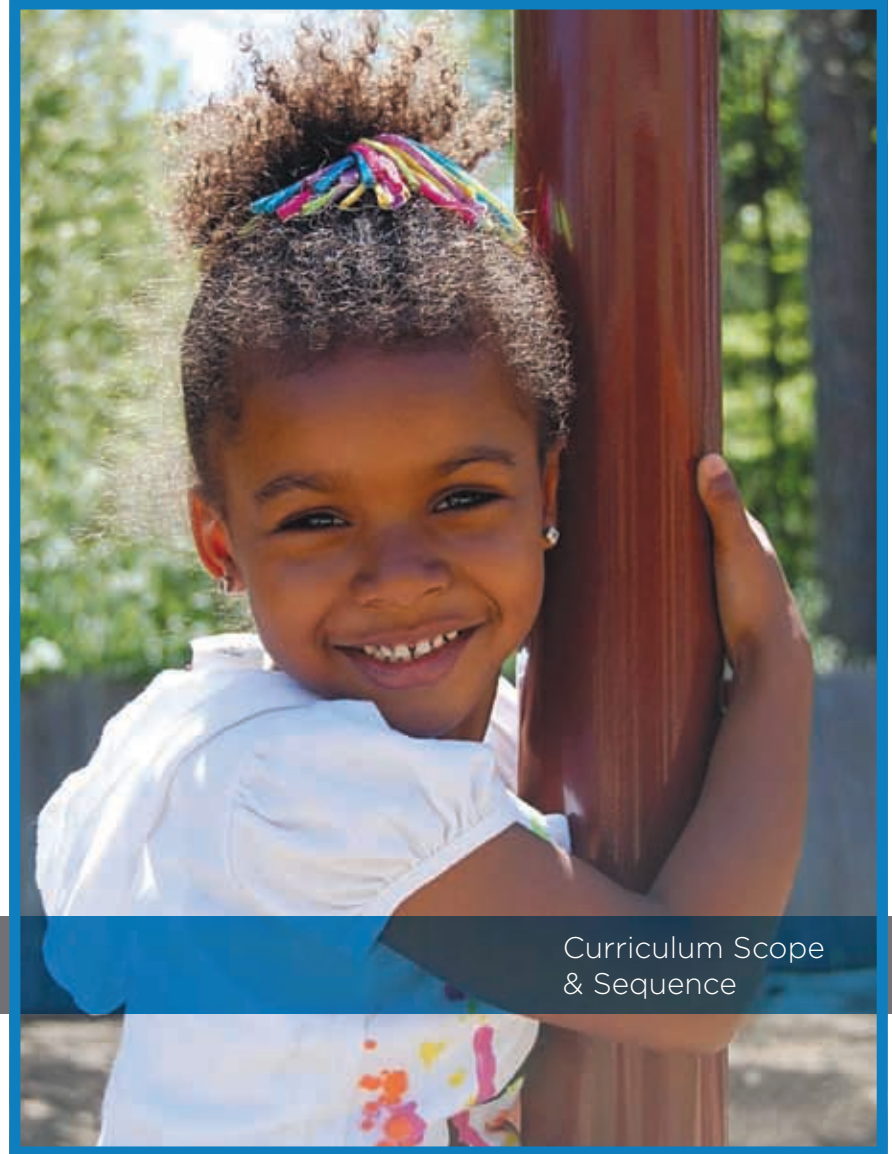


Ruffing  
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Curriculum Scope  
& Sequence





## Dr. Montessori's Five Great Lessons

Dr. Montessori uses the Five Great Lessons as an introduction to all topics, providing a "big picture" to demonstrate how the sciences, art, history, language and geography are interrelated. Students are then introduced to increasing levels of detail and complexity within these broad areas.

**THE STORY OF CREATION** of the Universe describes how minerals and chemicals formed the elements; how matter transforms to three states of solid, liquid and gas; how particles joined together and formed the earth; how heavier particles sank to Earth's core and volcanoes erupted; how mountains were formed and the atmosphere condensed into rain, creating oceans, lakes and rivers. Students are introduced to lessons in physics, astronomy, geology, and chemistry. For example, they learn about light, heat, convection currents, gravity, galaxies, planetary systems, Earth's crust, volcanoes, erosion, climate and physical geography.

**THE STORY OF THE COMING OF LIFE** explains how single-cell and multi-cell forms of life became embedded in the bottom of the sea and formed fossils. The Paleozoic, Mesozoic, and Cenozoic periods are traced beginning with the kingdom of trilobites and ending with human beings. A timeline shows the beginning of vertebrates, followed by fish and plants, then amphibians, reptiles, and birds and mammals. This is the basis for lessons in chemistry, nutrition, categories of animals and plants, care and requirements of different animals, and their interrelationship within an ecological system. Students are introduced to formal scientific language of zoology, botany, and anthropology.

**THE STORY OF HUMANS** introduces human beings and their unique endowments of intellect and will. The aim is for the children to imagine what life was like for early humans. This is the basis for lessons in prehistory and the emergence of ancient civilizations. Students are introduced to an analytical tool to compare cultures, and how climate and topography influence culture and political geography.

**THE STORY OF LANGUAGE** describes the origin, structure and types of writing and speaking. It begins with a discussion of the Egyptians, who had two kinds of symbols – one for ideas and one for sounds. The story goes on to describe the Phoenicians, who used the Egyptian's sound pictures but not their idea picture. Next, it describes the contributions of the Hebrews, Greeks and Romans. Students use grammar materials which help them examine how language is put together and refine capitalization and punctuation. They are introduced to the study of the origin of English words from other languages, the meanings of prefixes and suffixes and different forms of writing, such as poetry, narratives and plays. Older children may study Egyptian hieroglyphics of American Indian picture writing.

**THE STORY OF NUMBERS** emphasizes how human beings needed a language for their inventions to convey measurement and how things were made. The story describes how the Sumerians and Babylonians had a number system based on 60, which is the reason for our 60 second minute and 60 minute hour. Greek, Roman and Chinese numbers are introduced, and how Arabic numerals are similar to numbers found in a cave in India from 2,000 years ago. The Indian numerals had something that no other number system had, the zero. This is the basis for learning mathematics, which is integrated into all studies. For example, large numbers are needed when measuring time and space in astronomy, negative numbers are needed when measuring temperature changes; triangulation was needed to reestablish property boundaries after the Nile flooded Ancient Egypt.

### Lower Elementary

#### THE FUNDAMENTAL NEEDS OF HUMANS CHART

- Augmented with a section on energy
- Illustrates that energy can come from many sources
- Energy sources need to be tapped in different ways
- Significant differences between renewable and non-renewable sources
- Booklets on energy are designed to parallel the other Fundamental Needs booklets
- All Fundamental Needs of Humans Chart booklets are moved to reusable, washable cloth folders

#### GENERIC GREEN CLASSROOM

- A three-dimensional model of the new green curriculum construction will be added to the farm model with requisite vocabulary tags and moveable people and landscaping
- Lower Elementary directors will use it for advanced vocabulary and story building

#### GREEN CONSTRUCTION

- Our Green School, and Our Green Classroom include information about the green construction
- Students are introduced to the green roof, the waterless urinal, and the solar panels through these materials
- Students produce their own "green" booklets, either as their ideas for a green school or a green home

#### EXAMPLES OF GREEN ACTIVITIES:

- No Waste Lunches
- Composting
- Recycling
- Energy Conservation
- Gardening

#### COMMITMENT TO:

- No Waste Lunches
- Composting
- Recycling
- Energy Conservation
- Gardening



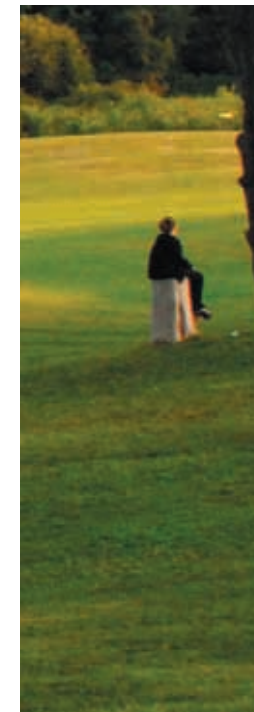
### Upper Elementary

#### EXAMPLES OF GREEN CURRICULUM:

- Students envision and draw possible extensions of the Ecozoic Era, imagining what a sustainable life may be like in the next 50 years
- Students expand on the needs of the Time Line of Life: food, clothing, transportation, shelter, defense, and technology, especially as regards communication

Upper Elementary students are stewards of the Living Roof, or Green Roof which includes:

- Various plants, mainly sedums and short grasses designed and planted by the upper elementary students
- Planter boxes outside of Upper Elementary classrooms which produce blueberries, cilantro, and peppers
- Ivy grown in long, rectangular boxes along balcony privacy fencing



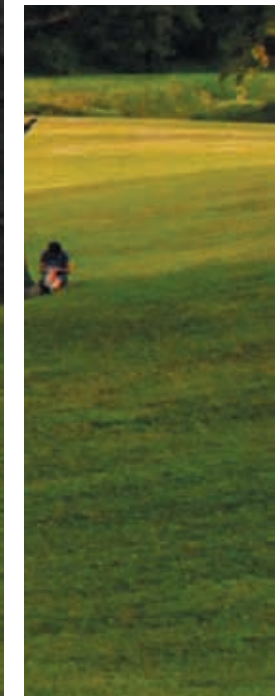
### Middle School

#### EXAMPLES OF GREEN CURRICULUM:

- Solar panel experimentation and monitoring
- Addition of a free-standing greenhouse on the campus

#### EXAMPLES OF GREEN ACTIVITIES:

- No-waste lunches
- Microeconomy with an eco-friendly focus on self-sustaining projects
- Battery recycling drives
- Composting workshops with the Nature Center at Shaker Lakes
- Ongoing composting and recycling
- Rain barrel workshops with Lower Elementary students
- Greenhouse planning, building and utilization
- Participation in Doan Brook clean-up on Earth Day
- Individual land steward projects
- Educational trips and activities
- Use of public transportation or walking whenever possible
- Nature-based outings



