curriculum

mountaintop's framework for work &
learning

mountaintop
MONTESSORI®

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Pedagogical Foundations

Mission

Mountaintop Montessori provides the greater Charlottesville community with an exceptional and authentic Montessori education, serving children and families from infancy through adolescence. Our campus is home to year-round programming in which children thrive through experiential learning, interactions with the natural world, and collaborative discovery.

At Mountaintop, we envision...

Children who live with enduring curiosity, joy, and responsibility. A community where each member is cherished and challenged. A world enriched by these young leaders, creators, problem-solvers, and peace-makers.

Our values...

We recognize the world as a place of wonder. We trust in the inherent potential of each person. We are guided by the peace, order and logic of simplicity. We are intentional in our words and actions. We commit to living as stewards of the earth. We connect and communicate with empathy and compassion. We are mindful of our responsibilities as global citizens. We believe that embracing risk and failure yields creativity and innovation. We ground all decisions, interactions, policies and programs in the Montessori philosophy.

Through sound Board of Trustees governance and strong school leadership, Mountaintop will actively engage in securing its long-term future by pursuing the following goals by 2019: enhance the Montessori experience for Mountaintop children and families, strengthen the vibrant community that makes Mountaintop unique, improve enrollment stability at key transition points, grow the school's financial resources, and nurture connections between Mountaintop and the broader community. Mountaintop Montessori will move through the twenty-first century as a beacon for authentic, outstanding progressive education among independent schools in the United States.

About Mountaintop

Mountaintop Montessori is a non-sectarian co-educational day school providing Montessori education for children beginning with a parent & infant class and continuing through middle school. It is operated as an independent, nonprofit institution governed by a self-perpetuating volunteer board of trustees. Mountaintop has an enrollment of approximately 250 students drawn from the Charlottesville area and outlying counties. Mountaintop welcomes students and families of diverse abilities and cultural, racial, religious and socio-economic backgrounds.

Montessori's Developmental Approach - The 4 Planes of Human Development

Dr. Maria Montessori, trained as a physician, used her scientific background to develop an innovative approach to understanding child development. This approach divides the child's life into four six-year stages which together span birth to age twenty-four. Within each stage the first three years are a time of great change and growth for the child, followed by consolidation during the second three years. Through the first three stages the role of the adult is to observe the child in order to understand what support is needed and to ensure appropriate guidance and challenge. The fourth stage constitutes young adulthood.

Our whole curriculum is organized to serve the first three of these planes of development. Children working in the same classroom are different ages but share the same characteristics and needs. Students proceed through the following curriculum but they do not do so in lock-step. Rather, each child experiences the acquisition of knowledge and skills as a natural, enjoyable experience that satisfies his or her inner drive to learn and grow.

1st plane | Toddler & Children's House | ages 0 to 6 | grades through K

From birth to age six children are soaking everything in, constructing an understanding of the world through their senses. So, the 1st plane of development is called the Absorbent Mind phase. During this phase children develop all the essential skills necessary for survival: to eat, to move and to communicate. They are driven to refine those skills to meet their needs independently. Through their strong desire to create order children are laying the foundations for language and math. We have two toddler communities (18 months – 36 months) and four Children's House (30 months – 6 years) classrooms at Mountaintop.

2nd plane | Elementary | ages 6 to 12 | grades 1 to 6

From six to 12 years, children are hard at work making sense of the world around them. In this 2nd plane, we say they have a 'Reasoning Mind.' They are making connections, discovering reasons and starting to become familiar with the essentials of human knowledge. During this plane they are able to focus on the next set of essential skills: reading, writing, and mathematical concepts. Our interdisciplinary approach allows them to apply these skills in many contexts. The curriculum reflects the drive of children at this age to learn everything they can about the larger world. The elementary level at Mountaintop consists of two lower elementary (6 – 9 years) classrooms and one upper elementary (9 – 12 years).

3rd plane | Middle School | ages 12 to 15 | grades 7 to 9

The complicated years of 12 to 18 are a time of physical growth, intense emotions and refinement of beliefs and values. During these years, young people seek both independence and community. Adolescents practice the skills they need to participate in society and make themselves ready to contribute to the wider world as individual adults. At Mountaintop, we have one middle school class.

A Decalogue

By Dr. Maria Montessori

1. Never touch a child unless invited by him (in some form or another).
2. Never speak ill of the child in his presence or absence.
3. Concentrate on strengthening and helping the development of what is good in the child so that its presence may leave less and less space for evil.
4. Be active in preparing the environment; take meticulous and constant care of it. Help the child establish constructive relations with it. Show the proper place where the means of development are kept and demonstrate their proper use.
5. Be ever ready to answer the call of the child who stands in need of you and ever listen and respond to the child who appeals to you.
6. Respect the child who makes a mistake and can then or later correct it himself, but stop firmly and immediately any misuse of the environment and any action which endangers the child, his development or others.
7. Respect the child who takes rest or watches others working or ponders over what he himself has done or will do. Neither call him, nor force him to other forms of activity.
8. Help those who are in search of activity and cannot find it.
9. Be untiring in repeating presentations to the child who refused them earlier, in helping the child acquire what is not yet his own and overcome imperfections. Do this by animating the environment, with care, with purposive restraint and silence, with mild words and loving presence. Make your ready presence felt to the child who searches and hide from the child who has found.
10. Ever treat the child with the best of good manners and offer him the best you have in yourself and at your disposal.

Mountaintop Best Practices

Prepared Environment

Clean & Orderly

Beautiful & Simple

Uncluttered & Organized

Empowering & Accessible

Materials

Correspond to Approved Montessori Lessons

Attractive & Well-Maintained

Avoid Redundancy

Arranged Sequentially

Appropriate Books

Adult Practices

High Expectations & High Warmth

Clear guidelines & Immediate Feedback

Consistent Limits & Expectations

Avoid Blame or Shame

Avoid Rewards or Punishments

Positive Language

Speak to Children at Eye Level

Schedule

Uninterrupted 3-Hour Morning Work Period

Beautiful Lunch

Extended Midday Unstructured Outdoor Play

Two-Hour Afternoon Work Period

Best Practices: Prepared Environments

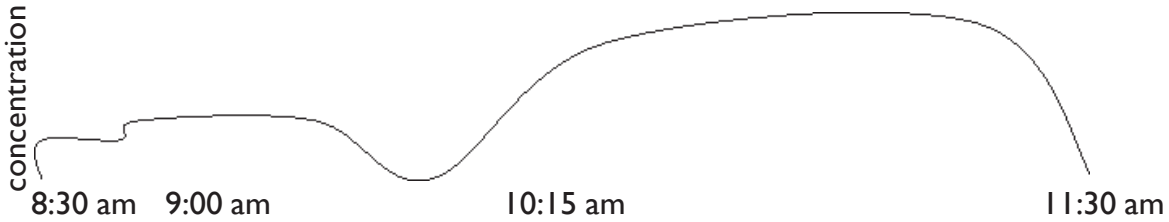
The Montessori prepared environment is simple, beautiful, clean and orderly. It is designed and furnished to fit the characteristics and needs of the students at that level and to promote independence and the development of executive function. Best practices for prepared environments are applied all over campus in specialist teaching spaces and outdoor work areas as well as in the Montessori classrooms.

Best Practices: Montessori Materials

"Any child who is self-sufficient, who can tie his shoes, dress or undress himself, reflects in his joy and sense of achievement the image of human dignity, which is derived from a sense of independence."
Maria Montessori

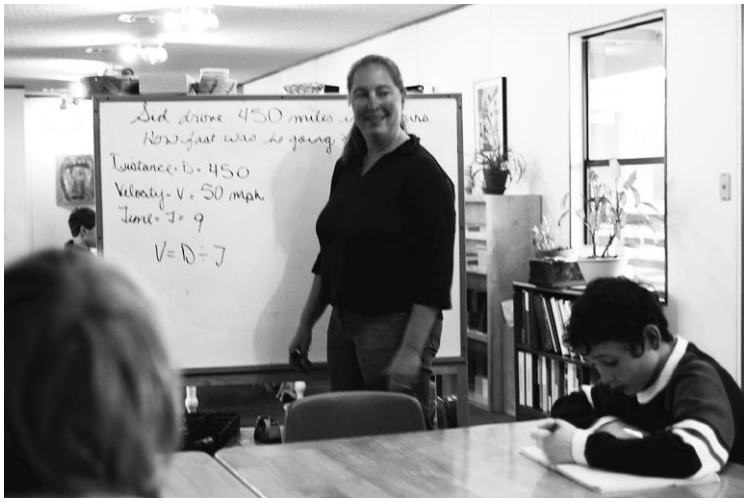
Learning materials are attractive, crafted from natural materials, and support independent exploration of academic concepts. These qualities apply to the materials in the Montessori curriculum and to items used in practical life activities at all ages. As the children reach the upper levels of our program, their work in a wide variety of disciplines is supported by technology and textbooks as well as the low-tech materials required for hands-on learning in science and permaculture.

Best Practices: Schedules



The schedules in a Montessori learning community include long blocks of uninterrupted work time during which students are exercising freedom with responsibility: making choices, working with peers, engaging in lessons with guides and experiencing concentration and flow. Each day includes time for beautiful lunch and outdoor play as well as opportunities for creative expression. Classrooms for older students use a variety of means to communicate how time is used by individual students and by the group.

The adults in a Montessori environment display high expectations and authority tempered with warmth and kindness. They use positive language and foster intrinsic motivation rather than utilizing external rewards and punishment.



"Whoever touches the life of the child touches the most sensitive point of a whole which has roots in the most distant past and climbs toward the infinite future."

Maria Montessori

1st plane | *Toddler & Children's House* | ages 0 to 6 | grades through K

TODDLER

Overview

Mountaintop provides the toddler child with an environment that encourages the discovery of self through facilitating a healthy separation from caregivers and by encouraging activities that foster functional independence. The need for independence at this age is strong and the classroom provides a safe environment where children can practice their burgeoning skills. Children are naturally drawn to the activities that will meet their developmental needs.

Characteristics	Needs
Egocentric	Order and routine
Becoming aware of an identity separate from caregivers	The opportunity to make choices
Strong attachment to caregivers	Space for movement
Emotional	Contact with nature
Impulsive	Safety and sanctuary
Difficulty with transitions	A nurturing, familiar environment
	Individual opportunities for development of independence
	Flexibility in scheduling and planning
	Enriched spoken language
	Nutritious and plentiful food and drink
	Napping and resting opportunities

Toddler: Learning Activities

Introduction to Life in the Prepared Environment - ***Individual, Small Group and Whole Class Activities***

- Gross and Fine Motor Skills
- Eye-Hand Coordination
- Receptive and Expressive Language
- Music and Movement
- Art and Expression

Practical Life Exercises – ***Skills of Daily Living***

- Care of Self: Food Preparation, Toileting
- Care of the Environment
- Grace and Courtesy Exercises: Movement in the Environment, Manners
- Education of the Senses - Beginning to Explore the World

Toddler: Outcomes

If intelligence is what distinguishes the human species, certainly the most important act of human development would be the creation of intelligence. In the first years each human child creates his or her own unique intelligence.

Margaret Stephenson

Emotional Development	Social Development	Character Development	Cognitive Development
Has close ties to adults Feels secure and safe Feels trust Demonstrates respect Feels capable Displays confidence	Feels like an individual Trusts people in the community Trusts the familiar environment Has functional independence (walk, talk, eat, toilet) Can communicate needs and feelings to others	Has a resilient spirit Internalizing habits of positive social behavior	Acquisition of spoken language Development of memory Learning to think and move deliberately Developing a love for order Can do multi-step activities

CHILDREN'S HOUSE

Overview

Mountaintop 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. Areas of learning are organized to form a child-centered learning environment that promotes independence and concentrated periods of uninterrupted, self-initiated activity.

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

Children's House: Learning Activities

Practical Life - *Skills of Daily Living*

- Organizational Skills
- Care of Environment
- Care of Self
- Grace and Courtesy
- Conflict Resolution

Education of the Senses - *Exploring the World*

- Sense of Order
- Classification
- Precise Language

Language - *From Spoken to Written*

- Vocabulary
- Written expression
- Reading
- Grammar
- Creative Drama
- Literature

Mathematics - *From Concrete to Abstract*

- Numerals
- Quantities
- Sequencing
- Operations and Facts
- Complex Numbers
- Fractions

Culture - *Appreciation for the World*

Geography
Time and History
Zoology
Botany
Music Concepts Art
Expression Spanish
Movement

Children's House: Outcomes

The human being builds himself through working, working with his hands, but using the hands as instruments of his ego, the organ of his individual mind and will, which shapes its own existence face to face with its environment.

Maria Montessori

Emotional Development	Social Development	Character Development	Cognitive Development
Takes pleasure in purposeful activity Displays emotional equilibrium Is serene and calm Has a happy outlook Shows concern for living things Has affection for others Is warm and expressive Is optimistic and outgoing	Developing self-discipline Has increased independence based on new-found competence Understands appropriate and specific pro-social behaviors Can delay gratification and share Has respect for others Is willing to abide by rules to maintain social order	Has good work habits Has the ability to choose Is self-disciplined Is not possessive Shows care and respect for the environment and people	Is beginning to clarify and classify information and impressions from the 0 - 3 phase Has an expanding vocabulary Is refining sensory perceptions and discrimination Can think logically and linearly Has acquired fundamental practical skills and academic knowledge Can sustain interest for extended periods Has internalized language (alphabet) and math (numerals) symbol systems and can work concretely in these areas with Montessori materials

2nd plane | *Elementary* | ages 6 to 12 | grades 1 to 6

Overview

The Elementary level offers a continuum built on the Children's House experience and is called *cosmic education*. The child's own questions provide the basis for exploration of the world. Because those questions are heeded and nurtured the child truly connects with learning. Subject matter is made relevant to the child's personal learning journey providing an inner motivation. An Mountaintop education does not give a child a collection of isolated facts but rather shares a vision of interrelated knowledge and a love of learning. In order to awaken the intellectual imagination in the elementary aged student Mountaintop utilizes a multi-faceted approach.

Characteristics	Needs
Looks beyond the immediate environment to learn Is strong and agile with increased physical stamina Has a reasoning mind that compels the questions why? and how does it relate? to understand the 'big picture' Is not interested in external order – messy and disorganized Is an intellectual explorer learning to organize information to create an orderly mind Is developing an imagination that has the capacity to take what is real and create new information and inventions Is capable of great work and is insatiable for knowledge Is passionate about fairness and justice Is inclined to hero worship Can be generous and compassionate, yet rude and unmannerly Oriented to group work and peer relationships	To explore nature and the surrounding culture To have adult role models who exemplify appropriate behavior and intellectual curiosity To have the opportunities to work in groups Needs opportunities to demonstrate mental and emotional independence and autonomy Responds to rules that make sense and are valid and fair Rises to intellectual challenge and respect toward his abilities Needs opportunities to debate and establish community norms and practice advanced conflict resolution skills

Elementary: Learning Activities

Practical Life – *Exploring the World*

- Going Out
- Garden to Table
- Physical Education
- Conflict Mediation & Second Level Responsibility

Education of the Senses – *Reasoning and Classifying*

- Nature Study
- Nomenclature
- Experiments

Language – *The Art of Expression*

- Grammar & Sentence Structure
- Literature
- Creative and Expository Writing

- Research
- Oral Presentation

Mathematics – *From Skills & Concepts to Application*
- Arithmetic
- The Decimal System & Non-Decimal Bases
- Word Problems
- Algebra

Geometry – *Order and Measurement*
- Plane Figures & Solids
- Measurement
- Theorems

Geography – *Understanding the Universe and the Earth*
- The Creation of the Universe
- The Sun and the Earth
- The Work of Air & The Work of Water
- Astronomy
- Political Geography

History – *The Human Story*
- Human Origins and Early Humans
- Nomads, Agriculture, Civilization
- Heroes and Great Stories
- Time
- Human Rights and Justice

Science – *Knowledge and Interdependence*
- Physics
- Chemistry
- Botany & Zoology
- Ecology

The Creative Arts – *Creativity and Confidence*
- Visual
- Performing

Elementary: Outcomes

Adaptation to the environment and efficient functioning therein is the very essence of a useful education.

Maria Montessori

Emotional Development	Social Development	Character Development	Cognitive Development
Has enthusiasm for life Is excited about the future Has self-respect Appreciates human commonalities and differences	Respects others and their work Shows self-discipline and the ability to delay gratification Can interact sociably with others Recognizes the value of service to others Loves and appreciates fellow humans and humanity	Is developing a personal morality and set of values Has a philosophical mind that explores issues of justice and morality Understands that one's actions have consequences	Has an eager and open attitude toward learning Can obtain and process information independently Has acquired an academic foundation in the cultural and humanities areas Appreciates creativity and is comfortable with self-expression Can place knowledge into a larger context Understands higher order cause and effect Can reflect on learning in order to process complex information and abstract ideas Has acquired functional literacy in language and mathematics

3rd plane | *Middle School* | ages 12 to 15 | grades 7 to 9

Overview

The Mountaintop Middle School encourages adolescents to explore their role in the world and to create a vision for their personal futures. Through engagement in meaningful work, the young adult gains self-confidence and self-knowledge, finds belonging in a community, learns adaptability, demonstrates academic competence, and comes to appreciate intellectual challenge.

The curriculum provides the academic foundation for success in secondary education and beyond, while incorporating unique opportunities for experiential learning, entrepreneurship, travel, and service learning. By his entrance into high school, the Mountaintop graduate has experienced ample opportunity to acquire social, moral, intellectual, and emotional intelligence.

The Mountaintop Middle School curriculum incorporates the following key components:

Characteristics	Needs
Experiencing physical growth and sexual maturation	Lots of purposeful physical activity
Can have boundless energy and periods of fatigue Is	Time for contemplation and relaxation
developing self-awareness and can be self-critical	Healthy, plentiful food
Feels uncertainty and emotional unevenness	Lots of sleep
Develops solidarity with peers and is critical of adults	Meaningful work that is respected by the community
Questions social mores and values	Opportunities to contribute to community
Is responsive to social issues	Opportunities to plan activities and make meaningful decisions
Displays moral and ethical sensitivity	Chances to make mistakes in a safe environment
Desires independence	Reliable and personal relationships with peers and adults
Can be extremely creative	Psychological safety
Is capable of higher order cognition	Opportunities for creative expression
Is egocentric	Challenging academic and intellectual work

Middle School: Learning Activities

Practical Life – *Exploring Our Place in the World*

- Garden to Table
- Personal Care/ Physical Health
- Physical Education
- Wellness & Psychological/Spiritual Health
- Travel
- Community Service

Leadership & Entrepreneurship – *Independence & Valorization*

- Internships
- Business Endeavors

Managerial/Committee Positions

Budgeting/Spending Allocation

Language – *The Art of Expression*

Research

Creative & Expository Writing

Evaluating & Critiquing

Critical Analysis

Persuasive Writing/Debate

Seminar

Oral Presentation

Mathematics – *Abstraction and Application*

Data Analysis

Visual Representations: Graphs, Tables, & Diagrams

Algebra I

Geometry

Practical Application

Geometry – *Reasoning & Logic*

Motions

Examining Properties of Lines, Angles, Polygons and Circles

Proofs & Deductive Reasoning

History & Culture – *The Human Story*

Current Events

The Timeline of Humanity

Social Awareness & Action

Cultural & Geographic Literacy

Science & Permaculture – *Knowledge and Interdependence*

Research

Stewardship

Biology

Physical Science

Ecology

Practical Permaculture Work

Technology

Word Processing

Internet Safety & Propriety

Visual Presentation

Collaboration & Communication

The Creative Arts – Creativity and Confidence

Visual

Performing

Technological

Culinary

Middle School: Outcomes

The whole life of the adolescent should be organized in such a way that will allow him or her, when the time comes, to make a triumphal entry into the life of society, not entering it debilitated, isolated or humiliated, but with head high, sure of himself or herself. Success in life depends on self-confidence born of a true knowledge of one's capacities.

Maria Montessori

Emotional Development	Social Development	Character Development	Cognitive Development
Has a sense of mission Connecting a personal vocation with the larger human purpose Feelings of self-sufficiency Experiences inner harmony based on work and achievement Optimistic about the future Feeling that human life has value Feeling of belonging to the global community and the earth Is self-disciplined Feels in control of and comfortable with change Believes that people can solve problems and overcome adversity	Learning to live and problem solve in a cohesive community Learning what it means to make a meaningful contribution Understanding interdependency and the need to cooperate Understanding the benefits of taking an active role in society Beginning to form a social consciousness Understanding work as a product of commerce and necessary to community life Balancing individual initiatives in relation to community goals Learning the meaning and context of rules and their importance to social harmony	Respect for others and their roles in the community Believes that work is noble and assumes mature responsibilities Grappling with social and ethical problems of a global nature Has initiative, motivation and a commitment to freely chosen work Finds satisfaction through personal accomplishments that contribute to the greater good Development of a service mentality toward the needs of the larger society Maturation of conscience based on community values and responsible dialogue	Ability to express creativity in a variety of modalities Intellectual consideration of questions of nature and cosmos Analysis of scientific causality Increased understanding of mathematics connected to practical applications and scientific observation Increased facility in languages, both written and spoken Ability to connect the history of civilizations with principles of personal and social evolution A view of the whole of history and humanity's future destiny Understanding the nature of interdisciplinary studies

Montessori Pedagogical Standards

Each classroom is staffed by a Montessori trained guide or co-guides from an accredited training organization.

Each classroom includes a sufficient number of students to create a vibrant community of independent learners.

Each classroom contains the full complement of Montessori didactic materials appropriate to the level.

Each classroom is organized into mixed age groups based on stages of development to encourage collaborative learning.

Each classroom schedule includes uninterrupted work periods during which students engage in independent learning.

Each classroom is characterized by an atmosphere of respect for purposeful work and joyful learning.

Each classroom and the school community as a whole consciously commits to modeling grace and courtesy.

