

The Montessori Philosophy

Over the last century, Dr. Maria Montessori's ideas have had a growing influence on education around the world. However, while individual elements of her program find their way into more classrooms every year, there is a cumulative impact when schools fully implement the entire Montessori model. When done well, something that is quite distinct for children is possible. Montessori schools are designed to help each student discover and fully develop her unique talents and possibilities. They treat each child as a unique individual, allowing her to learn optimally at her own pace and in the way that best suits her learning style. They strive to be flexible and creative in addressing each student's needs.

Learning the right answers may get a child through school, but learning how to become a life-long, independent

learner will take her anywhere. Montessori teaches children to think, not simply to memorize, feed back, and forget.

Rather than present students with right answers, Montessori educators lead students to ask their own questions and to discover how to find the answers for themselves. Older students are encouraged to do their own research, analyze what they have found, and come to their own conclusions. Teachers encourage children to think for themselves and become actively engaged in the learning process.



Core Values



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Today there are more than four thousand Montessori schools in North America. Each one is unique. There are variations in size, facilities, programs, and emotional climate. Within a school, each class may look and feel quite different from the others, reflecting the interests and personalities of the teacher; however, certain values will be found in all schools that are honestly following the Montessori approach.

Montessori schools are child centered and deeply respect children as unique individuals. All school activities are guided by a vision of complete development – cognitive, social, emotional, physical, and spiritual.

Taken together, a core set of values guides the daily practices of an “authentic” Montessori school.* These values must be shared by the entire school community and include:

- Children are intrinsically motivated, and they will succeed when their learning activities incorporate movement and opportunities for independence.
- Children will become self-disciplined when they are empowered to choose learning activities designed for specific developmental and learning needs.
- Each classroom is a respectful community of mixed-age learners.
- Classrooms and other school spaces are learning environments prepared with curriculum and materials.
- Teachers are educated and certified as Montessori teachers.
- Parents understand and support the purposes of the school; they are partners.

Intrinsic Motivation

One of Montessori's key discoveries is the idea that children are intrinsically motivated. They are driven by their desire to become independent and competent beings in the world. They naturally learn and master new ideas and skills. For this reason, outside rewards are unnecessary. Outside rewards create a dependency on external motivation. Far too many children become dependent on others to define their self-image or obtain permission to follow their dreams. In the process of making independent choices and exploring concepts largely on their own, Montessori children construct knowledge, their own sense of individual identity, and their own understandings of moral right and wrong.

Montessori saw children as far more than scholars. In her view, each child is a full and complete human being, the mother or father of the adult man or woman he or she will become. Even when very young, the child shares humankind's hopes, dreams, fears, emotions, and longings. From her perspective, this goes beyond mental health to the very core of one's inner spiritual life. Montessori programs

offer consciously designed experiences that cultivate the child's sense of independence, self-respect, love of peace, passion for self-chosen work done well, and the ability to respect and celebrate the individual spirit within people of all ages and the value of all life.

Independence and Movement: Acquiring Self-Discipline

Montessori teachers share a conviction that success in school is directly tied to the degree to which children believe they are capable, independent human beings.

Young children are shown how to pour liquids, write letters, and compute sums. Older children are shown research techniques, Internet search routines, and forms of expository writing. When children develop a meaningful degree of independence, they set a pattern for a lifetime of good work habits, self-discipline, and a sense of responsibility.

Children readily take pride in doing things for themselves carefully and well. All children learn through movement. They must actively explore and examine the world around them. Montessori environments encourage children to move about freely, within reasonable limits of appropriate behavior.

Much of the time they select work that captures their interest and



If they knew the words, even very young children would declare: "Help me learn to do it for myself!"

attention, although teachers also help them choose activities that will present new challenges and new areas of inquiry. Montessori teachers also direct students to master the basic skills of their culture.

Children learn by doing, and this requires movement and spontaneous investigation. Children touch and explore everything in their environment. The mind is handmade, because through movement and touch, the child investigates, manipulates, and builds up a storehouse of impressions about the physical world around her. Children develop thinking through hands-on learning.