## Green Curriculum

### Toddler Community

#### EXAMPLES OF GREEN ACTIVITIES:

- Photographs of compostible materials and of recyclables are new materials for the toddler program.
- Laminated picture cards and vocabulary cards are inserted in fabric sleeves, and directors can use them to connect with the actual use of recyclables in the classroom and what the students can put into their compost buckets after snack and lunches.
- Teachers plant seeds with the students and utilize the school's compost for those plantings.
- Students see the loop of organic material from consumption to seeds to plants and back again to food



### Children's House

The practical application of Human Ecology, (the study of the interaction of people with their environment) is integrated into our daily practices through:

- Composting
- Vermi Composting
- Recycling
- Conservation of Water and Raw Materials
- Sustainable landscaping
- No-Waste Lunch Program
- Green Architecture and Facility Management

#### GREEN CONSTRUCTION

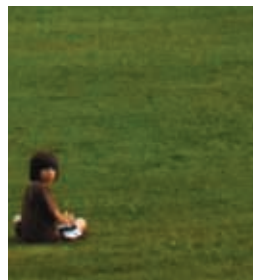
- "Our Green School," and "Our Green Classroom." Include information about the green construction
- Students are introduced to the green roof, the waterless urinals, and the solar panels through these materials

#### GENERIC GREEN CLASSROOM

- A three-dimensional model of the new green curriculum construction for every classroom
- Vocabulary tags and moveable people and landscaping
- Comparable to the farm model

#### EXAMPLES OF GREEN ACTIVITIES:

- Maintaining a vermiculture box
- Contributing lunch refuse to school compost bins
- Resultant compost from both structures are used in classroom planting projects
- Outdoor classroom areas
- Bird feeders
- Paving blocks made of recycled materials
- Butterfly garden plants
- Vegetable seeds grown for use during the school year
- Bulbs planted by the children in the fall for enjoyment and education in the spring
- Plants' needs for constant tending and watering are part of these children's daily experiences



## INTRODUCTION

Education is about making the world, and to do that you need to give the learning process full play in an open-ended enriched spirit of seeking meaning in knowledge. Dr. Maria Montessori was an intuitive visionary who gave the world a trans-generational method of learning. It is a method whereby truth is the prime moving force that guides children toward a unity of understanding, where respect, cooperation, trust, independence, self-reliance and peace are the real motivators.

This document is a testimony to Dr. Montessori's contribution. It is designed to demonstrate the continuum of knowledge in the curriculum reflected in the scope and sequence. Ruffing is a Whole School for the Whole Child, a place where "Education as an aid to life is a source of joy." I want to thank and acknowledge the faculty and staff team who worked many hours and days to produce this, with a special thank you to Jennie Rozsa and Susan Olsen, who compiled, edited and formatted the document.

## Developmental Characteristics



### Toddler Community

18-36 months  
First Plane of Development

During this stage of development, children have a unique ability to absorb knowledge quickly and effortlessly. Maria Montessori referred to this as the "Absorbent Mind."

These children are sensorial explorers and learn through the senses. All experiences within the classroom are hands-on.

### Children's House

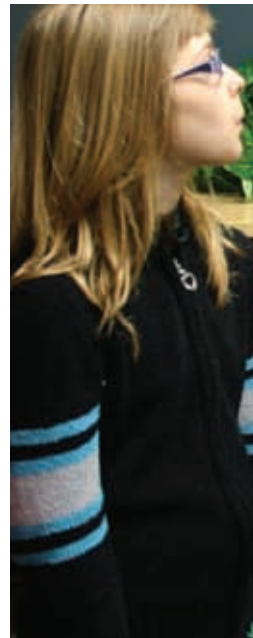
3-6 year-old  
First Plane of Development

A Montessori environment supports the development of joyful engagement, spontaneous concentration and self-discipline with the ultimate goal of each individual achieving self-regulated behavior.

During this stage of development, children are joyful learners with a unique ability to absorb knowledge quickly and effortlessly. Maria Montessori referred to this as the "Absorbent Mind".

These children are sensorial explorers and learn through the senses. All experiences within the classroom environment are done with the hands, with real things, accompanied by mental concentration.

Social development occurs in an environment with children of at least three ages (3-6 yr. olds) so that helping, caring, and sympathy for others develops naturally and appropriately in real-life situations.



### Lower Elementary

**Emphasis:** moving through space and time, continuity and change of movement, cooperative group play and developing patience to learn new games and skills

#### MOVEMENT SKILLS & MOVEMENT KNOWLEDGE

- Move in different directions at varying speed; locomotor skills such as hop and gallop on non-preferred foot, slide, travel in relationship to various objects (over, under, behind through), demonstrate body movement at different levels, balancing and dodging while moving, roll, toss and catch, stationary kick skills, strike with hand
- Combine basic skills into sequential actions: combine ball handling with walk/jog for basketball, baseball, soccer, and other games
- Skills to develop strength, endurance, and flexibility leading up to Physical Fitness test and mile run
- Dancing and rhythms

#### OUTDOOR EDUCATION

- Camping skills and trip for third grade students

#### SELF-IMAGE, PERSONAL AND SOCIAL DEVELOPMENT

- Appreciate importance of aerobic exercise and its effect on heart fitness- learning the "basics" for a healthy life style, developing a sense of teamwork, helping and supporting peers



### Upper Elementary

**Emphasis:** manipulating objects through space and with accuracy and speed, teamwork and camaraderie, self-control.

#### MOVEMENT SKILLS & MOVEMENT KNOWLEDGE

- Throw and catch with increasing accuracy, strive to master previously learned skills such as dodge, roll, catch, kick, engage in cooperative group activities as well as competitive organized games, develop knowledge of sports specific skills, and game rules, know the importance of teamwork and cooperation; play fair with peers, recognize the value of sports in understanding other cultures, participate in warm-up activities
- Sports: Kickball, Soccer, Flag Football, Ultimate Frisbee, Floor Hockey, Cooperative Games, and Battle-ball, relays, basketball skills including drills and lead-up games, Volleyball, tumbling, rope climbing
- Physical Fitness test and distance running
- Square Dancing

#### OUTDOOR EDUCATION

- Camping
- Boating
- Canoeing
- Swimming
- Hiking,
- Campfire safety
- Identification of: insects, trees, wildlife
- Outdoor safety
- Camping skills: setting up tents, building a fire, cooking outdoors

#### SELF-IMAGE, PERSONAL, AND SOCIAL DEVELOPMENT

- Learning to understand self-control, health and wellness for oneself
- Teamwork and camaraderie: helping and supporting one another
- Activities that help students to have fun
- Feel good and gain self-confidence

#### COMPETITIVE SPORTS

- Basketball for 6th grade (boys and girls)
- Cross Country 5th and 6th (coed)
- Lacrosse 4-6th (coed)



### Middle School

**Emphasis:** special attention given to the physiological condition of adolescence. Previously learned skills are further developed including movement skills, team sports, self-image, basic first aid, personal and social development. Students have Physical Education class four times per week. Seventh and eighth grades are often mixed for PE, and, on occasion, boys and girls have separate classes.

#### INTERSCHOLASTIC SPORTS

The Middle School fields a co-ed soccer team which plays a schedule of about ten games per season. Separate boys and girls basketball teams compete in the Eastern Independent School League during the winter season. In the spring, Ruffing maintains a co-ed ultimate frisbee team. There are regular practice schedules in all sports. Emphasis is on sportsmanship, skill development, and learning to put forth one's best effort within the context of a team endeavor.





## Physical Education /Movement

### Toddler Community

There is a Movement Area in the Toddler environment. Children of this age need many opportunities to learn how to move their bodies.

**THE MOVEMENT AREA DEVELOPS:**

- Large muscle control
- Small muscle control
- Perfect coordinated movement

**MOVEMENT EXERCISES INCLUDE:**

- Crawling through a tunnel
- Rolling on a mat
- Hopping on spots
- Walking across a balance beam
- Carrying heavy objects
- Walking around the classroom

At this level, children also participate in Physical Education for one half hour class, one day a week with the Physical Education Specialist in the gym.



### Children's House

**Emphasis:** how I move in my environment, identify self-space and loco motor movements. Children are in a sensitive period for movement and order.

**MOVEMENT SKILLS & MOVEMENT KNOWLEDGE**

- Develop loco motor skills such as hopping, balance, gallop, march/ walk in different directions, start/ stop on command
- Explore rhythm in relation to physical education: clap, run, jump to a specific beat
- Develop hand/eye coordination skills

**SELF-IMAGE, PERSONAL AND SOCIAL DEVELOPMENT**

Appreciate the body's ability to move through large muscle activities, parallel play, taking turns, following directions, sharing, listening, and safety while moving in space.



### Lower Elementary

*6-9 year-old  
Second Plane of Development*

During this stage of development, we see the development of the 'reasoning mind' and the use of the power of imagination.

Students in the second plane of development are interested in morality and what society (child's own group) considers to be right and wrong. They are exploring the wider society outside family and friends and are now socially oriented. Students in the second plane of development enjoy working with others.



### Upper Elementary

*9-12 year-old  
Second Plane of Development*

During this stage of development, children are interested in the exploration of wider society. The 9-12 year old begins an attitude of detachment from the home environment and a continued interest in morality.

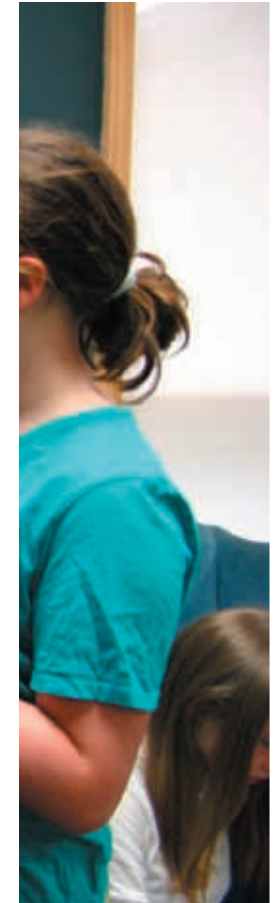
Students in this stage move from concrete representation to abstract thinking. They bring order to the various disconnected facts, and are able to think hypothetically. No longer focused on right and wrong, good and bad, the Montessori student now seeks to understand the motivation behind behavior, and when confronted with moral issues, the Upper Elementary student seeks to imagine and develop possible solutions..



### Middle School

*12-15 year-old  
Third Plane of Development*

During the third plane of development, adolescents experience significant cognitive, physical, emotional, social and moral growth. Building upon the holistic foundation set in place during Upper Elementary, critical thinking skills and deep philosophical thought become central components of development.



