

Using Montessori Strategies for Children with Learning Differences
The Montessori Method

The At-Risk Child Requires:	What Does the Montessori Curriculum Give Us That Helps the At-Risk Student?
<ul style="list-style-type: none"> Teacher is present in their learning environment for greater time periods 	<ul style="list-style-type: none"> Uninterrupted work cycle Individualization Role of teacher as a guide
<ul style="list-style-type: none"> Direct assistance on attention, focus, & concentration / Executive Function training (EF) 	<ul style="list-style-type: none"> Techniques for training attention (Lesson presentation procedures & the silence game) Classroom Organization - The Prepared Environment (open, clean, uncluttered) Work Organization - Lessons present materials in procedures that foster organization & prioritization (EF)
<ul style="list-style-type: none"> Structure for behavior must fit the needs of the student (child with learning & attention differences is less self-directed) MACAR Empowering Children for Self-Control Manual 	<ul style="list-style-type: none"> Classroom Structure (clear & consistent boundaries, privileges) Grace & Courtesy lessons include respect for the teacher, classmates & materials leading to self-regulation
<ul style="list-style-type: none"> Guidance in selecting & performing tasks (child with learning & attention differences must be taught a cycle of work) MACAR - Work ribbon & work plans 	<ul style="list-style-type: none"> Individualization Teacher guiding toward the development of a work cycle
<ul style="list-style-type: none"> Perceptual Motor Skills Activities (child with learning & attention differences may have poorly developed fine and/or gross motor skills) MACAR - Perceptual Motor Skills Manual 	<ul style="list-style-type: none"> Gross and Fine Motor Development through the use of Practical Life, Sensorial, Pre-writing activities & movement in the classroom while carrying materials of different weights & sizes & maneuvering around other children's work
<ul style="list-style-type: none"> Specific & direct oral language development (child with learning & attention differences usually has underlying oral language development delays or disorders and will need additional language therapy intervention) MACAR - Oral Language Development 	<ul style="list-style-type: none"> Oral Language Development through the use of the three-period lesson for the nomenclature attached to each lesson

The At-Risk Child Requires:	What Does the Montessori Curriculum Give Us That Helps the At-Risk Student?
<ul style="list-style-type: none"> • Multisensory teaching (V A K T) • Teaching of pattern recognition • Pre-writing & writing practice with a multisensorial technique • Language presentations combined with the techniques or programs for children with specific reading disabilities • Direct teaching of language and/or math symbols (SEE, Structural Math) 	<ul style="list-style-type: none"> • Manipulative Multisensory Materials (Concrete to Abstract) • Patterns taught through the Sensorial materials leading to a recognition of math & language patterns • Preparation of the hand for writing (Practical Life, Sensorial, Metal Insets) • Montessori Language presentations use VAKT & present patterns of the English language from simple to complex • Math concepts taught from simple to complex with manipulative, multisensory materials which proceed from concrete to abstract
<ul style="list-style-type: none"> • Reduction of difficulty in materials & lesson steps 	<ul style="list-style-type: none"> • Academics presented in small sequential steps matched to the level of development of the child
<ul style="list-style-type: none"> • Teaching of transitions • A specific program of social skills – Choices 	<ul style="list-style-type: none"> • As abstraction is increased the presentation of transition steps from concrete to abstraction are included (red rods to number rods) • Enhancement of Social Skills (Grace and Courtesy)
<ul style="list-style-type: none"> • An environment of encouragement (validation - the need for having feedback from the teacher on their accuracy) 	<ul style="list-style-type: none"> • Environment of Encouragement (De-emphasis on failure) Mistakes are not bad, they are the way we learn (De-emphasis on competition with others) • Child moves through the lessons at their own learning rate and may do each work at their individual pace. Teacher presents lessons at the child's developmental level

Figure 4.8 Montessori four planes of development at risk for language-learning differences

0-6 First Plane

0-3

- Cognitive – average or above
- Adaptive – average or above
- Development of fine (FMS) and gross (GMS) motor skills may be delayed or disordered.
- Speech-Language development delayed or disordered
- Development of sustained attention may not be attained by 3 years
- Visual and auditory perceptual processing skills inaccurate

The foundation for learning and attention reveal an uneven development, which will affect all the following planes of development.

