



*"We must look to the children as a vehicle for bringing change to humanity."*

~ Maria Montessori

## **Children's House: GUIDE TO WORK & LEARNING**

(updated July 2024)

## Many Rivers Montessori Mission

Our school empowers our students to transform the world. Through world-class Montessori education, a focus on the whole child, and an inclusive and fun community, we cultivate independent, academically prepared, and socially responsible citizens who will be lifelong learners and creative problem solvers.

## Many Rivers Montessori Vision

Our students are empowered to transform the world into a better place for all.

### Our Values:

- DREAM BIG & MAKE IT HAPPEN: We have the courage and passion to dream big, and we're willing to sacrifice, serve, and work hard toward an audacious goal that really matters.
- FUN! We are a place of joy and laughter.
- HEALTHY COMMUNITY: We are intentionally creating a kind, compassionate, inclusive and welcoming community that reaches out to the world around us.
- NORTH COUNTRY CULTURE: We live in a beautiful, extreme, and distinctive natural playground. And we love being part of it.
- JUSTICE IS A WAY OF LIFE: Our respect for all means justice is at the heart of everything we do.
- BE YOUR WHOLE SELF: We meet each child where they are at, and empower them to follow their passion and realize their academic, social and moral potential.

## Introduction

Montessori education is an individualized, hands-on approach to learning that allows children to explore and progress at their own pace through direct experience and through the process of investigation and discovery.

Dr. Maria Montessori was an intuitive visionary who gave the world a trans-generational method of learning. Through extensive research, she discovered that children are motivated by respect, cooperation, trust, independence, self-reliance, and peace. Dr. Montessori said, "education is not something which the teacher does, but that it is a natural process which develops spontaneously in the human being."

This living document is a testimony to Dr. Montessori's contribution and our school's commitment to authentic Montessori practice. It is designed to be dynamic as our school evolves in our practices, demonstrating the continuum of knowledge in all areas of the curriculum from toddler through adolescence.

## Montessori Best Practices

Montessori best practices promote independence, freedom with responsibility, grace and courtesy, respect, intrinsic motivation and the development of executive functions.

### Prepared Environment

- Classroom decor is simple, uncluttered, attractive, contains elements of nature, and is furnished with high quality, accessible furniture
- Classroom is fully equipped with learning materials and supplies that are accessible to the children
- Classroom is thoughtfully organized and ordered

### Prepared Adult

- Guides are qualified and undertake regular professional development
- Adults care for their own wellbeing and stability in order to maintain a mindful and efficacious demeanor
- Adults are guided by Montessori principles in all decisions and interactions
- Guides follow the Association Montessori Internationale scope and sequence, and encourage children to be independent, self-directed, and engage in active learning and discovery
- Adults serve as role models for children and for one another
- Classroom management is consistent with Montessori philosophy, is grounded in kindness, is developmentally appropriate, emphasizes natural consequences, and encourages students to take ownership of maintaining a productive learning environment and respectful relationships
- Adults engage with students by setting high and consistent expectations coupled with warmth, avoiding shame or blame

### Systems and Schedules

- Classrooms are multi-aged
- Each day includes several hours of uninterrupted work time during which students choose work and engage in lessons with the guide
- Classroom practices balance the needs of the individual with those of the community
- There is a well-articulated, standardized planning, record-keeping, observation, assessment, and reporting system in place
- Parent communication is thoughtful, respectful, and includes the student when appropriate

### Classroom Culture

- The learning environment is intellectually, emotionally, and physically safe
- Students engage in purposeful work and participate enthusiastically in lessons
- A growth mindset is explicitly encouraged
- Students feel ownership of their school and classrooms, help enforce the norms, and act as mentors and role models for their peer, both academically and socially

## Psychology Research and Montessori Education

### A Research Based Approach:

Dr. Montessori based her system of education on insights regarding child development, now supported by modern psychological research.

### Cognition and Movement:

Movement and cognition are closely entwined and thinking is often expressed by the hands or body before it can be put into words.