## Practical Life

### Toddler Community

Practical Life activities link the home environment to the school environment and develop everyday life skills through real and purposeful work.

#### PRACTICAL LIFE ACTIVITIES HELP STUDENTS DEVELOP:

- Coordination of movement
- Independence
- Concentration
- Aid in the development of language

#### PRACTICAL LIFE EXERCISES INCLUDE:

- Sweeping
- Dusting
- Watering plants
- Dressing and undressing
- Setting a table
- Practicing polite social interactions

Practice learning how to use the toilet is also an important part of Practical Life in the Toddler Community.



### Children's House

Practical Life activities link the home environment to the school environment and develop everyday life skills through real and purposeful work. These activities form the foundation for all other work in the environment.

#### PRACTICAL LIFE EXERCISES HELP:

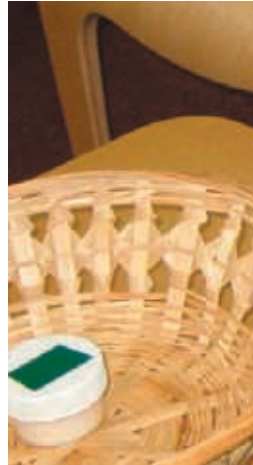
- Development of concentration
- Coordination
- Independence

#### SECONDARY PURPOSES INCLUDE:

- Development of logical thought
- Ability to sequence
- Formation of sets
- Exploration of spatial relationships
- Cultural adaptation
- Indirect preparations for reading and writing

#### PRACTICAL LIFE EXERCISES INCLUDE:

- Learning how to take care of oneself with buttoning, zipping, polishing/washing shoes, washing hands
- Learning how to care for the environment by washing, polishing, dusting
- Real life activities in baking, gardening, sewing, and art
- Additional activities involve movement and games in silence to help a child learn self control within the limits of the group
- Lessons to practice independent and polite social interactions are also integral to the Practical Life area of the environment



### Lower Elementary

In Lower Elementary, we build upon the four areas of art: Aesthetics, Creative Expression, Art History, and Art Criticism, previously introduced in Children's House. Children explore these areas of art through discussions and sequential skills-based studio projects. In art we understand that observation or using subjects from nature is a key part of the Lower Elementary curriculum.

#### AESTHETICS

- Identification of visual elements
- Observations in the environment
- Awareness of vantage point
- Perception of subtle visual qualities

#### CREATIVE EXPRESSION

- Creation of art based on observation, imagination and design
- Acquisition of basic skills using art media for drawing, painting, collage, printmaking, and sculpture
- Artistic interpretation based on imagination and personal interpretations
- Intentional choices of lines, colors, and other visual elements
- Creation of two- and three-dimensional art
- Creation of art based on imagination, recall and observation
- Portrayal of details, depiction of action, and use of varying vantage points
- Use of visual qualities to express ideas, feelings, or non-verbal messages

#### ART HISTORY

- Discussion styles and types of art
- Expansion of knowledge of artistic process
- Architectural studies

#### ART CRITICISM

- Perception and description of the subject matter, visual elements, and mood
- Expression of opinions about art with thoughtful response to others' opinions
- Description, analysis, and interpretation of visual qualities of art
- Students see and discuss styles and types of artwork from varied cultures and periods.
- Emphasis on the cultural origin and function of art
- Expansion of knowledge of artists and artistic styles



### Upper Elementary

Students in the Upper Elementary will continue to explore art concepts and techniques studied in Lower Elementary but in greater depth. Students will explore more complex, abstract ways of thinking about and creating art, with continued focus on aesthetics, creative expression, art history and criticism.

#### AESTHETICS

- Increased awareness of subtle visual qualities in the natural and constructed environment and art
- Application and refinement of perceptual skills developed in earlier grades
- Identification and analysis of more subtle and complex visual relationships, including light, color, texture, form, proportion, space, distance and balance

#### CREATIVE EXPRESSION

- Creation of more complex works with greater attention to expressive intentions
- Use of design concepts for specific purposes
- Efficient and inventive use of media
- Creation of art to express visual, tactile, emotional and imaginary concepts
- Introduction of multi-step techniques in two- and three-dimensional media
- Incorporation of principles of design such as balance, unity, and variety to create two- and three-dimensional art

#### ART HISTORY

- Comparison and contrast of the functions, cultural origins, and relative age of art
- Study of select styles, historical eras, and specific artists
- Emphasis on recurrent themes, such as nature, mythology, human needs and activities, and popular culture

#### ART CRITICISM

- Examination of execution, media choices, emotional intent
- Introduction to art criticism: perception, discussion, analysis, and interpretation of the "visual evidence"
- Introduction to criteria for judgment of their own and other's work, including expression, imagination, representation, abstraction and functionality



### Middle School

Middle School students further develop the skills and techniques learned in their elementary experience. They are introduced to more advanced techniques and more sophisticated approaches to art problems.

#### AESTHETICS

- Application of skills and concepts acquired at previous levels
- Perception of more subtle interactions among qualities of color, line, shape, and other visual elements
- Perception and identification of underlying structures such as proportion, visual rhythm, and balance

#### CREATIVE EXPRESSION

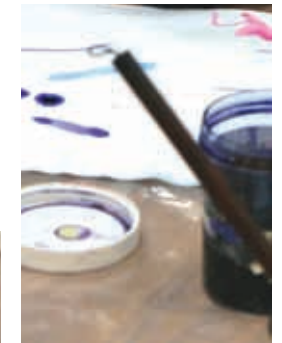
- Continued use of sketching and related techniques to generate ideas
- Incorporation of the principles of design such as balance, unity, and variety to create two- and three-dimensional art
- Lessons emphasize efficient yet expressive uses of media

#### ART HISTORY

- Expansion of knowledge of styles and eras of art, with greater emphasis on recurrent themes such as nature, mythology, human needs, and the accomplishments of individual artists
- Study of the artistry involved in crafts, architecture and mass produced images such as posters and films

#### ART CRITICISM

- Examination of art with addition focus on critical analysis based on perception of the subject, visual design, artist's use of materials and other specific criteria





# Art

## Toddler Community

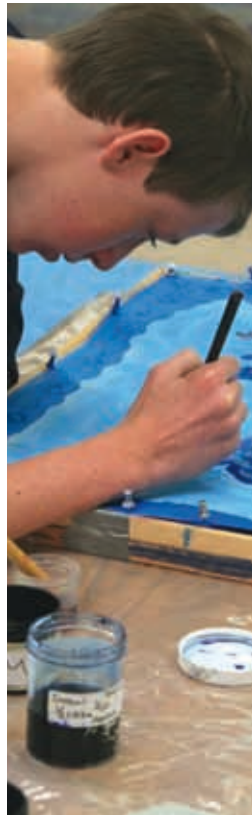
The Art area in the Toddler Community offers many hands-on activities for children to explore and develop creativity.

**ART ACTIVITIES DEVELOP:**

- Self expression
- Concentration
- Fine motor skills in preparation for writing

**ART EXERCISES INCLUDE:**

- Painting
- Scribbling
- Gluing
- Cutting
- Stamping



## Children's House

The Montessori Children's House program sees art as a continuing process in conjunction with the day-to-day work of the child. Each child works at his/her own pace using a variety of media to stimulate choice and innovation.

**EXPLORING**

Exploration of the various media available: coloring, drawing, painting at an easel, watercolor painting, clay/sculpture, collage, fibers sewing and weaving; exploration of simple tools, media and ways of making things.

**CREATING**

Begin the development of art techniques and experiment to gain knowledge of the structure of art.

**REFINING**

Learning how to look at his/her own work and appreciate the work of others, share the responsibility of clean-up and preparation

**ART HISTORY**

Through the use of a wide variety of prints, children are introduced to the classifications of art: themes, artists, schools of art and history.

Extended Day Children's House (ages 5-6) has art once a week with an art specialist in the art room. They are introduced to the four key areas of Visual Art: Aesthetics, Creative Expression, Art History and Art Criticism.

**AESTHETICS**

- Multi-sensory experiences
- Name visual elements such as color, textures, and shapes

**CREATIVE EXPRESSION**

- Create art that is unique to each child while applying their new knowledge of art terms and techniques
- Skills include: cutting, gluing, painting, drawing and molding with clay

**ART HISTORY**

- Introduced to a variety of two and three dimensional artwork from different cultures and eras.
- Artwork as the outcome of a process that involves many decisions by the artists identify art in their home, school, and community and to think of their own creative work as art

**ART CRITICISM**

- Artworks are selected and introduced in ways that stimulate curiosity and interest in seeing them
- Discuss features of artwork such as the subject matter, design qualities and overall mood or feeling

## Lower Elementary

Practical Life activities for the elementary aged child help the child to navigate the social world he is entering. Activities now include planning and managing projects.

**PRACTICAL LIFE EXERCISES INCLUDE:**

- Conflict resolution skills
- Gardening
- Cooking
- Baking
- Science experiments
- Care of the environment,
- Care of self
- Grace and courtesy
- Movement
- Silence (reflection)



## Upper Elementary

Practical Life activities in Upper Elementary focus on care of self, care of environment and living things, cooperation, and continued practice of grace and courtesy. Students feel a greater sensitivity to their surroundings, so activities begin to take the children outside of the classroom through community service projects.

**PRACTICAL LIFE ACTIVITIES TEACH:**

- A means to an end
- Cultural awareness
- A sense of success
- Organization skills to plan and run fundraisers to coordinate school-wide events and programs, food drives, involvement in local and global charities and organizations
- Gardening skills to plant/harvest produce
- School outreach, role modeling and mentoring
- Building projects such as sets, greenhouses, indoor and outdoor environments
- Cottage enterprises, such as salad bars, lemonade stands, dances, and holiday stores
- Planning functions



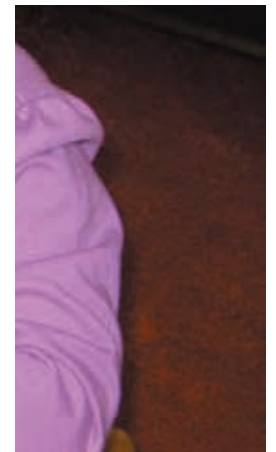
## Middle School

Purposeful work and reality-based learning takes place within the classroom environment and in the natural outdoor environment.