Each classroom and the school community as a whole engage in responsible practices that steward the natural world.

Psychology Research and Montessori Education

See Montessori: The Science Behind the Genius by Angeline Lillard, Oxford University Press, 2005, or www.montessori-science.org.

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

Interested 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 report significantly higher levels of psychological well-being and competence when they are 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.

Grace and Courtesy and Respectful Community Relations

Courteous behavior and gracious movements create harmony in a community. Politeness and positive human conduct play an essential role in the development of children, thus lessons in grace and courtesy are considered fundamental in the Montessori curriculum at each level. Grace refers to beauty of form, manner or action. It also connotes spiritual strength and kindness in manner. Courtesy refers to good manners and respectful or considerate acts or expressions. Montessori children develop grace and courtesy in order to guide others with their joyful kindness and act as agents for a more peaceful world.

Grace and courtesy speak to the art of being with other humans in ways that promote respect and thoughtful civil behaviors. Manners facilitate living together in a community where everyone feels the impact of individual practices. Lessons in grace and courtesy are introduced in the Toddler level; are put into practice in the Children's House level; are questioned by the reasoning mind at the Elementary level; and take on a certain moral seriousness at the Middle School level. Our role as adults is to model grace and courtesy as we work to be good citizens in our school community.

The Mountaintop Model of Respectful Communication

Create time and space for communication.

Invite participation of those involved.

Clarify intentions.

Think and then speak honestly.

Listen for the value in others' thoughts and words.

Observe how others are feeling.

Offer empathy.

Accept differences of opinion.

Express gratitude for one another's time and efforts.

The Child in Nature

Introduction

Mountaintop students of all developmental stages develop a kinship with the natural world and act as stewards for the environment. Children can become anxious and overwhelmed with messages about endangered animals and dying ecosystems yet have limited personal attachment to the world around them. This abstract form of environmental education can leave children feeling hopeless and distanced from the vibrant ecosystems and flora and fauna right outside their back doors. Mountaintop works to build optimism and hope instead.

At Mountaintop we are creating a rich natural world on our Pantops campus. Our native plant habitats, home to animals and birds, are green, inviting, safe spaces that offer a laboratory for encouraging curiosity, observation, critical thinking and intellectual growth. These outdoor spaces invite participation and engage children in unstructured physical activity, providing a hidden curriculum that children discover on their own.

Toddler and Children's House

At Mountaintop we guide the children to connect with the natural world and develop a relationship with the earth. The Toddler and Primary ages are the most critical periods for bonding with the world and developing what entomologist E.O. Wilson calls *biophilia* – an affinity for the living world. During these formative years, our main objective is to cultivate empathy between the child and nature through stories, songs, seasonal celebrations and direct experiences with plants and animals.

Elementary

Elementary children are natural explorers. Their activities include experiencing the living and nonliving forces of nature. They collect specimens, explore the woods and streams, observe amphibians, insects and birds, hike trails, plant gardens, compost and recycle, tend animals and ultimately make the connection that human beings need to live in harmony with the earth; that all things, natural and man-made, are interdependent.

Middle School

As Montessori children enter adolescence, they turn their personal relationship with nature into a catalyst for social action on behalf of the environment. This devotion to the world around them provides context for studying the challenges facing our world today. These young adults emerge from Mountaintop understanding the unique relationship between human technology and nature's gifts. The Mountaintop student feels empowered to make positive and purposeful contributions to local and global environmental efforts out of genuine understanding and experience.

General Areas of Study

An Interdisciplinary and Individualized Approach

Mountaintop students learn at their own pace, unfolding as conscious and capable members of a larger community in order to achieve their full intellectual potential. Montessori classrooms have beautiful, specially designed, hands-on materials which help guide the children through their learning, using concrete experiences to build up to abstract ideas. The curriculum is integrated; the individual subjects build on one another to provide the child with an holistic learning experience. Each classroom is specially arranged in a multi-age grouping, allowing children within each age span to experience the support of their peers when are the youngest and then grow in to the role of teacher as they master the skills appropriate to that level. The following charts include some general topics of study, not inclusive, in each curriculum area.

Children's House	Lower Elementary	Upper Elementary	Middle School
Practical Life			
Care of Self Care of the Indoor Environment Care of the Outdoors Grace and Courtesy Movement Peace Education Conflict Resolution Community Service	Care of Self Care of the Indoor Environment Care of the Outdoors Garden-to-Table Grace and Courtesy Peace Education Conflict Resolution Community Service Going Out	Care of Self Care of the Indoor Environment Care of the Outdoors Garden-toTable Grace and Courtesy Peace Education Conflict Resolution Mediation Skills Montessori Model UN Community Service Going Out Trip Planning	Care of Self/Changes & Choices Personal Growth Journeys Experiential Learning Work on the Land Garden-toTable Grace and Courtesy Peace Education Community Service Service Trips Entrepreneurship

Language			
Oral and Auditory Development Visual Discrimination Preparation for Writing and Early Writing Process Preparation for Reading Reading Punctuation Integration of Skills	Spoken Language Word Study Grammar Writing and the Five Step Process Spelling Punctuation Reading and Comprehension Research and Reports	Spoken Language Word Study Grammar Writing and the Five Step Process Spelling Research Skills and Publishing Reading Seminar Discussion	Spoken Language Word Study Grammar Writing and Writer's Workshop Spelling and Editing Research Skills and Publishing Reading Seminar Discussion
Mathematics			
Numeration Decimal System Linear Counting Skip Counting Memorization Introduction to Money Introduction to Fractions	Decimal System Memorization Fractions Four Operations with Materials Multiples and Factors Pre-Algebra Geometry	Fractions Application of the Four Operations Percentages/Ratios Measurement and Representation Decimal Fractions Pre-Algebra Roots and Exponents Geometry	Processes of Mathematics Business Accounting Pre-Algebra Geometry Algebra
Science			
Sensorial Zoology Botany Physics Discrimination of Size Discrimination of Color Discrimination of Shape	Zoology Classification of Vertebrates Classification of Invertebrates Botany Classification Kingdoms of Life Physics and Geology Physical Geography	Zoology and Botany Biology Earth Education Physics Chemistry Geology Geography	Natural World Earth Science Life Science Physical Science Chemistry Experiential Connections

Cultural Studies			
	Creation Geography The Sun and the Earth Evolution of Life Human Origins History/Time Political Geography	Creation Human History Geography Evolution Political Geography Human Rights and Justice	Governmental Structures Revolutions Geography War and Peace Immigration Economics Exploration Industrial Revolution Social Justice Future Vision

Toddler Lessons

Large Motor Skills
- Stair
- Slide
- Climbing structure

Eye-Hand Coordination Exercises

Opening and Closing Exercises

Small Motor Skills
- Sewing
- Gluing
- Scissors
- Folding
- Spooning

Language
- Nomenclature objects
- Nomenclature cards
- Books

Music and Movement
- Singing
- Musical instruments - percussion
- Movement games
- Walking heel to toe
- Using the balance board

Art
- Paper tearing
- Scribbling
- Easel (chalk and paint)
- Clay
- Watercolor painting

Practical Life — care of self and the environment
- Dressing/undressing
- Handwashing
- Wiping the nose
- Cleaning shoes, polishing shoes
- Toilet training
- Dressing frames (Velcro, zipper, large buttons, snaps)
- Wiping a table, washing a table
- Washing a chair
- Dusting
- Sweeping, mopping
- Cleaning glass, polishing a mirror, polishing wood
- Dusting plants, washing plants, watering plants, Flower arranging
- Washing cloths

Planting and gardening Caring for pets

Grace and Courtesy- Movements and manners

Carrying a chair Sitting on a chair Carrying a table

Use of a rug to create a work space Polite language and greetings

Food Preparation

Setting the table, serving food, cleaning up Washing dishes, drying dishes

Bread making

Water preparation (plain or lemon) Cutting fruits and vegetables

Development of Senses

Visual Olfactory Gustatory

Auditory

Stereognostic (touch and dimension)

Social/Emotional Development

Separates from caregiver

Shows trust in adults and environment Displays impulse control

Accepts limits

Expresses emotions appropriately (including frustration and anger) Relates to others - works alone/parallel with others/cooperatively Tests the various results of saying "no"

Transition Indications: Readiness for the Children's House Classroom

Child demonstrates concentrated cycles of activity

Child develops maturing spoken language — ability to hold conversations Child is drawn to repetition of work

Child is mastering toileting and self-care Child is becoming socially aware

Child separates from caregiver Child can ask for help

Toddler Materials

Furniture	
Storage for outerwear Outdoor shoe storage Slipper Storage Toddler-size tables Toddler-size chairs	Stools Shelves Cots Work rugs and mats Toileting area - "Beautiful Bathroom"
Practical Life	
Toileting Undressing, dressing Handwashing in the bathroom Handwashing exercise Wiping nose Dressing frames (zipper, large button, velcro, snaps)	Washing a table Sweeping with a broom Sweeping with a dustpan and brush Washing a window / mirror Flower arranging Germinating seeds Caring for garden
Grace & Courtesy	
Carrying a chair Sitting on a chair Carrying a table	Carrying a step stool Use of a work rug or mat
Food	
Setting the table Serving food Pouring a beverage Cleaning up	Washing dishes Drying dishes Cutting fruits and vegetables
Refining of Hand Movements	
Gluing Cutting with scissors	Transferring exercises
Eye-Hand Coordination	
Infilare-threading an object onto a rod, dowel, or string, including: Peg box Vertical dowel (cubes) Horizontal dowel (discs) Pegs with rings Bead stringing Imbucare-fitting an object through an opening, including: Mail box Slotted box with chips	Pegs and pegboards; various sizes Sorting Basket of containers Puzzles Opening and closing Stereognostic (tactile) exercises

Music & Movement	
Singing Dancing Musical instruments	Movement games Aid to climbing Ball Tracker
Art	
Drawing / writing with various media Working at the easel with various media	Play dough Painting with watercolors
Language	
Nomenclature objects Objects with matching cards	Nomenclature cards Realistic books

Children's House Traditions

Grace and Courtesy

Grace and Courtesy happens naturally throughout the day and is taught by the modeling adult. These lessons are very focused upon and intentional at the beginning of a child's Montessori journey and are revisited as needed while children's needs change and develop. Some examples of Grace and Courtesy lessons that are important 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 largest lessons to model in Grace and Courtesy because it contains so many fundamentals. Mountaintop's curriculum depends upon the following fundamentals to teach children how to communicate:

- 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

Prepared Environment

The prepared environment is created to meet the developing needs of the children. The environment may stay the same or change a bit daily based on observations of the children. Areas of the prepared environment include:

- Practical Life – works that help children develop self-care skills while learning to work independently and increase concentration for later work
- Sensorial – self-correcting, hands-on materials that help develop senses of vision, hearing, touch, taste and smell
- Language
- Math
- Snack – an important part of the Practical Life area set up so that children can learn to do the following without adult assistance:
    - Wash hands
    - Serve themselves
    - Sit and eat
    - Socialize with others while eating
    - Clean up after themselves leaving the space ready for someone else to use it
- Outdoor Classroom – an extension of the classroom set up so that children can bring work from inside to do or they can do other work like gardening and taking care of the outdoor classroom (sweeping, window washing, etc.)
- Beautiful Lunch – lunch is eaten using real plates, glasses, utensils, place mats, and cloth napkins. Children and adults (models) sit and eat lunch together, socialize, and clean up (scrape and rinse plates, put away place mats and napkins, clean table space, etc). Sometimes soft music or stories may be playing during this time.

Conflict Resolution

At Mountaintop the conflict resolution process uses an interactive process. The process engages all parties involved to try to come up with solutions to the problem. Children discuss what happened, how it made each of them feel, and what they can do the next time to avoid or solve the disagreement. The adult may be more involved during first-time disagreements as children learn to communicate with each other. The ultimate goal is that the adult only gets involved when absolutely necessary and is available as a guide to the process. We help the children think of a variety of words to express their feelings, and role-play appropriate ways to interact with others.

Children's House Lessons

Practical Life: Care of the Environment

Dusting a Table: The child folds the dust cloth, dusts in a formal pattern, shakes out the cloth and replaces the material in order to develop coordinated movements and learn the skill of dusting.

Waxing a Table: The child applies wax to a clean table, uses light and energetic movements to shine the surface and replaces the cloths with clean ones. The exercise requires concentration and promotes independence.

Washing a Table: The child follows a complicated sequence of steps involving set-up of the area, washing the table, rinsing, drying and restoring the materials to their original condition. The exercise requires concentration and promotes mental and physical orderliness.

Sweeping the Floor Mopping

Opening and Closing: The child works with a variety of bottles and boxes to develop visual-motor coordination.

Folding: The child learns to fold and follow visual patterns in an indirect preparation for later work in Geometry.

Spooning: The child carefully exchanges beans from one bowl to another. This exercise develops concentration, visual-motor development and coordinates the fingers used for writing.

Dry Pouring

Pouring Water

Polishing Brass/Silver/etc.: The child follows a series of steps to polish items, then return the material to its original order. This exercise develops a sense of order through sequencing.

Arranging Flowers: The child follows a series of steps to prepare flowers, cut the stems and create a pleasing arrangement.

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 and heighten social awareness.

Sensorial:

Cylinder Blocks (dimension): The child removes and replaces cylinders with knobs into blocks with receptacles. This exercise develops a sense of dimension and prepares the three fingers for writing.

Pink Tower (large/small): The child builds a tower of cubes, largest to smallest, using a whole-handed grip that emphasizes the size differences of the cubes. This exercise develops a sense of dimension and prepares the mind to think mathematically.

Brown Stair (thick/thin): The child arranges a series of prisms to form a stair, that differ in width and height, but are the same in length. This exercise develops a sense of thickness and prepares the mathematical mind.

Red Rods (long/short): The child arranges a series of rods that only differ in length. This exercise develops a sense of length and prepares the child to work with the number rods in mathematics.

Knobless Cylinders (dimension): The child arranges four separate sets of cylinders by size. These correspond exactly to the Cylinder Blocks. This exercise helps the child to compare dimensions and refine their discrimination.

Color Tablets: The child matches sets of colored tablets, then grades different shades of the same colors. This exercise helps the child to learn the names of the colors and develops a sense of color discrimination.

Geometric Cabinet (plane figures): The child lifts knobbed, wooden geometric shapes from an inset tray and traces the figures with the writing hand. The child also matches the wooden shapes with corresponding cards that depict the shapes. This exercise helps the child to learn about geometric figures and prepares the hand for writing.

Sound Boxes (loud/soft): The child shakes cylinders filled with different substances and matches pairs that sound the same, developing a sense of auditory discrimination.

Bells (pitch): The child works with a set of bells that represent the diatonic and chromatic musical scales. The child matches corresponding bells and arranges the bells into the scale. This exercise develops a sense of pitch and prepares the child for further work in music.

Tactile Exercises (rough/smooth, fabrics, hot/cold): The child works with a series of materials that help to discriminate variations of roughness or smoothness, types of fabric, and heat or coldness. The exercises develop the tactile sense and are preparation for writing.

Tasting Exercises: The child pairs corresponding substances that have sweet, sour, salty and bitter tastes. This exercise develops a sense of the four fundamental tastes.

Smelling Jars: The child pairs items by smell, developing a discriminating sense of smell.

Geometric Solids (shape and size – 3 dimensions): The child works with a set of 3-dimensional geometric figures (sphere, cube, cone, ellipsoid, cylinder, rectangular prism, triangular prism, ovoid, pyramid, tetrahedron), using both sight and feel to identify them. This exercise helps the child to learn the solid shapes and prepares the child for geometry.

Sorting Exercises: The child, sighted or blindfolded, mixes then sorts various items. This exercise develops a discriminating sense of touch and dimension. The child eventually works with the 'mystery bag', which contains items that can only be identified by touch.

Constructive Triangles: The child works with several boxes that contain triangles that form various shapes with matched. These exercises show that geometric figures can be formed using triangles, prepare the child for learning equivalence, and prepare the child for learning the rules for finding area.

Binomial and Trinomial Cubes: The child dismantles, then reforms cubes that represent the formula $(a+b)(a+b)(a+b)$ and $(a+b+c)(a+b+c)(a+b+c)$. This exercise provides an indirect introduction to algebra, proves the formula, and prepares the child for finding cube root.

Superimposed Geometric Figures: The child works with sets of figures that can be transposed within each other. This exercise shows relationships between geometric figures and teaches the language – concentric, inscribed, tangential, and adjacent.

Language:

Preliminary Language

Language Training: Telling or reading stories and poems and talking about them afterwards with the children.

Enrichment of Vocabulary: Presenting sensorial materials and classified cards to give vocabulary that is personal, familiar and/or scientific.

Phonetic Sounds ("I Spy" Game): Making the child conscious of sounds in words, in preparation for writing. The child works with small objects and the guide isolates beginning, middle and end sounds.

Writing

The Practical Life exercises and Sensorial exercises provide a good basis for physical writing abilities through development of left to right movement, lightness of touch and coordination and precision.

Sandpaper Letters: Giving the symbol, the shape and sound of the letters of the alphabet, using letter that the child traces.

Moveable Alphabet: Practice using knowledge of letter sounds to form words. NOT A READING ACTIVITY. 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. This is an artistic activity that aims at pencil control. The child traces metal shapes and decorates the drawings.

Writing with Chalk Writing with a

Pencil

Reading

These exercises contain all the necessary steps for the child to begin reading. Practice comes through the exercises, not from using phonetic reading books. These books are not appropriate for use in reading instruction. Some children enjoy the phonetic books, because they are familiar and comfortable – they can choose to read them, but the guide should not assign these books or direct the child to read aloud.

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.

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.

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.)

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.

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.

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.

- Article (small, lt. 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. These exercises make the child aware of the meaning of words, and help him to interpret his reading more meaningfully.

Simple Sentences – subject, action, object

Simple Sentences with Extensions – subject, predicate, object, prepositional phrases Simple Sentences

with Attributes and Appositions

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 children read and perform. The purpose is to prepare for 'total reading' and for future work in drama.

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

Punctuation and Capitalization: These rules are presented as aids to fitting into society, rather than as corrections.

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, unlike the number rods. 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, 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.

Changing 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 (collective exercises): 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 with Bows: 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. This allows the child to practice all four operations and exchanging without the collaboration of classmates.

The Dot Game: The child gains further understanding of addition in the decimal system, practices working with large numbers, and realizes that there are never greater quantities in any category than nine. This work focuses the child's attention on exchanging and is the first abstract exercise in the decimal system work.

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. This material provides a sensorial impression of the difference between two numbers when laid side by side, and provides an introduction to squaring and cubing.

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.

Addition

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: memorization charts

Multiplication

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: memorization charts

Children's House Materials

Practical Life	
Dusting	Care of plants
Table washing	Washing hands
Sweeping	Dressing Frames
Opening and Closing	Polishing Shoes
Tools, locks & keys etc.	Braiding
Folding	Carrying a chair/table
Spooning	Rolling a rug
Pouring	Walking on the line
Polishing	Silence
Arranging Flowers	Sewing/weaving
Setting a Table	Sponge squeezing
Cloth Washing	Napkin rolling
Dish washing	Window washing
Food preparation	
Music/Art/Culture	
Painting	Flags
Gluing	Geography folders/boxes
Cutting	Clock work
Clay	Land/air/water
	Botany cabinet
Sandpaper globe	Biology cards/definitions (botany &
Painted globe	zoology)
Land and water forms	Living/non-living
Puzzle maps	Plant/animal
Geography cards/definitions	Vertebrates/invertebrates
Language	
Vocabulary cards	Phonogram SPL
Story paper	Phonogram booklets, cards
I spy	Puzzle word cards
Sandpaper letters	Reading classification
Moveable alphabet	Farm/function of words
Metal insets	Grammar work
Sand tray	Reading analysis
Writing with chalk	Reading (reality books)
Writing on paper	Word study
Object boxes	Punctuation
Phonetic cards	Alphabetizing (with sandpaper letters or create a work to alphabetize)

Mathematics	
Number rods	Chains
Sandpaper numbers	Positive snake game
Spindle boxes	Strip boards
Memory game of numbers	Multiplication with beads
Cards and counters	Multiplication board
Golden beads	Unit division board
Stamp game	Memorization charts
Dot game	Bead frames
Word problems	Racks and tubes
Teen beads & boards	Fractions
Ten beads & boards	Negative snake game
Sensorial	
Cylinder blocks	Geometric solids
Pink Tower	Sorting exercise
Brown Stair	Constructive triangles
Red rods	Binomial cube
Knobless cylinders	Trinomial cube
Color tablets	Superimposed geometric
Geometry cabinet	Decanomial
Sound boxes	can send to LE for this lesson if not in CH
Bells	
Tactile exercises	Thermic bottles
Tasting exercises	Thermic tablets
Smelling exercises	Baric tablets
Free Choice Shelf (removed by 6 weeks after start of school year)	
bead stringing	object to picture matching
challenging puzzles	pegs/pegboard

Elementary Great Lessons

Great Lessons open the door to cosmic education in the elementary. These lessons, presented as stories, spark the child's imagination and spur the student on to academic pursuits. The Great Lessons create a vision of the totality of the universe and human accomplishment, thus providing a framework for the Montessori integration of all learning. The five Great Lessons are:

The Creation of the Universe

A story, enriched with charts and science demonstrations, that reveals how the universe and our world came to exist, the natural order within and amongst the elements, and the divine mystery at the heart of everything.

The Coming of Life

A story, supplemented with an illustrative timeline, that explains the manner in which life appeared on earth and the evolution of species, culminating in the appearance of humans.

The Story of Human Beings

A story, including two timelines, that chronicles the appearance of humans on earth, highlights their special gifts, and shows the amazing discoveries that have set them apart from all other living creatures.

Communication in Signs

A story, supplemented with alphabetic illustrations, that tells the tale of how humans learned to communicate through spoken and written language, emphasizing the magnitude of written communication throughout history.