### Choice and Control:

Freedom and choice are linked to better psychological and learning outcomes. Montessori classrooms are based on personal choice and freedom within the limits imposed by being constructive for oneself and society.

### Learning and Interest:

Interest in a topic has a significant influence on one's proficiency in learning about the topic. Montessori children learn because the environment is set up to create interest in topics, and to capitalize on the interests children already have, thereby optimizing learning.

### Extrinsic Rewards:

People experience higher levels of psychological well-being and competence when engaged in intrinsically rewarding activities. Montessori education promotes sustained, intense periods of concentration as central to learning. The rewards in Montessori education are internal ones.

### Collaborative Learning:

Optimal learning and social outcomes occur through imitation of models, through peer tutoring and in collaborative situations.

### Learning and Meaningful Context:

Meaningful contexts assist learning by providing frameworks and motivation for the acquisition of new knowledge. Montessori education embeds meaningful context in its methods and makes what happens in the classroom meaningful and transferable.

### Discipline and Rules:

When adults provide clear limits but set children free within those boundaries, and sensitively respond to children's needs while maintaining high expectations, children show high levels of maturity, achievement, empathy and other desirable characteristics.

### Order, Routine and Ritual:

Physical and conceptual order promote optimal learning and development. The Montessori classroom is logical and organized, as are the layouts of each activity within the classroom. There are set routines for using each Montessori material. The curriculum follows a logical progression that is coherent and internally consistent.

## Montessori Learning Outcomes

As students progress through the learning continuum (Toddler through Middle School), they move from acquiring awareness to being compelled to action; and from a focus on self to a focus on community and world citizenship.

<p><u>INDEPENDENCE</u></p> <ul style="list-style-type: none"> <li>• Choosing and completing work</li> <li>• Expressing needs and caring for oneself</li> <li>• Maintaining attention and concentration</li> <li>• Setting and attaining goals</li> <li>• Making appropriate choices</li> </ul>	<p><u>CONFIDENCE &amp; COMPETENCE</u></p> <ul style="list-style-type: none"> <li>• Believing in one's abilities</li> <li>• Adept in practical application of skills</li> <li>• Secure in own ability to communicate</li> <li>• Able to voice opinions respectfully</li> <li>• Willing to take risks and make mistakes</li> </ul>
<p><u>INTRINSIC MOTIVATION</u></p> <ul style="list-style-type: none"> <li>• Striving for personal best</li> <li>• Inner desire to learn and master concepts</li> <li>• Not reliant on external rewards or consequences</li> </ul>	<p><u>FREEDOM WITHIN LIMITS</u></p> <ul style="list-style-type: none"> <li>• Using time effectively</li> <li>• Balancing work and areas of learning</li> <li>• Making safe and responsible choices</li> </ul>
<p><u>LOVE OF LEARNING</u></p> <ul style="list-style-type: none"> <li>• Engaging in purposeful learning activities</li> <li>• Joyful interest in work and new learning</li> <li>• Willingness to share with and teach others</li> </ul>	<p><u>RESPECT FOR AUTHORITY</u></p> <ul style="list-style-type: none"> <li>• Understands that one is a member of a community</li> <li>• Respectful attitude toward adults and peers</li> <li>• Able to both follow and lead</li> </ul>
<p><u>ACADEMIC PREPARATION</u></p> <ul style="list-style-type: none"> <li>• Mastery of level appropriate content knowledge</li> <li>• Developing critical thinking and reasoning skills</li> <li>• Achieving level appropriate outcomes</li> <li>• Ability to express creatively</li> </ul>	<p><u>SOCIAL RESPONSIBILITY</u></p> <ul style="list-style-type: none"> <li>• Recognizing the needs of others</li> <li>• Ownership of community norms</li> <li>• Ability to problem-solve and collaborate</li> <li>• Taking on increasing responsibility</li> <li>• Serving as a role model</li> </ul>
<p><u>EMOTIONAL REGULATION</u></p> <ul style="list-style-type: none"> <li>• Sense of self</li> <li>• Inner regulation and ability to be calm</li> <li>• Having healthy relationships</li> <li>• Demonstrating compassion and empathy</li> <li>• Experiencing awe and wonder</li> <li>• Showing care for the earth</li> </ul>	<p><u>CITIZEN OF THE WORLD</u></p> <ul style="list-style-type: none"> <li>• Being respectful out in the community</li> <li>• Local and community awareness</li> <li>• Global awareness and connection</li> <li>• Knowing that one's actions impact others</li> <li>• Knowing that one's contributions matter</li> </ul>

