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# The Perfect Fit

Montessori Concepts In a Nutshell

Sheldon Clark

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\* Thanks to Danielle Beam and Kristen Cullen

# Introduction

These short writings are intended for families and staff at The New School who may be new to Montessori education.

Montessori pedagogy differs from other educational systems in a number of important ways. Based directly on Dr. Maria Montessori's observations of human development, Montessori education seeks to follow each child on their own individual path of self-construction, academically, socially and emotionally. With one eye on universal human tendencies and another on the planes of human development, Montessori teachers prepare environments designed to meet the developmental tasks of the children they serve.



The work of a Montessori teacher is to guide children toward the goal of becoming independent and lifelong learners. We recognize each child's cognitive, emotional and social aspects, nurture them, and help them flourish in ways which are unique to each individual.

The pieces in this book were written at different times and for different purposes. Some stem from speaking notes for a presentation, others originated as letters to colleagues. Either way, I hope they can be of use.

Sheldon Clark  
*June, 2020*

***The child is both a hope  
and a promise for mankind.***

Dr. Maria Montessori

# Goals of a Montessori School

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The main purpose of a Montessori school is to provide a carefully planned, stimulating environment which will help children develop a foundation for creative learning. With this in mind, we can identify a number of goals for children who attend a Montessori school.

## **Developing a positive attitude toward school**

Most of the learning activities in a Montessori classroom are individualized to meet each child's needs. Children engage in learning tasks that appeal to their level of readiness. Because activities are geared to their needs, students come to feel comfortable working at their own pace and repeating tasks as often as needed to gain mastery. In this way, children build a positive attitude toward learning itself.



### **Helping each child develop self-confidence**

In a Montessori school, learning tasks are designed so that each new step is built upon what the child has already mastered, removing the negative experience of incomplete understanding. Their resulting feelings of success build inner confidence in children, assuring them that they can learn on their own.

### **Assisting each child in building concentration**

A primary goal of Montessori education is to aid children in engaging with their environment. Through experiences which appeal to their successive stages of developmental readiness, children form habits of increasing attention and concentration, extending the depth of their learning.

### **Fostering an abiding curiosity**

In a rapidly changing world, a deep and abiding curiosity is a necessary component of creative learning. Providing children with opportunities to discover qualities, dimensions, and relationships amidst a variety of situations builds curiosity as an essential element in their learning.

### **Developing habits of initiative and persistence**

Surrounded by materials and learning activities geared to their developmental needs, children become accustomed to engaging activities on their own. Over time, this results in the development of initiative, leading directly to habits of persistence and perseverance.

### **Fostering inner security and a sense of order**

A well ordered, enriching environment helps to meet children's need for order and security, often producing a calming effect on the child. Every item in a Montessori classroom has a place, and the classroom culture calls for maintaining the environment, meeting the children's inner need for order.

# Montessori in a Nutshell

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There are a number of interrelated strands which shape a child's experience in Montessori education. Let's consider two:

- the cognitive, social, and spiritual growth of the child
- children's experiences and understanding within community, relating to the idea of "cosmic education" as expressed in the elementary cultural curriculum, and in relation to the adolescent community

Regarding the individual development of the child, we need to keep in mind Dr. Montessori's belief in the need for every learner to grow at their own pace, and in ways which best meet the needs and strengths of each student. This would seem to be common sense, but a cursory look at traditional learning environments reveals a sequence tied directly to timed schedules and assumed skills. As Montessori teachers, we can operate with generalized understandings about children's growth, but Montessori philosophy requires us to find the unique developmental path which each child walks, and to walk that path alongside the child.

Key to Montessori practice is the creation of a prepared environment with which the children interact. Classrooms are designed to meet children's physical size with a correspondingly sized physical structure. Materials are provided which present concepts in concrete, sensorial terms, and the child is given latitude in both choice and independent action when interacting with these materials. The need for this is shown in Dr. Montessori's ideas that children acquire physical independence by being self-sufficient; that they grow into their own independent will by freely using the power of choice; and that they develop



concentration by working without interruption.

In the prepared environment, children interact with materials which range from practical life skills to the development of ideas in language, mathematics, and the sciences. The materials are organized around a general pattern, moving from the concrete representation of a concept, to those which demonstrate more abstract understandings. Early materials present manipulative opportunities for children to explore the inner workings of an idea. Successive materials become increasingly abstract until a student finally moves into a free and actualized understanding. This is seen strongly in the mathematic materials, though the pattern of moving from the concrete into abstraction is seen in other applications as well.

Montessori environments develop and change with the age of the child, with each successive environment prepared with the children's developmental tasks in mind. The materials provide their own motivation for growth, while opportunities for cooperative action between students deepen with the children's experience and age.

Montessori spoke of the child moving through a second gestation of sorts, occurring now in the outside world where a young child's latent seeds of personality grow with experience into a mature, social being. Montessori saw this as a process of individual self-construction, and knew that educational environments must be designed in every way to aid that growth.

At the same time, Dr. Montessori also knew that for humanity to thrive, young people must be led toward a conscious vision of peaceful, productive coexistence. If humanity is to work toward common goals, she believed, then children must be educated to seek common goals. In this light, Montessori saw one real purpose for education: to better society by fostering children's independence, while at

the same time preparing them for participation in a truly social life. This begins at the Children's House level, and continues through each level of Montessori education.

This vision takes strong form in the elementary level's "cultural curriculum" which broadly encompasses our planet's physical and biologic development, the development of humanity, and earth's early civilizations. Activities in these areas serve as a vehicle for learning ideas and skills through research and experimentation. Studies in the cultural curriculum offer students opportunities for interaction in imaginative and inventive work. Group activities allow children to step into leadership roles, to experience the value of a role in support of leadership, and to find in both the satisfaction of cooperative action.

More importantly, however, the cultural curriculum is also key in helping children understand the interdependent nature of the world, and to finding their own place in the world around them. Vital to the unfolding of the cultural curriculum is Montessori's vision of "cosmic education," a system of thought which seeks to "...give the child a vision of the whole universe, for all things are part of the universe, and are connected with each other to form one whole unity."

Within this broad vision, interdependent structures are examined for the "cosmic task" of each to their elements. Whether a given structure is in the biologic, geologic, or social realm, its component strands each play a vital role in supporting the structure as a whole. That role is known as that element's cosmic task.

In Lower Elementary, the structures examined have to do with planetary creation and the biologic development of life on earth. Particular emphasis is given to the period from 650 million years ago through the development of early humans. Ideas such as interrelatedness, symbiosis, and mutual

interdependence are kept at the fore as the development of our planet and its life are explored.

In Upper Elementary, the cultural curriculum focuses more on ancient civilizations, and the specializations within community life which allowed for the growth of the arts, government, religion and agriculture. Here, the idea of the cosmic task is considered in relation to the mutually interdependent roles held by individuals within society.

All of this leads into Dr. Montessori's vision for adolescent education. The goal at this level is not simply to help students find and develop their independence. Rather, it is to provide opportunities for them to use their independence in ways which help them enter into real and productive social life. Montessori's thinking here is about rooting the expansion of adolescence into experiences which are forward moving and community oriented. At the adolescent level, we seek to help young people enter society with skills for self-support, as well as the experience and knowledge required for self-sufficiency. Toward this end, Montessori writes of an educational environment which appeals to the developmental needs and capacities of adolescents as they prepare to interact in larger, and more significant ways with the society around them.

One can easily make connections between these ideas and the overall cultural curriculum of the elementary grades. There, emphasis is given to the ideal of the cosmic task, revealing how seemingly simple things aid one another in systems of support, leading to expanding structures. In her writings on adolescent education, Montessori continues to speak of cosmic tasks, but not in relation to the planet, nature or early civilizations. In her thinking on adolescent education, Montessori gathers the elementary program's ideas of interdependent support, and reflects them onto the economic, civic and relational roles each of us plays as we interact with society.

# Statement of Educational Philosophy

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Both the character and experiences of Montessori teachers play an integral role in their ability to help children grow through the successive planes of development. Broadly speaking, the work of the Montessori teacher is to guide children toward the goal of becoming independent and lifelong learners. In so doing, teachers must honor each child's differing aspects, cognitively, emotionally, and socially. A child's needs and abilities in each of these areas must be recognized, nurtured and allowed to flourish in ways which are unique to each individual.

As a result, Montessori teachers most often take their lead from the students themselves. By observing children's demonstrated readiness for new ideas and skills, we offer curriculum appropriate for each child at his or her own stage of development. At the same time, however, a Montessori teacher must always remember to look past the child of the moment, and toward the growth of each child's potential. Certainly, the child's development informs our decisions as teachers; the axiom "follow the child" is vital to our work. However, as children develop we must also offer them a path on which to walk.

In this sense, Montessori teachers act as guides, balancing our knowledge of the skills children need with our own observation of each child's readiness to receive them. As children progress, we teach by way of interaction and relationship, using the tools of the Montessori curriculum, and by providing time for students to approach work as a living context in which they can practice their expanding skills.

We seek to educate both the mind and spirit of each child, providing academic and cultural experiences designed to broaden their skill levels, their understanding of the world,

and their own expanding points of view. We help children learn the mechanics of math and language, for example, at a pace appropriate to the strengths and needs of each. At the same time, we help children use these skills in the pursuit of a real understanding of the development of our planet, the nature of humanity, and of their own place within the world around them.

