers.

The sensorial materials offer a variety of skills necessary to write. The knobs in the cylinder blocks, the geometric shapes and puzzle maps require a thumb, index and third finger grip similar to holding a pencil. Holding the blocks of the Pink tower and Brown Stair strengthens the grip and arm muscles. As a result, with the combination of practical life and sensorial activities and the acquisition of oral skills, the child is further equipped with the skills to write.

The language activities such the metal insets help the child in controlling his movements and also provides more practice in going from left to right. The sand paper letter and phonograms give the child the opportunity to sensorially commit the letters to memory by tracing over them. The moveable alphabet enables the child to start writing down his thoughts by sounding our words and writing them down with pre cut letters.

Gradually the child can perfect his ability to write on lines and eventually learn punctuation cues.

## Cultural Activities:

Children learn about other disciplines by learning about our world and its continents. They explore different cultures through food and photos. They also study areas of interest such as biology, geology, geography and history.

### *Artistic Expression*

Children study the need for artistic expression throughout history through exposure to various artists and their work. They are encouraged to express themselves through various medium of art (painting, drawing, sewing and so on). Music is presented as a language, using a combination of rhythmic approach, Montessori sound analysis and musical composition. Drama and movement are the child's opportunity to use their whole body as an instrument of expression.

### *Physical Education*

Children have gym twice a week where they learn gross and fine motor skills. These enable the child to gain control over their body whilst perfecting the ability to throw, skip, hop and so on.

### *Celebrations and Performances*

We celebrate our home country's cultural holidays and those of other parts of the world through costumes, food and ceremonies. We produce quarterly performances for parents to come and watch.

## Mathematics:

The Montessori approach to mathematics is based on the concept that the child has to experience mathematical experiences in a concrete manner before being given the abstract concept. The process of mathematics has to be one of discovery. The potential for mathematics is present at birth, but will disappear if it is not given the opportunity to develop. The child should therefore be given the opportunity to manipulate the materials and engage in self-activity.

The sensitive period for mathematics starts at around the age of 4. Initial mathematics begins at the time when the child is introduced to the Pink Tower (cubing), the Broad Stair (squaring) and the other pieces in the sensorial materials prepare him for geometry. When the child becomes interested in numbers, he is introduced to mathematics with concrete materials.

### *Mathematical Curriculum or Apparatus:*

Our approach to mathematics is sensorial, color coded, based on visual and tactile impressions. This is a time when the child has the potential to understand and enjoy mathematics. Exposing

the child to the concrete material first allows him to develop the thinking and reasoning skills that he will need later on for abstract work.

The mathematical apparatus is structured, correlated and sequential.

Number work is introduced by teaching concrete quantities. The symbols are also introduced in isolation. The two are then combined (quantity and symbol) in the process of enumeration. The child is thereafter introduced to the operations of addition, subtraction, multiplication and division of the decimal system. The next step is that of memorization of the possible combination of the four operations. The last step is that of abstraction work which is carried out with test tubes and bead frames.

### Four Basic Steps in the Mathematical Montessori Materials are:

- Enumeration
- Operation
- Bridge or transition
- Memorization
- Abstraction.

### *The Qualities of the Mathematics Materials:*

#### The Concise Math Apparatus:

The Concise Math Apparatus is always attractively color coded and give the child clear cut visual and tactile impressions, e.g. the one is presented by a colorful bead or dot, a ten by a bar or line, a hundred by a square, and a thousand by a cube. The weights vary accordingly and child receives a vivid weight impression for each one as well as a visual and tactile impression, as well as an increase in surface area.

#### Isolation:

All materials provide for isolation, e.g. the number rod has uniform width and breadth while it uses two contrasting colors and length to impress quantity.

#### Control of Error:

Most of the materials contain control of error devices to reinforce the child's correct answers. Control of error is only introduced when accuracy is expected.

#### Allows for Repetition and Movement:

The exercises themselves allow for plenty of activity and repetition including reaching and crawling along concrete lengths of numbers.

#### Sequence:

The materials progress from very concrete materialize abstractions to less and less concrete thus

leaving the child with strong sequential abstract concepts

Know-why

All the apparatus provides not only the 'know-how' but also the 'know-why' of them.