



EDINBURGH MONTESSORI
ARTS SCHOOL

Curriculum Map

for Children's House through
Middle School



Course of study is organised in three year cycles (3–6 year old, 6–9 year old, 9–12 year old, 12–15 year old, 15–18 year old) as designed by Dr. Maria Montessori and recognised in the philosophy and pedagogy of the school. The curriculum is structured to provide **broad based exposure to educational experiences while encouraging detailed individualised exploration**. Succeeding levels are used to provide depth of knowledge and refinement of understanding.

Development

Developmental Characteristics:

Children's House	Lower Elementary	Upper Elementary	Middle School
<p>AGES 3–6 First Plane of Development</p> <p>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."</p> <p>These children are sensorial explorers and learn through the senses. All experiences within the classroom environment are hands-on.</p> <p>Social development occurs in an environment with children of at least three ages (3–6 yr. olds) so that helping, caring, and responsibility develop naturally and appropriately.</p>	<p>AGES 6–9 Second Plane of Development</p> <p>During this stage of development, we see the development of the 'reasoning mind' and the use of the power of the imagination.</p> <p>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.</p>	<p>AGES 9–12 Second Plane of Development</p> <p>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 begin to delve into interest topics and lesson follow up in greater depth and are developing advanced independent study skills.</p>	<p>AGES 12–15: Third Plane of Development nature of the early adolescent; the emerging adult in transition</p> <p>This is a 'thinking and critical' age and this stage ushers in a period of idealism. The adolescent is interested in social order and justice; confronts moral and ethical questions; are critical of each other and adults and are capable of deep philosophical thought. It is a period of tremendous growth; sexual maturation; boundless energy. Adolescents seek increased independence.</p>

Practical Life

Children's House	Lower Elementary	Upper Elementary	Middle School
<p>The Practical Life activities link the home environment to the school environment and develop everyday life skills through real and purposeful work. The main purpose of these activities is the development of concentration, coordination, and independence. Secondary purposes include the development of logical thought, ability to sequence, formation of sets, exploration of spatial relationships, cultural adaptation, and preparation for reading and writing. These activities form the foundation for all other work in the environment. Exercises include, for example, spooning, sweeping, and folding, buttoning, learning how to take care of the environment, lessons to practice independent and polite social interactions.</p> <p>There are also activities using movement and silence. Games help the child learn how to function in a group and to develop self control.</p>	<p>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 activities in the school (classroom projects) and outside the school (field trips or other trips to support classroom work). Conflict resolution skills are practiced. Work with the hand continues to play an important role in the child's life at school through gardening, cooking, baking, and science experiments. Care of the environment, the self, grace and courtesy, movement, and silence (reflection) are recognised as important life skills and continue to play a role in our curriculum.</p>	<p>For the older elementary child, the activities remain the same with more and more responsibility falling to the students. Service to the community receives more emphasis as the students move toward adolescence.</p> <p>As students become strongly socially conscious, projects in charity fundraising, community work for good causes and care of the local area become a focus.</p>	<p>Purposeful work and reality-based learning takes place within the classroom environment and in the natural outdoor environment.</p> <p>Microeconomy Community meeting Community work</p> <p>Experienced 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 counselling, seminar protocol and oral presentations are an important part of the Middle School experience.</p> <p>Nearing the end of this phase students learn exam technique and practise exam study skills as part of their practical life curriculum.</p>

Sensorial

Children's House

The sensorial materials are a series of puzzle-like apparatus that allow the child to refine the many sensorial impressions that have been taken in through experience in the world.

The main purposes of the sensorial exercises are the development of observation, comparison, judgment, reasoning, and decision-making skills. These exercises also prepare the child for math through the activities of matching, sequencing, sorting, grading, classifying, and patterning.

