

The Upper Elementary Curriculum

The international Elementary Montessori curriculum taps into the natural sensitivities of this age to create an energy that animates Elementary education. Dr. Montessori called this curriculum a ‘cosmic’ curriculum. Each year five great stories are told in a dramatic fashion in order to create a framework of information to which students will add detail and understanding throughout their elementary years: The story of the beginning of the universe, of life on the Earth, of human life and of the great human creations of language and of mathematics and science. These create a broad framework that invites students to explore all the traditional curriculums (the sciences, history and geography, as well as mathematics and language) creating greater depths of understanding each year.

As students move from Lower Elementary to Upper Elementary, they are moving away from reliance on concrete materials and toward greater abstraction. The framework of lessons and concepts students began in Lower Elementary are consolidated in Upper Elementary. Students at this level reach a high level of abstraction of concepts and explore themes and topics in greater depth.

LANGUAGE

Language lessons fuel active and purposeful writing activities. Students usually work collaboratively and write every day, with pencil and keyboard, learning to organize increasingly complex ideas and information into original stories, reports, poems, business letters, and essays. At this level, students push themselves to acquire reading fluency, analysis skills and writing strategies that stimulate cognitive development. As these new skills consolidate, students examine their writing much more critically.

- Story and development of English
- History of written language
- Word study
- Latin and Greek etymology
- Grammar
 - Parts of speech/function of words
 - Sentence types
 - Sentence analysis
 - Compound and complex sentences
 - Clause analysis
- Written language
 - Writing process
 - Organization of expository writing

- Creative writing
- Spelling
- Mechanics
- Cursive writing
- Literature
 - Poetry
 - Drama
 - Short story
 - Novel
 - Biographies
- Reading comprehension and novel study
- Spoken language
 - Discussion
 - Project presentations
 - Debates
 - Dramatic readings
 - Drama
- Computer literacy (also see technology)
 - Typing skills
 - Word processing
 - Slide show presentations
 - Media awareness

RESEARCH SKILLS

Developing solid research skills is key to independent learning. These skills allow students to find information to satisfy their curiosity. To be literate in our modern world requires the ability to research both in books and using online sources. Students are guided with locating information in books efficiently, finding interesting facts, and taking notes effectively. With online research, students are helped with constructing effective key words for search engines and how to judge the credibility of a site. Students learn how to move through the steps of putting a project together, including how to type a final copy of a project.

- Use of the library
- Book sources
- Online sources
- Outlining and planning
- Note taking and synthesizing information
- Bibliography and appropriate presentation

TECHNOLOGY

At the Upper Elementary level, computers become a tool of the classroom. Each class has a set of computers that are available to students throughout their day. Students at this level are encouraged to use books as well as the Internet for research. Most of a student's work is written by hand but final projects and presentations often make use of word processing, spreadsheet and PowerPoint applications.

Upper Elementary students are introduced to proper keyboarding and an online keyboarding tutorial program capitalizes on the natural tendency at this age to be faster and better.

Direct instruction is given on Internet safety as well as search skills, site credibility and citing sources.

Longer projects that will be 'published' (brought to a polished final stage to be shared with an audience) make use of planning strategies, keyboarding skills, and revision and editing technologies; but we ask students to illustrate their work by hand. Much more is learned when a map, diagram or picture is drawn by hand rather than instantaneously 'cut and pasted' from the Internet. As a school, OMS works hard to show how much we value hand drawn work because we value the learning process over the appearance of a final product.

A limited number of desktop computers accessible to everyone in the classroom encourages students to continue to explore and use didactic materials that develop critical thinking, and encourages collaborative use.

Students are introduced to

- Keyboarding through an online program
- Microsoft Word Processing (used to create final copies of their projects)
- Microsoft Excel (used to keep track of sales in the small businesses they run)
- Microsoft PowerPoint (used to present research back to peers)

Students also learn:

- Internet safety
- How to establish credibility of websites
- How to reference websites
- How to avoid plagiarism and the importance of expressing ones' own ideas

MATHEMATICS AND GEOMETRY

Math is the language of science, particularly chemistry and physics. The Upper Elementary program consists of arithmetic, geometry, and algebra. Students are given the big picture of the history of mathematics. Mastering math facts is a key to progressing with the operations, as well as multiples, divisibility, factors, fraction

concepts and operations. Concrete materials are still in place from Lower Elementary, but students often move quickly to an abstract understanding. New concepts are generally presented with materials, but students move to pencil and paper as soon as they are able.