It is the teacher who has faith in children's ability to discern their own development who can best help them rise into higher levels of maturity and ability. While the accumulation of knowledge, skills, and social experience are crucial components in our students' growth, the art of a Montessori teacher's success lies in finding a balance between leading and following, supported by careful observation of the needs of each child.

The nature and role of the teacher is not the only matter of importance, however. Each Montessori environment bears the stamp of its teachers. For a classroom to be a dynamic learning environment, however, it must be prepared with qualities designed not only to help students develop academically, but as creative and logical thinkers as well.

A dynamic learning environment is one in which high levels of trust have been nurtured between teachers and students, and between the students themselves. In this context, both teachers and children can be free to grow in an atmosphere of respect, receiving support as well as having the opportunity to offer support to others. Based on this trust, students in a Montessori environment should be able to explore ideas freely through the use of hands-on materials and projects, using the resources of a prepared environment as well as the world and society around them.

While a curriculum must be followed and standards of excellence maintained, students must have the ability to explore ideas freely. This sense of exploration forms the

heart of a Montessori classroom. Freedom of movement and choice inspire children to reach out for new possibilities and opportunities. This freedom, however, must always be coupled with a sense of responsibility on the part of the children, toward themselves, their environment, and toward one another.

A dynamic learning environment is one in which children are encouraged to work together in gathering and presenting information. This not only engenders excitement among the students, but allows them to practice the very skills we hope our children will develop: the ability to lead in group settings, to cooperate with others and actively support leadership, to problem solve, to think creatively, and to follow knowledge for knowledge's sake.

In short, teachers should encourage, create and demonstrate a classroom dynamic that requires in-depth thinking, collaboration, and a hands-on exploration of ideas which can help children to construct an understanding of the concepts at hand.

# Universal Human Tendencies

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Through the gifts of intelligence, reason and will, humans have the ability to modify and adapt ourselves in ways which fulfill our fundamental needs. Dr. Maria Montessori determined that there are basic human tendencies which we all share, and which have existed in humanity throughout our history. These tendencies are universal and unchanging, and help us to survive and adapt to particular times and environments.

**Order:** The tendency to establish order helps us to understand and control our environment. Children clearly benefit from an orderly environment, where events are predictable and things are in their place. Montessori classrooms are prepared to meet this tendency through a well prepared environment.

**Orientation:** The tendency of humans to orient themselves helps us to understand how and where we are in relation to the environment around us, and how to we might need to adapt ourselves to it. A prepared Montessori environment gives children the structure and information they need to orient themselves to the space itself, and the routines of the classroom community.

**Exploration:** Humanity has always been driven by a curiosity to explore and understand the world around them. The physical environment and classroom culture of a prepared Montessori classroom offer children chances to explore the space around them, their social interactions with others, and new ideas represented by the Montessori materials.

**Communication:** The human tendency to communicate is what allows us to understand one another, to build community, and to advance in knowledge. Montessori classrooms offer opportunities for speaking, listening, reading and writing in progressively complex ways as children age.

**Activity:** The ability to move involves both the body and the mind, and is fundamental to the learning process. Montessori environments are prepared with this in mind, affording opportunities for movement in the classroom, as well as access to the various manipulative materials in the room, where the hand functions as the main pathway to learning.

**Manipulation:** The human tendency to touch and handle things gives us an important ability to interact with the environment around us. Children need to experience the physical world. Montessori environments and materials offer this experience in many different subject areas.

**Work:** The human tendency to work speaks to our ability to construct in reality what our imaginations suggest. Work focuses the tendencies of activity and manipulation, bringing the child to a place of independence and confidence. A Montessori classroom gives children the freedom to work at their own pace in an appropriate and supportive environment.

**Repetition:** With the tendency to repeat our actions, we do things over and over in order to build our abilities and understanding of our world. Montessori environments provide materials that are easily accessible, and which encourage repeated activity.



**Exactness:** The tendency to be exact stems from the desire to be constant in our work. The call to work with exactness, and the repeated attempts this can entail, increase both our learning and the efficacy of our work. Montessori environments allow children to repeat an activity until reaching a point of exactness, increasing the joy of learning.



**Abstraction:** The tendency toward abstraction allows us to think and reason beyond the concrete reality around us. Through abstraction, we are able to generalize our thinking, interpret events, and relate ideas one to the other. Montessori environments and materials offer children experiences which provide understandings in concrete terms. Over time, these experiences become more abstract, leading children into higher orders of thinking and working.

# Philosophy, Human Development and Prepared Environments

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What I want to do here is offer an outline of Montessori philosophy and ideas on developmental psychology, both of which are key when considering the idea of a Montessori prepared environment.

In my own thinking, the overall philosophical structure of Montessori education is more akin to deep ecology than to anything else. It's about relationships among members of the human race, and our interactions with the biologic and physical features of our world. Now, take those two ideas — relations between humans, and between humanity and its environment — and place them into the context of a Montessori school. From Children's House to our Adolescent Program, Montessori classroom environments provide students with elements of cultural knowledge and community understanding, as well as experience in different academic disciplines.

The thing to consider is how these classroom environments differ one from another, and why. To do this, we need to consider several ideas: basic human tendencies, planes of development, sensitive periods, and the idea of a prepared environment itself.

The idea of human tendencies describes certain inclinations which are universal within the human family, regardless of our time in history or our location on the planet. Dr. Montessori postulated that these tendencies shape the ways in which we interact with one another, and with the environments we encounter. The tendencies she named are these:

- to explore the world around us and to orient ourselves
- to create order out of disparate elements
- to engage in activity of all kinds
- to use self-control in order to repeat our actions in a quest to achieve exactness
- to engage the imagination
- to think abstractly, to calculate and to communicate

The manner in which these tendencies are expressed changes according to a person's level of development. While human tendencies may manifest differently at different developmental stages, however, it is always the tendencies themselves which shape our actions we respond to the environment around us. Because of this, we need to see the expression of human tendencies in education within the context of what Montessori identified as the four planes of development: 0-6 year old, 6-12, 12-18, and 18-24.

This leads us to the Montessori idea of the prepared environment. If the human tendencies are expressed differently at different stages of development, then we need to consider the characteristics of the child in each of the four planes of development. Understanding the characteristics of the different planes helps us to prepare environments which meet the characteristics of the children the environments will serve.

Exploration, communication, orientation — all of these are exercised by the child in the context of their environment, and so the nature of Montessori classroom environments change from one plane of development to the next. As Montessori teachers prepare their classroom environments to align with the developmental characteristics of the children in the room, we need to understand the developmental characteristics of the students, and prepare environments in ways that meet those characteristics head on.

With all of this in mind, we also need to consider the ideas of sensitive periods. This is especially important in the first plane of development (0-6), when expressions of human tendencies are forming in the child for the first time, and a readiness for certain kinds of experiences comes to the fore at different moments. Sensitive periods manifest in the child as an overpowering interest, a force which directs the child to particular qualities and elements in the environment. Sensitive periods are times during which the child centers his or her attention on specific aspects of the environment, to the exclusion of all else.

Breaking the first plane of 0-6 into its two sub-planes is helpful here: 0-3 and 3-6. Think about what happens during the first years of a child's life, ages 0-3. The child learns to interact with her immediate environment, to orient herself, to stand and walk, and to make discriminations between and to order objects. Montessori notes that all of this happens without effort, or even intention on the part of the very young child. An example I like to quote is a time I watched a baby reaching over his mother's shoulder and manipulating a window lock with his hand. It might have been easy to see this as meaningless activity, but there really was so much at work there: purposeful exploration, repetition leading to coordination, exploration of a cause and effect relationship. Montessori termed this kind of unconscious, yet vital interaction as the exercise of the absorbent mind, during a period of time when she termed these very young children as "Spiritual Embryos."

The child I saw knew none of this, of course, but his mind and body were reaching out. Each experience in those first years takes takes children to the point when a three year old enters Children's House. Here there are many materials with which the child can interact, all of which give sensory impressions of the structures of language, mathematics, earth sciences, and human culture. Using the expressions of

the tendencies they've already experienced, 3-6 year olds now interact with Children's House materials willingly, glad to expand on their previous understandings. Montessori termed Children's House students as "Conscious Workers."

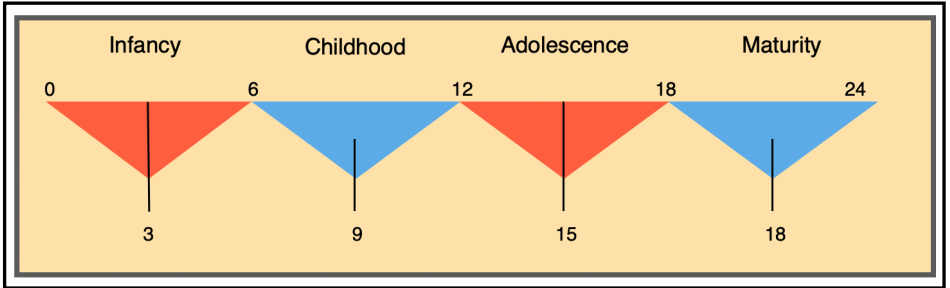
All of which leads back to sensitive periods, such as for the development of language, or the ability to create order. As a child's individual expressions of human tendencies manifest during the first six years of life, there are certain times when one of the tendencies will be expressed more deeply than others. You can see this in a child's sudden interest in certain materials, only to abandoned them when the unfolding of that tendency has been given its needed attention, now to be replaced by interest in a different sort of material, appealing to a different sort of tendency — communication in the form of writing, for instance.