3-6

- Cognitive – average or above
- Adaptive – average or above
- Development of FMS/GMS may be below average
- Speech-Language development below average in speech articulation and or oral language communication (receptive and/ or expressive).
- Sustained attention may not be developed typically/sensitive period for order delayed or remains disordered.
- Auditory perceptual processing skills below average resulting in difficulty in progress in written language (reading, writing, spelling) and/or math/Visual perception processing skills may be below average
- Progress is uneven, better in some subject areas than others, variable from day to day.

6-12 Second Plane

- Cognitive – average or above
- Adaptive – affected by learning differences to varying degrees
- Motor coordination differences may be seen in overall body coordination skills, balance, rhythmic activities and/ or handwriting
- Speech-Language weaknesses continue unless remediated
- Sustained attention may not be achieved in students with ADHD/difficulties with working memory and organization
- Visual and auditory perceptual processing skills in accuracy and speed continue to be a challenge, unless remediated

Schoolwork continues to be erratic, better in some areas than others, variable from day to day

12-18 Third Plane

- Cognitive – average or above
- Adaptive – affected by learning differences to varying degrees
- All skills continue to present differences in academic progress depending on the individual combination of strengths and weaknesses, unless remediated.

18-24 Fourth Plane

- Cognitive – average or above
- Adaptive – affected by learning differences to varying degrees
- All skills continue to present differences in academic progress depending on the individual combination of strengths and weaknesses, unless remediated.

Early intervention with the Montessori method and therapeutic remediation in motor skills, speech-language development, sustained attention, visual and auditory perceptual processing skills and direct explicit teaching in a multisensory structured language approach can ameliorate the challenges of the At Risk/LD student.

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Figure 5.1, Montessori four planes of development for communication disorders

0-6 First Plane

0-3

- Cognitive – may be average or above, but not presenting this ability on verbal IQ tests
- Adaptive – below average to average
- Development of fine (FMS) and gross (GMS) motor skills may be average, delayed or disordered.
- Speech-Language development delayed or disordered
- Development of sustained attention may not be attained by 3 years
- Visual perceptual processing skills may be average. Auditory perceptual processing skills – below average for those with articulation problems.

The foundation for learning and attention reveal an uneven development, which will affect all the following planes of development.

3-6

- Cognitive – may be average or above, but not presenting this ability on verbal IQ tests
- Adaptive – below average to average
- Development of FMS/GMS may be average to below average
- Speech development may be below average in speech articulation. Language perceptual processing skills below average in delayed or disordered language skills. Oral language communication (receptive and/ or expressive) below average
- Sustained attention may not be developed typically/sensitive period for order delayed or remains disordered.
- Visual and auditory perceptual processing skills may be below average resulting in difficulty in progress in written language (reading, writing, spelling) and/or math
- Progress may be uneven, better in some subject areas than others, may be variable from day to day.

6-12 Second Plane

- Cognitive – may be average or above, but not presenting this ability on verbal IQ tests
- Adaptive – below average to average
- Motor coordination differences may be seen in overall body coordination skills, balance, rhythmic activities and/ or handwriting
- Speech-Language weaknesses continue unless remediated
- Sustained attention may not be achieved in students with ADHD/difficulties with working memory and organization
- Visual and auditory perceptual processing skills in accuracy and speed may continue to be a challenge, unless remediated

Schoolwork continues to be erratic; better in some areas than others, may be variable from day to day.

12-18 Third Plane

- Cognitive – may be average or above, but not presenting this ability on verbal IQ tests
- Adaptive – below average to average
- All skills continue to present differences in academic progress depending on the individual combination of strengths and weaknesses, unless remediated.

18-24 Fourth Plane

- Cognitive – may be average or above, but not presenting this ability on verbal IQ tests
- Adaptive – below average to average
- All skills continue to present differences in academic progress depending on the individual combination of strengths and weaknesses, unless remediated.