Story of Our Numerals

A story, supplemented with numeric illustrations, that explains how humans learned to use written symbols to represent quantity, underscoring the importance of mathematics in our world.

Elementary Key Lessons

These lessons, often presented with didactic materials, offer keys to open the doors of learning. Each Key Lesson provides a point of departure for the child to pursue further knowledge. Montessori Key Lessons are brief and free from complicated explanations. They provide enough information to allow the child to work with the concept or material at length and in a variety of ways, often remaining unaware of what they are expected to learn from the process. Through uninterrupted work and accessing the blossoming imagination, the child can experience an

aha!' moment of discovery as she realizes the intent of the exercise. The learning becomes the point of arrival, after the child has internalized the concept through manipulation and exploration. The guide assesses the student's progress and presents follow-up lessons to steer the discovery or redirect the exploration.

Elementary Practical Life

Practical life activities encourage the development of independence and foster the child's adaptation to the social community of her environment. At the elementary level, practical life occurs through the social organization of community tasks in which the children care for the classroom environment, the plants and animals and the outdoor environment. Practical life is also expressed through the preparation and activities involved ingoing ou4 in which students take self-initiated trips into the larger community to study and learn.

Elementary Going Out

The major acquisitions of the child on the path of self-construction from about the ages of six to twelve are tremendous intellectual growth, moral development and a desire for further social independence. This child has a fundamental need to know about the 'universe'. The knowledge the child acquires in this stage is potentially limitless. This is the time of building responsibility toward the world and its inhabitants. Social and moral issues are of great interest to the child during the second plane of development.

Dr. Montessori considered the 'will' as the power of the human being to make purposeful choices. This ability to pause, reflect and make a decision is unique to human beings. The act of choosing an activity or pursuing a specific interest in a purposeful manner aids in the development of the will. Making

choices with meaningful consequences exercises the will. The going out process gives the child a real life opportunity to make consequential' decisions and realize the natural outcomes of those actions.

Going out also provides new opportunities for intellectual stimulation, giving the students an authentic experience. Viewing nature, learning about a craft and visiting a museum or lab are a few clear examples of meaningful going out experiences that can relate to classroom exploration.

Finally, going out helps prepare the child to live in society. Through going out the child begins to experience reality beyond the classroom. The child learns to travel safely, move appropriately and speak politely in a variety of settings, as well as more practical issues such as how to question an adult or wait in line.

Going Out Skill Set

- Relate trip to academic work
- Research a variety of going out options
- Present going out plan to guide or student support specialist
- Telephone/internet contact with destination
- Complete parental permission forms and notify office
- Arrange drivers and chaperones for trip
- Conduct follow-up work — report or presentation

Junior Great Books

The Great Books Program is designed to bring literature to children in a format that encourages creative thinking through seminar discussions, in which ideas are explored in depth. Trained facilitators work with the third through sixth year students in this combined literature, writing, art and discussion process. Parents can learn about Junior Great Books at their website www.greatbooks.org.

Writing

The Montessori curriculum includes writing at every level, including small motor development and language preparation in the Toddler level. The writing program emphasizes the importance of writing as a human accomplishment and how the ability to communicate across time and space has allowed civilization to flourish. The writing program includes:

- Mechanics — cursive, print, calligraphy
- History of writing
- Five-step process (prewriting, drafting, revising, editing, publishing)
- Creative expression
- Expository expression
- Cyclical curriculum from Kindergarten through Middle School

Spotlight on Language & Reading

The Story of Human Beings introduces the Montessori elementary History curriculum and tells the tale of how humans came to exist on Earth. Human beings differ from other living creatures because they were endowed with three special gifts that set them apart from other living creatures. People have hands with which to use tools because they learned to walk upright. They have hearts with which to love and feel compassion even for unknown people. They have minds with which to think and to create that which has not yet been imagined.

Language, both written and spoken, is the human trait that brings humanity's unique gifts to life. Language allows us to communicate and receive messages that express compassion and creativity. The written word combines the work of the hand, the heart and the imagination most eloquently. Through the art of writing, which heralded the onset of human history, we can communicate through space and time! We can know the lives of those who came long before us and share our thoughts instantaneously with people across the Earth.

Children grow in their capacity to communicate and the Montessori environments are especially prepared to support different stages of development.

Toddlers miraculously and effortlessly acquire their native spoken language – both receptive and expressive – during their first few years of life. Their work is really that of forming a personal identity separate from caregivers and family. We take note when a child in the Toddler environment begins to use the personal pronoun 'I'.

In the Children's House the focus becomes the acquisition of one's native culture and language is once again the key. We introduce the arts of reading and writing to children at this level and share the magic of communicating without even saying a word!

Once children move into the Elementary the focus becomes finding one's place in society and issues of justice and morality. Language takes on the added dimension of becoming a tool for appreciation. We can hear the voices of humans who lived long ago and be grateful for their contributions to our lives.

The adolescents in Middle School have become skillful in their use of and interpretation of language. The students are engaged in discovering how will they can make a difference in the world and find purpose in society. Language is purposeful communication, an expression of self and a tool for intellectual exploration.

Language is a time machine for the imagination, relatively simple but infinitely productive. David Bickerton

Elements of a Model Writing Program

- Students write often.
- Students get meaningful feedback.
- Students write for an audience.
- Students prewrite, draft, revise, edit and publish.
- Mistakes are treated as opportunities to improve.

- Grammar and spelling are integrated into the teaching of writing and students learn by editing and revising their own and classmates' writing.
- Students practice oral and written communication skills.
- Emphasis is placed on the revision process.
- Students publish their writing.
- Students write in all areas of the curriculum.
- Teachers keep records of student progress.

What Makes a Writer?

- Writers need regular chunks of time to write.
- Writers need meaningful topics.
- Writers need feedback.
- Writers need to learn mechanics in the context of writing.
- Writers need to know other writers.
- Writers need to feel safe taking risks.
- Writers need a genuine purpose for writing.

Elementary Lessons

Math

Reading, writing and place value work with numbers into the millions

- Wooden Hierarchical Material, Large Bead Frame, Checkerboard

Operations

- Dynamic Addition, Dynamic Subtraction
    - Golden Beads
    - Stamp Game
- Multiplication
    - Large Bead Frame
    - Checkerboard
    - Flat Bead Frame
    - Geometrical Form
    - Abstraction
- Division
    - Unit Beads
    - Divisibility
    - Racks and Tubes
    - Stamp Game
    - Abstraction
- Memorize Math Facts

Commutative and Distributive Laws

- Bead Bars

Fractions

- Equivalence
    - Circles, rectangles, triangles

- Addition and subtraction with like denominators
- Multiplication and division with whole numbers
- Simplification
- Multiplication and division abstractly
- Simplification
    - Mixed numerals, Improper fractions

Word Problems

- Addition and subtraction, multiplication and division

Multiples and Factors

- Bead Bars
- Tables A&B
- Peg Board
- Lowest Common Multiple
- Greatest Common Factor

Decimal Fractions

- Quantity and Symbol with cubes, felt board and # cards
- Addition and subtraction
- Reducing
- Multiplication with Decimal Checkerboard
- Abstract multiplication and division
- Cross Multiplication
- Conversion of fractions and decimals

Geometry

- Geometric Cabinet: plane figures
- Similar, congruent and equivalent figures
    - Metal insets
    - Constructive triangles
- Lines, angles, polygons
    - Box of Sticks
- Area and Volume
    - Yellow Area Material
    - Nomenclature Cards
    - Pythagorean and Euclidean Materials
    - Deriving the Formulas
    - Volume with Cubes
    - Area of a Circle
    - Solids
        - Equivalent prisms
        - Solids of rotation
        - Lateral and total area
        - Regular polyhedrons
    - Point, line, surface, solid

Squares and Cubes

- Introduction with Bead Cabinet and Cards
- Exercises
- Squaring
    - 10 as a binomial and trinomial
    - Expressing in algebraic terms
    - Square Root
        - Concept with peg board and bead cabinet
        - Finding roots
        - Abstraction
- Cubing a binomial and trinomial with cubing material
- Cube Root concept and notation Number

Bases

- Introduction of different number bases (other than decimal system)
    - Bead bars, cubes
    - Number Base Board
    - Operations

Powers of Numbers and Exponential Notation

- Wooden Hierarchical Material
- Abstraction Algebra
- Balancing Mathematical Expressions
- Solving for one unknown
- Solving for two unknowns Negative

Numbers

- Concept on Number Line
- Operations

Language

Cursive writing

Grammar Boxes and Commands

- Nine parts of speech
- Verb tenses
- Compound and complex sentences
- Elliptical sentences
- Active and passive voice
- Transitive and intransitive verbs Sentence

Analysis - - parts

- Circles and Arrows

Spelling

- Phonograms
- Puzzle Words
- Spelling demons

- Spelling lists and tests Punctuation
- Capitals
- Endmarks
- Commas, colon, semi-colon, quotation marks Reading

Comprehension

- Mechanics and Fluency
- Group Work Word Study
- Prefixes
- Suffixes
- Compound words
- Conjunctions
- Synonyms, antonyms, homophones Writing
- Creative
- Research
- Paragraphs
- Dialogues
- Biographies
- Poetry
- Book reports
- Monologues
- Improving writing style
- Term paper **Physical and Social**

Sciences Geography

- Physical
    - Composition of the Earth and Geology Studies
    - The Work of Air
    - The Work of Water
- Political
    - Puzzle Maps, Pin Maps, Paper Maps
- Economic
    - Interdependencies
        - Food Origins
        - Division of Labor
        - Taxes
        - Trade, Exports and Imports

Biology

- Botany
    - Evolution of Plant Life

    - Plant Stories
    - Lessons and Experiments: functions, parts, varieties
    - Classification V
- Zoology
    - Evolution of Animal Life
    - Invertebrates: Five Classes of Invertebrates — body functions
    - Zoological Relationships: parasitism, symbiosis
    - Classification

Physiology

- The Great River Story
- Systems of the Human Body

Chemistry and Physics

- The Physics Experiments
- The Science Experiment Command Cards (the scientific method)
- Experiential Lessons
    - Molecules
    - Elements
    - Atoms
    - Sub-atomic particles

History

- Measuring Time: Calendars/Timelines
- The Coming of Humans and the Stone Age: Archeology and Anthropology
- The Age of Metals and the Great River Civilizations V
- Classical Greece and Rome
- Civilizations of Africa, Asia, Pre-Colonial America
- Europe in the Middle Ages
- The Renaissance and the Age of Exploration
- Colonial and Early US History
- Virginia History

Elementary Materials

History	
Charts	Hand Timeline
Timeline of Life (printed and blank)	History Question Charts
Timeline of Life individual pieces	BC/AD Timeline
Timelines of Human Beings I & II	Calendar
US History Timeline	Days of the Week cards
The Black Strip	Clock
	Clock stamp
Geography	
Charts	Geography nomenclature
Volcano	Rock mounds and earth pillar
Combining/separating/crystallization	Interdependencies cards
States of matter materials	Economic geography stamps
Composition of earth materials	Outline Maps
Ball on string	Almanac
Ball on stick	Atlas
Globe	Geography command cards
Lamp	Clay models of geographic features
River model	Pin maps
Biology	
Needs of a plant labels	Body function Material
Botany command cards	Zoology Nomenclature
Botany Nomenclature	Animal Classification Materials
Plants	Skeleton Model
Charts	Ecological Relationships pictures
Kingdom Plantae circles/branches	6 transparent containers (plants need minerals)
Plant Classification Material	Paper towel tube (back bone)
Animal Story Material	
Question/Answer Game	
Language	
Letter formation chart	Compound/complex analysis
2 moveable alphabets (dif. colors)	Punctuation charts
Phonogram cards	Interpretive reading cards
Puzzle words	Fiction/Non-fiction books
Word study charts (suffix, prefix, compound words, word families)	Examples of poetry
Grammar symbols	Phonetic readers
Grammar boxes	Early reading activities
Parts of speech activities	Variety of books
Grammar Command Cards	Jr Great Books
Conjugation cards	Dictionaries
Classification charts (noun, adj, etc)	Thesauruses
	Encyclopedia

Simple Sentence Analysis material)	Great Story of the Alphabet charts
Mathematics	
Wooden Hierarchical Material	Decimal Board
Large Bead Frame	Decimal Checker Board
Bead Bar Box	Felt Squares
Box of gray & white number cards	Centesimal Frame
Golden Bead Material	Guide Squares
Checker Board	Binomial cube
Bank Game Cards	Trinomial cube
Flat Bead Frame	Wooden cubing material
Racks and Tubes	Hierarchical trinomial cube
Stamp Game	Snake Game for signed numbers
Bead Chains	Powers of 2 cube
Peg Board and Hierarchical pegs	Number Base Board
Numerical Decanomial envelopes	Word Problems
Fraction Insets	Ruler/Yardsticks
Box of fraction pieces	Capacity containers
Divided Skittles	Scales (spring scale, balance scale)
Decimal cubes (tenths-millionths)	Money
Decimal cards	Square Root Board
Geometry	
Divided inset material	Geometry Nomenclature
Constructive Triangles	Geometry Command Cards
Box of Sticks	Iron Material
Plane	Yellow Area Material
Plumb bob	Paper Circle Area Material
Montessori protractor	Geometric Solids
Protractors	Divided Blue Prisms
Compass	Yellow Prisms for Volume
Rulers	Box of 2cm white cubes
Geometry Cabinet	Hollow shapes for volume
Folder of prepared circles	

Middle School Traditions

Goal Setting and Conferences

At the middle school level, students work with their parents and team of guides each fall to establish goals on which they will focus for the duration of the year. Students lead two annual conferences with their guides in which they present their work to their parents and goals are revisited and discussed as a group. During this conference, parents, students, and guides evaluate the student's work progress, as well as the development of his social, organizational, decision-making, and time management skills.

Cycles of Work

The school year is divided into four learning cycles of eight weeks each. In each discipline, the study and work of a cycle is organized around a central theme or problem for exploration, while opportunities are sought for meaningful interdisciplinary integration. The end of a cycle presents students with the opportunity for closure, reflection and adjustment of practice. It also provides a framework for regular formative assessment by way of "cycle reports", which are comprehensive narratives, written collaboratively by middle school guides, and addressing all aspects of a student's school experience.

Immersion Weeks

For one week between each cycle, students take part an "immersion" week, during which the regular schedule of classes and work is suspended. During this time, students participate in a large-scale, immersive project or activity which may incorporate creative expression, community service, foreign language, or other academic investigations of particular interest to the students. Immersion weeks provide unique opportunities for in-depth explorations of content not included in the written curriculum, as well as for valuable partnerships with individuals and organizations in the larger Charlottesville community.

Experiential Learning/Leadership Opportunities

Through experiential and hands-on learning, the students of Mountaintop Montessori Middle School apply academic, practical and interpersonal skills to real life situations and tangible problems in need of solving. Academic studies often revolve around very real challenges faced by the class, the school, and the larger community. Additionally, at the start of each school year, students interview and are hired into influential leadership positions responsible for making decisions that will affect themselves and the class as a whole. These positions may be related to entrepreneurial endeavors, gardening and animal care, and community life, to name a few.

Independent & Collaborative Work

In all elements of their school life, students engage in a mindfully planned balance of independent and collaborative work. Independent work addresses the adolescent's need to explore her own interests and ideas and to work according to her individual abilities and pace, while collaborative experiences serve her need to make meaningful social contributions and to find a role within the larger group. Students frequently share the fruits of both independent and collaborative work with the class as a whole, allowing for practice with public speaking, group discussion, and debate.

Creative Expression

Opportunities for creative expression are both integrated into the other disciplines, and an area of study in their own right. Through creative writing, music, drama, movement, visual arts, cooking, and expressive uses of technology, students explore avenues through which to share their thoughts, feelings and ideas with a larger audience. Students are given the opportunity to enroll at the start of each cycle in one of four creative workshops which they will attend one morning a week for those eight weeks.

Additionally, frequent opportunities are sought for students to use creative expression as a mode of communication for their academic work as well.

Internships

For one week each year, students experience the rewards and challenges of potential future careers by completing an internship at a local organization or business. Through this experience, they build important relationships with adult mentors and learn about the expectations and demands of adult life.

Travel/Service Learning

Student leaders plan a week-long class trip every year, which traditionally takes place in the spring. Trips alternate on an annual basis between community service experiences and enrichment activities that follow class interests. Expenses of the trip are covered by profits raised by student-run businesses.

Middle School Lessons

Language Arts	Students will:	Materials & Resources
The Writing Process	-Learn strategies for brainstorming/pre-writing -Carry multiple pieces of writing through the following stages of the writing process: -Drafting (crafting pieces of increasing length, complexity, & sophistication) -Responding (giving critical and significant feedback to others) -Revising (accepting and incorporating critical feedback from others) -Editing work of self and others (proper use of editor's marks) -Publishing	Individual Writing Portfolios Materials for the publication of polished work, such as report covers, blank books, etc. Overhead projector and related supplies for the sharing of work Response forms for evaluating peers' work Visuals & handouts outlining the writing process
6 (+ 1) Traits of Effective Writing	-Apply to their work the 7 traits of effective writing, which are: -Ideas -Organization -Voice -Word choice -Sentence Fluency -Conventions -Presentation -Evaluate the work of others using the rubric of the above listed traits	"6 Traits" Materials from Northwest Regional Educational Laboratory
Research Skills	-Map & plan future pieces of writing -Research from multiple sources, including the internet -Organize & synthesize information -Create original work from source material -Cite properly	Online class subscription to NoodleTools Software X-mind software

Structure & Organization	-Make narrow & manageable topic choices -Craft a thesis statement -Outline expository pieces - craft topic sentences that support thesis - sequence information logically - isolate topics within individual paragraph - create engaging introductions & conclusions	*Write Source* Materials
Conventions	-Apply proper punctuation, capitalization & grammar to original work -Properly use and interpret editor's marks -Apply word processing technology to identify & correct errors of convention	
Genre	-Explore the structure & conventions of multiple genres -Read, analyze & discuss important pieces in each genre -Create original pieces of work from the following genres: - poetry (inherited & open form) - short story - novel - non-fiction - essay (5 ¶ persuasive) - essay (5 ¶ literary analysis) - the letter - speech/public address - biography/autobiography - drama - journalism	Reading list consisting of culturally significant pieces from each of the named genres. Examples include: -To Kill a Mockingbird -Lord of the Flies -Fahrenheit 451 -Flowers for Algernon -Hiroshima -Raisin in the Sun -The Crucible
Literary interpretation/analysis	-Define, identify in context, and apply to their own written pieces, literary devices such as: - simile & metaphor - alliteration & assonance - foreshadowing - irony - personification - rhyme scheme -Participate in Socratic seminar and shared inquiry -Write original pieces of analytical writing addressing the following elements of literature: - character - theme/motif - setting - point of view - plot - author's intentions - historical context	

Mathematics	Students will:	Materials & Resources
Problem Solving Strategies	Learn flexibility and creativity in approaching complex problems Apply such strategies to mathematical challenges as: - Solving by making a diagram - Solving by making a table - Solving by simplifying the problem - Solving by working backwards	

Algebra	- Understand and implement the language of Algebra -Commutative property -Operations w/ integers -Exponents -Order of operations -Associative property -Distributive property -The symbols of Algebra -Translate information into Algebraic expressions -Evaluate expressions for a given value of x -Use variables -Simplify expressions -Use formulas - Manipulate & solve single variable equations & inequalities -Solve equations & inequalities in one variable -Identify and create equivalent equations & inequalities - Graph on a co-ordinate plane -Navigate the Cartesian coordinate plane -Graph functions using multiple strategies -Understand and compare slope -Recognize the equation of a graphed line - Solve systems of equations & inequalities -Graph Inequalities -Solve systems of equations/inequalities using multiple methods/strategies -Compare the equations of parallel and perpendicular lines - Manipulate polynomials -Understand the definition & concept of monomials -Perform operations on monomials -Factor monomials -Understand the definition & concept of polynomials -Evaluate and simplify expressions with negative & zero exponents -Apply the properties of exponents to mathematical solutions -Perform operations on polynomials -Factor polynomials - Solve quadratic equations -Solve quadratics using multiple methods & strategies, including graphing, factoring & completing the square - Implement the quadratic formula to solve quadratic equations - Manipulate rational expressions & equations -Define & identify rational algebraic expressions -Simplify rational expressions & recognize equivalent expressions -Perform operations on rational expressions -Use ratio and proportion in Algebra -Solve complex rational equations	
Geometry	Some students, with advanced ability and heightened mathematical interest, will: - Identify & define geometric objects -Understand paths & points -Visualize angles -Define parallel lines - Enact motions on geometric objects	

	-Reflect, translate, rotate, & dilate objects -Differentiate between congruence and noncongruence motions -Understand reverse orientation -Conceptualize reflectional & rotational symmetry - Relate polygons & solids -build solids -compare & contrast prisms, pyramids, & polyhedrons -identify translational vs. rotational solids - Measure geometric objects -Use standard units to measure length and angles -Deduce methods for measuring area and volume -Dilate geometric objects -Dilate objects -Understand dilation as a similarity motion -Use measurements within dilated figures - Use angles -Identify supplementary & vertically opposite angles -Define perpendicularity -Understand the relationship of angles created by parallel lines -Apply the rules governing internal & external angles of triangles and other polygons - Know the properties of polygons -Understand the properties of circles, triangles, & quadrilaterals -Identify properties unique to regular polygons -Define & measure circumference - Apply coordinates to geometric problems -Use coordinates to place, locate, and move objects -Measure, identify & compare slope -Measure distance using coordinates - Work with proofs using parallel lines - Prove lines to be parallel, -Use properties of parallel lines in proofs -Identify and work with off-scale drawings - Calculate area & perimeter -Discover the formulas for calculating the areas of: triangles, quadrilaterals, other polygons, and circles -Apply the pythagorean theorem -Compare the areas of similar polygons - Identify and prove triangle similarity & congruence -Define similar & congruent triangles -Apply similarity & congruence theorems: AAA, SSS, SAS, ASA, -Understand the properties of special right triangles (45-45-90) -Tangent ratio -Apply knowledge of proportions in right triangles - Calculate volume & surface area -Deduce & apply formulas for calculating the volume of solids, including: prisms, pyramids, cylinders, cones, & spheres -Identify & compare similar solids -Calculate the surface areas of cones & spheres - Create proofs about polygons -Apply logic & accumulated geometric knowledge to the writing of proofs about quadrilaterals & triangles - Understand the structures & properties of circles -Find the measure of arcs -Define, identify & create tangent lines -Use arcs to find inscribed angles -Create proofs using circles - Other Coordinate Systems -Conceptualize coordinates in 3 dimensional space	