There is some discussion as to whether sensitive periods extend beyond the first plane of development. One Montessori author refers to "sensitive points" at the elementary and adolescent levels. For children in the elementary years, during the second plane of development, these sensitive points include things such as justice and morality; creating social relationships; use of the imagination; a love of history, culture, and their own membership in the human family. For adolescents, sensitive points include the development of human dignity; justice in society; the need to find one's own place and role in community; and the drive to establish social and financial independence.

So, as teachers, we watch for sensitivities as they manifest, and we prepare environments which are designed to appeal to the characteristics of a particular plane of development, remembering that these characteristics are simply human tendencies being exercised within the characteristics of a child's given moment of development.

# Seeing the Child Through the Lenses of the Planes of Development

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## Characteristics of the First Two Planes of Development

The structure of Montessori education is directly linked to Maria Montessori's observations of human development. Proposing that human development occurs in stages, each with its own characteristics and needs, Dr. Montessori outlined an overall construct known as the "four planes of development," including infancy (0-6 years), childhood (6-12 years), adolescence (12-18 years), and maturity (18-24 years.) The different Montessori classroom environments are designed to correspond directly to the developmental characteristics of the students they serve.

## The First Plane of Development

The first of these planes, infancy, is a time of dramatic self creation for the child, and is considered to be of fundamental importance in human development. Because the nature of the child's developmental work expands dynamically across the six years of this plane, Montessori divided it into two sub-planes: the "Spiritual Embryo" (0-3), and "The Conscious Worker" (3-6).

Unlike many other animals, Montessori observed that between the ages of 0 to 3, the newly born and very young child enters the world with few pre-established powers of

movement or psychic qualities of her own. The infant does have inborn potentialities, however, which determine the course of her development. Following this innate creative essence, the very young child begins a process of self-construction. Dr. Montessori saw this time as much of a period of creation as was the physical development in the womb which comes before it. She referred to the child during this time, therefore, as the “Spiritual Embryo.”

*It may be said that we acquire knowledge by using our minds; but the child absorbs knowledge directly into his psychic life. Simply by continuing to live, a child learns to speak his native tongue. A kind of mental chemistry goes on within him. ... The child undergoes a transformation. Impressions do not simply enter his mind; they transform it. They incarnate themselves in him. The child creates his own “mental muscles,” using for this what he finds in the world about him. We call this type of mentality the absorbent mind.*

*Dr. Maria Montessori, The Absorbent Mind*

The second sub-plane of the first plane of development occurs between the ages of 3 and 6. Here, the nature of self-development changes as the child’s consciousness and personality emerge. The child in this sub-plane is eager to explore her environment, so much so that Montessori referred to the child of this age as the “Conscious Worker.” All of the self-constructed psychic powers the child created in the first sub-plane are now expanded through her conscious experience and exercise of individual will. The child’s hands are perpetually busy at this stage. What may appear to be play, however, is in reality the child’s own intelligence at work. The 3-6 year old child’s conscious interaction with her environment is key at this stage; her active hands the tool of her unfolding development.

It is in this latter half of the first plane, ages 3-6, that we observe what Dr. Montessori called “normalization.” A normalized child in a Children’s House begins to work

independently, engages in it with a deep concentration, and completes it with a feeling of satisfaction. Preparing an environment in which the child can achieve a normalized state is our primary concern for children operating in the first plane of development and beyond.

## **The Second Plane of Development**

The second plane of development, childhood, takes place between the ages of 6 and 12. This is a time of more calm and uniform growth where the functions and powers created in the first plane continue to expand physically, psychologically and intellectually. Abstract functioning of the mind emerges at this time, helping the child to explore and internalize abstract reality.

With the child's expanding physical strength and cognitive functioning comes a great capacity for work. Using the power of an expanding imagination, second plane children are explorers of the universe, of humanity, and of culture. Eager for knowledge and understanding, they will tirelessly explore new ideas, often joining with their peers in large scale group endeavors.

## **The Prepared Environment as an Aid to Life**

### **Rational For the Prepared Environment**

As children moves through the planes of development, Montessori classrooms provide prepared environments which offer experiences designed to aid the developmental work of the child. In his book on Dr. Montessori's life and work, E.M. Standing writes about Montessori's idea of the prepared environment.

*The child ... has need of a very much richer environment to bring out his potentialities. He will require not only those things which will satisfy his vegetative and animal requirements — food, light, air, opportunity for movement, etc. — but also those*



*factors which will satisfy his intellectual, moral and social needs.*

*E.M. Standing, Maria Montessori, Her Life and Work*

Montessori education, then, can be seen as a relationship between the child and her environment. As the child's developmental needs change from one plane to the next, the differing Montessori environments accommodate these changes by providing activities designed to meet the child's current developmental needs.

## **Characteristics of the Prepared Environment**

### **First Plane of Development**

The first aim of any of the prepared environments is to help the child develop a sense of independence and self-sufficiency. To aid this process in the first plane, we scale the environment to fit the child's physical size and arrange it with a strong sense of order. The environment has indoor and outdoor work areas, and contains materials and activities which pertain directly to the first plane child's needs, including in the areas of practical life, sensorial experience, mathematics and language.

### **Second Plane of Development**

The heart of the prepared environment for the second plane lies not in a carefully crafted physical environment, nor in the inclusion of the simple items which grace the environment of the younger child. If the first plane's child explores with the hands, the second plane child explores with her imagination. The contents of the second plane environment, therefore, provide the child with keys to cultural exploration. Charts and timelines, demonstrations and experiments — these are the purview of the second plane environment. Second plane materials, for the examination of culture as well as those designed for the exploration of the academic disciplines, take the form of "materialized abstractions." Appealing to the child's now expanding imagination and reasoning mind, these materials

help the child see what cannot be seen with her eyes, and to know the nature of things not immediately present in the environment.

### **Cosmic Education as the Wings of the Second Plane Environment**

Cosmic education is the plan of study for the second plane, or elementary aged child. As it unfolds, cosmic education presents the child with an interpretation of the universe as an ordered whole, and a vision of the journey our planet and humanity have taken to reach the present we now share.

Broadly stated, the goals of cosmic education are to help children see themselves in relationship with everything in the world around them. Studies in biology and ecology help them to understand how life exists in interdependent structures of support. Through the study of the history of humanity, children come to appreciate ordinary people of the past as those who have done the work which has culminated in our present life.

The elementary grades' "cosmic curriculum" helps children understand that the stories of life and humanity continue, and that they each have a part to play not only in their present reality, but in the unfolding of the future. With these understandings in hand, children in the second plane begin to be aware of the consequences of their own actions, and to see themselves as the creators, and sustainers, of the world around them.

### **Considering the Third Plane of Development**

As they enter the third plane of development, ages 12-18, young people prepare to enter the broader society around them. Montessori referred to adolescents, therefore, as "Social Newborns." As in the first plane, the adolescent's growth is rapid and dynamic as they transition between childhood and early adulthood. They are becoming members of society in their own right and, as such, are

involved in a searching self analysis: Who am I? Where do I fit in? How might I serve others? The social adult has been created, but she has not yet reached her state of full potential.

Young people in the third plane live in a state of expectation. They begin to explore the social and economic world around them. They often engage in creative expression, and explore the characteristics of justice and personal dignity which will prepare them to be members of the adult world.

As a time of dramatic self-creation, the third plane can be a difficult time where the adolescent stands in need of protection. With the gradual attainment of physical maturity comes a time of developing and reorienting physical strength and coordination. This can also be a time of emotional and psychological upheaval, with strong emotions and feelings of discouragement.

### **Characteristics of the Third Plane Prepared Environment**

The third plane environment is often referred to as a school of experience in the elements of social life. The environment for this plane contains opportunities which allow the adolescent to develop her abilities to function independently. Calling for young people to work within an organization of social collaboration, the third plane environment provides a variety of activities which are designed to feel like adult work, and to appeal to adolescents as worthy of their time and effort.

Additionally, the third plane environment offers opportunities for students to explore personal interests, and to engage in self-reflection as they seek resolution in the areas of self-identification, societal engagement and membership, and their own contributions to society as a whole.

## **The Third Plane Development as an Aid to Life**

Montessori believed in the power of education to encourage the development of a society in which different groups engage in full and free interaction.

*A powerful campaign of organization would be required to enable men to understand and structure social phenomena, to propose and pursue collective ends, and thus to bring about orderly social progress.*

*Dr. Maria Montessori, Education and Peace*

In order for this to be achieved, Dr. Montessori knew that the spirit of the adolescent requires many things, not the least of which is to be “valorized,” or accepted and seen as having value in the eyes of one’s community. If the elementary years lead the child to an understanding of the contributions of humanity to its own development, our work with adolescents helps them build a broader and more immediate sense of responsibility and collaboration — tools they can use in the building of a new world.

*This cannot be achieved without practical and concrete effort. It is not enough to preach an abstract principle or to attempt to persuade others. A “great work” must be undertaken. An extremely important social task lies before us: actuating man’s value, allowing him to obtain the maximum development of his energies, truly preparing him to bring about a different form of human society on a higher plane.*

*Dr. Maria Montessori, Education and Peace*

## **Characteristics of the Fourth Plane of Development**

In his monograph *The Four Planes of Development*, Camillo Grazinni writes of the fourth plane of development (maturity), as corresponding to the young person’s arrival at university. Montessori’s “bulb diagram” of the planes of development shows this plane as extending into what she

simply labels “man.” As the young person moves firmly into adulthood, Grazinni writes, she can become a young person...