## Children's House Overview

Many Rivers Montessori provides the Children's House child with an environment that encourages emotional, social, physical and academic skills to develop. The child interacts with the materials and the environment with interest and focus and learns to coexist in a peaceful community of learners. Children's House classrooms and systems are organized to respond to the child's characteristics and needs at this developmental stage. These child-centered environments promote independence and concentrated periods of uninterrupted, self-initiated activity.

Characteristics of the Child	Needs of the Child
Tremendous physical growth and change	Opportunity to develop physical independence
Development of physical coordination and balance	Order in the environment
Development of sensory perception	Order in the schedule
Has a mind that perceives things in totality and memorizes them without censure – an Absorbent Mind	Opportunity to work alone
Lives in the present, the here and now	Nutritious food and resting opportunities
Perceives others in relation to his own experiences	External rules and natural consequences
Explores with the senses	Experiences in reality rather than fantasy
Works for its own sake rather than to complete a task	
Drawn by repetition	
Interested in language	
Developing a love for order	
Can do multi-step activities	

### Children's House: Learning Activities

Skills of Daily Living	Exploring the World	Language	Mathematics	Mathematics
Organizational Skills	Sense of Order	_Vocabulary	Numerals	Geography
Care of Environment	Classification	Written expression	Quantities	Time and History
Care of Self	Precise Language	Reading	Sequencing	Zoology
Grace and Courtesy		Grammar	Operations and Facts	Botany
Conflict Resolution		Creative Drama	Complex Numbers	Music Concepts
		Literature	Fractions	Art Expression
				Spanish
				Movement

### Children's House: Outcomes Overview

Emotional Development	Social Development	Character Development	Cognitive Development
Takes pleasure in purposeful activity	Developing self-discipline	Has good work habits	Has an expanding vocabulary
Displays emotional equilibrium	Has increased independence based on new-found competence	Has the ability to choose	Is refining sensory perceptions and discrimination
Is serene and calm	Understands appropriate and specific prosocial behaviors	Is self-disciplined	Can think logically and linearly
Has a happy outlook	Can delay gratification and share	Is not possessive	Has acquired fundamental practical skills and academic knowledge
Shows concern for living things	Has respect for others	Shows care and respect for the environment and people	Can sustain interest for extended periods
Has affection for others	Is willing to abide by rules to maintain social order		Has internalized language (alphabet) and math (numerals) symbol systems and can work concretely in these areas with Montessori materials
Is warm and expressive			
Is optimistic and outgoing			

## Grace and Courtesy

Grace and Courtesy happens naturally throughout the day and is taught by the modeling adult or the older students in the classroom. These lessons are focused upon and intentional at the beginning of a child's Montessori journey and are revisited as needed when children's needs change and develop. Some examples of Grace and Courtesy include how to:

- Shake hands and make eye contact upon arrival and departure
- Interrupt
- Get someone's attention
- Talk in a group
- Help someone (do they need or want help?)
- Ask for help
- Say "No thank you"

Communication is one of the key lessons to model in Grace and Courtesy because it contains so many fundamentals. Many Rivers Montessori's curriculum depends upon the following fundamentals to teach children how to communicate effectively:

- Be consistent without being illogical or rigid
- Be objective not personal
- Be positive
- Give reason rather than flat authority
- Give a solution rather than prohibitions
- Be specific
- Match objects and actions to your words
- Give awareness of consequences
- Recognize the validity of emotions when limiting destructive actions
- Use a simple and courteous manner with children and other adults

## Conflict Resolution

The conflict resolution process is interactive and engaged. It brings together all parties involved to try to come up with solutions, restore justice and find resolution for all involved. Children discuss what happened, how it made them feel, and what they can do in the future. Adults may be involved as facilitators early on, but the goal is that the adult only gets involved when absolutely necessary and is available as a guide to the process. Adults help the children think of a variety of words to express their feelings, and role-play appropriate ways to interact with others. Adults also support the children in making restorative commitments that foster community harmony and kindness.