Development of Visual Sense

Visual discrimination of dimension, form and colour

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 and Sense of Smell

Isolating the sense of touch to discriminate without aid of the visual sense

Refinement of Stereognostic Perception

Combination of senses, construction of geometric figures and forms, discrimination of three dimensional geometric forms; sphere, cube, cone, cylinder, ovoid, ellipsoid, rectangular prism, triangular prism, square based pyramid, triangle based pyramid

Language

Children's House	Lower Elementary	Upper Elementary	Middle School
<p><i>In the Montessori approach, the Children's House environment utilises the child's sensitive period for language by starting with spoken language, then 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.</i></p> <p>Spoken Language</p> <ul style="list-style-type: none"> • 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 • Musicality <p>Phonological Awareness</p> <ul style="list-style-type: none"> • Rhyming, sentence segmenting, word 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 the phonograms (digraphs and long vowels) 	<p>Introductory lesson History of language (pictographs, hieroglyphics, early alphabets)</p> <p>For many children there is overlap as they progress from one class to the next or join the class from a non-Montessori based program. Example areas covered in both levels are highlighted in blue.</p> <p>Grammar</p> <ul style="list-style-type: none"> • Parts of speech including types of adjectives, irregular verbs, and verb tenses • Word study: root words, prefixes, suffixes, word families – synonyms/antonyms/homonyms • Alphabetical order, possessives, contractions, abbreviations, rules for syllabication • Compound and Complex sentences • Sentence analysis: predicate, subject, direct object, indirect object, attributives <p>The Writing Process Lower and upper case letters in cursive and print (solidification of handwriting from Children's House), constructing sentences; all capitalisation and punctuation rules, constructing paragraphs, spelling skills</p> <p>Composition Creative writing, reports, journal, letters, diary, descriptive writing, short story, poetry, plays, biography</p>	<p>Second Level Introductory Story of Language – Communication in Signs (history of oral and written language)</p> <p>Grammar</p> <ul style="list-style-type: none"> • 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 <p>The Writing Process Mechanics: colon, semi-colon, contractions, run-on sentences, note-taking, paraphrasing, summarising, topic sentences, sentence structure, paragraph construction, editing</p> <p>Writing Reports, journal, letters, diary, invitations, letter writing, proposals, book reports, myths, fables, descriptive writing, short stories, poetry, plays, biographies, summaries</p> <p>Reading</p> <ul style="list-style-type: none"> • All literary genres including: historical fiction, biographies, fantasy, poetry, classics, myths, mysteries. • SRA (interpretive reading, reading comprehension and discussion) • Novel study • Book group 	<p>Grammar Application of previously learned concepts within the context of written work and the reading of diverse literature and articles. It is also reinforced via the second language course (Spanish) at this level.</p> <p>Acquisition of Vocabulary Context clues, synonyms, antonyms, affixes, roots, metaphors, similes – figurative language, abbreviations, connotation and denotation – use of dictionaries, thesaurus, glossaries, and technological tools</p> <p>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 and publishing)</p> <p>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</p> <p>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.</p>

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
- Phonograms: writing, reading and spelling
- Introduction to grammar and parts of speech through the use of concrete objects and games
- Word study: antonyms, synonyms, homonyms, singular and plural, contractions, positive words), alphabetising and spelling comparative and superlative

Sentence analysis

Exploring how the order and placement of phrases affects meaning

Reading

- Short vowels, phonograms, consonant sounds, digraphs, silent letters, long vowels, double letters, ending sounds (interwoven with spelling work)
- Interpretive reading, story elements; setting, characters, plot, action, predicting – genre
- SRA (interpretive reading, reading comprehension and discussion)
- Novel study
- Book group

Spoken Language

Oral reports, drama, history of Spoken Language (interwoven with History work)

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Oral reports, drama, history of Spoken Language (interwoven with History work)

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

Seminars

Socratic seminar is a model for analysis and discussion of text based ideas. The format allows for deep-dive exploration and sharing across academic disciplines. Skills practised include; personal organisation and preparation, listening, waiting to speak, note taking, sharing of considered views, diplomatic discussion, contribution and response, critical analysis, experience of academic disagreement outside the personal realm, respectful debate and seminar conduct, metacognitive thought process development and much more!