Experiences based applications of practical life skills include activities such as: service to the community, maintenance of indoor classroom space and stewardship for the natural environment. Problem intervention and peer counseling, seminar protocol and oral presentation are an important part of the Middle School experience.

**PRACTICAL LIFE EXERCISES INCLUDE:**

- Grace and courtesy in social settings
- Promoting civilized lunch time
- Micro economy
- Daily community jobs
- Weekly community meetings
- Weekly community service at the Cleveland Foodbank or here at Ruffing in the younger classrooms
- One week of Stanford standardized testing
- Green house maintenance
- Flower arranging
- Eighth grade mentorships
- Intergenerational Project at Judson
- Personal Development class (organization class for maintenance and self-assessment)
- Parent/student high school night open house
- Public speaking
- Ceremonies
- Utilizing public transportation or walking to field trips



# Sensorial

## Toddler Community

The Sensorial materials are hands-on activities that allow the child to explore the world in a concrete way.

### SENSORIAL ACTIVITIES HELP STUDENTS DEVELOP:

- Hand eye coordination
- Fine motor skills
- Large motor skills
- Spatial awareness
- Object permanence

### SENSORIAL EXERCISES INCLUDE:

- Puzzles
- Bead stringing
- Peg boards
- Nuts and bolt boards
- Cooking
- Gardening
- Sensory table with rotating activities, such as water, snow, sand, and items from nature



## Children's House

The child's natural tendency to explore puts him in touch with the physical world around him through the involvement of all his senses.

The Sensorial materials are puzzle-like materials that allow the child to refine the many sensorial impressions that have been experienced. These impressions are classified and organized in the mind. The sensorial area focuses on the correct association of these impressions by providing the essential elements of our world via the manipulation of materials that refine the senses.

### SENSORIAL ACTIVITIES FOCUS ON:

- Development of Visual Sense-visual discrimination of dimension, form and color
- Development of Tactile Sense-tactile discrimination of texture, temperature and weight
- Development of Auditory Sense-discrimination of volume and pitch
- Development of Sense of Taste (Gustatory) and Sense of Smell (Olfactory)- refinement of the gustatory sense, and the olfactory sense
- Refinement of Stereognostic Perception: development of the ability to visualize mentally.



## Lower Elementary

### RHYTHM

- Perform, identify, and create rhythmic phrases

### INSTRUMENTAL

- Introduce accompaniment using barred instruments, beginning with pentatonic scale, and non-barred instruments including recorders at third level

### VOCAL

- Greater melodic development of vocals, use of solfège to increase musical literacy, simple sight-reading

### PERCUSSION

- Begin with rhythmic pieces using body percussion to start moving and add instruments such as drums and non-pitched percussion
- Introduction of ostinati

### MOVEMENT

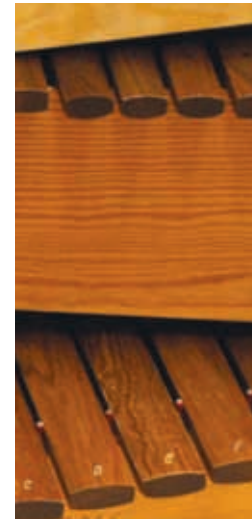
- Sequences to music, composed movement, folk dance

### IMPROVISATION

- On Orff instruments beginning with limited pitch building to more complex, vocal improvisation, movement improvisation

### MUSIC APPRECIATION

- Listening examples, Cleveland Orchestra concerts



## Upper Elementary

### RHYTHM

- Perform, identify, and create rhythmic phrases

### INSTRUMENTAL

- Introduce accompaniment using barred instruments, beginning with pentatonic scale, and non-barred instruments including recorders at third level

### VOCAL

- Greater melodic development of vocals, use of solfège to increase musical literacy, simple sight-reading

### PERCUSSION

- Begin with rhythmic pieces using body percussion to start moving and add instruments such as drums and non-pitched percussion. Introduction of ostinati

### MOVEMENT

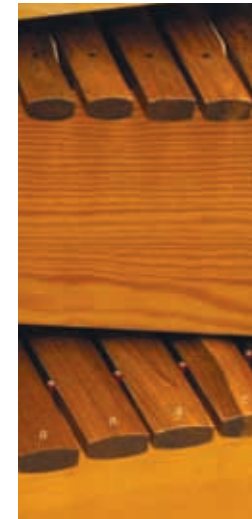
- Sequences to music, composed movement, folk dance

### IMPROVISATION

- On Orff instruments beginning with limited pitch building to more complex, vocal improvisation, movement improvisation

### MUSIC APPRECIATION

- Listening examples, Cleveland Orchestra concerts



## Middle School

### MOVEMENT

- Folk dances, composed and improvised movement

### HISTORY

- The recognition of composition, the composers, the period, learning musical styles of each distinct musical period: medieval, Renaissance, Baroque, Classical, Romantic, 20th Century, American 20th century
- Practice playing instruments (recorders and Orff) both solo and in ensembles

### CHORUS

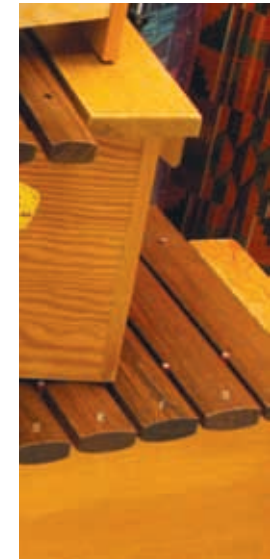
- World music, American folk music, canons, partner songs, sight-reading, singing technique, singing in French, Spanish, Latin, and other languages.

### PERFORMANCES

- As an extension of the music program

### MUSIC APPRECIATION

- Annual concert and field trip may include The Cleveland Orchestra, Playhouse Square, Cleveland Playhouse, House of Blues, Rock and Roll Hall of Fame



## Music

### Toddler Community

Music is included in Language at this level



### Children's House

#### BELLS

- Use of the Montessori 'bells' in the classroom environment for tone matching and composition
- Music appreciation
- Listening to musical stories

The Orff Approach to teaching music is introduced by the Music Specialist. This approach addresses every aspect of musical learning: listening; performing; creating. The theory connects the musical experience with movement, dance and speech.

#### RHYTHM

- Introduction to steady beat, then uneven beat
- Rhythm sticks leading to barred instrument

#### INSTRUMENTAL

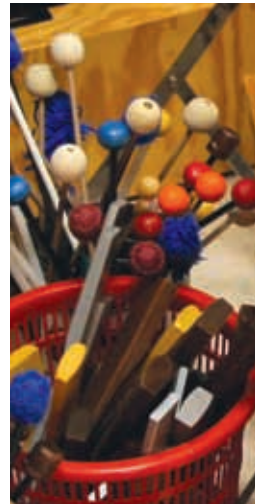
- Gradual introduction of color instruments and concept of melody using the instruments to enhance songs - mallet technique exercises

#### VOCAL

- Short songs with limited pitches involving movement, songs with repetition, dramatization of songs, emphasis on use of props such as scarves, hats, puppets, introduction to concept of high and low, sounds/pitch

#### VOLUME

- Concept of loud and soft





# Language

## Toddler Community

In the Toddler Community we focus on receptive and expressive language. Receptive language refers to what the child can understand, following direction, and expressive language refers to what the child is able to communicate with words and or gestures.

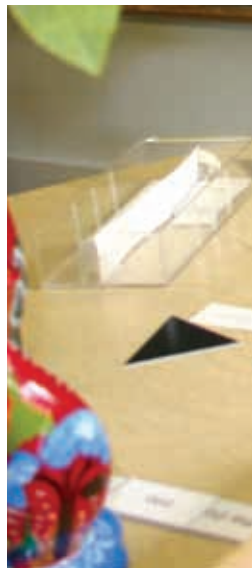
Language is found in all areas of the environment; however we have a specific Language area, which also includes Music.

### THE LANGUAGE AREA ACTIVITIES:

- Develop and enrich language
- Introduce structured language (including syntax and vocabulary)
- Aid in independence
- Help students learn how to use language appropriately
- Introduce language through music (including singing, dancing, and use of instruments)

### LANGUAGE EXERCISES INCLUDE:

- Reading books
- Singing songs
- Naming language objects
- Matching objects to co-responding pictures
- Daily conversations



## Children's House

The Children's House environment utilizes the child's sensitive period for language by starting with spoken language, the progressing to writing and reading, and the exploration of the function of words in our grammar leading to the development of expressive and receptive language skills.

### SPOKEN LANGUAGE

- Enrichment of vocabulary: learn the name of objects, develop and refine the skill of conversation by focusing on sentence structure and staying on topic
- Verb tenses: past, present and future
- Lessons to practice and simulate social situations dramatically
- Stories, songs and poems to give the child opportunity to appreciate literature

### PHONOLOGICAL AWARENESS

- Rhyming, sentence segmenting, work segmenting, syllable segmenting, and alliteration.
- Sound games: initial sounds, ending sounds, middle sounds, words with a specific sound anywhere in the word, and sounding a word out from beginning to end.
- Sandpaper letters: beginning with consonants and vowels then progressing to phonograms (diagraphs and long vowels)

### WRITING

- Constructing words with the moveable alphabet, then phrases and sentences and finally paragraphs and stories
- Preparation of the hand through metal insets, chalkboards and paper

### READING

- Phonetic reading, Puzzle words (sight words), alphabetizing and spelling
- Phonograms: writing, reading and spelling
- Grammar and parts of speech through the use of concrete objects and games
- Word study: antonyms, synonyms, homonyms, singular and plural, contractions, positive comparative and superlative

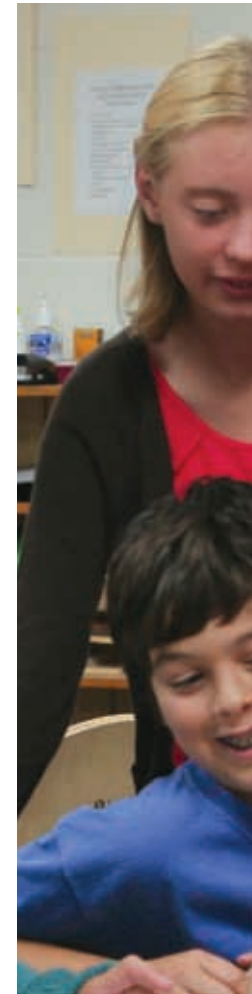
### SENTENCE ANALYSIS

- Exploring how the order and placement of phrases affects the meaning



## Lower Elementary

Students are introduced to keyboarding in the latter portion of their Third Year. Small group lessons provide an introduction to the use of Smart Boards.