Mathematics

- Numeration and place value
- Math facts
- Operations
 - Whole numbers
 - Fractions
 - Decimal numbers
 - Story problems
- Properties and rules
 - Commutative and distributive laws
 - Divisibility
 - Factors
 - Multiples
- Integers
 - Concept
 - Operations
- Percent
- Squaring and cubing
- Square root and cube root
- Ratio and proportion
- Rounding and estimating
- Graphing
- Mean, median, mode, range
- Probability

Geometry

- Equivalence, similarity, congruence
- Lines
- Angles
- Names and parts of figures
- Classification of figures
- Names and parts of solids
- Classification of solids
- Perimeter, area, volume
- Circle
- Pythagorean theorem

Algebra

- Introduction to algebra
- Variables
- Expressions
- Like terms
- Solving simple equations

CULTURE – THE SCIENCES, GEOGRAPHY AND HISTORY

In Upper Elementary, students receive their cultural lessons in such a way that the subjects of language, mathematics, the arts, history, geography, the physical sciences, and biology are intertwined and viewed in a broader context in relation to each other. The students' lessons on the creation of the universe integrate basic physics, chemistry, and geology concepts. Students are introduced to the parts of an atom and the periodic table of elements while learning about the origin of the universe. Upper Elementary students study Canadian rocks and minerals, work with geographical concepts such as the layers of the Earth, the naturally occurring ecological cycles, and the work of air and water as forces of erosion. They study the timelines of life and early humans, migration theories, and the concept of the nomadic, agricultural, and urban stages of human development. In biology, they learn about the needs and characteristics of the 5 kingdoms of life. Our Science Fair teaches experimental design and the scientific method of inquiry, including the concepts of experimental controls and variables.

Geography

- Story of the creation of the Earth
- Physical geography
 - Maps
 - Land and water forms
 - Longitude and latitude
- Human geography
 - People in different climatic zones
 - Migration models
- Political geography
 - World
 - Canada
- Economic geography
 - Taxes and common services
 - Interdependency of human beings
- Physical and Earth sciences
 - Composition of the Earth
 - Work of water
 - Work of air
 - Weather
 - Spheres of the Earth

- Seasons
- Temperature zones
- Water, carbon, nitrogen cycles

Physics

- States of matter
- Mass and density
- Magnetism
- Gravity
- Simple machines

Chemistry

- Elements and compounds
- Periodic table
- Solutions and mixtures

Scientific Method of Inquiry

- Designing experiments
- Controls and variables

Astronomy

- Solar system
- Constellations

Biology

- Parts of the plant
- Plant classification
- Plant cells
- Needs of animals
- Animal studies
- Animal classification
- Animal cells
- Ecology
- Biomes
- Human body systems
- Human development

History

- Story of the coming of life
- Timeline of life
- Clock of eras
- Story of the coming of humans
- Timeline of early humans
- Timeline of civilizations

- Fundamental needs of humans
- 3 phases of history
- Ancient civilizations
- History of Canada
- Native Peoples of Canada
- Canadian government

Music

In a Montessori classroom, students are free to work on their choice of activity after lessons. The student may pick who they collaborate with, but they must demonstrate engagement in the work. Music is one of the many subjects a student can choose to explore, specifically through the ukulele. The ukulele has a mellow tone that lends itself well to a classroom setting. It is not unusual to have the soft, background sound of the ukulele fill our Upper Elementary classrooms. Students play in the halls, the classroom, and often perform for other classes.

In addition to exploring the ukulele on their own accord, all students receive weekly lessons in small groups from a professional musician. Music pieces presented during these lessons are immediately ready on the shelf for the students to use. Ukuleles are available in the classroom and students are responsible for keeping the instruments tuned and in good repair.