Math

Children's House	Lower Elementary	Upper Elementary	Middle School
<p><i>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.</i></p> <p><i>Children begin working with the math materials when they approach the age of four. The lists of concepts associated with each group are shown below.</i></p> <p>Numbers 1 to 10 Through the use of rods, spindles, and disks, numeration, one to one correspondence, number as length, number as quantity, and the concept of zero are introduced</p> <p>Decimal System Categories of unit, ten, hundred and thousand are introduced with bead materials. The processes of addition, subtraction, multiplication, and division are experienced with the materials</p>	<p>Review of Decimal System up to 1,000</p> <p>Introductory Lesson - The Story of Number: History of numbers/numeration (Babylonian, Ancient Egyptian, Ancient Greek, etc.)</p> <p>Number/Numeral Association</p> <ul style="list-style-type: none"> • Understanding of decimal System (up to 1,000,000) • Understanding of money <p>Measurement Introduction, concept, history</p> <p>Understanding of Operations</p> <ul style="list-style-type: none"> • Addition/subtraction/multiplication/division • Static, dynamic, abstraction <p>Laws of Arithmetic Commutative, associative, distributive (using concrete materials)</p> <p>Introduction to Fractions</p> <ul style="list-style-type: none"> • Operations with Fractions with common denominators • Equivalent fractions • Fractions with different denominators : +,- <p>Study of Multiples begins</p> <p>Study of Divisibility begins</p> <p>Study of Factors begins</p> <p>Decimal Fractions study begins</p> <p>Negative numbers (concept)</p>	<p>Introduction The Story of the history of numbers/numeration (including the history of measurement)</p> <p>Whole Numbers and Numeration</p> <ul style="list-style-type: none"> • Complete all whole number operations, (including long multiplication and division abstractly) • Review hierarchical values, expanded notation, comparison, rounding and estimating <p>Multiples GCF, LCM, prime and composite numbers</p> <p>Properties Commutative, associative, distributive</p> <p>Rules of divisibility (Review odd and even numbers) 3, 4, 5, 6, 8, 9 & 25</p> <p>Fractions</p> <ul style="list-style-type: none"> • Review: concept, equivalence • Types of fractions: proper, improper, mixed, reducing fractions • Operations using fractions <p>Decimals Equivalency, comparing and ordering, renaming fractions as decimals, all four operations abstractly</p>	<p><i>The Middle School mathematics curriculum is a logical continuation of the student's work and studies in the Elementary program.</i></p> <ul style="list-style-type: none"> • History of Mathematics • Problem solving techniques and Greek mathematicians • Perimeter and area • Use of Variables • Order of operations • Describing patterns with variables • Translating words to algebraic expressions • Design and build a model • Probability • Variables and equations • Solving equations • Polynomials <p>Mathematics and History</p> <ul style="list-style-type: none"> • Ancient counting and numbers (portfolio piece) (ancient city, park project, ancient addition) • Operations with real numbers • Pythagorean theorem (portfolio piece)

Numbers 11 to 19

Teens are presented separately to reinforce the construction of these numbers with one ten and units and the language of the teen numbers which does not follow the typical pattern

Numbers 11 to 99

Numbers in the tens are explored with an emphasis on the change from nine to the next ten (39–40, for example) by building the numbers with beads

Counting 1 to 1000

Bead chains provide practice in counting and recognising numbers. Exercises using the chains include introduction to multiples of numbers and the concept of squaring and cubing

Memorisation Work

Through a series of boards offering repetition, the child moves toward the memorisation of addition, subtraction, multiplication, and division facts

Passage to Abstraction

Some children move to abstraction in their math through the use of an abacus-like bead frame for addition and subtraction

Fractions

Introduction to the concept of fractions

Basic problem-solving skills are introduced using 'real life' situations such as cooking and sharing

Squares and Cubes of Numbers

(Games, concept), notation, numerical values, numerical decanomial

Squaring

Cubing

Graphs

Introduction leading to circle graphs, line graphs, etc.

Problem-solving skills and logical reasoning (throughout Math Curriculum)

Exploration of other number bases, squaring of binomials and trinomials, cubing of binomials and trinomials, pre-algebra

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/median/range/mode/frequency/tree diagrams

Algebraic Ideas

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 (throughout the Math Curriculum)

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/proportion

- Real numbers, area, and volume
- Factoring
- Converting fractions to decimals
- Filling and wrapping project – cylindrical packages
- Weights of spheres
- Square roots
- Volume/area

Application of mathematics

Small business enterprise: the micro-economy, scale work related to the models and projects connected with the environment, research, data analysis, stock market simulation, service in the greater community, cooking, art, music, technology, fundraising, timeline work, time management