## Upper Elementary

Students develop and master terminology and identification of key hardware components.

### KEYBOARDING

- Use of proper finger positioning in all letter rows
- Refinement of skills with punctuation, numbers and symbols
- Use of shortcut keys

### WORD PROCESSING

- Introduction to basic word processing skills using Microsoft Word
- Page and text formatting
- Use of spell check software
- Insertion of clip art
- Copy and paste functions
- Introduction to Word Art

### SPREADSHEET SKILLS

- Introduction to basic spreadsheet skills using Microsoft Excel

### PRESENTATIONS SKILLS

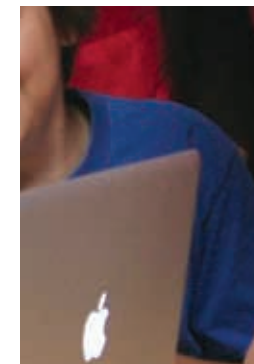
- Introduction to presentations skills using Microsoft Powerpoint
- Creation of basic slideshows using auto-layout
- Slide show customization using colors, effects, text formatting and clip art

### NETWORK

- Introduction to network, including logging-on, saving and opening existing files from personal and shared drives

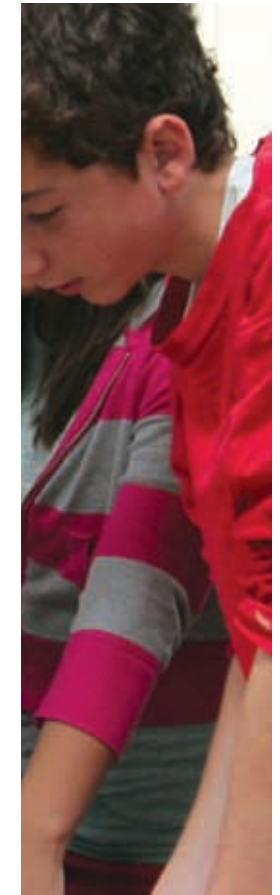
### INTERNET

- Review of browser and internet vocabulary
- Addition of web sites to favorites list
- Use of various search engines in research



## Middle School

Students are expected to have mastered keyboarding, web-based research, and the use of Microsoft Word, PowerPoint and Excel by the time they enter the middle school. The Technology Coordinator is available to work with the students should they have questions on the use of technology in support of their coursework. Students are permitted to use privately-owned notebook computers.



## Technology

### Toddler Community

The only Technology the children are introduced to at this level is using a tape player or CD player in the music area. Parents are updated weekly by use of email by staff.



### Children's House

For the young child, we continue to use a multisensory approach and real-life experiences for learning through the use of the Montessori manipulative materials, classroom events, and lessons. We recognize the need for movement and learning through experience. The use of technology, therefore, is introduced and utilized as an important tool in the Upper Elementary classrooms and onwards.



### Lower Elementary

#### THE GREAT LESSON

- The Story of Language

#### GRAMMAR AND SYNTAX

- Parts of speech with grammar boxes – noun, article, adjective, verb, preposition, adverb, pronoun, conjunction, and interjection
- Extensions with parts of speech
- Beginning sentence analysis – subject, predicate, and direct object
- Word study – root words, prefixes, suffixes, compound words, word families, synonyms, antonyms, homophones, and singular/plural nouns
- Dictionary skills

#### WRITING PRACTICE

- Cursive handwriting lower and upper case
- Punctuation rules – period, question mark, exclamation point, beginning comma work
- Capitalization rules – sentence, proper name, titles, "I," holidays, months, and days
- Beginning paragraph skills
- Sentence construction
- Spelling skills – contractions, phonograms, and puzzle words
- Editing and rewriting a final composition

#### WRITTEN COMPOSITION

- Research writing
- Creative writing
- Story writing
- Poetry writing
- Letter writing
- Journal writing

#### BEGINNING READING SKILLS

- Continued phonics – letter to sound relationships
- Basic sight word recognition
- Additional reading support with an emphasis on first year readers

#### READING COMPREHENSION

- Reading for meaning and content
- Story elements
- Literature discussions including Junior Great

#### BOOKS

- Daily individual reading for practice and enjoyment
- Reading aloud to children

#### READING EXTENSION

- Lower elementary reading to primary classes as "reading buddies"
- Upper elementary reading to/with lower elementary
- Middle school reading in Spanish to lower elementary

#### SPOKEN LANGUAGE

- Presenting oral reports
- Sharing poetry and stories

### Upper Elementary

#### LITERATURE

Novels, biographies, essays, short stories, historical documents, poetry, drama. Integration of these pieces within the humanities and science studies enriches the students understanding of time, place, and the dynamics of the human story.

#### READING APPLICATIONS

- Compare details, examine cause and effect, use text features, charts and graphs, and to glean the author's purpose
- Characters, setting, plot sequence, speaker, theme, dialects, literary form, and vocabulary use are examined

#### ORAL INTERPRETATION

Public speaking, drama sessions, debates, seminar, plays, skits, oral presentations

#### GRAMMAR

- Advanced Function of Words (all parts of speech including Verb Conjugations)
- Sentence Analysis: Adverbial Extensions, attributives, predicate nouns, predicate Adjectives, prepositional phrases
- Clausal Analysis: independent, dependent, verbals, gerunds
- Analysis of Literature

#### THE WRITING PROCESS

Mechanics: colon, semi-colon, contraction, run-on sentences, note-taking, paraphrasing, summarizing, topic sentences, sentences structure, paragraph construction, editing

#### WRITING

Reports, journal, letters, diary, invitations, letter writing, proposals, book reports, myths, fables, descriptive writing, short stories, poetry, plays, biographies, summaries

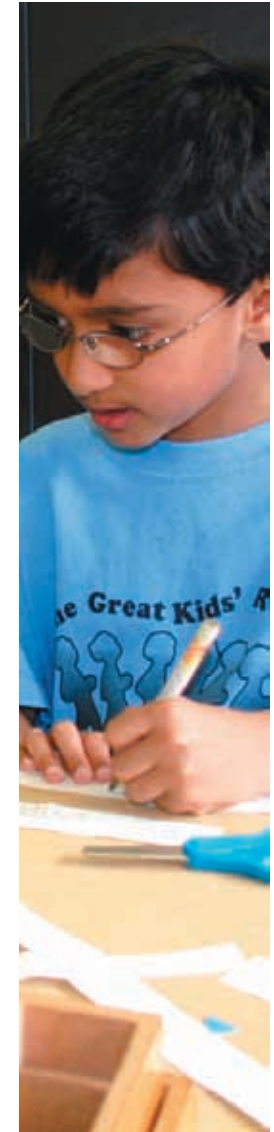
#### READING

- All literary genres including: historical fiction, biographies, fantasy, poetry, Newberry Award Winners, adventure, classics, myths, mysteries
- Junior Great Books (interpretive reading and discussion)
- Novel study

#### THE WRITING PROCESS

Process writing with several drafts of a single work edited and evaluated until a publishable product is constructed. (Prewriting, drafting, editing, revising, publishing)

Essay Writing includes the primary genres; expository, descriptive, comparison, persuasive, theme, response and narrative work. Summary, research, editorial, newspaper, letter, informal writing, bibliographical (MLA) formats, memo, advertising data, note taking





## History

### Toddler Community

History is introduced indirectly through books and by learning the daily schedule. By the end of the year most children know Gym day, Spanish day, Pizza day and some may know the seasons.



### Children's House

For the young child, the focus is on developing awareness and understanding of the concept of "time."

- Introduction to Calendar
- Days of the week, months of the year
- Awareness of Seasonal Change
- Beginning of Clock Study
- O'clock, half-past, quarter to, quarter past
- Introduction to the three fundamental tenses
- Past/Present/Future
- Experience of Personal History via Birthday Celebrations



### Lower Elementary

#### SPANISH

Spanish is taught twice a week for thirty minutes. The emphasis is on speaking. Students learn the language through the songs, chants, games, books, and conversations. Topics covered are: family, animals, occupations, food and beverages, numbers, opposites, days, months, weather, clothing, sports, parts of the body, classroom objects, fruits and vegetables, transportation, and rooms in the house.

#### CULTURAL KNOWLEDGE:

Students learn about customs associated with holidays celebrated in Spanish speaking countries.



### Upper Elementary

#### SPANISH

Spanish is taught twice a week for a total of seventy-five minutes. Lessons include speaking, listening, reading, and writing. Students learn the languages through games, songs, chants, books, conversations, and skits.

Topics covered are: family, animals, occupations, food and beverages, numbers, opposites, days, months, weather, clothing, sports, parts of the body, classroom objects, fruits and vegetables, transportation, rooms in the house, and the date. As well as using the verbs to have, to be, and to want in conversation, common questions and answers, and memorizing popular riddles.

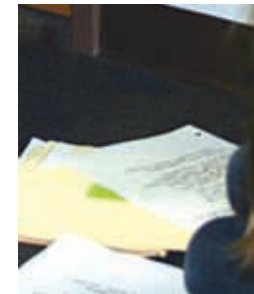
Students learn about customs associated with holidays celebrated in Spanish speaking countries. Students eat foods popular in Mexico.

#### LATIN

Latin instruction begins in sixth grade, taking place once a week for fifty minutes.

The Latin program teaches rudiments of Latin, including organization and formation of declensions and conjugations, basic vocabulary, and experience in tracing English meanings from Latin words. The paradigms of declensions one, two, and three are memorized, as are those of the present, imperfect, and perfect tenses are memorized. The pluperfect tense is introduced.

Latin lessons are taught through stories based on information of private and public characters and events found in the ruins of Pompeii and the first century Roman colonies in Britain and Alexandria. These historical bases give the language concrete settings which provide interest for students as they follow the plot, recognize characters, and react to them emotionally.



### Middle School

The Foreign Language curriculum emphasizes language not only as a tool for communication, but as a means of developing awareness of appreciation for people of other cultures, as well as for the community of humankind. The curriculum and its assessment follow OFLA (Ohio Foreign Language Association) guidelines and National Standards for Learning Foreign Languages.