Science and Permaculture	Students will:	Materials & Resources
Scientific Method	Understand and apply all stage of the scientific method: -Formation of hypothesis -Experiment design -Identification and control of variables - Repeat trial -Interpretation & representation of data -Application to useful and practical problems	
Chemistry	-Explore the history & organization of the periodic table of elements -Understand the structure and particles of Atoms -Learn how atoms bond to form molecules -Manipulate basic chemical formulas & equations -Differential between physical and chemical changes -Understand the properties of acids & bases/ test for pH	*Science Explorer: Chemical Building Blocks* *Science Explorer: Chemical Interactions* Visuals of Periodic Table *A Brief History of Nearly Everything*
Physics	-Describe the multiple forms of energy and name examples -Understand the ways that energy transforms and transfers -Explore the structures, properties, and behaviors of waves -Apply their knowledge of work, force & motion to practical problems -Understand the relationship between electricity & magnetism	*Science Explorer: Motion, Forces, Energy* *Science Explorer: Electricity & Magnetism* Slinkys
Life Science	-Have knowledge of the structure, function, & division of cells - the basis on which scientists classify organisms -Recognize photosynthesis & respiration as inverse processes -Apply probability to knowledge of genetics & inheritance -Discuss changes in populations over time	*Science Explorer: From Bacteria to Plants* *Science Explorer: Animals* *Science Explorer: Cells & Heredity* Microscopes
Ecology/Environmental Science	-Apply understanding of the interdependence of elements in an ecosystem to stewardship of the campus -Compare cycles of matter and energy in nature to man made systems -Demonstrate awareness of the relationships between biotic and abiotic factors	*Science Explorer: Environmental Science* Beehives
Environmental Issues	-Cultivate awareness and understanding of the social, economic, political and personal causes and implications of environmental challenges such as: -Global warming -Pollution (air, water, land, etc.) -Food systems -Human activity & the ecosystem -Plan, organize and implement personal/collective action	Newspaper subscription
Permaculture Design	-Exercise the strategies of permaculture design, including: -Deep observation -Mapping -Capturing & storing of energy -"Stacking" of elements in a system -Designing to mimic cycles in nature -Implement the stages of the design process -Demonstrate understanding of the ethics & strategies of permaculture -Explore the history of permaculture movement	Greenhouse & Gardens Aquaculture & aquaponic systems Beehives Composting systems Gardening & Landscaping tools Compasses 100 m Measuring Tapes

	-Research examples of successful permaculture design -Create original permaculture installations	Texts: *Gaia's Garden* *Permaculture: A Designer's Manual* *Food Not Lawns* *Permaculture in a Nutshell*

Changes and Choices	Students will:	Materials & Resources
Self-awareness/Self-inventory	-Identify personal strengths & weaknesses -Develop awareness of learning styles & preferences -Explore the multiple dimensions of wellness -Discuss the successful "habits of mind" -Work to cultivate positive character traits	
Self-Care	-Demonstrate awareness of habits & practices of: -Nutrition -Hygiene -Exercise -Emotional, social & spiritual wellness	
Teen Issues	-Practice decision making & communication regarding: Drugs & alcohol Sexual activity Healthy relationships Financial Self Sufficiency -Work to develop a sense of self-respect/self-regard -Explore issues of body image -Learn ideal care of self (diet, rest, exercise, hygeine, stress management) -Discuss self-harm (eating disorders, mutilation, etc.)	
Sexuality	-Strengthen knowledge of reproductive anatomy -Understand the physical & emotional aspects of puberty -Explore gender, gender roles, and stereotypes -Develop an awareness of potential sexual consequences Pregnancy STD emotional, social, etc. -Compare the relative advantages and disadvantages of various means of protection (abstinence & contraception) -Broaden their understanding of sexual orientation & gender identity	*OWL Curriculum*, Published by Universalist Unitarian Church *Changing Bodies, Changing Lives*
Peer Counselling	-Cultivate active listening skills -Practice sending effective messages -Strengthen helping skills -Develop effective questioning -Explore values & apply them to decision making -Broaden awareness of available community resources	
Peace Talks	-Practice effective communication -Engage in practice conflict resolution	

	-Develop collaborative problem solving skills -Mediation -Anger management -Discuss relationships: peer, family, school, etc. - Inner peace/happiness	
Social Justice	- Cultural identity - Class issues - Gender & sexual identity - Human rights - Race & ethnicity - Bystanding vs upstanding	

Middle School Materials

Community Life/Practical Life	
Notebook for community meeting Mailboxes for guides and students Hanging chore calendar Large, highly visible homework chart	Large, highly visible weekly schedule Mentorship binders Quality, durable cleaning tools Biodegradable, non-toxic cleaning products
Garden to Table	
Cookbooks Cloth napkins Placemats Utensils Ceramic Plates & Bowls	Glasses & Mugs Labeled organizer for personal napkins Assortment of books for blessing/giving thanks for meals *-A Grateful Heart*
Music	
Assortment of authentic West African Drums (*Djembes & Djuns*) Assortment of World Percussion	Instruments: *-shakers* *-bells* *-bailaphone* Assortment of authentic, quality instruments: *-keyboard (preferably full) w/ headphones* *-guitar*
Art	
Assortment of art/art history reference books (aimed at an adult level) Pieces of authentic art for display -not posters	Examples of student-made art on display
History	
Timeline of Human History from Lake Country Institute Current, accurate globes and maps	Assortment of reference books for study of history & cultures: *-What Life was Like series* *-Atlases* *-High School Textbooks* *-A History of US Series* *-Encyclopedias* *-Eyewitness Series*

Science & Permaculture	
Textbooks for Reference *Science Explorer Series* *Science Matters* *How Stuff Works Series* *Assortment of high school texts:* *Biology* *Earth Science* *Chemistry* *Physics*	Permaculture Library Beekeeping Greenhouse gardening Organic methods Permaculture design Aquaculture Tools & Equipment necessary for the practice of permaculture: *-beehives, tools, protective clothing* *-water barrels* *-vermiculture bin* *-aquaculture testing kit* *-durable, quality, adult-sized garden tools*
Language	
Assortment of classic, challenging, books from the following genres: Poetry Collections/Anthologies *Norton Anthology* *World Poetry* Drama: Full & One Act Plays *The Crucible* *The Glass Menagerie* *Raisin in the Sun* *Romeo & Juliet* Short Stories *Major Writers of Short Fiction* *Great American Short Stories* Biography/Autobiography/ Memoir *Ghandi* *The Autobiography of* *Malcolm X* *Anne Frank* *The Diving Bell & the Butterfly* Novels *To Kill a Mockingbird* *Lord of the Flies* *1984* Non-Fiction *Hiroshima* Avoid anthologies and books specifically aimed at a teen/pre-teen audience. Aim for books that discuss universal human themes and emotions.	Writing Process Poster Editor's Marks Poster 6 Traits Posters Student writing portfolios from previous years Creative prompts/ideas Partner response sheets based on 6 Traits qualities of effective writing Hanging files for current portfolios 6 traits binder & materials Books for guidance/ideas/reference: *-Write Source 2000* -Dictionaries -Thesauri *-The Writer's Idea Book*

Mathematics	
Texts (1 for each applicable student): -*Algebra: A Process Approach (for reference)* -*Geometry: A Moving Experience* -*Discovering Algebra: An Investigative Approach* Prepared binder for remedial algebra prep: -fractions, decimals, percents pre-algebra High quality, durable compasses Protractors Metal Rulers & Yard Sticks Graph Paper Lined Paper	Scratch Paper TI-84 Plus Graphing Calculator(s) Calculators Pebble Model Materials: -two colors of "pebbles" -3 small containers Overhead projector & screen Skills practice sheets - "Quickies" from algebra text -rational # review Binder for checking practice sheets Poster for tracking completed practice
Changes & Choices	
Assortment of reference books for physical, mental, social, emotional health & puberty related topics: -*Changing Bodies/ Changing Lives* -*Habits of Mind* -*What do You Stand For* -*7 Habits of Highly Effective Teens*	Books should be informative, frank, & pragmatic. They should be respectful to teenager emotional development and not "speak down". Avoid flashy, "hip" texts that pander to a pre-teen/teen audience. Whenever possible, they should be useful for both genders.
Spanish	
Text: *Buen Viaje!*	Assortment of cultural items: -Books (in Spanish) -Photographs -Art pieces -Musical instruments
Technology	
Functional computers & laptops with reasonably up-to-date word processing, presentation, and data management software. A ratio of approximately 1 for every 3 or 4 students. Should be an even mix of Mac & PC platforms.	Software: -Microsoft Office Suite -Inspiration 9 -for image editing -for film-making -for music-making/listening

The Three Period Lesson

The Importance of the Third Period: The Child's Synthesis and Responsibility for Knowing in the Montessori Elementary Years

by Jean Peters, published in the NAMTA Journal, vol. 36, Number 1 (Winter 2011)

The Three Period Lesson in the Children's House

The three period lesson is a technique for teaching nomenclature to children in the Children's House level. The three period lesson follows the pattern represented thus: this is… show me… what is?... Naming, recognition and recall are the three steps used to offer vocabulary to the child in this stage of development. The three period lesson honors the unique cognitive powers of the absorbent mind and takes advantage of the connection between movement and learning. Three to six year old children absorb their culture and build confidence through the memorizations of precise language. They, in turn, build a solid foundation of knowledge in order to fully exploit their next great adventure in the elementary level; creating mental order through the powers of the reasoning mind.

The Three Period Lesson in the Elementary

The second plane child is anything but simple and elegant and the lessons reflect this! This is… show me…what is?... is a technique that will result in bored and disengaged students. However, the three period lesson, understood as a deeper, more complex experience is still a powerful metaphor for how elementary children's brains work and learn. What does the three period lesson look like in the elementary?

The first period is the key lesson or Great Lesson. The child is introduced to the concept or skill through materials, lessons or stories. The imagination is sparked. Interest is whetted.

The second period is the independent work or experience in which the student engages. The students work toward abstraction by doing research, using materials, conducting experiments, and planning going outs. This is where the challenge lies! A genuine second period requires action and motivation. Our society trains children to be passive and to need constant feedback. In order for the second period to be fully realized, the students need to be nudged, supported and inspired along the way to keep the work going. They cannot be abandoned, but independence must also be fostered, during this stage. Luckily the Montessori child gained the ability to concentrate and a remarkable stamina for work during his early childhood years. The second period in elementary is tricky. It can take an hour. It can last years.

The third period is when a student achieves mastery; the show me stage. However it is important to take seriously Dr. Montessori's profound counsel. She stated, the secret to good teaching is to regard the

child's intelligence as a fertile field in which seeds may be sown, to grow under the heat of flaming imagination, yet goes on to caution against digging up those carefully sown seeds in our quest to measure learning.

The Traditional Approach

In conventional elementary school, the speed at which a child is moved from the first period to the third period can be dizzying. This is long division… do 10 problems for homework… test on Friday… move on to next thing. This approach presents much material out of context, ignores the natural rhythms of the child's mind, confuses rote practice with actual learning and offers a very one-dimensional, short-term approach to measuring learning.

A Closer Look at Standards

Cognitive science shows us that children need context and core knowledge in order to learn effectively. A curriculum that emphasizes foundational knowledge and core skill development is essential for success. At

Mountaintop Montessori the faculty has developed a list of learning standards based on the Montessori curriculum, the National Standards and the Virginia State Standards. These standards are called the "will be exposed to"s (or WBETs) at Mountaintop and they identify the required lessons presented to students during the elementary years.

In order to maximize the power of the second period it is critical to understand its importance to genuine learning. The most important component for a successful second period is TIME. Time is the unique gift offered to the Montessori child. This stage of learning must not be rushed as it can play out over the course of hours, days or even years.

The Third Period and Assessment

Montessori teachers observe, record and evaluate student work on an ongoing and individual basis. Mastery or achievement is noted when a student can independently demonstrate the use of a material, achieve the expected outcome or answer, teach a concept to another student, verbalize the knowledge or process, or produce a work or product that demonstrates comprehension or skill acquisition.

Meaningful assessment takes two approaches. It can be formative, which is process oriented and guides instruction strategies and individualized lesson plans for students. It can also be summative, which provides a means for evaluating if the educational process is succeeding, both for individual students and the community at large. Assessment measures whether and to what degree objectives have been accomplished, true learning has occurred and the environment promotes work and learning. Feedback informs the student, the guides, the parents and the school-wide community.

The Montessori approach, with an emphasis on the importance of the second period, avoids the pitfalls of traditional evaluation. The anxiety associated with high stakes testing does not occur. Rather, it is the

responsibility of all parties, adults and students, to teach, inspire, work and learn to the best of their abilities and to make the process transparent and ongoing.

It is also important to note that the second and third periods provide important information about children who will require accommodations in order to learn successfully. Students with learning differences, with challenges outside of school and students who have not experienced Montessori from the start all often need special attention. It is the school's responsibility to identify and support these children along the way.

Measurement

The Mountaintop faculty has developed another set of criteria called the "will be able to"s (or WBATs) to identify core skills and knowledge each student should acquire by the end of the three-year cycle. Students must acquire a baseline of knowledge and academic competence in order to find success at the next stage of their education.

Outcomes

Dr. Montessori provides this optimistic description: the whole life of the adolescent should be organized in such a way that will allow him or her, when the time comes, to make a triumphal entry into the life of society, not entering it debilitated, isolated or humiliated, but with head high, sure of himself or herself. Success in life depends on self-confidence born of a true knowledge of one's capacities.

Students are only truly educated when they learn in an environment that emphasizes skills, such as those acquired in the early years of Montessori, AND knowledge, the kind of deep understanding that takes place when the second period exploration is allowed to unfold fully. Montessori adolescents demonstrate remarkable academic aptitude. More importantly, their very adult entrepreneurship endeavors and responsibilities to the community provide the ultimate third period!

Toddler Outcomes

At the end of the Toddler cycle, students *will be able to* (WBATs):

Practical Life Benchmark	
Care of Self - Can take coat on and off and hang it up - Can change shoes to slippers and slippers to shoes - Can put on and off pants with elastic waistband - Can get arms in and out of a pullover shirt - Can use the potty and wash hands on own - Recognizes the need and wipes nose and face themselves	**Care of Environment** - Consistently puts materials away - Demonstrates a desire to take care of the environment: notices if something is out of order - Recognizes a spill and gets cloth to clean it without prompting from adult
Language Benchmark	
- Has a receptive vocabulary of 1500 words - Has an expressive vocabulary of 800 words	- Expresses needs and wants in an audible way
Fine Motor Benchmark	
- Has pincer grip with three fingers - Has a pencil grip - Can use scissors	- Can carry a tray with something on it from a shelf to a table - Uses a spoon, fork, glass and plate appropriately
Gross Motor Benchmark	
- Can run - Can jump on two feet - Can walk backwards - Can navigate around mats and work on floor successfully	- Can sit with ankles crossed and hands in lap with no stimulation for three minutes - Can navigate stairs with no assistance

At the end of the Toddler cycle, students ***will have been exposed to*** **(WBETs):**

<table>
<tr><td colspan="2">Music and Art</td></tr>
<tr><td>- Musical instruments
- Singing
- Dancing
- Games</td><td>- Scribbling
- Chalk on easel
- Tempera paints on easel
- Clay</td></tr>
<tr><td colspan="2">Language</td></tr>
<tr><td>- Nomenclature objects
- Objects and matching cards
- Nomenclature cards</td><td>- Books
- Rhythmic language
- Self-expression</td></tr>
<tr><td colspan="2">Practical Life</td></tr>
<tr><td>Care of the Person
- Dressing
- Handwashing
- Wiping nose
- Cleaning shoes
- Face washing
- Dressing frames

Care of the Indoor Environment
- Washing a table
- Dusting
- Sweeping/mopping
- Cleaning glass
- Polishing mirror
- Polishing wood
- Dusting/washing/watering plants
- Flower arranging
- Washing cloths
- Hanging cloths
Aids to Development of Equilibrium and Eye-Hand Coordination
- Ball-tracking material

Aids to Eye-Hand Coordination
- Peg box
- Cubes on a vertical dowel
- Spheres on a horizontal dowel
- Three pegs with small rings
- Bead stringing
- Mailbox
- Slotted box with chips
- Sorting
- Puzzles

Aids to the Development of Opening and Closing Skills
- Wooden box with sliding lid
- Rectangular box with bins
- Locks and latches</td><td>Food
- Preparing food
- Setting the table
- Serving food
- Eating
- Cleaning up
- Washing/drying dishes

Movement of Furniture
- Carrying a chair
- Sitting on a chair
- Carrying a table
- Carrying a stool
- Carrying a bench
- Using a work rug or mat

Care of the Outdoor Environment
- Germinating seeds
- Other as appropriate to space
Aids to the Development of Refinement of Hand Movements
- Spooning
- Pouring liquid
- Pouring liquid with a funnel
- Sewing
- Gluing
- Using scissors
- Folding
Aids to Climbing
- Stairs
- Slide
- Small climbing structure

Aids to the Development of the Stereognostic Sense
- General Fishing Bag
- Classified Fishing Bag
- Twin Fishing Bag</td></tr>
</table>

Children's House Outcomes

At the end of the Children's House cycle students will be able to (WBAT's):

GRACE & COURTESY BENCHMARK	

Citizenship and Social Graces
• Shows respect for peers and adults
• Participate calmly in whole group activities
• Exhibits control over body and voice
• moves with self control
• consistently uses conventional manners
  ○ responds when addressed
  ○ shakes hands and makes eye contact
  ○ say please and thank you
• Offer help and accept help
• Notices fair and unfair
• Uses good table manners
• Takes responsibility for own actions
• Able to engage in conversation
• Able to wait (for turn or attention)
• Manages transitions & adapts to changes in routine
• Demonstrates self confidence
• resolves conflicts effectively (positive, non-violent way)
• Demonstrates self-discipline on the playground
• Moves with self control
• Works and plays well with others
	Work Habits
	• Listens attentively
	• Uses materials purposefully and respectfully
	• watches presentation with concentration
	• Choose work independently
	• Able to sustain concentration
	• Able to complete the 3-step work cycle (choose, do, put away)
	• Works without disturbing others
	• Able to organize self and materials
	• Perseveres even when the work is difficult
	• Seeks learning challenges independently
	• Completes tasks independently
	
	Gross Motor and Fine Motor
	• Moves with balance and control
	• Coordinates movements to perform simple tasks
	• Uses hand-eye coordination to perform tasks

At the end of the Children's House cycle students will be able to (WBAT's):

PRACTICAL LIFE	**SENSORIAL BENCHMARKS**

BENCHMARKS	
• Wash hands and face (independently in bathroom) • Dress and undress • Tie shoes • Hang clothes (on a hanger) • Button and snap • Wash a table following lesson sequence • 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 paint and glue • Hold a paintbrush with the proper technique • Decorate and embellish work	• Identify big and small • Identify long and short • Identify thick and thin • Identify colors • Identify gradations of color • Discriminate heavy and light (weight) • Discriminate rough and smooth • Discriminate loud and soft • Discriminate hot and cold • Sort objects by color, shape, size • Build the Binomial Cube • Build the Trinomial Cube • Match the bells by pitch (diatonic scale) • Identify the geometric solids sphere, cone, cube, pyramid • Identify plane figures circle, rectangle, square, triangle, ellipse, oval

At the end of the Children's House cycle students will be able to (WBAT's):

LANGUAGE BENCHMARK	
Oral Language • Asks and answers questions in order to seek help, get information or deepen understanding • Able to express feelings & thoughts • Understands and follows 1 & 2 step directions • Participates in discussions • Speaks clearly in full sentences • Follows conversation rules • Uses adequate vocabulary • Comprehends oral stories, songs, games Reading • Shows interest in books & stories • Understands that print carries a message • Tracks left to right/top to bottom • Identifies letters of the alphabet by sound/name • Recognizes and produces rhyming words • Reads phonetic words • Identifies key phonograms (th, sh, ch, ai, ie, ay, ee, oa , er) • Recognize key puzzle (sight) words (the, of, is, and, you, that, it, to, in) • Asks and answers questions about what is read • Identifies what an author and illustrator does • Understands fiction and non-fiction	Writing • Builds phonetic words with moveable alphabet • Holds a pencil with the proper grip • Writes on the baseline • Writes left to right • Write three letter words • Composes simple sentences with capital letter and end marks • Writes full name

At the end of the Children's House cycle students will be able to (WBAT's):

MATH BENCHMARK	MATH BENCHMARK
Counting and Writing Materials • Count to 100 • Can count backwards from 10 • Understands the relationship between numbers and quantities • Can write numbers 0-9 • Read and write teens • Read numbers to the thousands place using cards • Match numbers and quantity to the thousands place • Can count by tens • Understands < > =	Operations • Understands the process of exchanging • Can do both static and dynamic addition with materials • Can do vertical addition to the tens place without materials • Can do both static and dynamic subtraction with materials • Can do static multiplication with materials • Can do static division with materials Memorization • Knows addition facts • Knows subtraction facts • Knows some multiplication facts • Identify coins and currency (real money: penny, nickel, dime, quarter, $1) Tell time to the hour

At the end of the Children's House cycle students will be able to (WBAT's):