Music is often selected, by the student, as a piece of work to be presented alongside other portfolio work during conferences with parents and the teacher. During the half-hour conference, some students will show off their ukulele skills, their ability to read music, and their singing voice.

Ukuleles use a Low A tuning to segue with the guitar lessons that will be given in The Element.

Drama

Classical Greek myths are scripted, rehearsed, directed, and costumed all by the students and performed for parents each year.

Art

The students continue their exploration of artistic techniques and the use of a wide variety of mediums. They fine-tune their skills by using contour drawing realism, the interplay of lines, shapes, and position on the page. They explore focal point perspective, horizon lines, middle ground, foreground, and Chiaroschuro (light and dark) as they study works by Rembrandt and genre works by Vermeer. They also explore their own creative sense with the complementary pieces that they lovingly construct to go with their projects.

- Contour drawing
- Pastels

- Block printing
- Art/architecture/arches/domes
- Portraits
- Calligraphy
- Impasto Techniques
- Perspective
- Landscapes
- The Group of Seven
- Seascapes
- Charcoal
- Chiaroscuro
- Geometry in Art
- Composition
- Still Life
- Block Printing
- Scratch art with Black and Gold Boards
- Tessellation
- Abstract art
- Mixed media
- Paper marbling

PHYSICAL EDUCATION

Initiative, persistence, determination, integrity, respect, and confidence are the social skills that we look to facilitate. This is the level where students refine their movement and cooperation skills, enjoy the stricter rules of more complex sports and games, and help each other develop strong sportsmanship.

Upper Elementary students participate in physical education activities with high energy. They learn advanced skills for many sports, and then sign up for extra games in the team-structured intramural programs over the recess breaks.

We participate in many of the Ottawa Independent School Athletic Association (OISAA) events including the Cross-Country Pumpkin Run in the fall, the Track Meet in the spring, basketball, volleyball and badminton tournaments throughout the year.

- Motor skills become much more refined:
 - Throwing
 - Rolling
 - Running
 - Jumping
 - Dodging
 - Striking
 - Catching

- Kicking
- Soccer
- Basketball
- Badminton
- Floor Hockey
- Volleyball
- Personal Fitness

ENHANCED CORE FRENCH AS A SECOND LANGUAGE (FSL)

The Upper Elementary Enhanced Core FSL program focuses on building all components of language: speaking, reading, and writing.

Speaking:

- Oral
 - Discussion
 - Singing
 - Presentation of projects
 - Reading aloud
 - Drama
- Comprehension
 - Oral Instructions
 - Written Instructions
 - Oral Response
 - Written response

Word study

- Vocabulary
- Syllables
- Phonograms
- Prefixes and suffixes
- Compound words
- Synonyms, antonyms, homonyms
- Contractions
- Negations

Grammar

- Parts of speech (articles, nouns, adjectives, pronouns, verbs, prepositions, conjunctions, adverbs, etc.)
- Verb conjugations and tenses
- Types of sentences
- Sentence analysis (Identifying and understanding the function of each word within the sentence and identifying the Subject, predicate and object)
- Spelling

Reading:

- Literature
 - Songs
 - Poetry
 - Drama
 - Short stories
 - Research texts
 - Biographies
 - Simple novel studies
- Comprehension
 - Written response to literature questions

Writing:

- Poems
 - Letters
 - Projects
 - Autobiographies
 - Surveys
 - Reports
 - Use of dictionary and French resources
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- Comprehension
 - Written response
 - Written Instructions

In addition to using traditional techniques, we also use the Accelerative Integrated Method (AIM). The AIM program develops vocabulary, fluency, structures and conventions through gestures, creating a kinesthetic approach to learning. Paired with traditional methods, our FSL program caters to all types of learners. The AIM program uses:

- Gestures (accompany vocabulary providing a multi-sensory approach)
- Short plays
- Raps

Each component is developed through the guided exploration of various themes including:

- Seasons
- Animals
- Sports
- Transports
- Recycling
- Cultural holidays around the world
- Food

- “La francophonie”
- French history (Ontario, Quebec, New-Brunswick, France)
- Immigration
- Historic sights
- Inventors
- Migration
- Pertinent world events

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