#### SPANISH

Middle School Spanish classes meet four times a week for forty-five minutes. Classes are conducted in Spanish and students have the opportunity to speak, listen, read and write in each class.

The Middle School Spanish students use the textbook Ven Connigo. Studies include conversation, vocabulary, grammar and cultural information. In addition the students memorize and perform skits, sing songs, celebrate holidays from Latin America and cook popular dishes.

#### LATIN

Latin instruction continues in through Middle school, taking place once a week for fifty minutes.

The Latin program teaches rudiments of Latin, including organization and formation of declensions and conjugations, basic vocabulary, and experience in tracing English meanings from Latin words. The paradigms of declensions one, two, and three are memorized as are those of the present, imperfect, and perfect tenses are memorized. The pluperfect tense is introduced.

Latin lessons are taught through stories based on information of private and public characters and events found in the ruins of Pompeii and the first century Roman colonies in Britain and Alexandria. These historical bases give the language concrete settings which provide interest for students as they follow the plot, recognize characters, and react to them emotionally.

#### FRENCH

Middle School French classes are conducted in the target language. Classes meet four times a week for a forty-five minute lesson. Current events, international news, geography, proverbs, idiomatic expressions, and cultural vignettes are presented daily at the start of class. While listening and speaking continue to be assessed, reading and writing are strongly reinforced.

The foreign language teacher utilizes outcome-based and communicative methodologies. French children's books, comic books, films, music, games, and magazines provide important realia to the students. French plays, field trips to art exhibits, French film, and restaurant visits complement our class work when available.

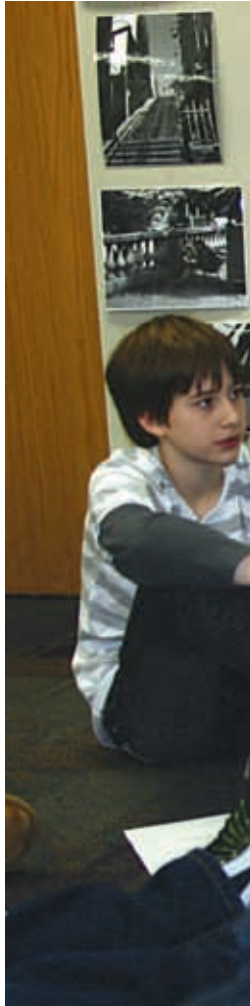
Students prepare French cuisine in mini-cooking classes conducted in French.

## Foreign Languages

### Toddler Community

#### SPANISH

Spanish is introduced by the Spanish teacher once weekly for 15 minutes through language, books, and songs.



### Children's House

#### SPANISH

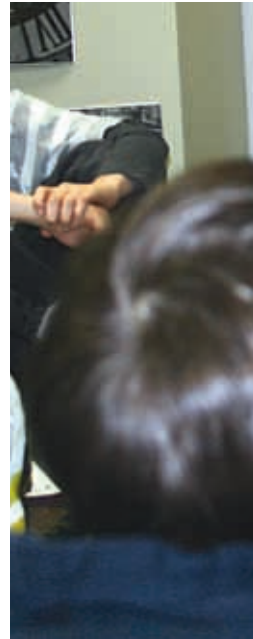
Spanish is taught once a week for thirty minutes to first, second, and third, year students. Extended Day students receive an additional thirty minutes a week.

#### CULTURAL KNOWLEDGE EXERCISES INCLUDE:

- target language expressions and gestures for greetings
- farewells common courtesy expressions in the target language
- celebrate special events (Cinco de Mayo, Día de los reyes, etc.)
- listen and respond through activities
- creative expression to songs and stories in the target culture/language
- learn about Spanish speaking countries, flags and geography

#### LINGUISTIC KNOWLEDGE EXERCISES INCLUDE:

- provide identifying information (name, age, state of being)
- point to parts of the body
- follow simple directions



### Lower Elementary

#### GREAT LESSON

- The Story of Human Beings

#### TIME

- Timeline of Life
- Earth history with the Clock of Eras and the Black Strip
- BC/AD timeline
- Calendar – study of year, month, week, day including personal timelines
- Clock study – o'clock, half-past, quarter to, quarter after

#### HUMAN STUDIES

- Fundamental Needs of Humans
- Introduction to various civilizations and cultures
- Appreciation for human contributions



### Upper Elementary

#### REVIEW OF TIMELINE OF LIFE:

(Paleozoic, Mesozoic, Cenozoic, Neozoic eras)

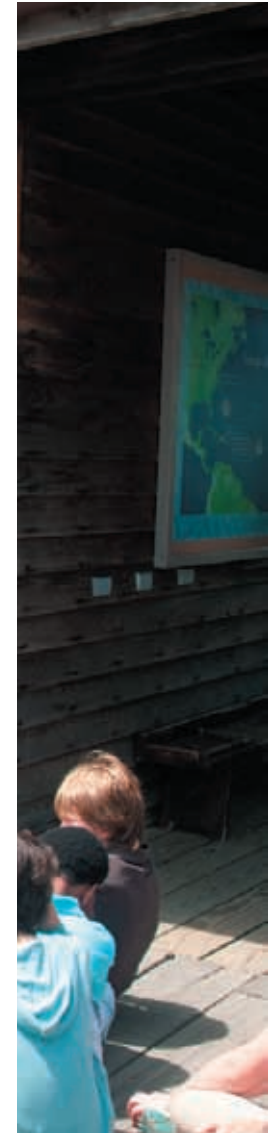
- Timeline of Early Humans
- Significance and Characteristics of Early Humans (beginning with Australopithecus)
- Timeline of Lower Paleolithic Age)
- Timeline of Upper Paleolithic Age)
- Introduction to Civilizations: Early, Egyptian, Roman, Greek, Medieval, Renaissance, Modern
- Further study of Civilizations
- Fundamental Needs of Humankind Chart

#### STUDY OF CIVILIZATIONS

- Gifts of civilizations
- History of Question Charts
- Study of a Civilization (research)
- Archaeology/Anthropology
- Growth of Culture, migration, exploration

#### AMERICAN HISTORY

- American Aborigines
- Period of Exploration
- Colonial Period



## Humanities

### Middle School

The Middle School Humanities curriculum is a two-year integrated program incorporating literature, history, cultural and social studies, current events, art history, anthropology and philosophy through readings, research projects, community service, and field observation. The child's cultural studies of the early Montessori years culminate in a curriculum that takes into account the needs and personality of the adolescent in the third plane of development and an expanded "prepared environment" that includes the Middle School, Ruffing and its neighborhood, and the myriad of resources of the greater Cleveland area. Throughout the two-year cycle, students explore a variety of topics and questions relating to the early development of human civilizations and social models, human interactions with the natural world, the building blocks of human society, and human conflict and controversy; and expand their inquiry into the meaning of "community," with a focus on physical places, religious and ethical views, government, education and different human perspectives.



#### YEAR ONE: EXPOSITORY

##### Fundamentals of Human Society

Students conduct research and investigate lifestyles of different early civilizations, explore some of the history and settlement patterns of the Cleveland area, and consider the development of cities.

##### Building Blocks of Society: Government and Law

Students explore various forms of government and legal structures, with an emphasis on the American system of government. Students read the Constitution and the Bill of Rights, and study the legacy of such documents.

##### World Views

Students explore the traditions, language, symbolism and sacred places of the world's great religions, including: Judaism, Christianity, Islam, Hinduism, and Buddhism.

##### Education and Individuals

Students continue to explore the meaning of education, childhood, and the changing role of children and adolescents in society through literature and personal histories.



### Upper Elementary

#### CHEMISTRY

- Atoms, Molecules, Compounds, Bonding, Experimentation
- Matter and Energy
- Conservation of matter, conservation of energy, properties of matter, experimentation

#### LIFE SCIENCES

- Five-Kingdom Classification
- Review of Five Kingdom Classification followed by research of kingdoms

#### ZOOLOGY

- Vital Functions, comparative study: nervous system, reproduction, circulation, respiration, nutrition, skeletal
- Animals (chordates vs. non-chordates)
- Tracing the genealogy of an animal
- Adaptations/Biomes/Food Chains
- Predator/Prey

#### HUMAN ANATOMY

- Introduction to the cell, genetics, systems of the human body: skeletal, muscular, respiratory, circulatory, digestive, reproductive, excretory, nervous, endocrine

#### BOTANY

- Classification of kingdom plantae, vital functions of the plant (second level), research of 'classes' in kingdom plantae, research the genealogy of a plant, nature walks: observations of animals in their natural habitats- field trips

#### TREE OF LIFE

- Taxonomy of all living organisms

#### RESEARCH

- Science Experiments: Writing, Performing, Evaluating
- Nature Walks/ observations/ Field trips

#### GEOLOGY

- Rocks and minerals: properties
- Land forms



### Middle School

The two-year cycle in the science classroom is primarily a laboratory-centered inquiry-based physical science course, with frequent interdisciplinary correlations with pre-algebra and algebra as well as links to history, geography, and music

#### CYCLE A

##### CHEMISTRY UNIT

- Naming and classifying the elements: investigations of density, states of matter, basic qualitative analysis
- Atomic structure: why atoms combine, radioactivity, nuclear power
- Chemical and Physical Change: investigations in different kinds of chemical reactions, solution chemistry, properties of water
- Principles of Organic Chemistry: structural formulas, nutrition analysis, building molecular models, operation of senses of taste and smell

##### GENETICS UNIT

- Introduction: the importance of genetics to humans
- The chemical structure of DNA: models of replication, translation, and transcription
- Heredity investigations: probability studies, Punnett Squares, Mendelian genetics: studies of hybrid corn and simple human traits, blood typing
- Microscopic observations of chromosomes
- Student research on genetic disorders
- Presentation by guest speaker on the relationships of medicine to the work of a geneticist

#### CYCLE B

##### SOUND AND LIGHT UNIT

- Introduction: The Nature of Waves
- Sound waves, their behavior and characteristics: tuning fork labs, observations on the oscilloscope, velocity of sound calculation from experiment on nearby field
- Harmony, Resonance and Overtones: mathematics of musical harmony, students bring instruments and compare pitch, timbre and methods of sound production
- Electromagnetic Spectrum: labs in visible, ultraviolet, and infrared light.
- Analysis of color: labs in mixing lights and pigments, and introduction to the laser
- Reflection and refraction of light
- Human vision: mechanics of the eye, labs on blind spot, color vision, and visual perception