Montessori children enjoy considerable freedom of movement and choice. Montessori children freely move about, work alone, or with others at will. However, their freedom always exists within carefully defined limits on the range of their behavior. Free to do anything appropriate within the ground rules of the community, children are consistently redirected promptly and firmly if they cross over the line. Children may select an activity and work with it as long as they



wish, so long as they do not disturb anyone or damage anything. When finished, they are expected to put materials back where they belong. Becoming self-disciplined is a major goal of Montessori programs. Students are taught to manage their own community, and they develop strong leadership skills and independence.

Respectful Communities of Mixed-Age Groups

Montessori schools are warm and supportive communities of students, teachers, and parents. As children grow older and more capable, they assume a greater role in helping to care for the environment and meet the needs of younger children in the class. The focus is less on the teachers and more on the entire community of children and adults, much as one finds in a real family. A child experiences courtesy and trust, two important aspects for optimal learning conditions.

The number of students in a Montessori class is determined by: the physical size of the classroom; regulations governing children-to-adult ratios; and the beliefs of the school community. Originally, Montessori enrolled more than forty-five children in a classroom. Her purpose for this was to insure that her teachers would help children become capable, independent learners, children who would also turn to one another for lessons and guidance.

Classrooms today are typically much smaller (usually twenty-five to thirty-five), bringing children together in multi-age groups, rather than classes comprised of just one grade level. Schools that place children together into small groups assume that the teacher is the source of instruction, a very limited resource. They reason that as the number of children decreases, the time that teachers have to spend with each child increases. Ideally, we

would have a one-on-one tutorial situation. But the best teacher of a three-year-old is often another child who is just a little bit older and has mastered a skill. This process is good for both the tutor and the younger child. In this situation, the teacher is not the primary focus. Instead, a larger group size puts the focus less on the adult and encourages children to learn from each other. By having enough children in each age group, all students will find others at their developmental level.

By consciously bringing children together in a group that is large enough to allow for two-thirds of the children to return every year, the school environment promotes continuity and the development of a very different level of relationship among children and their peers, as well as among children and their teachers. Classes tend to be stable communities, with only the oldest third moving on to the next level each year.

A strong community develops as teachers and children create close and

(Below) A class involved in the **Silence Game**.