## Children's House Learning Benchmarks

GRACE & COURTESY	
Choose work independently Sustain concentration Complete the work cycle (choose, do, put away) Articulate and follow classroom rules Participate appropriately in whole group activities Transition from one activity / place to another Exhibit physical and voice control Move with self-control Consistently use conventional manners Respond when addressed	Say please and thank you Shake hands and or greet appropriately Offer and accept help Notice when things are fair or unfair Express feelings Use common table manners Carry on a conversation Listen Wait Make choices
PRACTICAL LIFE	
Wash hands and face Brush teeth Dress and undress Tie shoes Hang clothes Button and snap Wash a table Sweep the floor and use a dustpan Clean a spill Pour beans Pour liquid	Set a table Food preparation: slice, peel, chop, mix, grate Dust Fold Sew Arrange flowers Care for plants Use scissors Use glue Hold a paintbrush properly Decorate and embellish work
SENSORIAL	
Identify big and small Identify long and short Identify thick and thin Identify colors Identify gradations of colors Discriminate heavy and light Discriminate rough and smooth Discriminate loud and soft	Discriminate hot and cold Sort objects by color, shape, size Build the Binomial and Trinomial Cubes Match the bells by pitch (diatonic scale) Identify the geometric solids (sphere, cone, cube, pyramid) Identify plane figures (circle, rectangle, square, triangle, ellipse, oval)
LANGUAGE	
Speak clearly in full sentences Follow several-step oral instructions Comprehend oral stories, songs, games Identify letters of the alphabet in cursive and print by sound and name	Recognize key sight words (the of, is, and, you, that, it, to, in) Hold chalk/marker with a proper grip Hold a pencil/pen with a proper grip Create a precise metal inset drawing

<p>Build phonetic words with the moveable alphabet          Make rhymes and identify rhyming words          Read phonetic words          Identify key phonograms (th, sh, ch, ai, ay, ee, oa, er)</p>	<p>Form the lowercase cursive and print letters          Write on the baseline          Write full name in cursive and print          Write three letter words in cursive and print          Write a sentence          Use endmarks (. ? !)</p>
<p>MATHEMATICS</p>	
<p>Count to 100          Recognize numerals to 100          Read and write numerals 0 - 20          Read numbers to the thousands place using cards          Exchange decimal system categories with materials          Do static and dynamic addition with materials          Do static and dynamic subtraction with materials          Do static and dynamic multiplication with materials          Do division with materials</p>	<p>Linear and skip counting with the chains          Know addition math facts          Know subtraction math facts          Know some multiplication math facts          Do vertical addition to the tens place on paper          Do vertical subtraction the the tens place on paper          Count by tens          Count by twos          Identify coins and currency          Tell time to the hour</p>
<p>SCIENCE</p>	
<p>Identify continents and oceans          Identify the United States of America          Identify the state of Minnesota          Identify different land and water forms</p>	<p>Differentiate between living and nonliving          Differentiate between plant and animal          Differential between vertebrate and invertebrate</p>
<p>CULTURE</p>	
<p>Can clap a beat          Has memorized some songs          Has confidence in creating art in several mediums          Appreciates the beauty of art and music</p>	<p>Recognizes that various cultures and customs exist around the world          Has a sense of the wonder of North Country culture</p>

## Children's House Lessons

### Practical Life: Care of the Environment

- *Dusting a Table*
- *Washing a Table*
- *Sweeping the Floor*
- *Mopping the Floor*
- *Opening and Closing Bottles and Boxes*
- *Folding*
- *Spooning*
- *Dry Pouring*
- *Pouring Water*
- *Polishing Brass, Silver, Wood*
- *Arranging Flowers*
- *Setting a Table*