Early intervention with the Montessori method and therapeutic remediation in motor skills, speech-language development, sustained attention, visual and auditory perceptual processing skills and direct explicit teaching in a multisensory structured language approach can ameliorate the challenges of the student with Communication Disorders.

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Figure 6.2 Montessori four planes of development-intellectual deficits (ID)

0-6 First Plane

0-3

- Cognitive – below average
- Adaptive – below average
- Development of fine (FMS) and gross (GMS) motor skills may be delayed or disordered.
- Speech-Language development delayed or disordered
- Development of sustained attention may not be attained by 3 years
- Visual and auditory perceptual processing skills often inaccurate

The foundation for learning and attention reveal an uneven development, which will affect all the following planes of development.

3-6

- Cognitive – below average
- Adaptive – below average
- Development of FMS/GMS may be below average
- Speech-Language development below average in speech articulation and or oral language communication (receptive and/ or expressive).
- Sustained attention may not be developed typically/sensitive period for order delayed or remains disordered.
- Visual and auditory perceptual processing skills may be below average resulting in difficulty in progress in written language (reading, writing, spelling) and/or math
- Progress in pre-academic/academic skills is below average.

6-12 Second Plane

- Cognitive – below average
- Adaptive – below average
- Motor coordination differences may be seen in overall body coordination skills, balance, rhythmic activities and/ or handwriting
- Speech-Language weaknesses continue unless remediated
- Sustained attention may not be achieved in students with ADHD/difficulties with working memory and organization
- Visual and auditory perceptual processing skills in accuracy and speed may continue to be a challenge, unless remediated

Schoolwork continues to be below average.

12-18 Third Plane

- Cognitive – below average
- Adaptive – below average
- All skills continue to present differences in academic progress with below average performance noted across subjects, significant difficulty with abstraction.

18-24 Fourth Plane

- Cognitive – below average
- Adaptive – below average
- All skills continue to present differences in academic progress. Depending on the level of ID, the student may be able to be educated in basic reading, writing, spelling and math or trained in life skills and specific work skills.

Early intervention with the Montessori method and therapeutic remediation in motor skills, speech-language development, sustained attention, visual and auditory perceptual processing skills and direct explicit teaching in a multisensory structured language approach can ameliorate the challenges of the student with intellectual deficits.

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Figure 7.2 Montessori four planes of development – autism spectrum

0-6 First Plane

0-3

- Cognitive – average to below average
- Adaptive – below average
- Development of fine (FMS) and gross (GMS) motor skills may be delayed or disordered.
- Speech-Language development delayed or disordered
- Development of sustained attention may not be attained by 3 years
- Visual and auditory perceptual processing skills may be inaccurate

The foundation for learning and attention reveal an uneven development, which will affect all the following planes of development.

3-6

- Cognitive – average to below average
- Adaptive – below average, improved with treatment
- Development of FMS/GMS may be below average
- Speech-Language development below average in speech articulation and or oral language communication (receptive and/ or expressive).
- Sustained attention may not often be developed typically/sensitive period for order delayed or remains disordered.
- Visual and auditory perceptual processing skills below average in specific areas resulting in difficulty in progress in written language (reading, writing, spelling) and/or math
- Progress is uneven, better in some subject areas than others, variable from day to day.

6-12 Second Plane

- Cognitive – average to below average
- Adaptive – below average, improved with treatment
- Motor coordination differences may be seen in overall body coordination skills, balance, rhythmic activities and/ or handwriting
- Speech-Language weaknesses continue unless remediated
- Sustained attention may not be achieved in students with ADHD/difficulties with working memory and organization
- Visual and auditory perceptual processing skills in accuracy and speed may continue to be a challenge, unless remediated

Schoolwork continues to be erratic, better in some areas than others, variable from day to day

12-18 Third Plane

- Cognitive – average to below average
- Adaptive – below average, improved with treatment
- All skills continue to present differences in academic progress depending on the individual combination of strengths and weaknesses, unless treated.