GEOGRAPHY BENCHMARK	BIOLOGY BENCHMARK
• Recognizes that globes and maps represent real places • Identifies continent and ocean • Identifies 7 continents • Identifies United States of America • Identifies state of Virginia	• Differentiates between living/nonliving • Differentiates between plant/animal • Differentiates between vertebrate/invertebrate

At the end of the Children's House cycle, students ***will have been exposed to*** **(WBETs):**

Practical Life Benchmark by the end of 3 year-old Year	
- All lessons of Grace and Courtesy - Walking on the Line - Squeezing a sponge - Wringing a cloth - Pouring rice - Pouring water (5 ways) - Spooning - Folding - Dusting - Sweeping - Sponging up a spill - Simple food preparation - Hand washing - Button, snap, zipper, buckle dressing frames	- Cutting - Gardening - Carrying a tray - Carrying a chair - Carrying a table - Rolling and carrying a rug - Opening and Closing/Boxes and Bottles - Locks and Keys - Nuts and Bolts - Using a screwdriver - Washing a table - Polishing wood, brass, silver, glass - Watering a plant, cleaning leaves
Practical Life Benchmark by the end of pre-K Year	
- Tying and lacing dressing frames - Cloth washing - Dish washing - Sewing a button	- Flower arranging - Gluing - Tying shoes
Practical Life Benchmark by the end of Kindergarten Year	
- Crochet - Needlepoint - Advanced cooking	- Advanced gardening - Language extensions
Sensorial Benchmark by the end of 3 year-old Year	
- Cylinder Blocks - Pink Tower - Brown Stair - Red Rods - Binomial Cube - Color Boxes (1,2,3)	- Touch Boards - Touch Tablets - The Fabrics - Baric Tablets - Geometric Solids
Sensorial Benchmark by the end of pre-K Year	
- Trinomial Cube - Decanomial Square - Superimposed Geometric Figures - Constructive Triangles (all boxes) - Biology Cabinet	- Thermic Bottles - Thermic Tablets - Progressive Exercises (sorting) - Sound Cylinders - Geometry Cabinet
Sensorial Benchmark by the end of Kindergarten Year	
- Knobless Cylinders - Small Metal Insets (Circle and parts, Squares and Triangles in parts) - Mystery Bag - Tasting Bottles - Smelling Boxes	- Bells – sorting - Bells – grading - Language extensions for all materials - Games with all materials

At the end of the Children's House cycle, students ***will have been exposed to*** **(WBETs):**

Language Benchmark by the end of 3 year-old Year	
- Enrichment of Vocabulary - Language Training (aka Spoken Language) - Sound Games - Sandpaper Letters	- Movable Alphabet - Metal Insets - Reading Classification
Language Benchmark by the end of pre-K Year	
- Handwriting - Phonetic Object Box 1 - Phonetic Cards - Object Box 2	- Phonogram Booklets - Phonogram Cards - Puzzle Words - Word Study
Language Benchmark by the end of Kindergarten Year	
- Article - Adjective - Logical Adjective Game - Detective Adjective Game - Conjunction - Preposition - Verb - Adverb Game - Logical Adverb Game	- Continuation of Commands - Simple Sentences – Stages 1 and 2 - Simple Sentences with Extensions - Simple Sentences with Extensions, Attributes and Appositives - Creative Writing Game - Interpretive Reading - Alphabetizing - Dictionary - Punctuation
Math Benchmark by the end of 3 year-old Year	
- Number Rods - Sandpaper Numbers - Number Rods and Cards	- Spindle Boxes - Numerals and Counters -Memory Game of Numbers
Math Benchmark by the end of pre-K Year	
- Presentation with Beads - Presentation with Cards - Association of Beads and Cards - Exchanging Exercise - Golden Bead Operations - 11-19 Beads Only	- Teen Board - Teen Board and Beads - Ten Board with Beads - Linear Counting (100 and 1000 chains) - Skip Counting (all other chains)
Math Benchmark by the end of Kindergarten Year	
- Golden bead Division static and dynamic - Long Division with Golden Beads - The dot game - Snake game (positive and negative) - Stamp Game all operations - The dot game - Snake game (positive and negative) - Addition Strip Board - Addition Charts - Negative Snake Game Negative Strip Board with chart #1 - Subtraction Charts	- Bead Bar Layout - Multiplication Board with chart - Addition Strip Board - Multiplication Charts - Unit Division Board - Division Charts - Small Bead Frame - Large Bead Frame - Division with Racks and Tubes - Fractions introduction - Fractions operations - Time, Money, Measurement

At the end of the Children's House cycle, students ***will have been exposed to*** **(WBETs):**

Geography Benchmark by the end of 3 year-old Year	
- Sandpaper globe - Painted globe - Land and water forms – sensorial	- Animals of the continents - Continent puzzle map
Geography Benchmark by the end of pre-K Year	
- All puzzle maps - Land and water forms cards - Flags	- Geography folders (culture) - Classified cards and definitions
Geography Benchmark by the end of Kindergarten Year	
- Labeling puzzle maps - Making maps and writing own labels	- Atlas
Biology Benchmark by the end of 3 year-old Year	
- Living/nonliving	- Plant/animal
Biology Benchmark by the end of pre-K Year	
- Vertebrate/invertebrate - Parts of fish - Parts of mammal - Parts of bird	- Parts of reptile - Parts of amphibian - Parts of tree - Parts of flower
Biology Benchmark by the end of Kindergarten Year	
- Botany nomenclature	- Zoology nomenclature

Lower Elementary Outcomes

At the end of the Lower Elementary cycle students will be able to (WBATS):

Grace & Courtesy BENCHMARK	

Social Development:
• Articulate and adhere to classroom rules ((respect for work, people, materials, environment)
• Work well in group activities
• Use conflict resolution
• Notice fair and unfair
• Express feelings
• Express wants and needs to adults
• Demonstrate good conversation etiquette
• Consistently use conventional manners
  o Respond when addressed
  o Say please and thank you
  o Introduce oneself and others
  o Shake hands and looks in the eye
• Use good table manners
• Offer help and accepts help
• Mentor younger classmates socially, academically and with practical tasks
 	
Physical Development
• Move with self-control
• Demonstrate body/space awareness
	Personal Development
	• Carry tasks to completion
	• Engage in 3-step work cycle (choose, do and put away)
	• Choose work independently
	• Handle transitions well
	• Listen and follow directions
	• Wait for his/her turn
	• Sustain concentration
	• Use a work journal
	• Participate in a work conference with a guide
	
	Practical Life Skills
	• Responsible and competent with classroom jobs
	• Care for classroom plants and animals
	• Plan a going out trip

At the end of the Lower Elementary cycle students will be able to (WBATS):

Biology BENCHMARK	Geography BENCHMARK
• Know need of the plant • Know name the plant's vegetative parts • Describe the function of a leaf • Describe the function of the root • Describe the function of the stem • Name the plant's reproductive parts. • Describe the function of the fruit, flower and seed • Know the five classes of vertebrates and general characteristics (mammal, reptile, bird, fish, amphibian) • Know the difference between vertebrate and invertebrate • Know the human being is a mammal • Investigate and understand food chains	• Identify the planets in the solar system • Explain the relative size of the earth in relation to the sun • Define revolution and rotation • Identify the layers of the Earth • Identify the four seasons • Explain the general work of water (to carve, carry, deposit) • Explain the general work of air (takes up space, moves, hot air rises, cool air sinks) • Name land and water forms • Name the continents • Name the oceans • Has knowledge of the US states and capitals • Identify the three states of matter and general qualities (solid, liquid, gas)

At the end of the Lower Elementary cycle students will be able to (WBATS):

Language BENCHMARK	**Mathematics BENCHMARK**
Reading • Read fluently at grade level • Read aloud comfortably • Reads with expression and intonation Comprehension • Verbally summarizes text • Infers meaning from the text • Indentify parts of a story (main character, setting, plot) Word Study • Identify synonyms and antonyms • Identify compound words • Identify homophones • Indentify prefixes and suffixes • Put words into alphabetical order Handwriting • Write legibly in cursive and print • Write a complete sentence • Write a five sentence paragraph • Write a fictional story • Write a letter Research • Collaborate on a report/research project • Use a dictionary and encyclopedia • Put simple statement in own words Grammar • Identify the parts of speech with materials Mechanics • Capitalize sentences and proper nouns • Use end marks properly and consistently • Use spaces between words • Use commas appropriately in a list • Use past and present verb tenses • Use articles a, an and the correctly • Use apostrophes in contractions • Demonstrate knowledge of spelling patterns Sentence Analysis • Identify subject and predicate • Analyze a sentence with a direct object • Identify a statement, a question and an exclamation	Numeration • recognize difference in odd & even • use symbols < > = correctly • Identify place value in 6-digit number • Read and write six digit numbers Operations • Verbalize the process of addition, subtraction, multiplication, division • Perform addition, subtraction, multiplication and division with materials • Perform addition, subtraction and multiplication on paper Fractions • Identify fractions as a whole broken into equal parts • Identify meaning of numerator and denominator • Identify and notate fractions up to tenths • Perform operations with fractions with common denominators • Multiplies fractions by whole number General Skills • Skip count by 2, 5, 10 • Understand inverse operations • Identify currency • Can measure in inches and centimeters • solve grade level word problems • round 2-digit numbers to nearest ten, hundreds and thousands • Use bar graphs, pie charts and pictographs Math Facts • Fluent in addition facts (to sum of 20) • Fluent in subtraction facts (from 20) • Fluent multiplication facts (1-10)

At the end of the Lower Elementary cycle students will be able to (WBATS):

Geometry BENCHMARK	History BENCHMARK
• Identify and define congruent shapes • Identify and define similar shapes • Identify and define equivalent shapes • Identify line, ray, segment • Know the parts of an angle • Recognize obtuse, acute, right angles • Identify polygons by number of sides • Identify geometric solids • Know how to calculate perimeter • Know how to calculate area of a rectangle	• Read a calendar • Tell time digitally and chromatically • Distinguish between past, present & future • Understand that human beings have fundamental needs (food, preparation, transportation and relationships) • Use materials to explore phases of history and civilizations • Understand the various ways humans migrate • Use timelines • Explore and understand simple machines

At the end of the Lower Elementary cycle students will be able to (WBATS):

Performing Arts BENCHMARK	Visual Arts BENCHMARK
• Express a positive disposition toward the discipline • and their own talents • Sing in Unison • Play the Orff percussion instruments • Narrate a performance • Perform a choreographed piece	• Express a positive disposition toward the • discipline and their own talents • Work with Line, Shape, Color, Texture, Space • Use with skill: Markers Pencils Collage Watercolors Clay

At the end of the Lower Elementary cycle students will be able to (WBATS):

Physical Education BENCHMARK	Spanish BENCHMARK
• Express a positive disposition toward the discipline and their own talents • Move their bodies with coordination • Demonstrate throwing, catching, kicking balls • Understand the concept of team sports • Demonstrate good sportsmanship • Maintain body awareness and control during games • Know general safety rules for sports games • Respect referees in a game • Engage in conflict resolution in a game situation	• Express a positive disposition toward the discipline and their own talents • Comprehend simple greetings • Comprehend simple action commands • Comprehend simple vocabulary in general categories

At the end of the Lower Elementary cycle, students ***will have been exposed to*** **(WBETs):**

Language Benchmark	
Reading - Comprehension exercises - Short narrative - Folk tale, fable, novel, legend, myth - Biography/autobiography - Reference material – outline - Poetry **The Writing Process** - Pre-write, draft, revise, edit, final draft - Penmanship – cursive, print, calligraphy - Fictional story - Personal narrative - Poetry - Research project **Written language** - Handwriting - Creative writing - Note taking - Editing	**Mechanics** - Grammar boxes (done by end of 2nd year) - Symbolizing literature - Noun and adjective classification - Verb conjugations (simple tenses) - Capitalizations - Punctuation - Paragraph structure - Spelling rules and common misspellings - Vocabulary enrichment **Sentence Analysis** - Subject, predicate, direct object, indirect object – circle and arrow material - Attributive/ appositive - Adverbial modifiers - Prepositional phrases - Compound sentences - Complex sentences **Word Study** - Suffixes and prefixes - Synonyms, antonyms, homonyms
Mathematics Benchmark	
Foundational skills - Multiplication facts - Multi-digit multiplication - Commutative law - Distributive law - Geometrical form of multiplication - Long division - Multiples – lowest common multiples - Factors – greatest common factor - Prime and composite numbers - Rounding - Powers of ten - Exponential notation - Squares of numbers - Cubes of numbers - Divisibility of 2, 5, 10, 25 - Integers – number line - Operations of integers **Advanced Skills** - Squaring – binomial, trinomial - Cubing a binomial - Distance, velocity and time word problems - Square root - Cube root	**Fractions** - Equivalence - Addition, subtraction, multiplication, division with common denominators - Mixed numerals and improper fractions - Reducing/ simplifying - Word problems **Decimals** - Reading of decimal numbers - Addition, subtraction, multiplication and division - Computation with money - Word problems **Ratio/Proportion** - Concept - Language - Notation **Percent** - Concept - Conversion of fractions to decimals to percent - Problem solving **Graphing** - Interpretation – bar, line, pie - Creation of bar graph - Creation of line graph - Creation of pie graph - Compute averages

At the end of the Lower Elementary cycle, students ***will have been exposed to*** **(WBETs):**

Geometry Benchmark	
Basic Concepts - Congruence, similarity, equivalence **Lines** - Ray/line segment - Vertical/horizontal/oblique - Parallel/convergent/divergent - Intersecting – Oblique/Perpendicular **Angles** - Types/parts - Complementary/supplementary - Vertical/adjacent - Linear pair/alternate angles - Corresponding/co-interior, co-exterior - Measuring angles - Bisecting angles **Measurement (metric and customary)** - Length - Weight - Volume	**Area and Perimeter of Plane Figures** - Rectangles, parallelograms, triangles, trapezoids **Volume** - Rectangular, triangular, rhombic and hexagonal prisms **Study of the Circle** - Nomenclature booklets - Calculating circumference - Calculating area **Advanced Construction with ruler and compass** - Angles, triangles, circles **Theorems** Pythagorean Euclidean
Geography Benchmark	
The Sun and Earth - Revolution, rotation, axis - Time zones - Solstices/ equinoxes/ seasons - Climatic zones - Latitude, longitude, equator, prime meridian - Study of the atmosphere **Work of Water** Rivers Erosion Water cycle **Work of Air** - Global winds - Sea breeze and land breeze - Wind and ocean currents - High and low pressure - Fronts - Erosion **Astronomy** - Solar system - Forces – centripetal/gravity	**Map Work** - Continents/Countries/Capitals - USA states and capitals - Land and water forms **Economic Geography** - Interdependence - Taxes - Production and consumption - World trade **Chemistry** - Mixture/ solution - Suspension, crystallization, deposit, emulsion - Acid/base **Plate tectonics** - Layers of the Earth - Effects of continental drift - Sedimentary, metamorphic, igneous rock

At the end of the Lower Elementary cycle, students ***will have been exposed to*** **(WBETs):**

Biology Benchmark	
Study of the Leaf **-** Function **-** Parts **-** Types **Study of the Root** **-** Function **-** Parts **-** Types **Study of the stem** **-** Function **-** Parts **-** Types **Study of the flower** **-** Function **-** Parts **-** Types **Study of the fruit** **-** Function **-** Parts **-** Types	**Study of the Seed** **-** Function **-** Parts **-** Types **Ecology** - Biomes - Ecosystem **Classification** **-** Five kingdoms **-** Plant classification **-** Animal classification **The Human Body** **-** Cells, tissues, organs, systems **-** Bones **-** muscles
History Benchmark	
Foundational History **-** Creation of the universe **-** Coming of life - Clock of eras - Black strip **-** Timelines of human beings **-** Fundamental needs of human beings **Time** Clock Personal timelines Calendar	**Further Exploration** - Phases in history : nomadic, agricultural, urban **-** Civilization - Ancient river civilizations **-** Greeks and Romans **-** BC/AD timeline **-** Age of Exploration: The Americas **-** US History

Upper Elementary Outcomes

At the end of the Upper Elementary cycle, students *will be able to* (WBATs):

Grace and Courtesy Benchmarks	

• Choose work independently
• Sustain concentration
• Complete the 3-step work cycle (choose, do, put away)
• Articulate and adhere to classroom rules (respect for work, people, materials, environment)
• Participate calmly in whole group activities
• Transition from one activity to another
• Stay silent and still
• Move with self-control
	• Consistently use conventional manners
	  ○ Respond when addressed
	  ○ Say please and thank you
	  ○ Introduce oneself and others
	  ○ Shake hands and look in the eye
	  ○ Offer sustenance or guidance to a guest
	  ○ Offer help and accept help
	  ○ Notice fair and unfair
	  ○ Express feelings
	  ○ Express wants and needs to adults
	  ○ Use good table manners
	  ○ Carry on a conversation
	  ○ Listen
	  ○ Wait
	  ○ Make choices
	  ○ Carry out conflict resolution

Practical Life Benchmarks	
• Plan a going out trip • Demonstrate responsibility and competence with classroom jobs • Mentor younger classmates socially, academically and with practical tasks	• Keep a work journal • Participate in a work conference with a guide • Care for classroom plants
Language Benchmarks	
• Explain the five step writing process • Read fluently and with comprehension • Read aloud comfortably • Engage in seminar discussion in the context of Junior Great Books • Put words in alphabetical order • Use dictionary	• Use encyclopedia • Identify and define parts of speech • Identify and define main parts of a sentence • Identify and define simple, compound and complex sentences • Symbolize literature • Conjugate verbs in different tenses • Use proper capitalization, punctuation and spelling
Math Benchmarks	
• Recall all math facts • Multiply and divide large numbers and use the inverse operation to check his/her work • Use multiples and factors • Identify prime numbers • Perform all four operations in fractions, common and decimal	• Simplify and reduce fractions • Use ratio and proportion to solve problems • Solve problems with percentage • Show an understanding of exponents • Interpret graphs, bar, line and pie • Create these graphs
Geometry Benchmarks	
• Explain congruency, similarity and equivalence • Define ray/line/segment and positions of lines and be able to draw them • Name the types and parts of an angle and be able to make specific angles • Determine volume of basic solids	• Measure angles and bisect angles • Classify triangles by angles and sides • Measure length, weight and volume • Determine area and perimeter of plane figures, rectangles, triangles and polygons • Name the parts of a circle and calculate the area

At the end of the Upper Elementary cycle, students ***will be able to*** **(WBATs):**

Geography Benchmarks	
• Explain the relationship between the Sun and the Earth and how it causes seasons and climatic zones • Identify latitude, longitude, the equator and the Prime Meridian • Demonstrate a understanding of water: rivers, erosion, water cycle and watersheds	• Label continents and major countries and capitals • Label US States and capitals • Identify major geographical features of the earth • Show an understanding of taxes • Show an understanding of production and consumption and world trade
Science Benchmarks	

• Explain the function of the leaf, roots, stem, flower seeds and fruit
• Show an understanding of the 5 kingdoms
• Classify plants and animals
• Show an understanding of biomes and ecosystems
	• Demonstrate knowledge of the Human Body
	• Show a basic understanding of:
	  ○ Light and Sound
	  ○ Energy
	  ○ Chemistry
	  ○ Physics
	  ○ Astronomy

History Benchmarks	
• Demonstrate knowledge of the Phases in History • Show an understanding of Civilizations • Show an understanding of Ancient river civilizations	• Show an understanding of the Greeks and the Romans • Show an understanding of the Age of Exploration • Show an understanding of the History of the United States

At the end of the Upper Elementary cycle, students ***will have been exposed to*** **(WBETs):**

Language Benchmark	
Reading - Comprehension exercises - Short narrative - Folk tale - Fable - Novel - Biography/ autobiography - Reference material – outline - Legend / myth - Poetry **The Writing Process** - Penmanship – cursive, print, calligraphy - Fictional story - Personal narrative - Poetry - News article Research project - Essay - Interview - Compare /contrast - Persuasive	**Mechanics** - Define part of speech - Patterning or symbolizing literature - Noun classification - Adjective classification - Verb conjugations - Capitalizations - Punctuation - Paragraph structure - Spelling rules - Common misspellings - Vocabulary enrichment - Personal patterns of error **Sentence Analysis** - Subject, predicate, direct/indirect objects –Attributive / Appositive - Adverbial Modifiers - Prepositional Phrases - Compound Sentences - Complex Sentences
Math Benchmark	
Foundational skill - Multi-digit multiplication - Commutative law - Distributive law - Geometrical form of multiplication - Long division - Multiples – lowest common multiple - Factors – greatest common factor - Prime and composite numbers - Estimation - Rounding - Powers of ten - Exponential notation - Squares of numbers - Cubes of numbers - Divisibility of 2,5, 10, 25 - Integers – number line - Operations with integers - Scientific Notation - Measures of center(mean, median, mode) **Basic Fractions** - Equivalence - Addition/subtraction with common denominators - Mixed numerals and improper fractions - Reducing/simplifying - Word problems **Advanced Fractions** - Multiplication - Division - Reciprocals - Addition/subtraction with Different denominators - Word problems	**Decimals** - Reading of decimal numbers - Addition / subtraction - Multiplication - Division - Computation with money - Word problems - Conversions between Decimals and Fractions **Ratio and Proportion** - Concept - Language - Notation - Cross multiplication - Problem solving **Percent** - Concept - Conversion of fractions and decimals to percent - Problem solving - Partial Percents **Graphing** - Interpretation – bar, line, pie - Creation of bar graph - Creation of line graph - Creation of pie graph - Compute averages - Locate Coordinates on x-y axis - Graph algebraic equations - Methods of visually representing data (stem and leaf, box and whisker)