Geometry

Children's House	Lower Elementary	Upper Elementary	Middle School
<p>Geometry is presented to the young child through sensorial exploration and language work. 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.</p>	<p>Introductory lesson History of Measurement</p> <p>Concept of Point, Line, Surface, Solid: Solid geometry, plane geometry</p> <ul style="list-style-type: none"> • Lines Introduction to the study of lines • Angles – Types and parts of angles, measurement of angles • Triangles – Constructive triangle boxes: triangular, small hexagonal, large hexagonal, combining boxes <p>Equivalence: Congruent, similar, equivalent figures</p> <ul style="list-style-type: none"> • Volume – Introduction • Area – Introduction • Measurement – Introduction to length, width, metric measurement • Portfolio – Development of geometry portfolio 	<p>Plane figures and solids Review</p> <p>Lines Review kinds, their positions and relationships</p> <p>Congruency, similarity, equivalence</p> <p>Triangle study Nomenclature, classification according to sides and angles, equivalence proof (sensorial)</p> <p>Quadrilateral study Nomenclature, classification, equivalence proof (sensorial)</p> <p>Polygon study Nomenclature, classification, equivalence proof (sensorial)</p> <p>Perimeter</p> <p>Measuring angles</p> <p>Bisecting angles</p> <p>Circles Nomenclature, relationships, circumference with materials leading to finding diameter and radius algebraically</p> <p>Pythagorean theorem Beginning with sensorial proof</p> <p>Volume and Area Review sensorial exploration of volume leading to calculating volume for rectangular, hexagonal prisms and pyramids, cylinders and cones</p>	<p>Geometry finds its place within the maths 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.</p>

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)

Transformations

Reflections, rotations, translations

Geometric constructions with compass and straightedge

History

Children's House	Lower Elementary	Upper Elementary	Middle School
<p><i>For the young child, the focus is on developing awareness and understanding of the concept of 'time.'</i></p> <p>Introduction to Calendar Days of week, months of year</p> <p>Awareness of Seasonal Change</p> <p>Beginning of Clock Study O'clock, half-past, quarter of, quarter past</p> <p>Introduction to the three fundamental tenses Past/present/future</p> <p>Experience of Personal History via Birthday Celebrations</p> <p>Child's personal "biography" Timeline of a child's day</p>	<p>Concept of time: Telling time, days of week, months of year, seasons, calendar, history of the calendar</p> <p>B.C./A.D. time-line</p> <p>Introduction to Early Civilisations Early, Egyptian, Roman, Greek, Medieval, Renaissance, Modern</p> <p>Further study of Civilisations</p> <p>Fundamental Needs of Humankind Chart</p> <p>Formation of the Earth</p> <p>Life on earth</p> <p>Clock of the Eras</p> <p>Further study of various Eras presented Paleozoic, Mesozoic, Cenozoic</p> <p>Timeline of Life Begins with Paleozoic up through Neozoic/Eozoic – integrated with zoology, botany, geology studies</p>	<p>Review of Timeline of Life: (Paleozoic, Mesozoic, Cenozoic, Neozoic eras)</p> <p>Timeline of Early Humans</p> <ul style="list-style-type: none"> • Significance and Characteristics of Early Humans • Timeline of Lower Paleolithic Age • Timeline of Upper Paleolithic Age <p>Study of Civilisations</p> <ul style="list-style-type: none"> • Gifts of Civilisations • History Question Charts • Study of a Civilisation (Research) Archaeology/ Anthropology • Growth of Cultures, migration, exploration <p>Scottish History <i>Early history covered in Upper Elementary with overlap to Middle school where more in depth exploration of topics from 1200's onwards are part of Pedagogy of Place</i></p> <ul style="list-style-type: none"> • Bronze age - Skara Brae • Iron Age - Crannog • CE: Romans, First Scots, Norse Settlers, Viking Raids • 12/1300's Wallace, Bruce and the Declaration of Arbroath • 1600's Civil War, Battle of Killiecrankie, Glencoe Massacre • 1700's Union of England and Scotland, Jacobite Uprising, Battle of Culloden, Agricultural revolution, Highland Clearances • 1800's Industrial revolution, votes for men, Crofters Holdings Act. • 1900's Pensions, Benefits, Votes for Women, Formation of SNP, WW1, WW2 	<p>A Study of Early Societies Eastern and Western Hemisphere (hunter-gatherers, pastoralists, cultivators, and city dwellers). Inquiry into what makes a society function in terms of the static and dynamic components which are present over time</p> <p>Study of the City Ancient Mesopotamia: governance, laws, religion, economics, education, the arts.</p> <p>Independent, interdisciplinary studies are undertaken with weekly on-site visits</p> <p>Pedagogy of Place:</p> <p>Scottish History History of humanity and social structures, evolution of weapons and rules of war from hunter-gatherers through modern times, a study of the wars in which Scotland and the UK has been involved.</p> <p>Study of Highland Clearances: emigration and immigration - what does it mean to be a refugee, our changing identities.</p> <p>(All studies are enhanced with outings to museums, Battlefields and relevant places of interest.)</p>