18-24 Fourth Plane

- Cognitive – average to below average
- Adaptive – below average, improved with treatment
- All skills continue to present differences in academic and work skills depending on the individual combination of strengths and weaknesses, unless treated.

Early intervention with the Montessori method and therapeutic remediation in motor skills, speech-language development, sustained attention, visual and auditory perceptual processing skills and direct explicit teaching in a multisensory structured language approach can ameliorate many of the challenges of the child on the Autism Spectrum.

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**Contrast of Average Development and the Development
of Children with Varying Exceptionalities Related to the Enhancement by the Montessori Method**

<u>DEVELOPMENT OF AVERAGE CHILD</u>	<u>DEVELOPMENT OF CHILD WITH VARYING EXCEPTIONALITIES</u>	<u>MONTESSORI METHODS THAN ENHANCE LEARNING FOR VARYING EXCEPTIONALITIES</u>
<p style="text-align: center;">COGNITIVE</p> <p>The child develops evenly through the 4 Planes of Development.</p>	<p style="text-align: center;">COGNITIVE</p> <p>The child's development is unequal or uneven through the Planes of Development.</p>	<p style="text-align: center;">COGNITIVE</p> <p>The presentation of each curricula area in precise steps, developing order and a sense of how to go about a learning task is optimal for all students. The multisensory materials use all areas of the brain and enhance neurological networking in the brain.</p>
<p style="text-align: center;">ADAPTIVE</p> <p>The child perceiving his world accurately proceeds to learn through imitation and experience how to adapt to the requirements of the environment. With typical development in inhibition control, the child's neurological system is mature and self-control and sustained attention are attained.</p>	<p style="text-align: center;">ADAPTIVE</p> <p>The child with varying exceptionalities does not perceive the world as the typically developing child. The sensory input may be distorted or overwhelming. Perception may be inaccurate or sensory information may be so intense as to cause the child discomfort. Inhibition control and sustained attention may remain at the level of a pre-school child, even as the child becomes older chronologically.</p>	<p style="text-align: center;">ADAPTIVE</p> <p>The ordered calm of a Montessori classroom, with its respect for each individual child's ability to learn, is supportive of children with various differences. The curriculum which proceeds for each presentation from concrete to abstract begins at the level each child can understand and allows the teacher to match the lesson to the development level of the student. The child is carefully shown how to adapt to the privileges and boundaries of the learning environment. A child with differences feels success without competition from others.</p>
<p style="text-align: center;">COORDINATION</p> <p>GROSS MOTOR Walks, hops, runs, jumps, skips, throws and catches ball by approximately 5 years of age if offered the opportunity to observe these movements.</p> <p>FINE MOTOR Cuts on a line, cuts out shapes, holds pencil, maintains line, pressure, makes corners by 5 years of age if offered the opportunity to learn these movements.</p>	<p style="text-align: center;">COORDINATION</p> <p>GROSS MOTOR Sometimes observed as clumsy in body movements in classroom. Often below normal limits when observed on specific items (alternating feet in walking up steps, skipping, learning to jump rope) even if offered a model and instruction.</p> <p>FINE MOTOR Difficulty maintaining pattern of cutting motion results in jerky motion, jagged cutting. Holds pencil in awkward fashion, difficulty maintaining a line, pressure, round corners, even if offered a model and instruction.</p>	<p style="text-align: center;">CO-ORDINATION</p> <p>GROSS MOTOR Manipulation of Materials: carrying/using multi-sensory materials of various sizes and weights. "On the Line" procedures: moving to rhythms, marching, hopping, skipping to music. Indirect/direct instruction in basic gross motor movements through a Perceptual Motor Skills program.</p> <p>FINE MOTOR Eye-Hand Co-ordination: manipulation of materials in all areas of curriculum. Hand Co-ordination: preparation of the hand for writing use of thumb, index and middle fingers working together for grasp and release. Particular training in the pre-writing activity of metal insets.</p>