### Practical Life: Care of Self

- *Washing Hands*
- *Dressing Frames (buttoning, zipping, tying, lacing)*
- *Polishing Shoes*
- *Dressing and Undressing*
- *Braiding*

### Practical Life: Preliminary Movements

- *How to Carry a Chair*
- *How to Roll a Rug*
- *How to Carry a Table*
- *Lessons in Grace* - how to move and behave with care and coordination
- *Lessons in Courtesy* - how to relate to other people

### Practical Life: Inhibition of Movement

*Walking on the Line:* The child participates in a series of activities that involve walking along an ellipse at different paces and rhythms and while sometimes carrying items. This can be done alone or in a group and in silence or with accompanying music or rhythm. These exercises develop self-controlled movements, equilibrium, a sense of rhythm, and spatial awareness.

*Silence Lessons:* The child participates in a series of activities that involve becoming as still and quiet as possible. These exercises develop a sense of self-control, mindfulness, and heighten social awareness.

## Sensorial:

*Cylinder Blocks* (dimension): This exercise develops a sense of dimension and prepares the three fingers for writing.

*Pink Tower* (large/small): This exercise develops a sense of dimension and prepares the mind to think mathematically.

*Brown Stair* (thick/thin): This exercise develops a sense of thickness and prepares the mathematical mind.

*Red Rods* (long/short): This exercise develops a sense of length and prepares the child to work with the number rods in mathematics.

*Knobless Cylinders* (dimension): This exercise helps the child to compare dimensions and refine their discrimination.

*Color Tablets*: This exercise helps the child to learn the names of the colors and develops a sense of color discrimination.

*Geometric Cabinet* (plane figures): This exercise helps the child to learn about geometric figures and prepares the hand for writing.

*Sound Boxes* (loud/soft): This exercise develops a sense of auditory discrimination.

*Bells* (pitch): This exercise develops a sense of pitch and prepares the child for music study.

*Tactile Exercises* (rough/smooth, fabrics, hot/cold): The exercises develop the tactile sense and are preparation for writing.

*Tasting Exercises*: This exercise develops a sense of the four fundamental tastes.

*Smelling Jars*: This exercise develops a discriminating sense of smell.

*Geometric Solids* (shape and size – 3 dimensions): This exercise helps the child to learn the solid shapes and prepares the child for geometry.

*Sorting Exercises*: This exercise develops a discriminating sense of touch and dimension.

*Constructive Triangles*: These exercises show that geometric figures can be formed using triangles, preparing for learning equivalence, and for learning the rules for finding area.

*Binomial and Trinomial Cubes*: This exercise provides an indirect introduction to algebra, proves the formula, and prepares the child for finding cube root.

*Superimposed Geometric Figures*: This exercise shows relationships between geometric figures and teaches the language – concentric, inscribed, tangential, and adjacent.

## Language:

*Storytelling and Conversation*

*Enrichment of Vocabulary*

*Phonetic Sounds* ("I Spy" Game): Preparation for reading and writing by isolating and identifying beginning, middle and end sounds.

*Writing*: Practical Life exercises and Sensorial exercises provide a basis for writing conventions like development of left to right movement, lightness of touch, hand strength, and coordination and precision.

*Sandpaper Letters*: Teaches the symbol, the shape, sound, and names of the letters of the alphabet, using letter traces.

*Moveable Alphabet*: Practice using knowledge of letter sounds to form words. The child uses small letters of the alphabet to 'write' words, phrases, sentences and, stories.

*Metal Insets*: A series of presentations to develop fine motor development, pincer grip and control of movement.

Writing with Chalk

Writing with a Pencil

Reading: *Phonetic Object Box*: The guide writes labels to match small objects with phonetic names – to help the child to understand that the written word is a group of sounds represented by graphic symbols and that the word has meaning.

Reading: *Phonetic Cards*: A set of cards with phonetic words printed on them with the vowels in red and the consonants in blue to give the child reading practice.

Reading: *Phonogram Box*: Same as the Phonetic Object Box, but, in addition to the phonetic objects, one object that contains a phonogram to introduce that sound (sh, th, ou, etc.)