Classical Era, Study of Ancient Alexandria, Middle Ages, Renaissance, Modern Era

Industrial Revolution: Focus is on the role of change - New Lanark and surrounding small towns are centres of industrial development. Mining, paper making, shipbuilding and port trading form provocations for further study.

The 20th Century

Immigration project will accompany these studies including a research of student's ancestry, a study of the settlement of the United Kingdom these years and the history of trends of migration and immigration to Scotland and the UK.

Geography

Children's House	Lower Elementary	Upper Elementary	Middle School
<p><i>The Geography curriculum introduces the child to stories of their culture and other cultures around the world.</i></p> <p>PHYSICAL GEOGRAPHY:</p> <p>Study of Land Forms Island, lake, archipelago, system of lakes, peninsula, gulf, cape, bay, isthmus, strait.</p> <p>Exploration of Globes, Maps, and Flags</p> <p>Cultural Geography</p> <p>Experience Culture People, places, products, plants/animals, homes, clothing, transportation, arts/crafts/history – cultural stories, songs, and poems – cultural cooking – cultural holiday celebrations</p> <p>Appreciation of Art Art themes, artists, periods</p>	<p>Introductory lesson The Story of the Universe</p> <p>Functional Geography</p> <ul style="list-style-type: none"> • Composition of the Earth core, mantle, crust – land and water forms, continents, oceans • Barysphere, Hydrosphere, Lithosphere, Atmosphere • Rocks and Minerals • Mountains, Volcanoes • Introduction to Plate Tectonics <p>Nature of the Elements States of matter, physical and chemical changes, accompanying experiments</p> <p>Different Ways of Combining Solutions, mixtures, precipitates, chemical reactions, crystallisation</p> <p>Concept of gravity/attraction (magnets)</p> <p>The Universe/Planets/Galaxies</p> <p>Sun and Earth Rotation, revolution of the earth around the sun – solstices and seasons – time zones, climatic zones</p> <p>The Work of Air Experiments, ecology</p> <p>The Work of Water Water cycle, experiments, ecology</p> <p>Weather</p>	<p>Introductory lesson The Story of the Universe</p> <p>Functional Geography</p> <ul style="list-style-type: none"> • 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 <p>Work of Wind Winds, Winds and Seasons, Rain Caused by Winds, Ocean Currents, Erosion, Energy</p> <p>Work of Water Work of Rivers, Rain, Work of Oceans, Glaciers, Water Cycle</p> <p>Political Geography Map research: political, physical</p> <p>Human Geography</p> <ul style="list-style-type: none"> • Interdependency of Man • Study of Natural Resources and Industries • United States (as a country), States (individual) • Production of Goods • Imports and Exports • Concept of taxation 	<p><i>Geography is studied within the context of pedagogy of place on a local level and within the humanities and science studies of each cycle of exploration over the two years.</i></p> <p><i>The concepts learned at the elementary level are revisited and we now apply those functions to everyday studies in history, current events, and the realm of science occupations.</i></p> <p><i>The student work is project driven in the areas of:</i></p> <p>Functional Geography Astronomy, composition of the earth, work of wind, work of water</p> <p>Political Geography Map and political research</p> <p>Human Geography Interdependency of humans, natural resources, industrialisation, commerce, etc. (see also Science Occupations)</p>

Political Geography

- Study of a Continent
- Map skills: Imaginary lines; equator, latitude, longitude – political, physical, road maps
- Map work: using puzzles and pin maps – including continents, countries, capital cities, flags, oceans – United Kingdom: regions, rivers, mountains – Scotland; regions, geology, cities: Study of Edinburgh.