<p style="text-align: center;">ORAL LANGUAGE</p> <p>Has a vocabulary of approximately 2,500 to 5,000 words and usage of this vocabulary or basic communication with appropriate sentence structure.</p>	<p style="text-align: center;">ORAL LANGUAGE</p> <p>Vocabulary deficiencies seen in labeling, sentence formation and usage in running speech. Often seen as a quiet child, child who is confused by simple directions. Child who often says "you know." High incidence of articulation and rhythmical difference.</p>	<p style="text-align: center;">ORAL LANGUAGE</p> <p>All lessons made silently to allow child to process the perceptual information being demonstrated and then the labels, the language concepts, are associated in the Montessori 3-period lesson. Specific vocabulary covered. Curriculum for the children with varying exceptionalities must be extended from vocabulary development to effective oral communication.</p>
<p style="text-align: center;">ATTENTION</p> <p>Inhibition control begins to develop at 2 1/2 to 3 years of age. Focuses on activity presentation and concentrates. Works with activities for periods of 10 minutes or longer.</p> <p>ORGANIZATION Order and sequence appear to be learned by imitation.</p> <p>WORK CHOICES Chooses variety of work, usually proceeding to more difficult concepts.</p> <p>WORK HABITS Chooses work, uses procedure with purpose, replaces the work on the shelf.</p> <p>WORK CYCLE Chooses one activity after another varying the difficulty of choices.</p>	<p style="text-align: center;">ATTENTION</p> <p>Attention deficits may be present. Behavior often noted as hyperactive, hypoactive, or distractible. Inhibition control does not develop in a normal manner, therefore focus and concentration are faulty.</p> <p>ORGANIZATION Difficulty noted in ordering work tasks and working in a sequential way.</p> <p>WORK CHOICES Chooses simple work that has been mastered, avoids work that is perceived as "harder." Avoids letters and/or numbers, avoids written work, needs teacher guidance for choices.</p> <p>WORK HABITS Avoids work, often insecure due to lack of successful learning experiences. When chooses, often replaces without using or leaves work and wanders the room.</p> <p>WORK CYCLE Does not establish a true cycle without teacher support.</p>	<p style="text-align: center;">ATTENTION</p> <p>Prepared Environment: organization of materials, room areas analyzed for use by children. Classroom Atmosphere: ordered calm. Order in Presentation: assists focus, child waits for closure. Silence game: teaches inner calm, concentration, focus. Classroom Structure: clear limits/freedoms, teacher accepts role to help children develop inhibition techniques, central focus.</p> <p>ORGANIZATION All activities in all curriculum areas have a specific order and sequence. The teacher demonstrates, the child imitates. The teacher helps the child refine his work habits from haphazard trial and error attempts to procedures which help the child gain the skills of analysis necessary for effective organization of work.</p> <p>WORK CHOICES Procedures allow the teacher to guide the child in learning to make his choice of work. She may allow choice, limit choices, or make choices for the child until he can do this task independently.</p> <p>WORK HABITS The structure of the classroom and the procedures for working with the activities fosters organized work habits.</p> <p>WORK CYCLE The teacher can enhance the work cycle by teaching the child to make choices, how to set up his work, areas appropriate for work, completion of activities and return of the activity to its location.</p>