Reading: *Phonogram Booklets*: A set of books, each with a collection of words containing a given phonogram (printed in red and isolated in each booklet) for practice reading. The purpose is to aid in correct spelling, to explore language, and to increase vocabulary.

Reading: *Phonogram Cards*: A set of cards, each with a collection of words containing a given phonogram. At the top of each card is a picture depicting one of the words on the list. These cards provide further reading practice.

Reading: *Puzzle Words*: Cards with words that have irregular construction and cannot be sounded out – using three-period lessons toward memorization.

*Reading Classification*: Using sets of cards, organized into categories, as labels to identify collections of pictures or objects in the environment. Also using pictures and definitions to match with corresponding

booklets for scientific nomenclature. These activities provide reading practice and vocabulary enrichment.

*Function of Words (parts of speech):*

Exercises designed to show that different words have certain roles. Each part of speech has a corresponding symbol. Written labels are matched to objects, often on a miniature farm. The parts of speech are not formally named until the elementary level.

- Article (small, light blue triangle) identifies a noun – definite (the) and indefinite (a, an)
- Adjective (medium, dark blue triangle) modifies a noun
- Conjunction (pink bar) connects words or phrases
- Preposition (green crescent) shows relationships
- Verb (red circle) names an action and explores the aspects of the verb
- Adverb (small, orange circle) modifies a verb
- Continuation of Commands – phrases and sentences to read and dramatize

*Reading Analysis (parts of a sentence):*

A series of exercises that allow the child to deconstruct sentences and discover that different parts of a sentence play different roles. The sentences are 'diagrammed' using arrows, circles and charts, but the sentence parts are not named until the elementary level. These exercises make the child aware of the meaning of words, and help them to interpret reading more meaningfully.

*Creative Writing Game:* Using the Reading Analysis materials to engage in creative writing.

*Interpretive Reading:* Using a set of cards describing dramatic scenes, sometimes from literature, that the children read and perform.

*Punctuation and Capitalization*

*Word Study:* A selection of cards and charts covering masculine/feminine, singular/plural, prefixes, compound words, and word families. This is usually small group work and satisfies the child's need for learning more about words and language.

## Mathematics:

*Numbers to Ten:* These exercises provide a basic knowledge of numerals and quantities to ten. They give the child an understanding of the quantities and their symbols and their association with each other in sequence. The concept of odd and even is also introduced.

*Number Rods:* A set of rods that correspond in size to the red rods, but are marked off into sections representing the quantities 1 through 10. The child develops a sense of the relationship between quantities and numerals.

*Sandpaper Numbers:* A set of written symbols depicting the numbers 0 through 10. The child traces them to prepare for writing and associates the written symbol with the quantity.

*Spindle Boxes:* The spindles clarify the concept that the numeric symbols also represent a certain quantity of separate objects. The child learns zero and counts the spindles to place them in the appropriate boxes.

*Cards and Counters:* This exercise matches numeral cards with the corresponding quantities, confirming the child's knowledge of the numbers 1 through 10 in their correct sequence. It also gives a visual representation of odd and even numbers and indirectly prepares the child to learn divisibility, multiples and submultiples.

*Decimal system:* These exercises familiarize the child with the different categories in the decimal system, the difference between them and their numerical representations. It introduces the child to complex numbers and the role of zero as a place holder.

*Golden Beads – Introduction to the Decimal System:* A set of materials representing the quantities of unit (1), ten, hundred, thousand, with the actual difference in volume between the categories.

*Association of Beads and Cards:* Gives the child the symbol for the quantity represented by the beads, introduces the color coding (green, blue, red) of the categories, reinforces the fact that there are no numerals beyond 9, and introduces zero as a symbol which gives value.

*Formation of Complex Numbers:* This exercise presents the combining of categories to form complex numbers and gather the corresponding quantities. The child learns to read large numbers and prepares for understanding the hierarchy of numbers.

*Exchanging Exercises:* The child gathers large quantities of golden bead materials and counts categories to exchange ten of the lower category for one of the higher category.