Human Geography

Fundamental Needs of Humankind (see History)

- Products: Who produces what? Where?
- Interdependencies

Introduction to concept of Import/Export

People in Different Climatic Zones

Science

Children's House	Lower Elementary	Upper Elementary	Middle School
<p><i>Concrete exploration of the physical and life sciences to further classify the child's world.</i></p> <p>LIFE SCIENCE:</p> <p>Living/Non-Living Plants/Animals</p> <p>Vertebrate/Invertebrates</p> <ul style="list-style-type: none"> • Vertebrates: mammal, reptile, amphibian, fish, bird • Invertebrates: insects <p>Botany</p> <p>Leaf shapes, plants, trees, flowers</p> <p>Magnetism States of Matter</p> <p>Buoyancy</p> <p>Colour Mixing</p> <p>Water Displacement/Volume</p> <p>Weather</p> <p>Evaporation/Condensation</p> <p>Simple Machines</p> <p>Pulleys, inclined planes, etc. – auxiliary</p> <p>Experiments and Exploration</p>	<p><i>Physical Science included under section, "Geography"</i></p> <p>LIFE SCIENCES:</p> <p>Zoology and Botany</p> <p>Zoology</p> <ul style="list-style-type: none"> • First Knowledge of Animal Kingdom: story card material introducing various animals, observation and care of animals • Taxonomy: first Zoology Classification <p>External Parts of Animals</p> <p>Introduction to Vital Functions</p> <p>First Level: protection, nutrition, respiration, digestion, excretion</p> <p>Introduction to the Five Kingdom Classification System (basic) Research</p> <p>Nature walks – Observations of animals in their natural habitat</p> <p>Field trips</p> <p>Botany</p> <p>First knowledge of plant kingdom, the needs of the plant (experiments), introduction to vital functions of the plant – parts of the plant, functions, parts – types of leaves, roots, stems, flowers, fruits, seeds – introduction to plant classification (kingdom plantae)</p> <p>Research</p> <p>Science Experiments</p> <p>Writing, Performing, Evaluating</p> <p>Nature walks, observations, field trips</p>	<p>Chemistry</p> <p>Atoms, Molecules, Compounds, Bonding, Experimentation</p> <p>Matter and Energy</p> <p>Conservation of matter, conservation of energy, properties of matter, experimentation</p> <p>LIFE SCIENCES:</p> <p>Five-Kingdom Classification</p> <p>Review of Five Kingdom Classification followed by research of kingdoms</p> <p>Zoology</p> <ul style="list-style-type: none"> • 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 <p>Human Anatomy</p> <p>Introduction to the cell, genetics, systems of the human body: skeletal, muscular, respiratory, circulatory, digestive, reproductive, excretory, nervous, endocrine</p>	<p><i>The work covered in the Elementary Life Sciences is once again visited within the reality of Science Occupations, application, more in-depth study and problem solving.</i></p> <p>Science occupations</p> <p>Interdisciplinary programs of study.</p> <p>Pedagogy of place drives the lessons and problem solving invites the application of skills and knowledge relative to the areas of: environmental science, chemistry, biology, botany, astronomy, weather and phonology, geology, physics, evolution, and gardening.</p> <p>Occupations offered:</p> <ul style="list-style-type: none"> • Soil study and restoration, forest study, botany, water: pond/river study • Air quality/environmental issues in city life, food preservation, simple machines • Ethical issues abound in each area of focus

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 habitat – field trips

Tree of Life

Taxonomy of all living organisms

Research**Science Experiments**

Writing, Performing, Evaluating

Nature walks/observations/field trips

- Geology, Topography and Watershed of Western Reserve (bogs, fens, marsh etc.)
- Anatomy and nutrition, weather and global warming, Astronomy (ancient and modern)
- Genetics, gardening for the micro-economy (soils, water, energy, and climate)
- Ethical issues relating to each area of study

Students experience Zoology, Human Anatomy, Botany, environmental studies, biology within the framework of an Interdisciplinary Occupation.