*... who can develop the spiritual strength and independence for a personal mission in life... a human being who has attained a high level of moral conscience and responsibility and can work for the good of humanity.*



# Characteristics of the Child in Each Plane of Development

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## Characteristics of the First Plane (ages 0-6)

*There is in the child a special kind of sensitivity which leads him to absorb everything about him, and it is this work of observing and absorbing that alone enables him to adapt himself to life. He does it in virtue of an unconscious power that exists in childhood... The first period of the child's life is one of adaptation.*

*Dr. Maria Montessori, The Absorbent Mind*

- A period of physical and “spiritual” construction
- The need to feel loved and protected
- Period of adaptation to surrounding environment
- Development of communication
- Development of coordinated movement
- Spontaneous physical movement
- Developmental use of sensory organs
- Working alone or in parallel
- Need for purposeful work

## **Characteristics of the Second Plane (ages 6-12)**

*Since it has been seen to be necessary to give so much to the child, let us give him a vision of the whole universe. The universe is an imposing reality, and an answer to all questions. We shall walk together on this path of life, for all things are a part of the universe, and are connected with each other to form one whole unity.*

*Dr. Maria Montessori, To Educate the Human Potential*

- Rapid intellectual development
- Relatively calm and stable
- Beginning maturity of the physical body
- More physically robust
- Beginning to move from concrete to abstract learning
- Imagination as a tool for learning
- Need for more internal order than external order
- Adventurousome
- More social; the “herd instinct”
- Attracted to big work
- Attracted to heroes

## **Characteristics of the Third Plane (ages 12-18)**

*The adolescent must never be treated as a child, for that is a stage of life that he has surpassed. It is better to treat the adolescent as if he had greater value than he actually shows, than as if he had less and let him feel that his merits and self-respect are disregarded.*

*Dr. Maria Montessori, From Childhood to Adolescence*

- A time of idealism
- Need to discover intended vocation
- Great physical and emotional change; a time of relative instability
- Emotional sensitivity
- Needs a nurturing environment

- Need to feel respect, valorization of the personality
- A relative decrease in intellectual capacity
- Abstract learning

## **Characteristics of the Fourth Plane (ages 18-24)**

*Culture and education have no bounds or limits; man is in a phase in which he must decide for himself how far he can proceed in the culture that belongs to the whole of humanity.*

*Dr. Maria Montessori, Four Planes of Education*

- Spiritual, emotional and moral independence
- Thinks about place in, and contributions to, society and humanity
- Development of personal interests
- Evaluation of social policy
- Personal responsibility



# The Three Year Classroom Cycle

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There are any number of benefits to the Montessori three year classroom cycle. The first among these are simply logistical. When students move through a classroom over three years, two thirds of them return at the beginning of each year. In this way, teachers can begin the year already knowing the personalities and academic readiness of many of the students. In turn, these students know and trust their teacher. They return to school not to meet a stranger, but to greet a friend.

Returning students know the routines and expectations of the classroom, and understand how to interact with the classroom environment. In short, they are able to function with independence from the first day. Older children are able to offer leadership to younger children who need guidance in building their own roots in a new classroom. These opportunities for mentorship are valuable supports for building self-confidence for the older students. The younger students also benefit from this arrangement, having more mature academic and social models to learn from.

The three year cycle aids in the development of community among the students. Long lasting friendships are formed in the bonds of shared experience, taking place not just over a period of months, but years, creating a deep sense of trust. The students' shared experiences generate shared interests among them. Their shared interests generate shared explorations, leading to a deeper, more fulfilling learning experience for everyone.

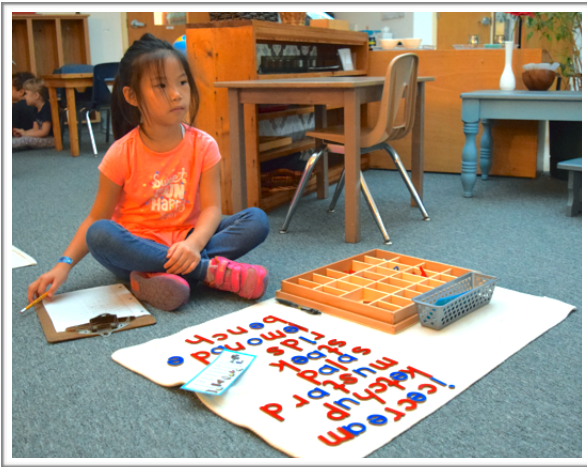
Other ideas in support of the three year cycle have more to do with Montessori pedagogy. Montessori education is founded on Dr. Maria Montessori's observations of human development, which resulted in a cogent educational theory

based directly on meeting the developmental needs of children. Montessori education doesn't start with questions of knowledge, but rather with questions about the child — questions which can only be answered through direct observation of the cognitive and psychological characteristics of children as they grow and progress through their education.

This process speaks to the role of Montessori teachers as observers of their students, and of the time needed for observations to become interactions tuned to each child's needs. How to serve each child in their own self-

construction is the chief concern of a Montessori teacher. The goal is not to accelerate children's learning, but to facilitate it, serving all levels of ability according to each child's needs.

A last point in consideration of the three year cycle has to do



with benefits at a very human level. Both the academic and social components of Montessori programs at any level help children to understand their own place in the natural world, in their community of peers and, eventually, the society around them. Developing these understandings over periods of years, and in the company of deepening relationships, leads to a building of children's human spirit, their sense of well-being, trust, and willingness to learn.

# Children's House at a Glance

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*The hand is the instrument of intelligence. The child needs to manipulate objects and to gain experience by touching and handling.*

*Maria Montessori, 1946 London Lectures*

## **Multiage Classrooms**

Our Children's House program is offered to children ages 3 to 6. The age difference between our youngest and oldest students creates a natural mentor system as these children work and learn together.

## **Individualized Learning**

Through careful observation, our Montessori teachers assess the strengths and current abilities of students. They can then determine the child's best path forward for growth. As we understand that each child is unique, Children's House students are presented with challenges and support that are individually tailored to their interests and abilities at that moment.

## **Respect for the Child**

Not only are our teachers helping students to engage their continued growth as both learners and citizens of the world, they are also overseeing a crucial period of their development. Our Children's House classrooms promote student's independence, allowing them to reach their fullest potentials and gain confidence in their abilities.

## **Peace Education**

Our Montessori teachers work to aid the development of the whole child, rather than just their academic abilities. We believe that a child's emotional and social growth is just as important as their learning. Peace education is a critical component of our Children's House program. Through peace education, our students learn to identify their

emotions, talk through conflicts to find a resolution, and understand the role they play in their community.

### **The Kindergarten Program**

Children’s House classrooms are designed to be experienced as a three year cycle, culminating in the

Kindergarten year. Our Kindergarten students are presented with many responsibilities and opportunities in our classrooms. While all Children’s House students have Spanish and Music, our Kindergarten students also have PE and Art specials designed for their age group. Our Kindergarten students practice goal setting and time management by creating and using Work



Plans each day. Our Kindergarten students also are offered special field trips and some shared events with our Elementary program.

### **The Prepared Environment of the Children’s House Classroom**

Our Children’s House classrooms are carefully prepared and maintained in order to provide the optimal experience for our students. Our teachers create and curate learning materials across many different areas of learning including the following:

#### **Practical Life**

In the practical life area, our students develop concentration, coordination, and independence. They

practice skills that help them care for themselves and develop their fine motor skills. Examples of practical life works are pouring water, using tongs, washing windows, and preparing food.

### **Sensorial**

The sensorial area helps children to acquire information from their environment and classify that information to solve problems.



Examples of sensorial skills are sorting from largest to smallest, matching fabrics by touch alone, and learning how to name and identify both two-dimensional shapes and three-dimensional solids.

### **Mathematics**

The math area is divided into several sections: quantities 1-10 (where a child's one-to-one correspondence becomes fixed and numeral symbols are clearly associated with quantities); operations (addition, subtraction, multiplication, and division); linear counting (eventually resulting in counting to 1000); and the decimal system (place value into the thousands).

### **Language**

Materials in the language area of the classroom help children to first develop pre-reading skills such as understanding sequence and visually discriminating amongst shapes. From these pre-reading skills, students move on to sandpaper letters which teach the shape of letters and their sounds. We use moveable alphabet letters

so that children can form words even before they can properly hold a pencil. Our children write to read, and begin to spell words before they can independently blend sounds. Our approach to literacy is a blend of phonics and whole-language methods.

### **Science & Geography**

The science and geography areas of the classroom help our students to better understand the world around them. They learn the names of continents, oceans, countries, and states. Our students also learn about various cultures and languages around the world. They learn different ways to classify living things, study the basic anatomy of plants and animals, and consider more complex topics like life cycles, food webs, and conservation.

# Elementary at a Glance

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*Let us give the child a vision of the whole universe. The universe is an imposing reality and an answer to all questions.*

*Maria Montessori, To Educate the Human Potential*

## **Multiage Classrooms**

Our Elementary program is divided into two levels: Lower Elementary (1st - 3rd grade) and Upper Elementary (4th - 5th grade). As in Children's House before it, Elementary students benefit from having both younger and older students in their classroom community, growing as a group through student to student mentoring and leadership.