**Contrast of Average Development and the Development
of Children with Varying Exceptionalities Related to the Enhancement by the Montessori Method**

<u>DEVELOPMENT OF AVERAGE CHILD</u>	<u>DEVELOPMENT OF CHILD WITH VARYING EXCEPTIONALITIES</u>	<u>MONTESSORI METHODS THAN ENHANCE LEARNING FOR VARYING EXCEPTIONALITIES</u>
<p style="text-align: center;">ATTENTION Cont.</p> <p>CO-OPERATIVE BEHAVIORS Usually has gained inhibition control by 5 which enables him to cooperate with a teacher and peers in a learning environment. Given encouragement, enjoys the acceptance of responsibility and independence. Follows a model of consideration of others.</p>	<p style="text-align: center;">ATTENTION Cont.</p> <p>CO-OPERATIVE BEHAVIORS Has not always experienced the neurological maturation which allows inhibition control. Can be seen as stubborn, willful, immature, silly or withdrawn. Lacking self control, he has not developed a cooperative spirit with adults or other children. Needs direct instruction in inhibition, how to accept responsibility, how to persevere, how to use independence, how to act in a considerate manner.</p>	<p style="text-align: center;">ATTENTION Cont.</p> <p>CO-OPERATIVE BEHAVIOR The experienced teacher with specific training in teaching students with varying exceptionalities accepts as part of her responsibility the guidance and instruction of appropriate behaviors and social skills. She will teach the child through specific techniques inhibition of impulsive behavior, increased self-control, the acceptance of responsibility, perseverance, independence and consideration for others.</p>
<p style="text-align: center;">PERCEPTION Matches, discriminates sensory information. Perceives patterns in shape, color, numbers.</p> <p>WRITTEN LANGUAGE If presented, has mastered most of the letters and the basic sounds of the language. Usually can blend these sounds and decode. Often is beginning to read by 5 years of age.</p> <p>MATH Gains number to quantity concepts, math symbols, math concepts and beginning computation by 5.</p>	<p style="text-align: center;">PERCEPTION Matching is usually within normal limits. Difficulty with discrimination of sensory information noted. Discrimination/memory difficulties in math or letter symbols frequently seen. Association of symbol to name often a problem.</p> <p>WRITTEN LANGUAGE Inconsistency in performance seen in learning letter symbols and sounds. Variable performance with all written symbols activities, difficulty in perceiving the patterns of words.</p> <p>MATH Spotty performance on number to quantity concepts, longer work time for mastery, erratic performance on symbol/numeral association, math concepts often superior to computation, difficulty with immediate recall of facts, difficulty with patterns as seen in odd/even, writing to 100, skip counting, difficulty with 1:1 correspondence.</p>	<p style="text-align: center;">PERCEPTION Through the Sensorial curriculum the teacher can assess the child's ability to perceive, discriminate and graduate visual, auditory, tactile, olfactory and gustatory information. These sensorial discriminations and the associated language concepts are significant in the progression to higher cognitive functions, such as categorizing, generalizing, and the beginning of reasoning. All areas of the curriculum utilize VAKT to assist the child in the perceptual discrimination and memory required in language and math.</p> <p>WRITTEN LANGUAGE Prerequisites: Sensorial Curriculum/Pre-Writing Activities/ Oral Language Development in progress.</p> <p>Presentations begin with the multi-sensory Sandpaper Letters with which the child can receive visual, auditory, kinesthetic and tactile information to <u>increase</u> the sound/symbol correspondence. Several activities presented after the Sandpaper Letters give repeated practice through varied materials in sound/symbol association. These proceed from concrete to abstract.</p> <p>The Movable Alphabet provides the child with 3-dimensional letters which the child may manipulate to practice Word Building by using his sound/symbol knowledge. The activity gives the child a beginning reading activity at the word level before presenting the challenge of reading in a book. The activity reinforces the left to right progression of language. Reading, Spelling and Writing proceed at the child's rate through a hierarchy of simple to complex word patterns. The child moves from word building to sentence building to reading/writing stories and books, to grammar analysis.</p> <p>MATH Pre-requisites: Sensorial Curriculum through Red Rods/Pre-Writing Activities begun. Number to quantity activities presented to establish quantity/symbol relationship. Materials are manipulative and multi-sensory. Materials move from concrete to abstract. Three Period Lesson used to attach language to quantity. Number to quantity practiced out of sequence and in sequence. Number to quantity activities include Number Rods (1-10), Spindle Box (concept of 0), Tile Game (1-10 odd/even). Teens Board and Tens Board allow for language of teen numbers and the tens number to be introduced by number to quantity. Introduction of the decimal system (language of number to quantity) provide child repetitions of building various quantities from 1-9,000 with the golden beads and matching the numerals. Addition, multiplication, subtraction, and division introduced with golden beads. Writing of numerals introduced with Sandpaper numerals. Skip counting introduced with the manipulative bead chains. Functions practiced with additional multi-sensory materials addition strip board, subtraction strip board, multiplication board, division board.</p>

For an expanded explanation of each area of enhancement for child with varying exceptionalities contact the author:
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