#### ELECTRICITY AND MAGNETISM UNIT

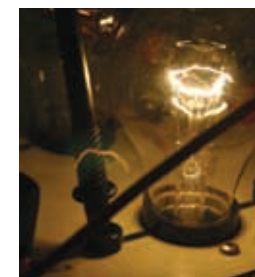
- Permanent magnets and electromagnets: labs and work on the importance of the compass in history and geography
- Investigations of series of parallel circuits: building, testing and analyzing circuits and how we wire our homes
- Static electricity labs: van de Graaff Generator labs, and use of static charge in dealing with particulates in the atmosphere

#### MACHINES, WORK AND ENGINEERING UNIT

- The six basic simple machines: lever pulley, inclined plane, wheel and axle, screw, and wedge; labs on each machine, relationship to daily life, how people have improved their lives through their use
- Biomechanical applications of machines: labs on bones and muscles
- Simple machines in history: readings on Archimedes
- Bridges: analysis of bridge types, model bridge building, the Rooblings and the Brooklyn Bridge, and bridges of greater Cleveland
- Model rocket construction

#### ONGOING

- Student work on greenhouse and the Middle School's microeconomy
- Mathematical analysis as a part of each science topic
- Field experiences to science museums with special classes relating to science topics under study
- Study of important scientists in each field and their places in history
- Application of technology in data analysis and research
- Discussion of ethical, political, and historical issues surrounding science topics
- Current events in science: discussion of journal articles on science topics in the news





# Science

## Toddler Community

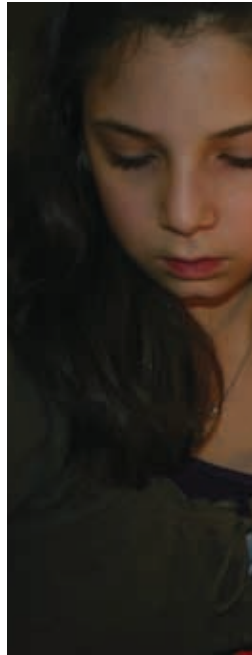
Science is introduced indirectly at this level through other activities, such as the sensory table, magnets, cooking, books, and nature walks.

## Children's House

Concrete exploration of the physical and life sciences to further classify the child's world

### LIFE SCIENCE

- Scientific classification: Living/ Non-Living, Plant/Animal, Vertebrate/Invertebrate, Mammal, reptile, amphibian, fish, bird, insect.
- Botany
- Leaf shapes, plants, trees, flowers
- Magnetism
- Buoyancy
- Weather
- Gravity
- Light
- Sound



## Lower Elementary

### GREAT LESSON

- The Story of the Coming of Life

### ZOOLOGY

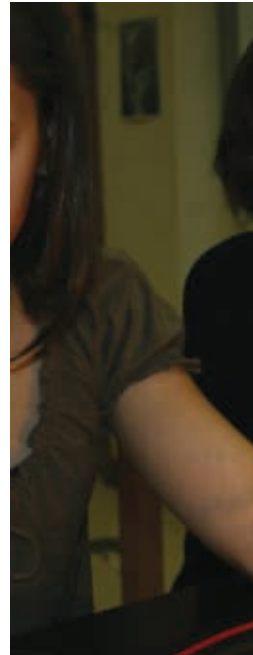
- The Five Kingdoms
- Animal kingdom with animal story material and reference books
- Vertebrate/invertebrate
- Classification by phylum and class
- Research
- Observation and care of animals; pet visits
- Nature walks and field trips

### BOTANY

- Story of the Plants
- Needs of plants
- Parts and functions: leaf, root, stem, flower, fruit, and seed
- Research
- Observation and care of plants
- Outdoor/indoor gardening
- Nature walks and field trips

### SCIENCE EXPERIMENTS

- Introduction to the scientific method by observing, writing, and evaluating



## YEAR TWO: CREATIVE

### War, Conflict, and Peace

Guided by their particular concerns and interests, students research elements of war and conflict within society, and explore concepts of peace. Students are encouraged to explore related areas in music, art, science, and technology.

### Changes in Society

Students explore social and cultural topics from the Middle Ages to the Reformation of Europe through novel selections and individual research projects. Topics may include:

- Heroes versus celebrities
- Religious diversity and tolerance
- Prejudices in different societies
- Explorers
- Inventors
- Philosophers

### Ethnic Neighborhoods and Immigration

Students visit and explore ethnic neighborhoods in Cleveland through interviews, research archives, and novel selections. Through a study of immigration students further evaluate prejudices, religious tolerance, freedom, human rights, and the power of traditions.

### Judson Intergenerational Service Project

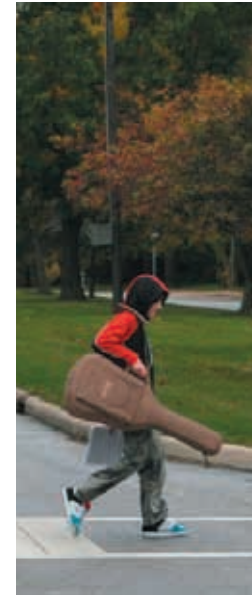
Students are carefully paired with and meet regularly with an elder at Judson with whom they share common interests. Over time, the student develops a meaningful relationship with the resident, and explores the aging process and the perspectives of the elderly through dialogue and interviews. The project culminates with a formal tea at which students present a written history of the elder's life in prose or poem.



### Literature

Literature is assigned to best complement the curriculum unit at hand. Student read seven to eight novels each year. Books include, but are not limited to:

- The Good Earth
- Lord of the Flies
- The Chosen
- Of Mice and Men
- To Kill a Mockingbird
- A Tree Grows in Brooklyn
- A Separate Peace
- All Quiet on the Western Front
- Travels with Charlie
- Tuesdays with Morrie
- The Good War
- Across Five Aprils
- To Dance with the White Dog
- The Giver
- A Tale of Two Cities
- The Once and Future King
- The Canterbury Tales
- The Alchemist's Daughter
- The Door in the Wall
- Ishmael
- Siddhartha
- 1984
- The Catcher in the Rye
- The Book Thief



### Writing

Writing is a critical component of the curriculum, and students write in formal and informal styles. Emphasis is placed on grammar, syntax, spelling, clear and concise expression, organization of ideas, consistent verb tense, dialogue, and the development of personal voice.

Writing exercises include:

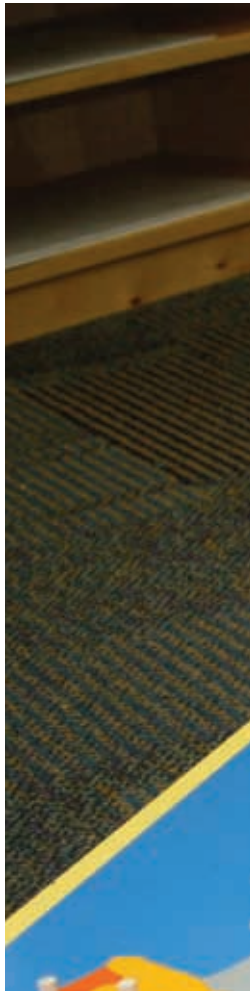
- Journals
- Plays
- Poetry
- Research Papers
- Speeches
- Children's Books
- Character Sketches
- Business Letters
- Paragraph Development
- Journalism
- Narratives
- Figurative Language
- Short Stories
- Thank You Notes
- Essays
- Travelogues
- Biographies



# Geography

## Toddler Community

Geography is introduced indirectly at this level through other activities, such as rolling a globe ball, singing cultural songs, books, and making cultural lunches.



## Children's House

The geography curriculum introduces the child to stories of their culture and other cultures around the world.

### PHYSICAL GEOGRAPHY:

- Study of Land and Water forms
- Island, lake, peninsula, gulf, isthmus and strait
- Biomes are introduced

### EXPLORATION OF GLOBES, MAPS AND FLAGS

- Distinguishing shapes and placement of continents, countries, states, and oceans
- Making of maps and books of flags to encourage repetition with the geography materials

### CULTURAL GEOGRAPHY

- People, places, products, plants, animals, homes, clothing, transportation, arts, crafts, and history are offered through the use of photos and cultural stories
- Cultural holiday celebrations are shared

### APPRECIATION OF ART

- Artistic themes, artists, periods



## Lower Elementary

### GREAT LESSON

- The Story of Geometry

### CONCEPTS

- Point, line, surface, solid
- Similarity, congruency, equivalence

### LINES

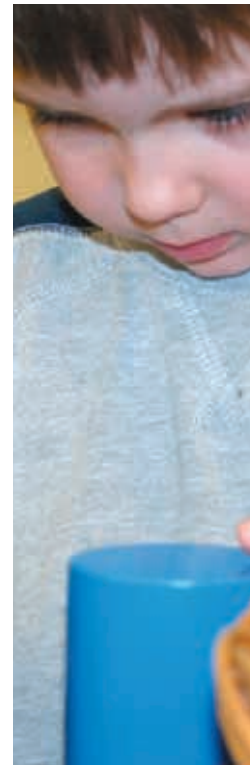
- Definition, position, and types of lines using the nomenclature booklets and materials

### ANGLES

- Definition, types, and measurement of angles

### POLYGONS

- Definition and types of polygons using the nomenclature booklets and materials
- Further study of triangles



## Upper Elementary

### PLANE FIGURES AND SOLIDS

- Review

### LINES

- Review kinds, their positions and relationships
- Congruency, similarity, equivalence
- Triangle study: nomenclature, classification according to sides and angles, equivalence proof (sensorial)
- Quadrilateral study: nomenclature, classification, equivalence proof (sensorial)
- Perimeter
- Measuring angles
- Bisecting angles
- Circles: nomenclature, relationships, circumference with materials leading to finding diameter and radius algebraically
- Pythagorean Theorem
- Beginning with sensorial proof

### VOLUME AND AREA

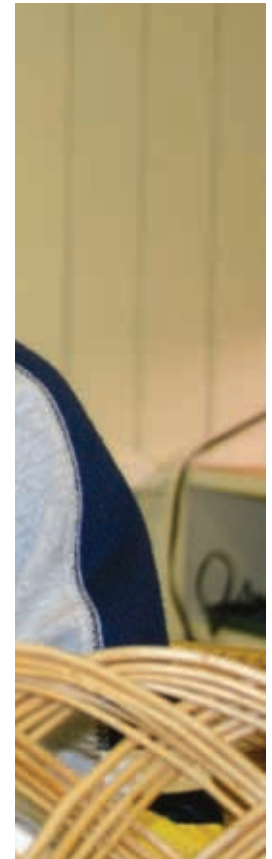
- Review sensorial exploration of volume leading to calculating volume for rectangular, hexagonal prisms and pyramids, cylinders and cones
- Area
- Formula derived for rectangle, rhombus and triangle lead to finding mass and capacity, algebraic applications
- Measurement
- Estimation, length, perimeter, area, volume, metric measurement (metric, imperial)
- Transformation
- Reflections, rotations, translations
- Geometric constructions with compass and straightedge



## Middle School

Geometry finds its place within the math curriculum as an interdisciplinary component in problem solving and project work- the study of Euclid as well as other Greek, Egyptian and Roman mathematicians add to an understanding of inventions, innovations, and the development of the mathematical mind over time.