## **Individualized Learning and Assessment**

### **Lower Elementary**

Our Montessori elementary teachers continually assess the strengths and abilities of their students. In Lower Elementary, this is most often done through formative assessment, as teachers observe students' work to determine their mastery levels before giving new lessons. Teachers also observe each student's skills in executive functioning and time management, and work to help them grow in these areas.

Discussion and collaboration between teachers and students are important. The nature of a Montessori classroom offers opportunities for teachers to have one-to-one and small group lessons with students. This gives teachers opportunities to understand each student's level of understanding, to advance students' higher level thinking skills, and to determine academic pathways appropriate to the developmental needs of each child.

## Upper Elementary

Formative, or observational assessment, is also used in Upper Elementary to determine the best path forward for each child's academic development. Upper Elementary teachers also introduce summative assessment, assessing



each student's learning by evaluating it against an appropriate standard or benchmark. This can include things such as working with rubrics, taking quizzes and tests, and meeting due dates for assignments. Summative assessments offer

students an objective tool with which to evaluate their own work, as well as information which can be used by teachers in determining the pace and direction of each child's academic path.

## Respect for the Child

The elementary years are a time of steady growth for children. Having completed the rapid changes of their first six years, 6-12 year olds begin to look outside of themselves toward the elements of culture which surround them. Their knowledge in areas such as geography, history and science expand rapidly, as do their skills in math and language, through which they express their growing knowledge.

Respect for the child at this age is to help them form important foundations of independence, allowing them to engage more fully in complex environments. Our teachers strive to offer students knowledge about the world around



them, to encourage their own curiosity, and to help them develop into lifelong learners.

### **Community Building and Emotional Growth**

Real independence at this age also has much to do with successful functioning in a community environment. As a group, our teachers and students emphasize the importance of communication in building and maintaining social cohesion.

Teachers and students regularly practice strategies for emotional and community growth, including class meetings, problem solving/conflict resolution conversations, and general habits of grace and courtesy.



### **The Prepared Environment of the Elementary Classroom**

Our Elementary classrooms are prepared and maintained in order to provide an optimal experience for our students. Montessori materials and information resources reflect different areas of the curriculum:

#### **Practical Life**

Practical life materials in the elementary classroom reflect the students' growing responsibilities for their own classroom environment. Students use real and appropriate tools to maintain the room, organize materials, and track their own work.

## **Mathematics**

Students in a Montessori elementary classroom use a variety of math materials designed to bring abstract ideas into concrete thinking. Montessori elementary math materials range from basic numeration and the four operations through fractions, decimals, squaring and cubing, algebraic expressions, and a broad range of geometry concepts.

Elementary students also use a variety of traditional math materials in areas such as basic math fluency, measurement, data analysis, and explorations with the Cartesian plane.

## **Language**

Montessori elementary students learn concepts which build their understanding of the structure of the English language. In Lower Elementary, students further their skills in reading, handwriting, spelling, basic writing mechanics, and sentence structure. In preparation for more advanced grammar studies, Lower Elementary students also are introduced to the different parts of speech

In Upper Elementary, students begin to use language as a tool for both exploration and the expression of their own learning. Students engage concepts in areas such as word usage, advanced writing mechanics, vocabulary, and advanced parts of speech and sentence analysis, all of which expand their understanding of the ways language is used in spoken and written communication. Upper Elementary students also have opportunities to build their skills in writing composition, practicing research skills, sentence and paragraph structure, and short essay styles through thematic work in the broader curriculum.

Both Lower and Upper Elementary are geared to develop student's abilities in reading. Reading is practiced in terms of both specific skills (fluency skills and types of comprehension, for instance), as well as application in the

various academic disciplines. The Upper Elementary curriculum, especially, is strongly geared toward both reading and writing as necessary learning tools.

### **Science, Geography and History: Cultural Curriculum**

Building upon their experiences in Children's House, Elementary students continue to study the world around them through Montessori's "Cultural Curriculum." Spreading across Lower and Upper Elementary, the Cultural Curriculum moves through a series of five "Great Lessons," including the beginning of the universe, the coming of life on our planet, the coming of early humanity, and the rise of civilizations. Each of these areas offer opportunities for exploration in a broad range of academic disciplines, including history; the physical, biological, and environmental sciences; and issues of social evolution. In the process, students employ the skills they've learned in reading and writing to research, organize, and present what they have learned.

# Adolescent Program at a Glance

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*The chief symptom of adolescence is a state of expectation, a tendency towards creative work, and a need for the strengthening of self-confidence.*

*Maria Montessori, From Childhood to Adolescence*

## **Multiage Classrooms**

As in Children's House and Elementary before it, Adolescent students benefit from having younger and older students in their classroom community. Both academic and practical work are geared to help adolescents grow together through peer mentoring and student leadership.

## **Individualized Learning and Assessment**

Our Montessori adolescent teachers continually assess the strengths and abilities of their students. Some of this continues to be done through formative assessment, as teachers observe each student's academic work and social emotional growth. Teachers also observe students' skills in areas such as executive functioning and time management, working to help them grow even farther in these areas.

Increasingly, however, adolescent teachers use summative assessment, evaluating each student's learning against an appropriate standard, or benchmark. This can include things such as working with rubrics, taking quizzes and tests, and meeting due dates for assignments. Summative assessment offers students an objective tool with which to evaluate their own work, as well as information used by teachers in determining the pace and direction of each child's academic path.

## **Respect for the Adolescent**

The early adolescent years (12-15) are a time of dynamic, sometimes uncomfortable growth. After the more quiet and steady growth of their elementary years, adolescent

students begin to change in profound ways. They begin to understand the depth of the society around them, and to understand the part they have to play in the world, though they can be uncertain, even anxious when trying new things.

Respect for the young person at this age means helping them build and expand their own sense of independence and confidence through direct experience and support. Our adolescent program offers opportunities for students to engage in increasingly complex tasks and environments, from gardening, caring for animals, working in the classroom coffee business, and taking part in community service opportunities.

### **Community Building and Emotional Growth**

A sense of community becomes increasingly vital in adolescence. Many aspects of the program require that students work together to plan and execute events. The students also have ongoing commitments as a group, such as micro-economy activities, gardening, fundraising, etc. Toward that end, the class has a weekly business meeting where ideas are discussed and decisions made.



Adolescent students learn to identify their changing emotions and to work with them. Part of life in the adolescent program is to talk through conflicts and find resolution; to understand the role that each plays in the

classroom community; and experience the benefits of cooperation and clear communication.

### **The Prepared Environment of the Adolescent Classroom**

Like any Montessori classroom, the adolescent program is a prepared environment. Because of the developmental nature of the 12-15 year old, however, what we might think of as the “classroom environment” extends beyond the room itself to our surrounding land and gardens, with their many opportunities for the students to experience real and meaningful work. The adolescent’s “environment” also extends into interactions with the school community, as well as the surrounding municipal communities.

### **Practical Life**

The idea of “practical life” activities continues in the adolescent program. As 3-6 year olds learn to dress themselves, or to sort objects, so too do adolescent students have activities which teach them new skills. What’s changed is that adolescent’s activities intersect with the needs of the community, and represent work which serves real purpose. Practical life activities for our adolescents include planning work, using power tools in construction projects, managing our kitchen projects and coffee business, and growing food.



## **Mathematics**

The mathematics program in the adolescent program is robust. Students learn in workshop settings, where they can dialogue directly with the teacher and one another about concepts and approaches to problem solving. The program tracks Wake County Public Schools, so that students who leave our program and rise into 9th grade are prepared for Math 1 or Math 2, depending on personal readiness.

## **Language**

Adolescents' language skills expand with their increasing interaction with the world around them. The study and use of language permeates the adolescent program at almost every level, from formal studies and work, to community meetings and cooperative activities.

In their language studies, students consider broad cultural issues such as coming of age, racism, experience in war, gender expressions, social protest, and more. Working together in conversation as well as project work, adolescent students engage with current literature, poetry and music, writing in different genres, public speaking, and creating digital presentations.

## **Science**

The adolescent program's science curriculum is a broad survey of scientific topics, with a consideration of how some of these topics apply to the real, practical work that the students do. In gardening projects, soil sciences become a relevant topic, as do areas such as climate and weather, drought, and nutrition. Other areas of science can be tied to the history curriculum, such as a study of the mechanics of construction in ancient civilizations, or cellular biology and the principles of evolution.

Other science topics may not fit into these categories, but are explored through classroom lessons and experimentation, including areas such as the properties of physics, structures of the universe, technology, oceanography, etc.

## **History/Geography**

Maria Montessori's syllabus for secondary education did not call simply for the *teaching* of history. Rather, her request was more anthropological, calling us to help adolescents build their own humanity by guiding them into an in-depth understanding of humanity itself.

Practically speaking, the study of world history in the adolescent program is based on The Timeline of Humanity, continuing the students' experience with timelines in their elementary years. This timeline covers a broad range of ideas and events:

- the Upper Paleolithic age, and the development of modern homo sapiens
- the Neolithic revolution, the spread of agriculture animal husbandry
- village life and expanding human capabilities
- the rise of cities and civilizations
- comparisons of the history and achievements of different human cultures, 7000 years before the common era until today

Over the course of their time in the adolescent program, the history curriculum involves students in discussions of the development of human cultures, American history, 20th and 21st century world history, and current events. Students examine the interrelationships between human nature, historical events, societal structures, technological progress, and geography. Guiding themes include cultural diversity,



the democratic ideal, participatory citizenship, economic ideals and realities, and the need for global perspectives.