Advanced Skills - Squaring – binomial, trinomial - Cubing – binomial, trinomial - Introduction to algebra - Variables - Balancing equations - Probability – range, mean, median, mode	- Distance / rate / time word problems - Square root - Cube root - Problem Solving Strategies (chapters 1 and 2 algebra) - Non-decimal number bases - Order of operations
Geometry Benchmark	
Basic Concepts - Congruence - Similarity - Equivalence **Lines** - Ray/Line/Segment - Vertical/Horizontal/Oblique - Parallel/Convergent/Divergent - Intersecting – Oblique/Perpendicular **Angles** - Types/Parts - Complementary/Supplementary - Vertical/Adjacent - Adjacent/Complementary - Linear Pair/Alternate Angles - Corresponding/ Co-interior, Co-exterior Angles - Measuring Angles - Bisecting Angles **Polygons** - Definitions - Classification of Triangles - Classification of Quadrilaterals **Measurement of Length** - Metric - Customary **Measurement of Volume** - Metric - Customary	**Area and Perimeter of Plane Figures** - Rectangles - Parallelograms - Triangles - Trapezoids **Volume** - Rectangular prism - Triangular prism - Rhombic prism - Hexagonal prism - Solids of Rotation – Cylinder, Cone, Sphere - Platonic Solids **Study of the Circle** - Nomenclature - Calculating circumference - Calculating area **Advanced constructions with ruler and compass** - Angles - Triangles - Circles **Measurement of Weight** - Metric - Customary **Theorems** - Pythagorean - Euclidean

At the end of the Upper Elementary cycle, students ***will have been exposed to*** **(WBETs):**

Geography Benchmark	
The Sun and the Earth - Revolution / Rotation / Axis - Time Zones / Solstices / Equinoxes - Seasons - Climatic Zones - Latitude / Longitude / Equator / International dateline / Prime Meridian - Study of the Atmosphere **Work of Water** - Rivers - Erosion - Water Cycle - Watersheds **Economic Geography** - Interdependence - Taxes - Production and Consumption - World Trade	**Work of Air** - World wind systems - Names of the world winds - Sea Breeze / Land Breeze - Wind and Ocean Currents - High and Low Pressure - Fronts **Map Work** - Continents - Countries / Capitals - USA States and Capitals - Virginia - Land and Water Forms **Plate Tectonics** - Effects of Continental Drift - Sedimentary / Metamorphic / Igneous Rocks
Science Benchmark	
Classification - Five kingdoms - Plant classification - Animal classification **Ecology** - Biome/Ecosystem - Water Cycle / Nitrogen Cycle - Photosynthesis **The Human Body** - Cells, tissues, organs, systems - Bones and muscles **Light and Sound** - Wavelength/ Frequency of sound waves - Refraction / reflection - Opaque / transparent /translucent - Speed of light and sound - Electromagnetic spectrum	**Energy** - Resources – renewable / non-renewable - Potential vs. Kinetic - Transforming energy from one type to another - Electricity **Chemistry** - Structure of an atom - Periodic table - Structures of Molecules and Compounds - Mixtures / Solutions - Suspension / Deposit / Emulsion / Crystallization - Acid / Base **Physics** - Forces and Friction - Simple Machines (levers and pulleys) - Astronomy - Solar System/Moon Phases - Meteors / Meteorites, Asteroids, Comets - Life of a Star - Forces – Centrifugal, Centripetal, Gravity
History Benchmark	
Foundational History - Creation of the universe - Coming of life - Clock of Eras /Black Strip - Timelines of Human Beings - Fundamental Needs of Human Beings **Further Exploration** Phases in History : - Nomadic / Agricultural / Urban Civilization - Ancient River Civilizations - Europe: Greece, Rome, Middle Ages / Renaissance - Africa, India, Asia, Islamic World	**Study of the United States** - Colonization of North America - American Revolution - Formation of Government - Westward Expansion - Civil War and Reconstruction - Industrialization - World Wars and the Depression - Movements for Equal Rights - Declaration of Independence - The Constitution - Constitutional Amendments - Bill of Rights

- Age of Exploration: The Americas **History of Virginia** - Native Peoples - History of the State - Famous Virginians - Functions of the State and Local Governments	- Three Branches of Government **Peace and Justice** - United Nations - Country Research - Position Paper - Speech - Resolutions

Middle School Outcomes

At the end of the Middle School cycle, students *will be able to* (WBATs):

Language Benchmarks

Create original work in the following genres:

- short story: fiction
- short story: non-fiction
- persuasive essay
- literary response essay
- personal letter
- business letter/cover letter
- resume
- inherited form poetry
- open form poetry
- public address
- biography/autobiography
- extended research paper

Fluently implement the 5 step Writing Process
Create finished pieces of writing with the following characteristics:

- consists of interesting, original ideas which stem from the author's knowledge and/or experience
- possesses logical organization & structure
- has original, identifiable voice
- utilizes precise, interesting diction
- contains flowing, readable sentences with varied structures &complexities
- demonstrates a grasp of standard writing conventions

Mathematics Benchmarks

- Implement multiple problem solving strategies for a given problem
- Translate problems into algebraic expressions and vice-versa
- Correctly apply the order of operations to evaluate complex expressions
- Use variables
- Simplify expressions
- Use formulas
- Solve & graph equations, inequalities, and systems of equations & inequalities
- Extrapolate equations & inequalities from their graph
- Recognize and create equivalent expressions
- Correctly use a Cartesian coordinate plane
- Perform operations, including factoring, on monomials and polynomials
- Identify, solve, and graph quadratic equations
- Define and calculate the 3 measures of center on a data set
- Identify, read, and create bar graphs, dot plots, and box & whisker plots
- Read, create, and perform simple operations on matrices

Science Benchmarks

- Propose, design, and conduct a scientific experiment
- accurately record data
- Create effective visual representations of data
- Describe the basic organization of the periodic table
- Identify subatomic particles
- Understand the way in which elements combine to form compounds
- Differentiate between a physical and chemical change
- Test a substance for pH
- Identify properties of acidic & basic substance
- Identify forms and sources of energy, and demonstrate examples of its transferral and transformation
- Diagram and label the basic structure and organelles of a plant and animal cell
- Explain the logic behind our current system of classification
- Understand the interdependence of photosynthesis and respiration
- Understand the basic mechanisms of inheritance
- Give examples of the change in a population over time
- Explain the way in which matter and energy cycle through an ecosystem
- Give examples of biotic and abiotic factors
- Describe the interdependence of organisms in an ecosystem
- Identify examples of mechanical and electromagnetic waves
- Explain the relationship between electricity and magnetism
- Identify the major threats to the health of our natural environment and their contributing factors
- Identify forms and sources of energy, and demonstrate examples of its transferral and transformation
- identify laws of motion
- Articulate one's personal level of environmental commitment
  - Communicate the basic ethics and tenants of permaculture design
- Apply creative and sustainable design strategies to living systems

At the end of the Middle School cycle, students ***will be able to*** **(WBATs):**

History Benchmarks	
• Interpret complex visual representations of time/history • Understand the sequence of the creation of earth and the appearance of humans • Discuss the progression and decline of at least one civilization from history • Identify the pathways by which humans populated the earth • Analyze the causes and implications of major migrations • Define "hero" and describe the heroic achievements of several figures from history • Explain key developments that have advanced humanity's progress towards peace & equality • Describe the way in which key inventions have altered the path of history • Identify one's personal ancestry • Conduct an interview/document an oral history	• Name the parts of a map • Describe the different types of maps, their appearance and purpose • Identify major landforms • Identify structures that organize culture (i.e. religion, gov., etc.) • Understand the way that geography influenced at least one key culture • Discuss the implications of increased specialization over time • Analyze the cultural impact of specific trade relationships • Identify and describe at least one key historical shift in modes of production or exchange • Implement the basic vocabulary of introductory concepts of economics • Identify reliable sources of current news and analysis • Discuss the implications and controversies of contemporary events • Participate in a debate with composure and civility
Health and Wellness Benchmarks	
• Identify one's own principal strengths and weaknesses • Modify one's own environment and practices to optimize outcomes • Explain the most current recommendations for balanced nutrition and level of exercise • Independently follow practices of basic hygiene • Articulate a decision making process to apply to issues related to drug & alcohol use, sexuality, etc. • Identify the internal and external male and female reproductive organs • Understand the basic physical & emotional changes expected during puberty	• Articulate the potential consequences of sexual activity, and that only abstinence provides 100% protection from them • Identify those methods of contraception that provide protection against BOTH STDs AND pregnancy • Consider strategies for communication regarding personal choices & boundaries • Identify community resources that provide crucial assistance to teenagers • Participate effectively in a peer mediation

By the end of the Middle School cycle, students ***will be exposed to*** **(WBETs):**

<table>
<tr><th colspan="2">Language Benchmark</th></tr>
<tr>
<td>

The Writing Process
- Strategies for brainstorming/pre-writing
- Drafting (crafting pieces of increasing length, complexity, & sophistication)
- Responding (giving critical and significant feedback to others)
- Revising (accepting and incorporating critical feedback from others)
- Editing work of self and others (proper use of editor's marks)
- Publishing

7 Traits of Effective Writing
- Ideas
- Organization
- Voice
- Word choice
- Sentence Fluency
- Conventions
- Presentation

Research Skills
- Mapping/Planning
- Researching from multiple sources, including internet
- Organization/synthesis of information
- Creation of original work from source material
- Proper citation

Structure & Organization
- Narrow & manageable topic choice
- Crafting a thesis statement
- Outlining
- topic sentences that support thesis
- logical sequence
- isolation of topic w/i paragraphs
- engaging introduction & conclusion

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Genre
The structure & conventions of, as well as exposure to important pieces from the following genres (students will also create pieces of original work in most of these genres):
- poetry (inherited & open form)
- short story
- novel
- non-fiction
- essay (5 ¶ persuasive)
- essay (5 ¶ literary analysis)
- the letter
- speech/public address
- biography/autobiography
- drama
- journalism

Literary interpretation/analysis
Identification and definition of literary devices such as:
- simile & metaphor
- alliteration & assonance
- foreshadowing
- irony
- personification
- rhyme scheme

Socratic seminar Interpretation of:
- character
- theme/motif
- setting
- point of view
- plot
- Analysis of author's intentions
- Consideration of historical context

Conventions
- Application of proper punctuation, capitalization & grammar to original work
- Proper use and interpretation of editor's marks
- Application of word processing technology to identify/correct errors of convention

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</tr>
<tr><th colspan="2">Math Benchmark</th></tr>
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Problem Solving Strategies
- Solving by making a diagram
- Solving by making a table
- Solving by simplifying the problem
- Solving by working backwards

Algebra
- Commutative property
- Operations w/ integers
- Exponents
- Order of operations
- Associative property
- Distributive property
- The symbols of Algebra
- Translating real problems into Algebraic expressions
- Evaluating expressions for a given value of x

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- Using variables

- Simplifying expressions
- Using formulas
- Solving equations & inequalities in one variable
- Recognizing and creating equivalent equations & inequalities
- The Cartesian coordinate plane
- Graphing functions using multiple strategies
- Slope
- Recognizing the equation of a graphed line
- Graphing Inequalities
- Solving systems of equations/inequalities using multiple methods/strategies
- Comparing the equations of parallel and perpendicular lines
- Definition/concept of monomials
- Operations on monomials
- Factoring monomials

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By the end of the Middle School cycle, students ***will be exposed to*** **(WBETs):**

Algebra (continued) - Definitions/concept of polynomials - Negative & zero exponents - Properties of exponents - Operations on polynomials - Factoring polynomials - Quadratic equations - Solving quadratics using multiple methods/strategies - The quadratic formula - Rational algebraic expressions - Equivalent rational expressions - Operations of rational expressions - Using ratio and proportion in Algebra - Rational equations **Data & Probability** - Measures of center: mean, median, mode - 5 number summaries - Bar graphs - Dot plots - Box & whisker plots - Histograms - Stem & leaf plots - Analyzing & graphing two variable data - Using matrices - Proportion - Measurement conversion - Probability & randomness	**Geometry** - Problem Solving Processes - Flexibility - Generalization - Reversibility - Motions - Geometric Objects - Solids - Combinations of Motions - Measurement - Dilations & Similarity - Using Angles - Properties of Polygons - Coordinates - Area & Perimeter - Proofs w/ Parallel Lines - Triangle Similarity - Triangle Congruence - Volume & Surface Area - Proofs About Polygons - Circles - Other Coordinate Systems
Science Benchmark	
Scientific Method - Formation of hypothesis - Experiment design - Identification and control of variables - Repeat trial - Interpretation & representation of data - Application to useful and practical problems Chemistry - History & organization of the periodic table of elements - Atoms & molecules - Chemical formulas & equations - Physical and chemical changes - pH Physics - Forms of energy - Transformation and transferral of energy - Waves - Work, force & motion - Electricity & magnetism Life Science - Structure, function, & division of cells - Classification of organisms - Photosynthesis & Respiration - Genetics & Inheritance - Changes in populations over time	**Ecology/Environmental Science** - Interdependence of elements in an ecosystem - Cycles of matter and energy in nature - Relationships between biotic and abiotic factors **Environmental Issues** - Global warming - Pollution (air, water, land, etc.) - Food systems - Human activity & the ecosystem - Personal/collective action **Permaculture Design** Deep observation Mapping Capturing & storing of energy "Stacking" of elements in a system Designing to mimic cycles in nature Stages of the design process Ethics & strategies of permaculture History of permaculture movement Examples of permaculture design

By the end of the Middle School cycle, students ***will be exposed to*** **(WBETs):**

History Benchmark	
Timelines - Visual representations of time - Timeline of creation - Human ancestors - Timeline of humans - Personal timelines	**Stages of Civilization** - Patterns from history - Great eras of history - Analysis of specific cultures - Birth, expansion & decline
Migrations - Prehistoric migration out of Africa - Pre-modern migrations - Modern migrations - Resulting cultural transformation **Progress, Contributions of Humanity** - Heroes of history - Advancement of peace & equality **Key Inventions & Discoveries** - Precursors - Inventors/Discoverers - Societal/Historical Effects - Implications/ Consequences **Biography/ Individual History** - Oral history - Interview - Noteworthy figures from history - Ancestry, personal history	**Geography and Human Connection to the Land** - Types of maps - Parts of maps - Map reading & making - Landforms - Effects of geography on civilization - Key historical shifts in humanity's relationship to the land **Production/Exchange** - Progression of specialization - Historical shifts in modes of production & exchange - Trade routes - Trade and cultural transformation - Economics **Study of Current Events** - Analysis of resources - Political and cultural awareness - Discussion & debate
Health and Wellness Benchmarks	
Self-Awareness/Self-Inventory - Identifying personal strengths & weaknesses - Learning styles & preferences - Dimensions of wellness - Successful habits of mind - Cultivating positive character traits **Self-Awareness/Self-Inventory** - Identifying personal strengths & weaknesses - Learning styles & preferences - Dimensions of wellness - Successful habits of mind - Cultivating positive character traits **Teen Issues** - Decision making & communication - Drugs & alcohol - Sexual activity - Healthy relationships - Financial Self Sufficiency - Self-Respect/Self-Regard - Body image - Care of self (diet, rest, exercise, hygiene, stress management) - Self-harm (eating disorders, mutilation, etc.)	**Peer Counseling** - Active listening skills - Sending effective messages - Helping skills - Effective questioning - Values & decision making - Community resources **Peer Counseling** - Active listening skills - Sending effective messages - Helping skills - Effective questioning - Values & decision making - Community resources **Self-Care** - Nutrition - Hygiene - Exercise - Emotional, social & spiritual wellness

By the end of the Middle School cycle, students ***will be exposed to*** **(WBETs):**

Sexuality - Reproductive anatomy - Puberty - Gender, gender roles, and stereotypes - Sexual consequences pregnancy STD emotional, social, etc. protection (abstinence & contraception) - Sexual orientation & gender identity	**Peace Talks** - Communication - Conflict resolution - Problem solving - Mediation - Anger management - Relationships: peer, family, school, etc. - Inner peace/happiness **Social Justice** - Cultural identity - Class issues - Gender & sexual identity - Human rights - Race & ethnicity - Bystanding vs. upstanding

Co-curricular Disciplines at Mountaintop

Spanish

The children work with a Spanish Specialist from the Children's House level through Middle School. In the early years, conversation and an appreciation for the culture are emphasized. As the children advance, the program becomes more academic and culminates in completion of either Spanish I or II in Middle School. The Spanish curriculum is tailored to each developmental level and to take advantage of the young child's ability to absorb language.

Visual Arts

Art lessons and opportunities for creative expression abound in the Toddler and Children's House classrooms. The children are free to choose art during their work time and the Guides are trained to share a variety of media. In Children's House, Elementary and Middle School, the students work with artists and art instructors in our fully equipped studios, as well as incorporating artistic expression into their daily work in the classroom.

Movement and Physical Education

Students at Mountaintop have ample opportunity for physical movement, physical work and spontaneous and organized sports activities. The Montessori approach emphasizes lifelong skills, fitness and nutrition and makes physical fitness accessible to all children. Cooperation and team effort are highlighted rather than competition and winning. Children learn to celebrate their own, as well as, other's accomplishments and efforts. Lower Elementary through Middle School students work with a Physical Education Specialist weekly in order to build their understanding of conventional sports, develop fitness goals and learn to appreciate their physical capabilities.

Music, Dance and Drama

Orff-Schulwerk incorporates music, drama and dance. It utilizes conventional and percussion instruments that lend themselves to ensemble work and improvisation. Orff is characterized by a unity of music, movement and drama; a respect for students at all ability levels; elemental instruments; the use of improvisation and composition; and the encouragement of creative thinking. The program includes: weekly extended music sessions with the specialist, monthly assemblies and community performances.

The Montessori curriculum also includes a richness of musical experiences at every level. Singing, movement, rhythm, history, styles and composers are all incorporated into the daily work cycle. Children also learn fundamentals of composition and reading music utilizing the Montessori bells and tone bars.

Garden to Table & Ecology

Each elementary class plans, prepares, serves and cleans-up its own nutritious lunch one day per week. Lunch is served on real dishes and beautiful lunch standards are implemented. Middle School students

also experience cooking as an elective throughout the school year.

The elementary students build upon the gardening and practical life experiences they gained in Children's House. The students use real tools and learn practical skills: planning, planting, maintaining and harvesting the garden; composting; and caring for the chickens.

Technology

Upper elementary and middle school students receive lessons in technology to improve their practical skills and internet safety. They also make use of technology for creative purposes such as design and video production.

Spanish

Children's House	Lower Elementary	Upper Elementary	Middle School
Listening Greetings Vocabulary Action Commands Reading Guide Reads in Spanish Vocabulary Matching Writing Words to Pictures Speaking Greetings Vocabulary Action Commands Q/A Format Pronunciation Culture Music and Movement	Listening Greetings Vocabulary Action Commands Sentence Formation Q/A Format Expressions Reading Guide Reads in Spanish Student Reads w/Guide Vocabulary Recognition Reading Comprehension Writing Nouns/Articles Action Commands Speaking Greetings Vocabulary Action Commands Intermediate Q/A Pronunciation Culture Music and Movement	Listening Greetings Vocabulary Application of Action Commands Advanced Q/A Original Sentences Expressions Reading Guide Reads Student Reads w/Guide Student Reads to Peer Vocabulary Recognition Reading Comprehension Writing Noun/Adjective/Article ID Parts of Speech Speaking Greetings Vocabulary Action Commands Advanced Q/A Original Sentences Expressions Culture Movement Real-life Situations Games Partial Immersion	Listening *Buen Viaje Series 1* Immersion Reading *Buen Viaje, Series 1* Student Reads to Peer Reading Comprehension Paragraphs, Books Calendar, Homework Writing *Buen Viaje, Series 1* Advanced Writing Compete Paragraphs Children's Book Speaking *Buen Viaje, Series 1* Immersion Culture Movement Real Life Situations Country/Culture Study

Visual Arts

Children's House	Lower Elementary	Upper Elementary	Middle School
Concepts Line Shape Color Texture Size Skills Scissors Paper Paint Glue Brushes Clay	Concepts Line Shape Color Texture Space Skills Tool Usage Markers Pencils Collage Watercolors Clay Grace and Courtesy Materials Space Time	Concepts Elements of Art Value Color Form Shape Line Space Texture Principles of Design Contrast Rhythm Unity Emphasis Movement Balance Skills Clay Acrylic Painting Watercolor Painting Screen Printing Linoleum Block Printing Charcoal Pastel Stone Sculpting Anatomical Studies Art History Art Appreciation	Advanced 2D Pencil Charcoal Sketching Drawing Pastel Painting Public Art Work in Extreme Sizes Advanced 3D Sculpture Recycled Materials Glass Ceramics Wheel Work Wire Stone Guest Artists Completed Portfolio Gallery Showing

Movement and Physical Education

Children's House	Lower Elementary	Upper Elementary	Middle School
Skills	Skills	Skills	Skills
Locomotor	Locomotor	Team Sports	Team Sports
Non-locomotor	Ball Skills	Sportsmanship	Recreational Sports
Object Control	Adv. Object Control	Team Play	Physical Wellness
Sportsmanship	Team Sports	Winning and Losing	Emotional Wellness
Body Awareness	Sportsmanship	Advanced Competition	Sexual Wellness
Body Control	Social Skills in Games	Nutrition and Fitness	Social Wellness
Spatial Awareness	Winning and Losing	Physical Changes	Nutrition and Fitness
Equipment Safety	Cooperation in Group		Maturity and Adulthood
Following Directions	Body Awareness		
Grace and Courtesy	Body Control		
Respect for Equipment	Social Grace and Courtesy		
Respect for Peers	Safety and Rules		
Respect for Rules	Control of Emotions		
Taking Turns	Respect for Referees		
Waiting for a Turn	Conflict Resolution		

Music Dance Drama

Children's House	Lower Elementary	Upper Elementary	Middle School
Vocal	Vocal	Vocal	Vocal
Singing	Singing in Unison	Singing in Unison	Singing in Unison
Matching Pitch	Canon	Canon	Changing Voices
Group Singing	Instrumental	Part Singing	Instrumental
Instrumental	Orff Instrumentarium	Instrumental	Orff Instrumentarium
Small Percussion	Advanced Percussion	Orff Instrumentarium	Advanced Techniques
Keeping a beat	Movement	Recorders	Analyze Scores
Movement	Labeling/Performing	Composition	Composition
Locomotor Movements	Movements	Movement	Movement
Body Awareness	Early Choreography	Labeling/Performing	Set Dances
Form a Circle/Dance	Body Relationships	Construct Choreography	Complex Choreography
Dance in Self Space	Mirroring	Contact Improvisations	Drama
Dance in General Space	Shadowing	Drama	Speaking in Public
Physical Contact	Alone/Connected	Ensemble Performance	Narration
		Narration	Puppetry
			Ensemble Performance
			Reader's Theatre

Garden to Table and Ecology

Children's House	Lower Elementary	Upper Elementary	Middle School
Life Cycles	Life Cycles	Life Cycles	Permaculture Curriculum
Seasonal Changes	Seasonal Changes	Seasonal Changes	Greenhouse Curriculum
Gardening	Gardening	Gardening	Food and Production
Wildlife Habitats	Wildlife Habitats	Wildlife Habitats	Food and Culture
Practical Skills	Practical Skills	Practical Skills	Food and Health
Conservation	Conservation	Conservation	Food and the Environment
	Food and Production	Food and Production	Food Preparation
	Food and Culture	Food and Culture	
	Food and Health	Food and Health	
	Food and the Environment	Food and the Environment	
	Food Preparation	Food Preparation	

Technology

Children's House	Lower Elementary	Upper Elementary	Middle School
		Information Technology	Information Technology
		Safety	Ethics
		Confidentiality	Daily Uses
		Plagiarism	Effects on Humans
		Citations	Effects on Environment
		Technology Basics	History of Technology
		Follows Rules	Access Control Systems
		Typing and Functions	Technology Basics
		Id's Components	Typing and Functions
		Vocabulary	Peripherals
		Work Processing	Adv. Word Processing
		Spreadsheets	Adv. Spreadsheets
		Presentations	Graphs/Data
		Application and Integration	Database
		Learning and Skills	File Management
		Finding Information	Document Manipulation
		Creativity Tool	Data Backup
		Reports/Graphics	LAN/Internet
			Online Research
			Reference Programs
			Search Engines
			Information Analysis
			Image Editing
			Video Production
			Application and Integration
			Problem Solving
			Writing Process
			IT in the Professions
			Creativity Tool
			Reports/Presentations

Ecoliteracy at Mountaintop: Garden to Table Program & Related Curriculum Content

Daily, our eating turns nature into culture, transforming the body of the world into bodies and minds. Through the eyes of the cook or the gardener or the farmer who grew it, food reveals itself for what it is; no mere thing but a web of relationships among a great many living beings, some of them human, some not, but each of them dependent on the others, and all of them ultimately rooted in soil and nourished by sunlight. I'm thinking of the relationship between plants and the soil, between the grower and the plants and animals he or she tends, between the cook and the growers who supply those ingredients, and between the cook and the people who will soon come to the table to enjoy the meal. It is a large community to nourish and be nourished by.