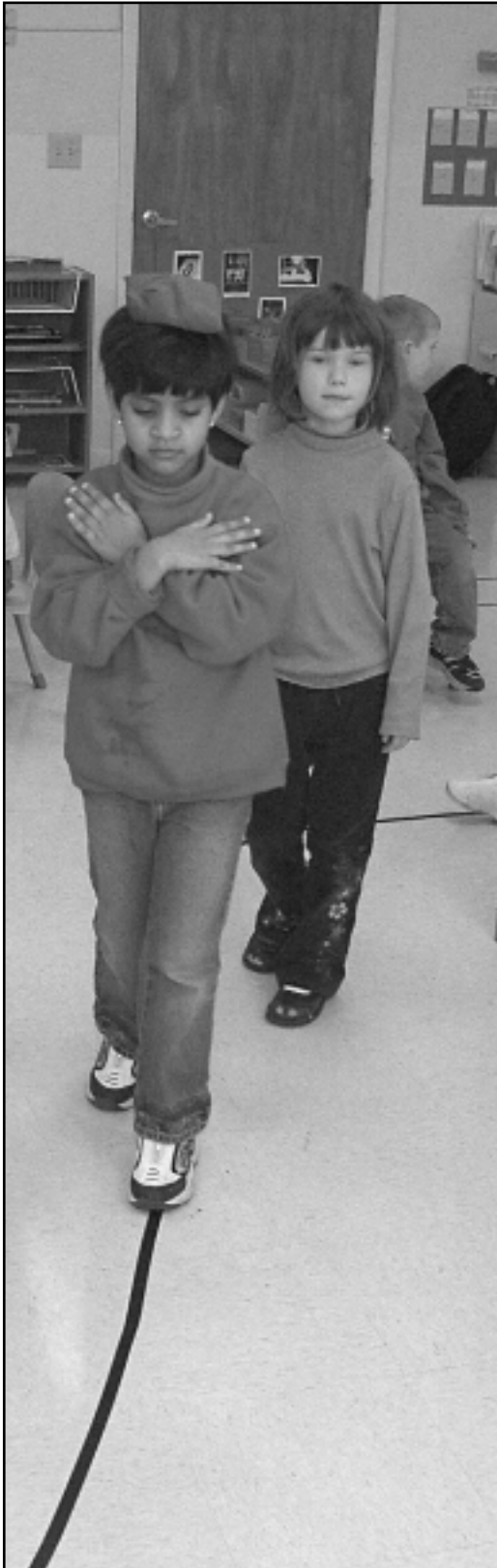


MONTESSORI PROGRAMS

The levels usually found in a Montessori school correspond to the developmental stages of childhood:

- ▲ Infant (birth through eighteen months);
- ▲ Toddler (eighteen months to age three);
- ▲ Early Childhood (age three to six);
- ▲ Lower Elementary (age six to nine);
- ▲ Upper Elementary (age nine to eleven);
- ▲ Middle School (age eleven to thirteen); and
- ▲ High School (age fourteen to eighteen).

At each level, the program and curriculum are logical and highly consistent extensions of what has come before.



long-term relationships. Teachers know each child's temperament, personality, and learning style. Ideally, there would be an equal number of girls and boys evenly divided among the three age levels.

With the strong emphasis on international education, many Montessori schools attract a diverse student body representing many ethnic, religious, and international backgrounds. The curriculum is international in its heritage and focus and consciously seeks to promote a global perspective, promoting mutual respect. The intent is for children to regard diversity as a call for celebration and not a cause for fear. Older students learn to care about others through community service. The Montessori Peace Education curriculum supports this purpose.

Montessori's spiritual perspective leads Montessori schools to make a conscious effort to organize programs of community service, ranging from daily contributions to others within the class or school setting to community-outreach programs that allow children and adults to make a difference in the lives of others. The fundamental idea is one of stewardship. Students also develop a love for the natural world. Natural science and outdoor education are important elements of our children's experience.

(Left) Walking on the Line

This child is walking along a line on the floor, stepping carefully heel to toe, with a pillow balanced on his head. Many exercises at the early childhood level help children to develop control of their hands and large muscles.

The Prepared Environment: Curriculum and Materials

Montessori classrooms tend to fascinate both children and their parents. They are normally bright, warm, and inviting, with an abundance of plants, animals, art, music, and books. Shelves are filled with intriguing learning materials, fascinating mathematical models, maps, charts, fossils, historical artifacts, computers, scientific apparatus, a natural-science collection, and animals that the children are raising.

Montessori classrooms are commonly referred to as *prepared environments*. Each is a learning laboratory in which the children are allowed to explore, discover, and select their own work. The independence that the child gains is not only empowering on a social and emotional basis, but it is also intrinsically involved with helping the child become comfortable and confident in her ability to master the environment, ask questions, puzzle out answers, and learn continuously instead of waiting for adult direction.

The Montessori goal is less to teach the child facts and concepts, but rather to help her fall in love with the process of focusing her complete attention on some challenge and solving its riddle with enthusiasm and joy. Work assigned by the adult rarely results in such enthusiasm and interest as does work that children freely choose for themselves.

The classroom is organized into several curriculum areas, usually including: language arts (reading, literature, grammar, creative writing, spelling, and handwriting); mathematics and geometry; everyday living skills; sensory-awareness exercises and puzzles; geography; history; science; art; music; and movement. Most rooms will include a classroom library. Each area is made up of one or more shelf units, cabinets, and work tables with a wide variety of materials on open

display, ready for use as the children select them.

Students are typically found scattered around the classroom, working alone or with one or two others. They tend to become so involved in their work that visitors are immediately struck by the peaceful atmosphere. It may take a moment to spot the teachers within the environment. They will be found working with one or two children at a time, advising, presenting a new lesson, or quietly observing the class at work. The focus of activity in the Montessori classroom is on children – who each one is, his or her interests and styles of learning. The teacher is a guide, providing direct learning experiences whenever possible.