# A Lexicon of Montessori Terms

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## Planes of Development

The *planes of development* are a model used to represent a child's point of physical and psychic development along an age continuum from 0-24 years. This 24 year span is divided into four planes: 0-6, 6-12, 12-18, and 18-24. For the child, each plane is marked by sensitivities to certain necessary developmental components. In the first plane there is a sensitivity to the development of language, for instance.

The first and third planes, infancy and adolescence, both represent times of rapid growth and change. In order to encapsulate this growth, each of these planes are divided into two sub-planes (0-3, 3-6 and 12-15, 15-18). The second and fourth planes, childhood and maturity, represent times of greater calm and stability. These planes are both times when the child expands upon the gains made in the previous plane, utilizing her intellectual and psychic growth in new, harmonious applications.

*... there are different types of mentality in the successive phases of growth. These phases are quite distinct one from another, and it is interesting to find that they correspond with the phases of physical growth. The changes are so marked - speaking psychologically - that the following picturesque exaggeration is sometimes used: Development is a series of rebirths.*

*Dr. Maria Montessori, The Absorbent Mind*

*The planes of development are ... interdependent, for the human being is always a unity. An earlier plane always prepares for the one that follows, forms its basis, and nurtures the energies which urge the individual towards*

*the succeeding period of life.*

*Camillo Grazzini, The Four Planes of Development*

*We must, then, constantly bear in mind this fact that the growth of the child, from birth to maturity, is not like that of an oak tree which grows by simply getting bigger, but is rather to be compared with that of the butterfly; for we have to do with different types of mind at different periods.*

*These periods indeed differ so greatly one from another that some psychologists, including Montessori, have compared the development of a human being to a succession of new births. This is of course an exaggeration; but nevertheless it does almost seem as though, at some periods of life, one psychic individual ceases and another is born.*

*E.M. Standing, Maria Montessori, Her Life and Work*

*With regard to the child, education should correspond to these stages, so that instead of dividing the schools into nursery, primary, secondary and university, we should divide education in planes, and each of these should correspond to the phase the developing individual is going through.*

*Dr. Maria Montessori, The Four Planes of Education*

## **Absorbent Mind**

The *absorbent mind* refers to the nature of mind in the young child (ages 0-6). During this critical time of self-construction, the child without effort, or even intent, absorbs information directly from her surrounding environment. This work is of a creative nature, and enables the child to incarnate her environment within herself, thus gradually forming herself as part of her own cultural place and time.

*It may be said that we acquire knowledge by using our minds; but the child absorbs knowledge directly into his psychic life. Simply by continuing to live, a child learns to speak his native tongue. A kind of mental chemistry goes on within him. ... The child undergoes a transformation. Impressions do not simply enter his mind; they transform it. They incarnate themselves in him. The child creates his own "mental muscles," using for this what he finds in the world about him. We call this type of mentality the absorbent mind.*

*Dr. Maria Montessori, The Absorbent Mind*

*He learns everything without knowing he is learning it, and in doing so he passes little by little from the unconscious to the conscious, treading always in the paths of joy and love.*

*Dr. Maria Montessori, The Absorbent Mind*

## **Adaptation**

*Adaptation* occurs in the first sub-plane of the first plane of development as the child between 0-3 years adapts herself to the customs and beliefs of the environment in which she finds herself. While adaptation occurs through the power of the absorbent mind, through which sensorial input forms the mind itself, nature provides help for the child in this process by way of the human tendencies we all share. As the child manifests the tendencies of exploration, orientation, communication, etc., she adapts herself to the social world around her.

*There is in the child a special kind of sensitivity which leads him to absorb everything about him, and it is this work of observing and absorbing that alone enables him to adapt himself to life. He does it in virtue of an unconscious power that only exists in childhood.*

*Dr. Maria Montessori, The Absorbent Mind*

*The mechanism of this basic adaptation is simple and plain; the child incarnates in himself the environment which he finds around him, and constructs a man adapted to live in those surroundings. In order to realize this function the child lives through an initial period of psycho-embryonic construction which is found only in human beings.*

*Dr. Maria Montessori, The Formation of Man*

*The child will... experience nebulous urges without form, yet charged with potential energy; and these will have the duty of directing, and incarnating in him the form of human conduct which he finds in his surroundings.*

*Dr. Maria Montessori, The Absorbent Mind*

## **Mathematical mind**

The term *mathematical mind* refers to the capacity of the human mind to organize and to categorize its experiences and impressions. The mathematical mind stems from the human tendency for order, and manifests as an inclination toward logic, reasoning, and an impulse to produce order out of disorder.

*In our work, therefore, we have given a name to this part of the mind which is built up with exactitude, and we call it the mathematical mind. I take the term from Pascal, the French philosopher, physicist and mathematician, who said that man's mind was mathematical by nature, and that knowledge and progress come from accurate observation.*

*Dr. Maria Montessori, The Absorbent Mind*

*Since the human mind is mathematical and philosophical, we try, in reasonable proportions, to turn it toward mathematics and philosophy.*

*Dr. Maria Montessori, The Secret of Childhood*

## **Cosmic education**

*Cosmic education* is the plan of study for the second plane of development (ages 6-12). Cosmic education presents the elementary child with the universe as an ordered whole, and with a vision of the journey the universe has taken to reach the present we now share. Cosmic education leads children to see themselves in relation to everything in the universe.

Through a series of cosmic fables (the Great Lessons) cosmic education offers perspectives across both time and space, and an approach to knowledge through an integrated use of the academic disciplines. History plays a vital role in what we do if we are to orient our students children toward a broader awareness of human solidarity. The study of history helps children to see themselves as a link between the past and the future, helping them to create historical and cultural identity.

Montessori wanted to emphasize the positive aspects of humanity's history. In cosmic education, emphasis is placed on how humanity has used its hands to create and invent the life we now share. Understanding how humans have worked together to meet our fundamental needs helps children build better understandings of other cultures and times.

Through this, we bring the children's attention to the value of each individual, now and in the past, creating a sense of admiration and gratitude for those who have come before us. By coming to see ordinary human beings as the heroes in humanity's story, children can find that they too have a part to play in the ongoing unfolding of the history. In this

way, cosmic education can help children see themselves as agents for peace in the world they themselves are creating.

*If the idea of the universe is presented to the child in the right way, it will do more for him than just arouse interest, for it will create in him an admiration, a feeling loftier than any interest and more satisfying. The child's mind then will no longer wander, but becomes fixed and can work.*

*Dr. Maria Montessori, To Educate the Human Potential*

*Let us in education always called the attention of children to the hosts of men and women who are hidden from the light of fame, so kindling a love of humanity; not the vague and anemic sentiment preached today as brotherhood, nor the political sentiment that the working classes should be redeemed and uplifted. What is most wanted is no patronizing charity for humanity, but a reverent consciousness of its dignity and worth. This should be cultivated in the same way as a religious sentiment, which indeed should be in us all, for we should not need to be reminded that no man can love God while remaining indifferent to his neighbor.*

*Dr. Maria Montessori, To Educate the Human Potential*

## **Prepared environment**

As children age through the planes of development, they develop different sensitive periods, times when the child's psyche is ready to internalize some aspect of the culture around her. Different sensitivities arise in each of the planes, so the differing environments for each of the planes must offer opportunities unique to the developmental needs of the children they serve. Montessori observed specifically timed principles of development. *Prepared environments* are intended to accommodate these, and to provide interactive opportunities appropriate to each child.

*The child has need of a very much richer environment to bring out his potentialities. He will require not only those*

*things which will satisfy his vegetative and animal requirements - food, light, air, opportunity for movement, etc. - but also those factors which will satisfy his intellectual, moral and social needs.*

*E.M. Standing, Maria Montessori, Her Life and Work*

*The immense influence that education can exert through children, has the environment for its instrument, for the child absorbs his environment, takes everything from it, and incarnates it in himself.*

*Dr. Maria Montessori, The Absorbent Mind*

*... education is not something which the teacher does, but is a natural process which develops spontaneously in the human being. It is not acquired by listening to words, but in virtue of experiences in which the child acts on his environment. The teacher's task is not to talk, but to prepare and arrange a series of motives for cultural activity in a special environment made for the child.*

*Dr. Maria Montessori, The Absorbent Mind*

### **Sensitive periods/sensitivities**

*Sensitive periods* are times when a child engages in spontaneous concentration with activities which meet the specific developmental needs of the child at that time. During the sensitive period for understanding and creating order, for instance, or the sensitive period when a child internalizes the social behavior around her, children observe and develop necessary understandings through concentration, exploration, and a desire to repeat activities.

*Man possesses creative sensitivities instead of hereditary models of behavior, and if it is due to these that adaptation occurs to his surroundings, then it is clear that the whole psychic life of the individual stands upon a foundation which is laid down by them in the earliest years.*

*Dr. Maria Montessori, The Absorbent Mind*



*A child learns to adjust himself and make acquisitions in his sensitive periods. These are like a beam that lights interiorly, or a battery that furnishes energy. It is this sensibility which enables a child to come in contact with the external world in a particularly intense manner. At such a time everything is easy; all is life and enthusiasm. Every effort marks an increase in power. Only when the goal has been obtained does fatigue and the weight of indifference come on. When one of these psychic passions is exhausted, another area is enkindled. Childhood thus passes from conquest to conquest in a constant rhythm that constitutes its joy and happiness.*

*Dr. Maria Montessori, The Secret of Childhood*

*Our experience with children in elementary schools has shown us that the age between six and twelve years is a period of life during which the elements of all the sciences should be given. It is a period that, psychologically, is especially sensitive and might be called the sensitive period of culture, during which the abstract plane of the human mind is organized.*

*Dr. Maria Montessori, From Childhood to Adolescence*

## **Human tendencies**

The *human tendencies* are things which shape all members of humanity. We each have the task of adapting to the society in which we live, absorbing the behavioral patterns inherent to its particular time and place. It is the basic human tendencies which help us to accomplish this.