Michael Pollan

The Mountaintop Garden to Table Program is based on curriculum and learning competencies from the Center for Ecoliteracy and the AAAS Benchmarks for Science Literacy. In addition to environmental knowledge, education for sustainability includes the acquisition of particular skills, values and vision needed to put that knowledge into practice. Education for sustainable living cultivates competencies of head, hand, heart and spirit to enable children to develop toward becoming citizens capable of designing and maintaining sustainable societies.

Head

Ecological knowledge
The ability to think systematically
The ability to think critically, to solve problems creatively, and to apply environmental ethics to new situations
The ability to assess the impact of human technologies and actions to envision the long-term consequences of decisions.

Heart

A deeply felt concern for the well-being of the Earth and all living things
Empathy and the ability to see from and appreciate multiple perspectives
A commitment to equity, justice, inclusivity, and respect for all people
Skills in building, governing, and sustaining communities

Hands

The ability to apply ecological knowledge to the practice of ecological design
Practical skills to create and use tools, objects, and procedures required by sustainable communities
The ability to assess and make adjustments to uses of energy and resources
The capacity to convert convictions into practical and effective action

Spirit

A sense of wonder
A capacity for reverence
A deep appreciation of place
A feeling of kinship with the natural world, and the ability to invoke that feeling in others

Garden to Table Curriculum Framework

Exploring where our **food** comes from and how it is produced
Investigating how **culture** shapes our choices and behavior
Observing the relationship between food and our **health**
Researching the links between our food and the **environment**

	Lower Elementary	Upper Elementary	Middle School
Food	Producing food for our society requires many people and lots of work in planting, growing, harvesting, transporting, and processing crops, and in raising animals for eggs, milk and meat.	There are many ways in which humans have managed the landscape, controlled plant and animal characteristics, and used technology in order to raise crops and animals for food.	Growing and producing food is a complex process that requires making tradeoffs among such factors as economics, environmental costs and benefits, public health implications, animal welfare, and personal views.
	How do climate, soil, and other conditions affect the ability of crops and animals to thrive? How has farming changed over time in our community and beyond? What people, tasks, steps, and resources are required to produce food and bring it to table?	How did ancient cultures acquire the food they needed? In the past and in the present, what effects have raising plants and animals had on the natural environment? How have people used selective breeding to increase the quality and quantity of food? In what ways do decisions about agriculture influence people's health?	How have changes in food and agriculture affected people's lives – today and in the past? What side effects and trade-offs are involved with various agricultural and food production strategies in both local and world contexts? How are selective breeding and the genetic modification of plant and animal species similar, and in what ways do they differ? What role should economics, environmental costs and benefits, public health implications, and personal views play in decisions involving food and food production?
	Many people work to bring food from the farm to our table. The kinds of crops that can grow in an area depend on the climate and soil. Irrigation and fertilizers can help crops grow in places where there is too little water or soil is poor. Heating, smoking, salting, drying, cooling and airtight packaging make it possible for food to be stored for long intervals before being used. Modern technology has increased the efficiency of agriculture, so that fewer people are needed to work on farms than ever before. Much of the food eaten by Americans comes from other parts of the country or world.	Early in human history, there was an agricultural revolution in which people changed from hunting and gathering to farming. This allowed changes in the division of labor and the development of new patterns of government. People control some characteristics of plants and animals they raise by selective breeding and by preserving varieties of seeds (old and new) to use if growing conditions change. In agriculture, as in all technologies, there are always trade-offs to be made. Getting food from many different places makes people less dependent on weather and conditions in any one place, yet more dependent on transportation and communication among far-flung markets. Specializing in one crop may risk disaster if changes in weather or increases in pest populations wipe out that crop. Also, the soil may be exhausted of some nutrient, which can be replenished by rotating the right crops. By eating locally grown and seasonal foods, we can minimize the resources needed to produce food.	Agricultural technology requires trade-offs between increased production and environmental harm and between efficient production and social values. In the past century agricultural technology led to a huge shift of population from farms to cities and a great change in how people live and work. Government sometimes intervenes in matching agricultural supply to demand in order to ensure a stable, high quality, and inexpensive food supply. Regulations are often also designed to protect farmers from abrupt changes in farming conditions and from competition from other countries. New varieties of farm plants and animals have been engineered by manipulating their genetic instruction to produce new characteristics.

	Lower Elementary	Upper Elementary	Middle School
Health	Food provides the energy and building materials our bodies need to grow, develop and thrive.	Individual bodies may have different specific requirements for health, but all people need good dietary habits, healthy personal behaviors, and a toxic-free environment for optimal health.	A variety of factors influence health decisions both at the personal and the societal level; including marketing, media messages, scientific information, public policy, personal preferences and one's friends.
	What is a healthy diet? What nutrients do we need to keep healthy? How do our nutritional needs change as we grow up? How does exercise contribute to health?	What effects do food choices have on body composition and optimal health? How do the amount and types of food and exercise needed for health vary among individuals? How have changes in the way that food is produced and processed affected the nutrient content of the food we eat? What behavior patterns and food choices affect the health of the human body and the health of the environment?	Why doesn't everyone practice health-enhancing behaviors – such as eating healthfully – all the time? How do public policies in our region or state promote human health? What conditions in our society diminish human health?
	Food provides energy and materials for growth and repair of body parts. Vitamins and minerals, present in small amounts in foods, are essential to good health. As people grow up, the amounts and kinds of food and exercise needed by the body may change. Making healthy food choices includes basing decisions upon nutrient content.	The amount of food energy (calories) a person requires varies with body weight, age, gender, activity level, and natural body efficiency. Toxic substances, some dietary habits, and some personal behavior may be bad for one's health. Some effects show up right away and others years later. Avoiding toxic substances, such as tobacco, and changing dietary habits increase the chances of living longer. The environment may contain dangerous levels of substances that are harmful to human beings. Therefore, the good health of individuals requires monitoring the soil, air, and water, and taking steps to keep them safe.	New medical techniques, efficient health care delivery systems, improved sanitation, and a fuller understanding of the nature of disease give today's humans a better chance of staying healthy than their forebears had. Conditions now are very different from the conditions in which the species evolved. But some of the differences may not be good for human health.

BIG IDEAS, ESSENTIAL QUESTIONS and KEY CONCEPTS from OUR GARDEN to TABLE CURRICULUM courtesy of THE CENTER FOR ECOLITERACY

	Lower Elementary	Upper Elementary	Middle School
Culture	Our family and cultural backgrounds influence the foods we eat.	Cultures have distinctive food patterns and behaviors that can change due to a variety of influences.	The decisions a society makes about food, food production, and food practices are influenced by the prevalent culture's values, assumptions, and norms.
	What food traditions do different cultures have? Why do families and other groups have customs and rules about food and eating? How do we learn about foods from others? How have food traditions changed over time where we live?	What can we learn about different cultures by studying their food and the ways they procure, prepare, eat and dispose of waste? How do ideas, values, and behavior patterns spread within a culture and from one culture to another? How have past and present technological changes (including transportation) brought changes to in food choices, food production, and human behaviors related to food?	How might we uncover the ways that culture influences our own biases, perspectives, and beliefs about food and food-related behaviors? How does our society's cost-benefit approach to decisions influence food and food practices, and how does it compare with the ways other societies make decisions. What are examples of ways in which our society favors individual rights over the collective good as it relates to food? How do these examples compare with other societies?
	Each culture has distinct patterns of behavior, usually practiced by most who grow up in it. People can learn about others from direct experience, from the media and from listening to other people talk about their work and their lives. People also imitate people or characters in the media. What is considered to be acceptable human behavior varies from culture to culture and from one time period to another. Human beings tend to repeat behaviors that feel good or have pleasant consequences and avoid behaviors that feel bad or have unpleasant consequences.	Each culture has distinctive patterns of behavior, usually practiced by most of the people who grow up in it. Within a large society there may be many groups, with distinctly different subcultures associated with religion, ethnic origin, or social class. Although within any society there is usually broad general agreement on what behavior is unacceptable, the standards used to judge behavior vary for different settings and different subgroups, and they may change with time and different political and economic conditions. Technology, especially in transportation and communication, is increasingly important in spreading ideas, values, and behavior patterns within a society and among societies. New technology can change cultural values and social behavior.	Cultural beliefs strongly influence the values and behavior of the people who grow up in the culture, often without their being fully aware of it. Heredity, culture, and personal experience interact in shaping human behavior. Benefits and costs of proposed choices include consequences that are long-term as well as short-term, and indirect as well as direct… but benefits and costs may be difficult to estimate. All social trade-offs pit personal benefits and rights of the individual, on one side, against the general social good, on the other.

	Lower Elementary	Upper Elementary	Middle School
Environment	Food is made up of energy and matter that are passed from one organism to another.	A consistent influx of energy is required for organisms to sustain themselves.	Human activities can affect the balance of food webs on which we vitally depend.
	Where do living organisms get their food energy? What is a food web and what are the different jobs in a food web? In what ways do people depend on food webs to survive? How do the decisions we make about food affect the natural systems, including food webs?	How do plants use energy from light to make sugar? What happens to the energy when food is transferred from one organism to another? In what ways to people depend on this flow of energy?	How do geographical factors, such as climate, location of water resources, and mountains, affect the availability of food energy? In what ways do human activities both depend on and affect food webs? What does knowledge about the flow of matter and energy through living systems suggest for human beings?
	Some source of 'energy' is needed for all organisms to stay alive and grow. Almost all kinds of animals' food can be traced back to plants. One of the most general distinctions among organisms is between plants, which use sunlight to make their food, and animals, which consume energy-rich food. Over the whole Earth, organisms are growing, dying, and decaying and new organisms are being produced by the old ones. Food chains and webs are ways to represent feeding relationships among organisms.	Food provides molecules that serve as fuel and building materials for all organisms. Plants us the energy from light to make sugars from carbon dioxide and water. Organisms that eat plants break down the plant structures to produce the materials and energy they need to survive. Then they are consumed by other organisms. All organisms, including the human species, are part of and depend on two main interconnected global food webs. One includes microscopic ocean plants, the animals that feed on them, and finally the animals that feed on those animals. The other web includes land plants, the animals that feed on them and so forth. Almost all food energy comes originally from sunlight. Over a long time, matter is transferred from one organism to another repeatedly and between organisms and their physical environment. as in all material systems, the total amount of matter remains constant, even though its form and location change.	The amount of life any environment can support is limited by the available energy, water, oxygen, and minerals, and by the ability of ecosystems to recycle the residue of dead organic materials. Human activities and technology can change the flow and reduce the fertility of the land. The chemical elements that make up the molecules of living things pass through food webs and are combined and recombined in different ways. At each link in the food web, some energy is stored in newly made structures, but much is dissipated into the environment as heat. Continual input of energy from sunlight keeps the process going. At times, environmental conditions are such that plants and marine organisms grow faster than decomposers can recycle them back to the environment. Layers of energy-rich organic material have been gradually turned into great coal beds and oil pools by the pressure of the overlying earth. By burning fossil fuels, people are passing most of the stored energy back into the environment as heat and releasing large amounts of carbon dioxide.

End of Cycle Benchmarks for Ecoliteracy: by the end of each cycle students will know:

	Lower Elementary	Upper Elementary	Middle School
The Living Environment: The Flow of Matter and Energy			
Plants Making Food	Know that plants and animals both need to take in water. Animals also need food and plants need light.	Know plants have different structures that serve different functions in growth, survival, reproduction.	Know the general distinction that plants use sunlight to make food (photosynthesis) and animals consume energy-rich foods.
Food Web	Know that animals eat plants or other animals for food.	Know that almost all kinds of animals' food can be traced back to plants.	Know that all organisms, including humans, are part of and depend on two main interconnected food webs.
Matter Cycle	Know many materials can be recycled and used again, sometimes in different forms.	Understand that over the whole earth, organisms are growing, dying, decaying and reproducing.	Know how matter is recycled within ecosystems.
Energy in Living Things	Know that plants and animals use certain resources for energy and growth.	Know that the transfer of energy through food consumption is essential to all living organisms.	Know how energy is transferred through food webs in an ecosystem.
Human Society: Culture Affects Behavior			
Groups and Subcultures	Know that some people belong to some groups because they are born into them and to some groups because they join them.	Understand that different groups have different expectations for how their members should act.	Understand that a large society may be made up of many groups, and these groups may contain many distinctly different subcultures.
Cultural Influences	Understand that people often choose to do the same kinds of things that their friends do, but that people often choose to do certain things their own way.	Understand that each culture has distinctive patterns of behavior that are usually practiced by most of the people who grow up in it.	Understand that usually within any society there is broad general agreement on what behavior is acceptable but that the standards used to judge behavior vary for different settings and different subgroups and may change with time and in response to different political and economic conditions.
Learning from Others	Know that people can learn from each other in many ways.	Understand that people can learn about others in many different ways.	Understand that technology, especially in transportation and communication, is increasingly important in spreading ideas, values, and behavioral patterns within a society and between societies.

End of Cycle Benchmarks for Ecoliteracy: by the end of each cycle students will know:

The Designed World: Agricultural Technology			
Producing Food	Know that most food comes from farms either directly as crops or as the animals that eat crops.	Know how human activities have increased the ability of the physical environment to support human life.	Understand the environmental consequences of both the unintended and intended outcomes of major technological changes in human history.
Transporting Food	Know the modes of transportation used to move people, products and ideas from place to place, their importance and their advantages and disadvantages.	Know the various ways in which people satisfy their basic needs and wants through the production of goods and services throughout the world.	Understand the role of technology in resource acquisition and use, and its impact on the environment.
Effects on Society	Know people invent new ways of doing things, solving problems, and getting work done.	Know that technologies often have costs as well as benefits and can have an enormous effect on people and other living things.	Understand the role of agriculture in early settled communities; differences between wild and domestic plants and animals; and how patterns of settlement were influenced by agricultural practices.
Controlling Characteristics	Know that plants and animals need enough warmth, light, and water to grow well.	Know that some plant varieties and animal breeds have more desirable characteristics than others, but may be more difficult or costly to raise or grow.	Understand that people control some characteristics of plants and animals they raise by selective breeding and by preserving varieties of seeds to use if growing conditions change.
The Human Organism: Maintaining Good Health			
Diet and Exercise	Know that eating a variety of healthy foods and getting enough exercise and rest help people to stay healthy.	Know the nutrient values of different foods and healthy eating practices.	Understand how nutrient and energy needs vary in relation to gender, activity level and age.
Harmful Substances	Know how to distinguish between helpful and harmful substances.	Know that tobacco, alcohol, other drugs, and certain poisons in the environment can harm humans and other living things.	Know that the environment may contain dangerous levels of substances that are harmful to humans. Individual health requires monitoring the soil, air, and water and taking steps to make them safe.
Maintaining Good Health	Know how basic personal hygiene habits required to maintain health.	Know ways in which a person can prevent or reduce the risk of disease and disability.	Understand how lifestyle, pathogens, family history, and other risk factors are related to the cause or prevention of disease and other health problems.
Dining Grace and Courtesy	Understand standards of behavior and consciousness		
Gardening and greenhouse	Know how to plant, tend to, and harvest a crop		
Meal planning, preparation, and cleanup	Know where food comes from, how it's made, how we dispose of it		

Children's House Language Sequence: *writing and reading explosion*

Age and Lessons	Outcome
<u>2.5 to 3</u> Spoken language: Greetings Conversations True stories Question game Classified pictures and books Read aloud (nonfiction, reality, poetry) Songs Naming lessons Vocabulary training Grace & Courtesy for handling books	Enrichment of vocabulary Pre-reading content acquisition Confidence building Skill building Disposition training (to love the language in spoken and written form) <u>Books in Library Area</u> Early picture books depicting beautiful, simple, reality-based content Read aloud literature telling reality-based stories, poetry
<u>3 – 4</u> Objects of the environment Qualities of sensorial materials Nomenclature for biology, geography, science Sound games for phonemic awareness – beginning, middle and ending sounds Rhyming - oral Sandpaper letters for alphabet awareness Large moveable alphabet awareness Chalk and chalkboards for writing practice Metal insets for pencil grip Moveable alphabet with objects Phonetic objects w/labels Phonetic cards Rhyming words – written Phonetic commands Simple notes from guide	Continuation of all above Pre-reading skills – phonemic awareness Writing preparation and explosion Phonetic reading <u>Books in Library Area</u> Phonetic books that are not part of a graded 'phonics' series Reality-based Never used to teach reading Children never made to read out loud Beautiful and look like real literature (Miss Rhonda's Readers) <u>Phonetic/Phonogram Reader Series</u> Not displayed in classroom Offered as a choice when a child needs extra practice
<u>4 – 5</u> Writing with pencil and paper Writing notes Reading notes Syllables Function of words (parts of speech) Continuation of sandpaper letters in small groups w/games – including blended sounds Phonogram object boxes Phonograms with small moveable alphabets Puzzle words Language extensions with sensorial materials Classified reading cards Function of words (parts of speech)	Continuation of all above Further work in writing and reading Impression of grammar <u>Books in Library</u> Literature and books for young readers that are beautiful and reality-based
<u>5 – 6+</u> Personal spelling dictionary Metal inset design Spelling Alphabetical order Uppercase Endmarks	Continuation of all above Writing and reading fluency Impression of sentence structure

Superlative and comparative Reading analysis Word study charts Dictionary Symbolizing Name, address, phone #	

Lower Elementary Language Sequence: *literacy acquisition and consolidation*

Age and Lessons	Outcomes
Reading and Writing Assessment (all students during first 2 weeks) Students who are not reading fluently get individual or small group (2 – 3 at same level) reading instruction each day for 30 minutes. They also get paired with a UE or MS reading buddy. Parents are communicated with frequently about progress and provided with guidelines to support the process at home. Children who are not reading and writing fluently by the end of the first year may be recommended for assessment and/or tutoring.	Verify reading and writing levels Plan for reading instruction and remediation Develop communication plan with parents
First Year Work Journal Great Lesson about the human story and the emergence of writing History of Written Language History of Spoken Language – English Word study Root words Suffixes, prefixes Compound words Word families Synonyms, antonyms, homonyms Parts of speech – oral introductions and grammar boxes Noun Article – definite, indefinite Adjective Verb Adverb Pronoun Conjunction Interjection Logical analysis (sentence diagramming)– simple sentences Cursive practice Spelling program Use of the dictionary Types of sentences, capitalization, punctuation Paragraphs Writing process – research, stories, poetry, book reports Capitalization and punctuation conventions	Big picture History Reading and writing fluency Grammar Conventions Sentence structure
Second Year Further work with grammar boxes Further work with logical analysis – compound, complex Indefinite, definite articles	Continuation… More sophistication in writing Reading comprehension

Positive, comparative, superlative adjectives Noun classification Adjective classification Symbolizing Cursive Spelling Reference books Writing process – revising and editing	
Third Year Further work with verbs Transitive, intransitive Tenses Mood Passive, active Verbals Further work with logical analysis – chart A, chart B Spelling Writing process – prewrite, draft, revise, edit, publish JR Great Books – literature discussion	Continuation… More sophistication in writing Reading comprehension and early seminar discussion

Montessori Learning Outcomes

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

Independence Choosing work and completing work cycles Expressing needs and caring for oneself Maintaining attention and concentration Setting and attaining internal and external goals Making appropriate choices	**Confidence and Competence** Belief in oneself Adept in practical application of skills Secure in own ability to communicate and relate to others Respectfully voicing opinions Willing to take risks and make mistakes
Intrinsic Motivation Striving for personal best Inner desire to learn, progress and master concepts Not reliant on external rewards or consequences	**Freedom within Limits** Using time wisely Balancing work and areas of learning Making safe and responsible choices
Love of Learning Engaging in purposeful learning activities Joyful interest in work and new learning Willingness to share knowledge and teach others	**Respect for Authority** Understanding that one is a member of a larger community Respectful attitude toward adults and peers in leadership roles
Academic Preparation Mastery of level appropriate content knowledge Developing critical thinking and reasoning skills Achieving level appropriate outcomes Ability to express creatively in the visual and performing arts	**Social Responsibility** Recognizing needs of others Ownership of community agreements Ability to initiate and participate in problem solving and cooperative learning Taking on increasing amounts of responsibility Motivating peers and acting as a role model
Spiritual Awareness Sense of self Inner peace and peaceful relationships Listening and having compassion and empathy Ability to be calm Finding joy in silence Experiencing wonder Showing care for the earth	**Citizen of the World** Being respectful in and out of the classroom Ownership of environments beyond the school Local and community awareness Global awareness and feeling a connection to others in the world Understanding one's place in society and that one's actions affect others Knowing that each person's contributions matter

Assessment Methods: Montessori Assessment Practices

Assessment follows planning and instruction strategies to provide a means for evaluating if the educational process is succeeding, both for individual students and the community at large. Assessment measures whether and to what degree objectives have been accomplished~ true learning has occurred and the environment promotes work and learning. Feedback informs the student, the guides, the parents and the school-wide community.