A Montessori classroom is filled with vast arrays of sequenced learning activities known as the *Montessori materials*. The materials are displayed on open shelves sized for the height of the children. They are arranged to provide maximum eye appeal without clutter. Each object has a specific place on the shelves, arranged from the upper left-hand corner in sequence to the lower right.

The materials are arranged in sequence from the most simple to the most complex, and from the most concrete to those that are more abstract. Because of the order with which they are arranged in the environment, children can find precisely what they need whenever they wish.

When children choose a material, they develop an array of personal traits such as independence, responsibility, and time management. While investigating and using the materials to sort, arrange, build connections, and problem solve, they develop cognitive capabilities. Educational theorists now advocate learning through direct experience and the process of investigation and discovery. The child must be active and engaged, constructing her or his

own knowledge. Most students do not retain or truly grasp much of what they “learn” through memorization. Instead, children need to manipulate and explore everything that catches their interest. Part of Montessori’s contribution was her discovery of what is now assumed. But, she went further. Montessori developed a series of sequenced learning materials designed with incredible precision.

Each material is a concrete representation of an abstract idea. Depending upon the ages of the children, they will use the materials to explore and investigate ideas found in anthropology, art, astronomy, biology, botany, chemistry, earth science, geography, geology, geometry, history, language, mathematics, music, physics, and sociology.

Some materials isolate and teach one concept or skill at a time. Length, for example, is explored by three-year-olds arranging a set of ten rods. The first is 10 centimeters long; the second is twice this length. This progression continues until the tenth rod is in place with its length of 1 meter.

(Right) As often as possible, Montessori materials and furniture are made of wood with beautiful natural finishes. Here, a student traces the cursive letter y in fine sand.

Students in a Montessori Elementary classroom use length to explore the concept of geological time. The arrival that our human species occupies is represented by the last centimeter of rope, which is two city blocks long.

Montessori teachers design and adapt the classroom environment with the specific community of children in mind, modifying the selection of educational materials available, the physical layout, and the tone of the class to fit the ever-changing needs of the children. Generally, young students will work individually or in small, self-selected groups. There will be very few whole-group lessons in the early childhood and lower elementary program levels.





(Above) These two elementary students compose a song on the **Tone Bars**.

Children from ages two to six are interested in sequencing and sorting objects. They are drawn to the sensory properties of objects within the classroom: size, shape, color, texture, weight, smell, sound, etc. Children of this age tend to repeat exercises. With repetition, their movements slow and become more precise. Their attention to detail increases; they discover small details in the objects and classroom as they observe and appreciate their environment. This is a key in helping children discover how to learn.

Elementary and secondary students are interested in sequencing and sorting ideas. They are drawn to the interpretive meanings of literary works, social and historic events, scientific findings, and issues of moral justice.

Elementary and secondary classrooms are designed to facilitate student discussion and stimulate collaborative learning. In group discussions, students readily propose and debate solutions to open-ended problems. A goal is to pursue topics

in depth rather than to “cover the material.”

At the secondary level, an integrated thematic approach is used to connect the otherwise separate disciplines of the curriculum into studies of the physical universe, the world of nature, and the human experience. Literature, the arts, history, social issues, political science, economics, science, and the study of technology all complement one another.

The organization of the Montessori curriculum from early childhood through secondary programs could be thought of as a spiral of integrated studies rather than a traditional model in which the curriculum is compartmentalized into separate subjects, with given topics considered only once at a specific grade level. The Montessori curriculum is carefully structured and integrated to demonstrate the connections among the different subject areas. History lessons, for example, link architecture, the arts, science, and technology.

An especially important aspect of the materials is that they offer multiple

levels of challenge and can be used repeatedly at different developmental levels. For example, the Trinomial Cube, which presents a complex and challenging twenty-seven-piece, three-dimensional puzzle to the five-year-old, is used to introduce the older elementary and secondary child to the algebraic concept of the exponential powers of polynomials.