Animals other than humans operate according to inherited, instinctual behaviors which allow them to function innately within their native environments. Living by these instinctual behaviors alone, each may thrive in its own place. Should that environment change, however, or should the animal find itself in a different environment altogether, its instinctual

behaviors will no longer offer the support needed for its survival.

Human beings, on the other hand, do not operate according to inherited behaviors. Rather than being dictated by inherited behaviors, humans have innate tendencies which allow us to adapt ourselves to the differing demands of each particular time and place. The methods we use to adapt to different settings may change, but the tendencies which guide us in that process are themselves universal.

Regardless of where we live, or when, we each operate according to certain basic tendencies, including orienting ourselves in physical space; exploring our environment to find things needed to meet our needs; observing our environment; abstracting concepts from our observations and applying our reasoning intelligence to formulating ideas; using our imagination to “see” and create things that did not exist before; and utilizing a sense of self-control, that we might learn from our errors and make adjustments toward progress.

*There are certain basic factors which do not change. What may change is the contents that you give the mind. It is these factors that make the child become adapted to any society, no matter what its pattern of behavior. These all important factors are what now-a-days psychologists call “human tendencies.”*

*Mario M. Montessori, The Human Tendencies and Montessori Education*

*As we have seen, tendencies do not change and human tendencies are hereditary. The child possesses them in potentiality at birth, and makes use of them to build an individual suited to his time. During the period of human growth these tendencies assume different aspects by the*

*aid of what Dr. Montessori called sensitive periods.*

*Mario M. Montessori, The Human  
Tendencies and Montessori Education*

## **Normalization**

The idea of *normalization* refers to a child's ability to initiate work, concentrate, and to work independently by her own choice. Normalization is an observable unity of characteristics, indicating a point of cooperation between a child's thoughts, actions, and her ability to engage in self-reflection.

Normalization is not an end point, but rather a journey of exploring and deepening developing qualities. Broadly stated, normalization is shown through a three step cycle:

- the child prepares for an activity,
- the child engage the activity with sufficient interest as to reach a deep level of concentration,
- the child emerges from an experience satisfied and with a tendency to internalize and reflect on her experience.

*The phenomenon that was called "conversion" is proper to childhood. It implies a swift, sometimes instantaneous change, brought about always by the same cause. It would not be possible to quote a single example of conversion that did not involve the concentration of activity on an interesting task. And the conversions that thus come about are of widely different kinds. Children of excited fantasy become calm, depressed children rise up, and all advance together, on the same road of work and discipline, continuing a progress which evolves of itself, moved by some inner energy that, having found a way of egress, can display itself in outward act.*

*Dr. Maria Montessori, The Secret of Childhood*

*It is the most important single result of our whole work. The transition from one state to the other always follows a piece of work done by the hands with real things, work accompanied by mental concentration. This psychological event ... we have called by the technical term "normalization."*

*Dr. Maria Montessori, The Absorbent Mind*

*For this we must provide 'motives for activity' so well adapted to the child's interests that they provoke his deep attention.*

*Dr. Maria Montessori, The Absorbent Mind*

*The essential thing is for the task to arouse such an interest that it engages the child's whole personality.*

*Dr. Maria Montessori, The Absorbent Mind*

## **Grace and Courtesy**

*Grace and courtesy* is a Montessori term familiar to many. Considered broadly, 'grace' refers to physical movement, and a sense of harmony between mind and body. 'Courtesy', on the other hand, speaks of one's relations with others, and one's sense of harmony in social relations.

Grace and courtesy as an element of Montessori education, however, takes on slightly different meanings as children move through the different planes of development. In the first plane of education (0-6), children arrive at a sense of grace and courtesy through a variety of sensorial experiences having to do with direct care of the self, of the environment, and of others. In the second plane (6-12), the children's expression of grace and courtesy expands, revolving now around an interest in the rules of social order, and in how adults formulate their social interactions. Grace and courtesy in the second plane stems from the child's expanding awareness of a broader social order.

In the third plane (12-18), the role of grace and courtesy is an implicit part of the adolescent's educational experience. Children in an Erdkinder setting live and work together in a residential, farm-based community. Even in a non-residential setting, the nature of the program employs the need for cooperative activity. Here, the student's expressions of grace and courtesy directly affect their collective experience.

As the children enter into maturity, skills with grace and courtesy formed in the third plane help them to navigate the rules and norms called for in social adaptation and interaction.

*What is social life if not the solving of social problems, behaving properly and pursuing aims acceptable to all? It is not sitting side by side and hearing someone else talk...*

*Dr. Maria Montessori, The Absorbent Mind*

*The child comes to see that he must respect the work of others, not because someone has said that he must but because this is the reality that he meets in his daily experience.*

*Dr. Maria Montessori, The Absorbent Mind*

*It is interesting to see how little by little, these [children] become aware of forming a community which behaves as such...Once they have reached this level, the children no longer act thoughtlessly, but put the group first and try to succeed for its benefit.*

*Dr. Maria Montessori, The Absorbent Mind*

## **Social Development**

Montessori's meaning for the term *social development* changes somewhat depending on the plane of development of the child. In the first plane (0-6), social development takes place in regard to the individual as the child uses the

absorbent mind to construct herself as a member of her time and place. In the second plane (6-12) the emphasis changes toward aspects of social order, and the rules of social engagement in a social group. In the third plane (12-18), the child's work of social development is in direct preparation for her entry into adulthood. The emphasis here is not simply how to relate to others in a group, but how to contribute to the cohesion and advancement of one's community, as well as the broader society. This is accomplished by engaging the adolescent in activities which, through the division of labor, and production and exchange, involve her in the production of something of use to society as a whole.

*This is the time, the "sensitive period" when there should develop the most noble characteristics that would prepare a man to be social, that is to say a sense of justice and a sense of personal dignity.*

*Dr. Maria Montessori, From Childhood to Adolescence*

*It is a different form of life that is lived in the group so closely knit together. A higher form of self-control is needed here, which is at the base of social education, and it has to be worked out and actually experienced in the sensitive period during which man is creating his social personality.*

*Dr. Maria Montessori, From Childhood to Adolescence*

*Social life is not sitting in a room together or living in a city. It does not regard social relations. The essence is that something is produced which is useful to the whole of society, and is changed for something else.*

*Production and change, exchange, are the essence of social existence. ... Division of labor enters into it too.*

*Dr. Maria Montessori, From Childhood to Adolescence*

## **Moral Development**

When speaking of *moral development* in a Montessori context, we consider the practical needs that arise out of social interaction which, again, change according to the child's plane of development. In the first period, morality is based in the proper and attentive care of self, others, and the environment. In the second plane, children enter into a sensitive period for considering right and wrong, with issues in social interaction considered accordingly.

In the third plane, there is a sensitive period for the development of justice and personal dignity. Through her experiences with production and exchange, the adolescent begins to understand that human society requires mankind to operate on a basis of reciprocal help, and that that help depends upon a set of rules which govern social interactions.

*Moral care here refers to the relation between the children, the teachers, and the environment. The teachers must have the greatest respect for the young personality, realizing that in the soul of the adolescent, great values are hidden, and that in the minds of these boys and girls there lies all our hope of future progress and the judgement of ourselves and our times.*

*Dr. Maria Montessori, From Childhood to Adolescence*

*The consciousness of what money is must be present to the mind of the child. The subject has to be lived out and experienced. Then the meaning of money used as a substitute for exchange becomes clear. What is money if not that which corresponds to the product of the worker? It comes to life in the sensitive period in which the child is getting at the idea of justice.*

*This gives a basis for morality and responsibility which is entirely lacking in today's teaching about money. We treat money itself as an immoral thing, but this is not right. The*

*very foundation of social morality is bound up with money.*

*Money has to circulate continually as the blood circulates in our tissues if cells and organs are to be fed. So that among the other laws the child is learning now, there is something grand to be grasped here, to realize that this is the most important factor in the organization of society and in social morality. ... Social morality has this basis, this is the material part of morality, a real material by which we can understand how an error in distribution is a moral fact which brings a social disease.*

*Dr. Maria Montessori, From Childhood to Adolescence*

*From all this the result will be not only self-discipline but the proof that self-discipline is an aspect of individual liberty and the chief factor of success in life.*

*Dr. Maria Montessori, From Childhood to Adolescence*

### **Three Period Lesson**

The *three period lesson* might be called the Montessori approach to inquiry. Through this structure, children are introduced to, and work with, concepts in a way which allows them to internalize ideas, and to express them according to their own understanding.

Briefly stated, the first period is when the guide establishes an *association* between an object and its name, or explicates an idea: "This is...." In the second period, the guide helps the child to *recognize* the object, or to deepen her understanding of an idea: "Show me the..." In the third period, the child *recalls* the name of the object, or the content of the idea: "What is this?"