Assessment practices fall into four general categories:

- Student performance compared to other students (norm-referenced standardized tests)
- Student performance compared to established outcomes (criterion-referenced tests)
- Student performance and progress with a particular skill (outcome measurement)
- Student performance in relation to his or her own capabilities (authentic assessment)

Montessori relies for the most part on authentic assessment practices.

Montessori Assessment Tools

Good assessment allows every constituent of a school community to witness a child's progress. In order to be relevant to the child, assessment should accomplish these objectives:

- Help students learn by providing non-judgmental feedback about HOW they learn
- Provide feedback that guides can use to improve classroom practices
- Easily integrate into classroom life by flowing naturally from the work of the students
- Relate to what has occurred in the learning environment over time
- Use a variety of measures and a variety of methods
- Unite guides, faculty, parents and peers in each student's assessment
- Be flexible so as not to dominate the curriculum or child-centered learning environment

Authentic Montessori Assessment

Authentic assessment recognizes the importance of the process students undergo in learning new concepts. It encourages guides to document and appraise the manner in which students represent, reorganize and utilize new information. The focus is less on the product and more on the process and performance. When students use any variety of materials and manipulatives to learn or practice a concept, they should have those same materials available to them during evaluations.

Observation

Montessori guides are trained in observing as an art form and they understand which indicators are significant to a child's progress. Mountaintop guides engage in formal and informal observations each day and during a variety of activities including lessons, spontaneous work choice, individual and group work, unstructured outdoor time, lunch and specialty classes.

Data from observing an individual student as well as the atmosphere of the classroom provides the means for identify the progress and needs of each child and the whole class.

Anecdotal Records

An anecdotal record is a brief description of an observed event. It typically includes the observed behavior or action, the setting in which it occurred and a separate interpretation of the event. These records provide useful data, particularly as they accumulate over time and indicate individual learning patterns and group trends.

Checklists

Record keeping checklists are useful in combination with authentic assessment practices. At Mountaintop the web-based Montessori Records Express incorporates a great number of different items, from skills and concepts to behaviors and attitude. Such listings provide guides with necessary and substantial information about student development in relation to lessons and planned curriculum or contributions to and detractions from the community. Guides use these records to keep track of lessons presented and they help to assess where individual students are on the academic continuum. The records track the amount of and type of work a child is accomplishing. Trends regarding the interests and needs of the whole group emerge from carefully kept individual records and can be used to assess the effectiveness of the overall classroom learning environment.

Portfolios

Mountaintop students in the upper elementary keep general portfolios and Middle School students keep writing portfolios. A portfolio is a systematic collection of a student's work. A portfolio updates automatically as the skills of the child grow. Portfolios emphasize discovering and learning as a process rather than just an end product. They provide guides, students and parents with documentation of learning and development over time that is inherently chronological and build in a natural progression. There are five fundamental purposes to utilizing portfolios:

- Celebration - acknowledge and validate student accomplishment
- Cognition - to encourage students to reflect on their own work
- Communication - to let those constituents not involved in the daily life of the classroom see the student's progress
- Cooperation - to provide a means for groups of students to collectively evaluate their own work
- Competency - to establish criteria by which current student work can be compared to that of their own past, as well as to that of other students or to standards and benchmarks.

Showcase portfolios are created with the intention of displaying the child's best work over a period of time. Showcase portfolios enable students to take ownership of the assessment process. Through the selection process, they come to realize their own definitions of their best work and then form expectations for themselves for future work.

Demonstration portfolios include multiple levels of a student's work from initiation and brainstorming through first drafts and process components to final pieces. This type of portfolio demonstrates progress over time and honors the process by which mastery comes about. Documentation portfolios make it

possible to see the steps students take to construct knowledge and develop their own educational mechanisms.

Rubrics

The Middle School utilizes rubrics as scoring guides that evaluate the quality of student's constructed responses. Rubrics help guides distinguish among student responses by setting forth central elements to the response, then indicating how to evaluate the relative quality of those elements. In order for a rubric to be effective it is necessary each evaluative criterion to be accompanied by a description of what constitutes a strong, relative response.

Projects and Presentations

At Mountaintop children can demonstrate their learning and knowledge through demonstration, or explanation in the context of projects or presentations. Projects and presentations are designed as inclusive yet specialized means for students to demonstrate competence. They can be individual endeavors or accomplished in a group, and usually require a broad range of competencies. Children generally choose to embark on larger scale projects and presentations when they understand a rich core of subject matter and can apply their knowledge in a resourceful, persuasive and imaginative way. The fact that most projects and presentations are meant to become public helps to set self-imposed quality guidelines.

Student- Guide Conferences

At the elementary and middle school levels students and guides meet one-on-one. Conferences are a medium for students and teachers to reflect on the student's progress in general or toward a specific goal. A child's own interest and attitude toward the meetings help create a learning partnership with the guide. Direct engagement is one of the most effective ways to gain insight into a child's learning. During the conference, the guide listens, asks questions, elicits demonstrations, checks work and progress and plans for the upcoming week. Through this fairly structured process, the guide is able to obtain valuable diagnostic information while building trust and rapport with the student.

Curriculum and Lessons

The curriculum and sequence of lessons provides a cumulative record of a student's achievements over a three-year period. Use of this system allows Mountaintop to track each student's progress through the academic span of chronological benchmarks from toddler through middle school.

Progress Reports

Guides prepare detailed reports twice each year that describe general curriculum and developmental outcomes and provide child-specific feedback related to areas of interest (student choice) and focus (guide lessons). At the toddler and Children's House levels, progress reports are done as picture portfolios that show a child working in each area of the classroom. The photos also portray a student's

strengths and challenges. Elementary and middle school progress reports include narratives on students' development and their work in each academic discipline. See examples in the appendix to this section.

Parent- Guide Conferences

Twice per year, guides and parents meet formally to discuss the progress and behavior of their child. Meaningful communication helps teachers and guides build a school-home partnership that increases the level of effective learning. Older students are included in the conference. Notes are taken during conferences and kept in the student file.

Norm-Referenced Testing

A norm-referenced test contains items that sample specific academic skills within a content · area and derive assessment by comparing an individual's results to scores obtained by a large, non-clinical, same age/ same grade sample of students. The primary purpose of norm-referenced tests is to make judgments from expected responses and provide a series of reference· points for identifying the degree to which a student's skill sets differ from those of her peers. In the pre-K and kindergarten years in the Children's House and in the lower elementary years, Phonological Awareness Literacy Screening (PALS) testing is done twice a year to evaluate students' literacy strengths and challenges. Mountaintop offers the Iowa Test of Basic Skills as an optional choice for upper elementary students and to all middle school students. The results are normed nationally with private schools.

Criterion-referenced Tests

Once Mountaintop developed WBATs (will be able to) for each age level, it became clear that an assessment needed to be crafted to ensure that children are achieving these benchmarks at the end of each 3-year cycle. Each level has developed assessment tests and checklists for the WBATs. Students are welcome to use materials or ask for adult help while completing these assessments. See examples in the appendix to this section.

Conclusion

Since individualized instruction is inherent in child-centered Montessori practices, both adaptive and interactive assessment are called for in a Montessori environment. Systems of assessment should incorporate risk taking, honor diverse learning styles and cultures, allow students to become an integral part of the assessment process, interpret results as a catalyst for reflection, and suggest approaches for furthering the development of the child. Authentic assessments include a variety of approaches that include elements of realism, relevance and a sense that assessment is instructive rather than judgmental. Authentic assessments align themselves with instruction so the process becomes recursive - assessment influences instruction and instruction influences assessment.

Student Needs Assessment Program: Policy on Student Progress

Mountaintop is committed to providing an excellent learning environment for all students. The success of our program relies on a collaborative approach among parents, teachers, specialists and administration. If a child does not progress academically, socially or emotionally or is unable to find success in the Montessori learning environment, the following steps are followed.

When guides observe areas of need in a student, they will:

- Clearly discuss their observations with parents at a conference
- Develop an initial plan at the conference to address the student's needs within the framework of the classroom. The plan may also include recommendations for action at home.
- Provide a written summary of the conference and a copy of the initial plan to parents and Head of School for signatures.
- Track through written records keeping the development or resolution of the situation.

If the steps outlined in the initial plan do not improve the student's learning experience, the school will:

- Schedule a second conference with the parents, guides and Head of School. Documentation of school observations of learning or behavior differences will be presented.
- At this time, the school may request that the parents arrange outside testing, evaluation or counseling. Mountaintop works with Albemarle County Public School as well as a Montessori trained tutor and an educational psychologist. Outside services could include, but are not limited to: occupational therapy evaluation, behavior assessment, hearing or vision testing, speech evaluation or academic evaluation. A visit by an evaluating professional to observe the child in a school setting may also be indicated. Parents are responsible for the costs of outside services.
- Upon receipt of the results of outside testing or evaluation, an *Education Agreement* will be developed by the guides and the outside evaluators, appropriate, for addressing the student's individual needs. Parents must sign the *Education Agreement*.
- If ongoing services are required by the student's *Education Agreement*, the parents must provide such and the services must be ongoing until both MCS and the parents assess the child's progress as satisfactory and the consulting professional recommends the termination of such services.
- Follow-up conferences with the parents will be arranged as needed to assess progress or implement changes to the *Education Agreement*.

The Head of School, in conjunction with the guides, will determine if continued enrollment in a Montessori learning environment is in the best interests of the child, the other students and MCS. If, in the opinion of the school, the measures taken do not result in a satisfactory situation for the child and his class or if the parents cannot cooperate with the provisions of the *Education Plan*, MCS may withhold reenrollment for the child.

Cases in which the school may be unable to adequately support a child's progress include:

- Mountaintop is not able to provide resources to assure sufficient academic or social progress.
- Mountaintop determines that the guides are not able to provide for the child's needs while maintaining attention on the remainder of the students.
- The child's family cannot provide support to the child and teachers as indicated in the *Education Agreement*.

Student Needs Assessment: Description of Forms

A full set of blank forms should he in the notebook when the process begins. As the process moves forward, the forms will he removed, completed, and returned to the notebook so that all information is at the teacher's fingertips when planning the next step.

1. Progress Record: Behavioral/Developmental

This is the action summary sheet used to keep track of progress for behavior and developmental

issues. It is kept in the front of the SNAP Notebook and is updated by the teacher whenever a new step is taken and at resolution.

2. Progress Record: Attendance

This action summary sheet is used to keep track of progress when the issue is mainly one of attendance. It varies slightly from the Behavior I Developmental progress record It is kept in the front of the SNAP Notebook, updated as the process moves forward.

3. In-School Student Assessment (two-sided)

This form is used by the teacher for recording observations of behavior and classroom work habits. A second copy is used later by the Administrator for observation notes as well, and then the two are brought together to aid in discussion as the in-school plan is formulated.

In the case of attendance issues, a second form is not required to be filled out by the Administrator.

4. Individual Action Plan

This form, which is drawn up by staff prior to the first conference with parents, is used to record the specifics of the school's initial plan.

5. Education Agreement (2 versions: Behavioral/Developmental & Attendance)

This form is used when the school's Individual Action Plan did not achieve success for the student and/or the school. This Education Agreement is drawn up by the teachers and reviewed by the Administrator before a meeting with the parents. The school's offer of a re-enrollment contract or a recommendation for matriculation may he tied to compliance with the agreement.

6. Year-End Summary

This form "reports out" on the services received, pending, or declined (by the parent), and offers a place for the teacher to summarize the end result of the process for the student's record This form also gathers data for the school office on the demographics of students receiving attention for special needs. This data can he entered in a simple database for future analysis.

Teacher's Guide: Behavioral/Developmental

The following steps should be taken to gain the services needed for a student when the issue is one of behavioral or developmental difference. ·

1. Clarify the Issue

Observe: For a period of time, observe the student's behavior, interactions with others, responses to teachers, physical movements, interactions with classroom work, playground behaviors, etc.-anything of interest. Remember to take note of positive things as well as those that concern you. Complete an In-School Student Assessment to summarize your observations. Review it with your assistant or co-worker if possible.

Research: Read all records that are in the student's office file that may inform you. Go back over your class notes as well.

Record: Fill out the information at the top of the Progress Record Sheet. Write a brief summary of the problem. File this summary, the In-School Student Assessment, and all of your notes in the SNAP notebook.

2. Get a Second Opinion

Ask the Administrator to observe. Give her the second (blank) copy of the In-School Student Assessment with your request. The Administrator should observe within two weeks, complete the form, and return it to you.

3. Hold a School Meeting within one week of the Administrator's observation.

At this important planning meeting, members of your teaching team and the Administrator meet to compare notes, discuss appropriate language to use with parents, and draft a course of action. If no action is needed, file all forms and notes in the student file in the office. If you determine further action is needed, the members of this school meeting should draft an Individual Action Plan in preparation for the first parent conference (below). The plan may also include recommendations for changes at home and it may specifically name the student's personal responsibilities. A time-frame for observing improvement or proceeding further should be determined at this meeting as well, and recorded on the plan.

Return all forms and notes to the SNAP Notebook and keep the notebook in your classroom out of sight.

4. Hold First Parent Conference

Call for a parent conference. Do not wait for the scheduled parent teacher conference on the calendar, unless it is within two weeks of the school meeting, above. At this conference, teachers state their initial observations and review the Individual Action Plan with the parents, adjusting it with the parents as

needed. Provide the parents with a copy of the final plan. Be sure to secure signatures on the plan before closing the meeting. Your copy of the plan is then stored in the SNAP Notebook.

If appropriate, invite the student to participate in this meeting as well, to add his or her own suggestions for personal responsibility.

5. Hold 2nd Parent Conference

If the steps outlined in the Individual Action Plan do not improve the situation by the time identified on the plan or if the parents do not comply with the plan, call a second conference with the parent(s) and include the Administrator. If appropriate, include other staff members involved with the student (e.g., after-school instructor, tutor, etc.).

At this conference, be prepared with your recommendations for outside testing, evaluation, or counseling, or for a visit by a professional to the school setting. Give a time-frame to the parents for results to be given to the school if outside evaluation or testing is done. Provide the parents with a copy of the school's Policy on Student Progress. The Administrator should answer any questions the parents may have about the policy and procedures from this point forward.

A brief summary of this conference and any recommendations that resulted should be written and included in the SNAP Notebook along with the expected timeline. A copy of the summary must be given to the parents, as stated in the Policy on Student Progress. There is no template for this written summary, as summaries will vary considerably depending on the circumstances.

6. Monitor Progress

Facilitate recommendations as appropriate, and keep in touch with the family and consultants regularly to assure that sufficient progress is underway. At resolution, or at the end of the school year. whichever is first, complete the Year-End Summary form (see #8, below). If resolution is reached, remove all contents of the SNAP Notebook and file them in the student's office file.

7. Provide Education Agreement (Behavioral Developmental)

If resolution is not reached with the steps above, it may be necessary to write a confidential Education Agreement to address the need for ongoing support from resources outside of the school. Provisions will be required of the parents (testing, therapy, tutoring, etc.) at this stage. These provisions will be carefully identified and signatures will be received to acknowledge agreement. While the conditions required may not be legally enforceable, in the majority of cases the process of signing this agreement serves as a sufficient notice of the parents' responsibility. This step also makes a strong statement of the school's inability to fully meet the student's needs without outside intervention. This document will be extremely important should the school get to the point where the student must be dismissed, denied re- enrollment, or recommended for an extra year.

This Education Agreement should be completed in advance by the teaching team, reviewed by the

Administrator, and then presented to the parents in a conference.

It is important that the school identify on this document those provisions which the school is able to offer to the family. For example, the teacher may offer to allow the student an after-school study hall period once a week for work make-up time, a private desk with headphones, a weekly session with a reading specialist, or a more detailed, individualized work-plan than would be offered to other students. The specific provisions will depend on the difficulty and the course of action up to this point.

To assure confidentiality, this document should be kept in the student's file in the office, not in the SNAP Notebook.

8. Wrap-Up: Year-End Summary

At the end of the school year, or when a satisfactory outcome has been reached, whichever comes first, you should summarize the result for each student for whom you started a SNAP Notebook. The Year-End Summary allows you to identify all of your recommendations and the level to which they were followed, to identify the enrollment impact of the process and to determine whether the parents and/or you were satisfied with the outcome.

The original of this completed form should be filed with the SNAP Notebook papers in the student's file, a copy given to the appropriate office personnel to record the data for future evaluation. This information should be kept confidential at all times.

Teacher's Guide: Attendance

The following steps should be taken to achieve changes needed when the issue is one of excessive tardiness or absence.

1. Keep a Record

Accurately record the number of days the student is absent and tardy during the school year. It is time to start a SNAP Notebook when it becomes apparent that excessive absences are causing you difficulty with lessons or the student is having difficulty with retaining information or making positive social connections. Fill out the information at the top of the Progress Record (Attendance). Write a brief summary of the problem, and begin the checklist, recording the attendance figures and dates on the first line of the checklist.

2. Research

Review all past attendance records at your school and previous schools, if available. Note any comments by previous teachers regarding attendance. As much as possible, document the number of missed lessons, gaps in retention, social implications, and the number of make-up lessons you have had to give the student.

Observe the student over one or two good sessions and record the behaviors that you believe are of concern and which you feel are a result of the number of absences or late arrivals.

Keep your notes in the SNAP Notebook for reference.

3. Give First Warning

Send a written request to parents/caregivers to be more prompt at arrival or more consistent with attendance. Make sure this letter is dated. Make a copy for the SNAP Notebook.

4. Keep a Record Again

Track the absence/tardy record for the period of time from when the letter was sent to a specific time in the future (one month, to the next conference, etc.). This date will vary depending on the situation, the time of year, or the severity of the problem. Record this information on the Progress Record.

5. Determine Action

At the end of the period of time you set (in 4, above), determine a course of action, with the Administrator. If it is determined that absences and tardiness are preventing the school from making adequate progress with the student, an Individual Action Plan will be given to the parents to insure cooperation/improvement (see 6, below). If it is determined to not be critical, file all papers in the student's office file and stop here, although attendance should still be monitored closely and the process begun again if necessary.

6. Hold 1st Parent Conference:

Arrange a parent conference, unless the next scheduled conference is within two or three weeks. Develop the Individual Action Plan with the parents at the conference. If appropriate, invite the student to participate in this meeting as well to add his or her own suggestions for personal responsibility.
Review responsibilities together, set a time-frame for measuring success, and get the parents' signatures on the form.

In some cases, teachers may want to write the Individual Action Plan ahead of time rather than with the parents (and perhaps the student) in conference. The choice depends on the level of communication that exists between the two .Parties and the amount of control the teachers feel is necessary for them to hold in order to receive a good response from the family.

7. Hold lad Parent Conference

If the steps outlined in the Individual Action Plan do not improve the situation by the time identified on the plan or if the parents do not comply with the plan, call a second conference with the parent(s), the Administrator, and the student, if the student is to have responsibilities on the Individual Action Plan.

Include other teachers or specialists where appropriate.

At this conference the Administrator should be prepared to state to the parents that either the school is not able to serve the student without better compliance or that the school will require better compliance if a re-enrollment contract will be offered fur next year (this depends on the timing of this process). The Administrator should complete a confidential Education Agreement (Attendance) at this meeting, and secure the parents' signatures.

Provide the parents with a copy of the school's Policy on Student Progress. The Administrator should answer any questions the parents may have about the policy and procedures from this point forward. A brief summary of this conference must be written by the teacher, in accordance with the Policy on Student Progress. The original of this summary should go to the parents and a copy should be stored in the SNAP Notebook.

8. Wrap-Up: Year-End Summary

At the end of the school year, or when a satisfactory outcome has been reached, whichever comes first, you should summarize the result for each student for whom you started a SNAP Notebook. The Year- End Summary allows you to identify all of your recommendations and the level to which they were followed, to identify the enrollment impact of the process and to determine whether the parents and/or you were satisfied with the outcome.

The original of this completed form should be filed with the SNAP Notebook papers in the student's file, and a copy given to the appropriate office personnel to record the data for future evaluation. This information should be kept confidential at all times.