The teacher presents the materials with precision and offers each child an initial exploratory procedure; the child is able to imitate what the teacher did. The teacher's presentation also enables children to investigate and work independently. A goal is for the children to become self-disciplined, able to use the materials and manage the classroom without direct adult supervision.

Children progress at their own pace, moving on to the next step in each area of learning as they are ready. Initial lessons are brief introductions, after which the children repeat the exercise over many days, weeks, or months until they attain mastery. Interest leads them to explore variations and extensions inherent within the design of the materials at many levels over the years.

The Montessori learning materials are not the Method itself; they are simply tools used to guide children into logical thought and discovery. The Montessori materials are provocative and simple; each is carefully designed to appeal to children at a given level of development.

In developing these materials, Dr. Montessori carefully analyzed the skills and concepts involved in each subject and noted the sequence in which children most easily master them. She then studied how children seemed to be able to grasp abstract concepts most easily and designed each element to bring the abstract into a clear and concrete form.



(Above) Working with the **Trinomial Cube**.

The Control of Error

The design of many of the materials gives children immediate feedback. Called the *Control of Error*, this feature makes it possible for Montessori students to determine for themselves if they have done each exercise correctly.

Children choose their learning activities within carefully defined limits as to the range of their behavior. Making mistakes is a vital part of the learning process. Discovery, investigation, and problem solving involve making wrong turns, getting stuck, and trying again. An important part of the learning experience is to recognize an error and learn how to make correc-

tions. These experiences are part of the process of becoming self-disciplined.

A young child takes ten cylinders out of a wooden case; the cylinders vary in height and diameter. The control of error lies in the construction of the objects: a cylinder can only fit into one place in the wooden case. Another child learns the names of African nations. In this case, the control of error is initially found with the teacher, who uses the "Three-Period Lesson" to teach and re-teach the correct names of nations. Once the child knows these names, the control of error becomes his own knowledge.

Each repetition is not an exact copy of the previous use. Children continuously refine their work and learn more. The principle of control of error guides this process. In addition to the design of the materials, prior knowledge is also a control of error. Knowledge of colors, shapes, and size for younger children — knowledge of addition and multiplication for older children — results with self-corrected learning.

The Three-Period Lesson

Montessori teachers will use the Three-Period Lesson to help children develop a rich vocabulary in all areas of study. Children best learn the meaning for names when they can associate the name with an object. In the following example, a young child is taught the names of secondary colors.

During the first period, the child is shown an orange-colored tablet. The teacher names the color: "This is orange." The child is now shown a green-colored tablet. The teacher names this color: "This is green." Finally, a purple-colored tablet is shown, and the teacher states, "This is purple."

During the second period, the child makes a link between the language and her own experience. The teacher gives the name, and the child finds the object. The teacher asks, "Show me orange." The child points to the orange tablet. "Show me purple." The child now points to the purple tablet.





Considerable learning and teaching occurs during the second period. If the child is asked, "Show me green," but she points to the purple tablet, the teacher simply re-teaches. Returning to the first period, the teacher points to the purple tablet and restates, "This is purple." The teacher again points to the green tablet and restates, "This is green."

In the final period, the teacher points to one of the tablets and asks, "What is this?" The child answers, "Orange." If the child answers

one of the other colors, the teacher will again re-teach the colors by renaming and reconfirming them using the first- and second-period lesson formats.

Maria Montessori understood that learning occurs best when stress and apprehension are removed from the learning situation. The Three-Period Lesson format is based on readiness. Complex vocabulary words are introduced when it is appropriate. Montessori educators believe that it is important for children to learn vocabulary, which is why so much emphasis is

(Above) A one-on-one lesson in long division in a lower elementary class.

placed on *nomenclature* (enhanced vocabulary). The three- and four-year-olds do not merely identify *triangle*; our teachers name triangles precisely: *isosceles triangle* or *scalene right triangle*. A rich vocabulary is also taught to lower elementary students; such as terms from botany as well as the various land and water forms that make up our planet's surface. The more words children know, the more they actually see around them.