In the first plane of development (0-6), this structure often takes the simple form of helping the child learn the names and qualities of objects in the environment. In the third plane, the same structure is used as students are introduced to new concepts. In the first period, the teacher



initiates a challenge, introduces key concepts, and works with the students to establish a common vocabulary. In the second period, the students engage a process of exploration and discovery, deepening and expanding their understandings. In the third period, the students express the knowledge, understanding, and insights they have gained through their work.

*Montessori does lay down certain principles with regard to giving of lessons(...) The famous 'three period presentation lesson' from Seguin is a model of efficiency in this respect; and Montessori recommends its use with small children, especially in the 'naming' lessons. Period I: Naming; Period II: Recognition; Period III: Pronunciation of the word.*

*E.M. Standing, Maria Montessori, Her Life and Work*

## **Work**

Montessori understood *work* to be the essence of humanity's social life, and believed that the purposeful work of the child assists in the development of the future adult. Work, both manual and intellectual, is a natural tendency of humanity. Through it, the child develops her personality and character.

In the third plane, the aim of the adolescent's work is the experience of financial independence through economic production and exchange.

*The essence of this social life is work. Work and exchange bring together people far apart – bring them in touch – who would never otherwise be in touch at all.*

*Dr. Maria Montessori, From Childhood to Adolescence*

*That is the third level, in fact, characterized by the preparation of the human soul for work as the vital function that is the cornerstone of social experience.*

*When he enters the workaday world, man must be aware first and foremost of his social responsibility.*

*Dr. Maria Montessori, Education and Peace*

*Real, honest work and the exchange of its products constitute the mechanism for the working of social life, because the aggregate of human society is based on the division of labor. Labor is requisite to carry on the production essential to the existence of mankind. All the rest follows as the consequence of that organization.*

*Dr. Maria Montessori, The NAMTA Journal*

## **Discipline**

The concept of *discipline* as discussed here does not refer to a particular subject of study, but rather something more closely linked to self-discipline, or the tendency to engage in purposeful work. In this sense, discipline speaks of the initiative, stemming from one's own sense of will, to make free choices in the pursuit of work appropriate to one's interests, and in the service of one's developmental needs.

*There was the question raised with regard to "discipline," to the amazing phenomenon shown by those small children who remained orderly and quiet, though they were free to choose their occupations and were not hindered in continuing their exercises as long as they were interested in them.*

*They were capable of maintaining this orderly behavior even when the teacher was absent. This collective behavior, remarkable for its social harmony and the features of their character, which did not show any signs of envy or competition, but led them to help each other, aroused admiration. They "loved silence," and saw it as the real source of joy.*

*Dr. Maria Montessori, From Childhood to Adolescence*

*The environment must make the free choice of occupation easy, and therefore eliminate the waste of time and energy in following vague and uncertain preferences. From all this the result will be not only self-discipline but a proof that self-discipline is an aspect of individual liberty and the chief factor of success in life.*

*Dr. Maria Montessori, The Formation of Man*

## **Freedom/Responsibility**

The ideas of *freedom*, *responsibility*, and independence are closely linked within one's actions toward self-construction, and the choices made in the fulfillment of one's developmental needs.

In the first plane, freedom manifests with a developmental necessity to explore one's environment. Here, responsibility lies in directly caring for the self, others, and for the environment. In the second plane, children have the freedom to work with initiative and discipline as they explore broad ideas within the context of cosmic education. For the second plane, responsibility lies in coming to know the order of the world and beginning to adapt to its cultural manners and norms.

In the third plane, freedom relates to understanding and joining the community's economic activities, and achieving economic independence within that structure. Responsibility lies in honoring the social organization of one's time and place, taking part in the social and economic structures in ways which are beneficial to one's self and to others.

*When the child is given freedom to move about in a world of objects, he is naturally inclined to perform the task necessary for his development entirely on his own. Let us say it straight out – the child wants to do everything all by himself.*

*Dr. Maria Montessori, Education and Peace*

*It is a common place that the child must be free. But what kind of freedom has he been given? The only true freedom for an individual is to have the opportunity to act independently. That is the condition sine qua non\* of individuality. There is no such thing as an individual until a person can act by himself.*

*Dr. Maria Montessori, Education and Peace*

*\* something absolutely indispensable, essential*

## **Imagination**

The role of *imagination* is critical in the second plane of education where children encounter cosmic education, the plan of study for the elementary years. Cosmic education presents the second plane child with a vision of the journey the universe has taken to become as it is now, and urges children to see themselves in relation to everything in the universe. Imagination and the reasoning mind are the tools of outward exploration for second plane child.

In the third plane of development, imagination plays a critical but fundamentally different role. For the adolescent, imagination serves as the basis for her own creative expressions. Such outward expressions are important as the adolescent works inwardly to develop her personality, expanding now into a more adult, social role. She begins to think more abstractly, understanding more about her own thought processes as well as the thoughts of others. In the third plane, the adolescent begins to develop a more global vision, to consider involvement in economic production and exchange, and to problem solve on deeper levels. In this regard, the imagination is not the province of fantasy, but the instrument of mature thought.

*Children are continuously trying to construct a vision of things in their minds. The work of a child's imagination is continuous, quite different from us who have already*

*constructed our minds. Children's imaginations must act continuously in order to construct this power. Just as in the period of the absorbent mind when the child studied the world at the sensorial level and received impressions, he now studies the world in another way and tries to construct, through experiences he has already had, things which he has never seen. Through this imaginative construction the child makes his way, for the first time, in the world of real intelligence.*

*Dr. Maria Montessori, The 1946 London Lectures*

## **Independence**

Fulfillment of the developmental needs of the child at any stage can be seen as leading toward one ultimate goal: successive degrees of *independence*. What independence means for the child changes, of course, depending on her position within the scheme of the planes of development.

For the first plane child, independence is found in the mastery of the physical: being able to dress, to eat, or to complete a task such as wiping a table. These physical abilities fulfill the young child's call, "Help me to do it myself."

For the second plane child, independence comes in the child's ability to explore with her imagination, leading to expanding sets of knowledge and skills. Primary among these is the child's growing understanding of societal interactions, and how to navigate relationships with those around her.

In the third plane, young people begin to move more deeply into the adult world. Now they are not so much observing society and adult life as beginning to take an active part in them. In Montessori's third Oxford lecture (1936) she speaks of production and exchange as the primary way in which humanity supports and expands itself. Independence for the third plane child comes from involvement in economic

activity, and from moving toward self-sufficiency within that structure.

*... for the essence of independence is to be able to do something for one's self. The philosophical concept which underlies these successive conquests of independence is this: that man achieves his independence by making efforts. To be able to do a thing without any help from others: this is independence.*

*Dr. Maria Montessori, The Absorbent Mind*

### **Maximum Effort**

*Maximum effort* is a quality which results from the alignment of a child's freedom, independence and discipline. When a child is free to work in a prepared environment, choosing occupations which encourage her developing independence, and which appeal to her developmental needs, a normalized concentration results. This allows, and encourages the child to apply herself to a task with maximum effort.

*As soon as the child has acquired this form of independence he begins to carry heavy things and to do difficult things. We call it maximum effort. He climbs on chairs, he goes upstairs, he does all kinds of things which require a great effort. He doesn't just practice a new ability – the new conquest enables him to exert great effort. This is horne. Horne asks the child to exert the maximum effort, to go into the world and make these difficult movements. Children evidently have a natural urge, a determined urge, because all children all over the world have the same need to exert a maximum effort at this age.*

*Dr. Maria Montessori, The 1946 London Lectures*

## **Preparation of the Adult**

*Preparation of the adult* is an important component of what Montessori considers the spiritual aspect of working with children. Montessori's idea of the spiritual preparation of the teacher stems from her belief that children develop intellectually and socially by interacting directly with their environment. Moving with freedom, independence and discipline, children choose work in a prepared environment which serve their fundamental needs.

For this to be possible, the teacher needs to honor the child's choices and work, not imposing her own expectations and values. Montessori writes, "The true educator is the man who rids himself of the inner obstacles which make the child incomprehensible to him..." (*The Secret of Childhood*) According to Montessori's ideas, one may choose the work of teaching, "... but first comes an act of humility, the routing out of a prejudice embedded in our hearts..." (*The Secret of Childhood*)

*Our instruction to educators consists in showing them what inner dispositions they need to correct, just as a doctor might point out the particular and definite disease that is weakening or threatening a physical organ. Here then, is some positive help.*

*Dr. Maria Montessori, The Secret of Childhood*

*Hence a prejudice has found its way into the adult – the notion that the life of the child can be changed or improved only through teaching. This prejudice impedes the understanding of the fact that the child constructs himself, that he has a teacher within himself and that this inner teacher also follows a program and a technique of education, and that we adults by acknowledging this unknown teacher may enjoy the privilege and good fortune of becoming its assistants and faithful servants by helping it with our cooperation.*

*Dr. Maria Montessori, The Formation of Man*

*The first step an intending Montessori teacher must take is to prepare herself. For one thing, she must keep her imagination alive; for while, in the traditional schools, the teacher sees the immediate behavior of her pupils, knowing that she must look after them and what she has to teach, the Montessori teacher is constantly looking for a child who is not yet there. This is the main point of difference. The teacher, when she begins work in our schools, must have a kind of faith that the child will reveal himself through work.*

*Dr. Maria Montessori, The Absorbent Mind*



## About the Author



Sheldon Clark is a teacher and parent educator at The New School Montessori Center in North Carolina. Trained in Montessori education for ages 6-18, he taught Upper Elementary for many years before founding the Montessori Adolescent Program at The New School.