*Arithmetic Operations of the Decimal System:* This subsection of the Decimal System gives an impression of addition, subtraction, multiplication and division to the child, as well as how they relate to each other. The exploration of categories continues through exchanging, and the child becomes more comfortable with large numbers.

*Addition:* The children combine quantities to gain impressions about the nature of addition, static and dynamic.

*Multiplication:* The children combine identical quantities to gain impressions about the nature of multiplication, static and dynamic. They also observe the relationship between addition and multiplication as a series of additions.

*Subtraction:* The children take smaller quantities from larger quantities to gain an impression of subtraction as the reverse process of addition. The children experience exchanging among categories within the context of subtraction.

*Short Division:* The children gain impressions of division as a process of sharing out, and experience exchanging among categories within the context of division.

*Long Division:* This exercise helps highlight that the answer in division is what one person gets after the sharing out process.

*The Stamp Game:* The children work with an individual exercise that represents the decimal quantities more abstractly on stamps.

*Story Problems:* The child either reads or works with a friend who reads simple word problems, then works out the mathematical equations.

*Teens and Tens:* This subsection of the Decimal System gives the language and corresponding symbols and quantities for the teens and tens (twenty, thirty, etc.), and their respective relationships.

*11-19 Beads Only:* The child works with the golden ten bars in combination with the colored bead bars to form quantities for eleven through nineteen. This work runs parallel to the work with complex numbers.

*Teen Board:* The child connects the teen quantities with the symbols.

*Ten Boards and Beads:* The child works with beads and symbols to associate the names of the numbers from twenty to ninety-nine with the corresponding quantities.

*Linear Counting (100 and 1000 chains):* The child works with long chains of connected ten bars to count from one number to the next in a linear fashion. With this exercise, the child becomes familiar with the sequence of numbers, counting each individual bead.

*Skip Counting (1 – 9 chains):* The child works with chains of connected bead bars to experience skip counting of multiples and to prepare for squaring and cubing. This work indirectly prepares the child to memorize multiplication tables.



*Memorization Work:* Through these exercises, sub-sectioned into the four operations, the children familiarize themselves with addition, subtraction, multiplication and division combinations. It also provides a key to algebra, geometry, square roots and factoring. The memory is enhanced by the absorbent mind, so memorization can happen spontaneously.

*Snake Game:* The child uses number bead bars to form a 'snake', and counts the beads to form quantities. This work helps the child to memorize essential addition combinations.

*Addition Strip Board:* The children explore the ways that one can make combinations for each of the numbers up to 18.

Addition Charts: memorization charts  
Subtraction

*Negative Snake Game:* The child uses number bead bars and negative bead bars to form a 'snake' and becomes familiar with subtraction combinations. This can be a first step toward algebra – integers of opposite signs cancel one another out.

*Negative Strip Board:* The children explore subtraction combinations to aid in memorization.

*Subtraction Charts:* The child practices math facts.

*Bead Bar Layout:* The child works with colored bead bars representing 1-9 to reinforce the function of the multiplier. This work prepares the child for square root, factoring and division by helping the child to visualize the divisibility of numbers. It also prepares the child for geometry and algebra.

*Multiplication Board:* The children explore multiplication combinations through the tens tables.

Multiplication Charts: memorization charts

Division

*Unit Division Board:* The child works with beads on a board to explore division and learn that not every number can be divided evenly and that some quantities can be divided by several numbers. The child also sees the relationship between multiplication and division.

*Division Charts:* The child practices math facts.

## Science

*Land and Water Forms*

*Names of Continents*

*Names of Oceans*

*States in the United States*

*Living and Nonliving Things*

*Plants and Animals and Parts*

*Animals of the World*

*Invertebrates and Vertebrates*

*Caring for Plants and Animals*

*Magnetic and Nonmagnetic*

*Sinking and Floating*

## Culture and Expression

*World People and Cultures*

*Art Appreciation*

*Visual Art Mediums*

*Rhythm*

*Singing*

*Dancing*

*Listening to Music*

*Performance*