Blending the historical aspect of geometry with modern problem solving gives students a good focus on this ancient discipline of mathematics.





# Geometry

## Toddler Community

Geometry is learned indirectly at this level through other activities, such as shape puzzles, and books.



## Children's House

Geometry is presented to the young child through sensorial exploration and language exercises. Shapes are introduced through wooden insets, solid shapes, and triangles used to construct other shapes. All sensorial work is followed by language to clarify the concept. The names of all typical geometric shapes are introduced to the primary aged child. Manual work (drawing, tracing, cutting) provides additional experience in geometry for the child.



## Lower Elementary

### GREAT LESSON

- The Story of our Universe

### SOLAR SYSTEM

- Planets, stars, constellations
- Relationship between the sun and earth

### COMPOSITION OF THE EARTH

- Layers of the earth
- Land and water forms
- Formation of mountains and volcanoes
- Types of rocks

### STATES OF MATTER

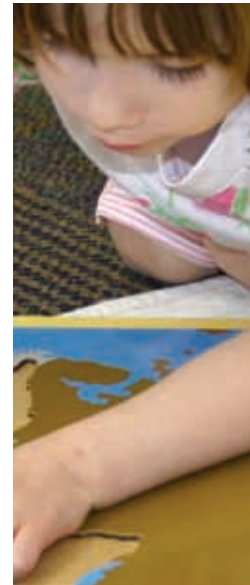
- Solid, liquid, gas
- Further extensions with experiments

### PHYSICAL GEOGRAPHY

- Identifying countries, cities, capitals, land and water features with pin map material
- Making maps
- Using an atlas
- Researching and presenting information

### SCIENCE EXPERIMENTS

- Introduction to the scientific method by observing, writing, and evaluating



## Upper Elementary

### POLITICAL GEOGRAPHY

- Map skills: Imaginary lines: equator, latitude, longitude- political, physical, road maps

### INTRODUCTORY LESSON

#### THE STORY OF THE UNIVERSE

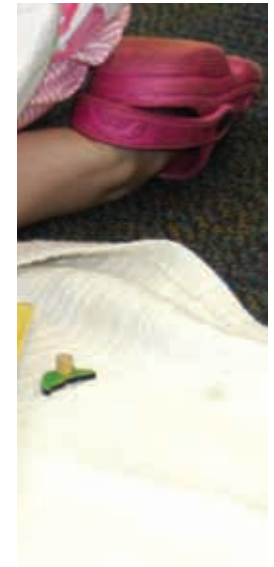
- Imaginary Island
- Fictional Geography
- Astronomy: Black Holes, Galaxies, Life Cycle of a Star (sun)
- Composition of the Earth: Further Studies of the Lithosphere including Continental Drift
- Mountain Building, Faults, Plate Tectonics
- Work of Wind: Winds, Winds and seasons, Rain Caused by Winds, Ocean Currents, erosion, Energy
- Work of Water: Work of Rivers, Rain, Work of Oceans, Glaciers, Water Cycle



## Middle School

Students engage in the study of political and physical geography as components of their work in diverse settings:

- War and Peace Studies: use maps to trace military campaigns, influence of physical geography on battles, and results of peace treaties.
- Preparing for and conducting field experiences such as the Washington trips and travel to other cities as opportunities arise
- Current events: relating geography to topics under discussion
- World Religions: tracing the geographical spread of religious groups and the relationship of geography to the conflicts among religious groups
- Immigration Studies: tracing the path of various national and ethnic groups to the United States as well as patterns of settlement within the United States.
- Local ethnic neighborhoods: exploring the history and current status of Cleveland's religious and nationality communities.
- Global Languages: relating world news events to cities, countries, world leaders.
- National Geography Bee
- Flags in our environment.



# Mathematics

## Toddler Community

Math is learned indirectly at this level through other activities, such as place setting and counting out snack.



## Children's House

In all Montessori math experiences, children are presented first with a material that allows for hands-on exploration of the concept. The confidence and skills the children acquire from their experiences in the Practical Life and the Sensorial areas of the Children's House classroom prepare them for success in mathematics.

### NUMBERS 1 TO 10

- Through the use of rods, spindles, and objects, numeration, one to one correspondence and teaching the quantity, symbol and sequence of numbers 1 through 10

### DECIMAL SYSTEM

- Categories of unit, ten, hundred and thousand are introduced with the bead materials. The processes of addition, subtraction, multiplication and division are experienced with the manipulation of the materials giving the impression of the four operations in math

### TEENS AND TENS

- The teens are introduced through the manipulation of gold beads, colored beads and cards to represent quantities and symbols of numbers 11 through 19
- Numbers in the tens are explored with the emphasis on the change from nine to the next ten (39-40, for example) by building the numbers with beads and cards
- Bead chains provide concrete practice in counting and recognizing numbers. Exercises using the chains include the introduction to multiples of numbers and the concept of squaring and cubing.

### MEMORIZATION WORK

- The exploration of math facts occurs through a series of beads and boards offering repetition. The child experiences the memorization of math facts in addition, subtraction, multiplication and division

### PASSAGE TO ABSTRACTION

- Some children move to abstraction in the math through the use of an abacus-like bead frame for addition and subtraction enabling the child to perform math operations with very large numbers.

### FRACTIONS

- Through the manipulation and exploration of fraction inset materials, the child is introduced to the language and writing of fractions and their relationships to each other.

## Lower Elementary

### GREAT LESSON

- The Story of Numbers

### NUMERATION

- Formation of numbers
- Attach quantity to symbol
- Place value to millions
- Reading numbers
- Study of other number systems

### OPERATIONS

- Static and dynamic addition with and without materials
- Static and dynamic subtraction with and without materials
- Static and dynamic multiplication with and without materials
- Static and dynamic division with and without materials
- Memorization of math facts for each operation
- Introduction to commutative, associative, and distributive laws of mathematics with materials

### MULTIPLES

- Introduction, concept, and practice with materials
- Skip counting with and without materials

### SQUARING & CUBING

- Introduction, concept, and practice with materials

### MEASUREMENT

- History/introduction, concept, practice of linear measurement
- Money - coin identification, adding coins, making change

### FRACTIONS

- Introduction and identification using materials
- Equivalence of fractions
- Operations with fractions with like denominators

### GRAPHS

- Introduction to bar, line, and picture graphs

### PROBLEM SOLVING SKILLS

- Word problems using the operations



## Upper Elementary

### INTRODUCTION

- The Story of the History of Numbers and Numeration (including the history of measurements)

### WHOLE NUMBERS AND NUMERATION

- Complete all whole number operations, (including long multiplication and division abstractly)
- Review hierarchical values, expanded notation, comparison, rounding and estimating

### MULTIPLIES

- GCF, LCM, prime and composite numbers

### PROPERTIES

- Commutative, associate, distributive
- Rules of divisibility
- Review odd and even numbers

### FRACTIONS

- Review: concept, equivalence
- Types of fractions: proper, improper, mixed, reducing fractions
- Operations using fractions

### DECIMALS

- Equivalency, comparing and ordering, renaming fractions as decimals, all four operations abstractly

### RATIO AND PERCENT

- Ratios as fractions, as decimals, as percents, percents as fractions/as decimals, percent of number

### STATISTICS AND PROBABILITY

- Construct, read and interpret: tables, graphs of all types, understand mean / medium / range / mode / frequency / tree diagrams

### ALGEBRAIC CONCEPTS

- Powers of numbers
- Squares and cubes
- Exploration of other number bases, squaring of binomials and trinomials, cubing of binomials and trinomials, pre-algebra
- Square roots
- Concept, concrete exploration, writing through to abstraction
- Order of operations, basic equations
- Working with integers, scientific notation, rational numbers
- Problem-solving and logical reasoning
- Translations, slides, reflections, symmetry, tessellations, graphs and other displays, coordination of graphs and equations
- Patterns leading to division, integer division, division of fractions
- Division with negative numbers

## Middle School

The Middle School mathematics curriculum is closely aligned with that advocated by the American Association of the Advancement of Science and the National Council of Teachers of Mathematics. It is a logical continuation of the student's work and studies in the Montessori Elementary program.

- History of mathematics
- Problem solving techniques
- Perimeter and area
- Use of variables
- Order of operations
- Describing patterns with variables
- Translating works to algebraic expressions
- Design and build a model
- Probability
- Variables and equations
- Solving equations
- Polynomials

### MATHEMATICS AND HISTORY

- Operations with real numbers
- Pythagorean Theorem (portfolio piece)

### COMPARING AND SCALING DISPLAYS

- Graphs and other displays
- Coordinate graphs and equations
- Translations, slides, reflections, symmetry-tessellations

### PATTERNS LEADING TO DIVISION

- Integer division, division of fractions
- Division with negative numbers
- Ratio and proportions
- Real numbers, area, and volume
- Factoring
- Converting fractions to decimals
- Filling and wrapping project-cylindrical packages
- Weights of spheres
- Square roots
- Volume and area

### APPLICATIONS OF MATHEMATICS

- Small business enterprise: the micro-economy
- Scale work related to the models and projects connected with the environment
- Research and data analysis
- Service on the greater community
- Cooking, art, music
- Technology
- Fundraising
- Timeline work and time management