Spanish

Children's House	Lower Elementary	Upper Elementary	Middle School
<p>Spanish is introduced through song, circle time activities, games and general Montessori classroom guidance by our Spanish speaking guide.</p> <p>An area of the classroom is dedicated to Spanish vocabulary building activities and these are presented to all children as part of the nursery scope and sequence.</p>	<p>Cultural Knowledge Students use target language expressions and gestures for greetings, farewells, common courtesy expressions – celebrate special events (Carnival, La Tomatina etc.) – listen and respond through activities, creative expression to songs and stories in Spanish culture/ language – learn about Spanish speaking countries, flags and geography.</p> <p>Linguistic Knowledge The learner will: provide identifying information (name, age, state of being) – point to parts of the body, measure size of hands and feet of children in the classroom, height – follow simple directions, respond to simple oral directions in the target language as part of class routine, place objects according to instructions; on, in, under, on top – use pencil/paper, scissors.</p>	<p>Cultural Knowledge The learner will: practise using appropriate expressions and gestures for greetings, farewells and group experiences, use common courtesy expressions – learn about special events and holidays – listen and respond through activities, creative expression to songs and stories in the target culture/ language – explore the geography of the Spanish speaking world – compare local weather conditions in Latin America and Spain.</p> <p>Linguistic Knowledge The learner will: learn the names of parts of the body; the metric system; the five senses and related actions; be able to follow simple oral directions in the target language and describe and sort objects according to physical attributes; explore family relationships and environment and create a family album; explore the home and classroom; recognise the symbols of the writing system and alphabet; use maps to locate capitals, countries, continents in target language.</p>	<p><i>Students joining our middle school program with no previous Spanish learning cover all areas described for Upper Elementary whilst continuing students consolidate their previous learning and forge ahead.</i></p> <p>Cultural Knowledge The learner will: listen to recordings of authentic music, speakers, watch and understand videos, formulate questions related to meaning of stories – explore the geography of Latin America and Spain, compare local weather patterns and climate in Spain and Latin America.</p> <p>This level culminates in an exchange experience with a Spanish Montessori school.</p> <p>Linguistic Knowledge The learner will: explore family relationships and environment, establish communication links with peers in the target language – learn geographical terminology in conjunction with a cultural unit on Spain.</p> <ul style="list-style-type: none"> – demonstrate knowledge of “tener expressions” – continue to follow self study with DuoLingo.

Technology

Children's House	Lower Elementary	Upper Elementary	Middle School
<p><i>For the young child, we continue to use a multi-sensory approach and real-life experiences for learning through the use of the Montessori manipulative materials, classroom events, and lessons. We recognise the need for movement and learning through experience. The use of technology, therefore, is introduced and utilised as an important tool in the Lower Elementary classrooms and from first level onwards.</i></p>	<p><i>Throughout the Elementary program, students use technology to communicate, search for information, gather information, collaborate with peers, analyse information and make decisions, compile results and for word processing.</i></p> <p>INTRODUCE TERMINOLOGY AND IDENTIFICATION OF KEY COMPONENTS</p> <p>Keyboarding Understand keyboard functions and introduce correct finger placement. Begin formal keyboarding practice through use of Typing Ninja and similar programs.</p> <p>Word Processing Introduce Basic Skills including: open a word processing document, save and close a document, print a word processing document</p> <p>Beginning skills Add text using letter and number keys, use spacing keys, move cursor with mouse and arrow keys, backspace and delete, use mouse to highlight, make text format changes</p> <p>Network Introduce log on, save & open files from personal and shared drives</p> <p>Internet <i>(all use with adult supervision)</i> Introduce browser and internet vocabulary: use "search box" in a search engine to find specific images or topics, locate web sites using the history list or "Favourites" list.</p>	<p><i>Develop and master terminology and identification of key hardware components.</i></p> <p>Keyboarding Continue to use Typing Ninja to refine skills.</p> <p>Word Processing Intermediate skills including: text format changes (style, font, size, colour, alignment), edit using the spell checker, insert and edit clip art, copy and paste, make page format changes (borders), insert and edit Word Art.</p> <p>Presentation Skills Introduction to presentation skills including: save, exit and open – create a multiple slide show using auto layout, change the background using colours and fill effects, format text using size and colour, add clip art to slides.</p> <p>Network Log on, save and open files from personal and shared drives</p> <p>Internet Review browser and internet vocabulary, add web sites to Favourites list, use a search engine to locate web sites for research</p> <p>Painting and Drawing Skills Select foreground and background colours, use drawing tools, shape tools, fill with colour, edit colours</p> <p>Spreadsheet Skills Introduction</p>	<p>Mastery and reinforcement of terminology and identification of key hardware components.</p> <p>Word processing Intermediate and advanced formatting and publishing skills</p> <p>Internet Mastery: work with the internet for researching and reporting, use specific web sites in all areas of the curriculum, complete research process with all Office applications</p> <p>Presentations Master: PowerPoint for Outlines, classroom presentations, PowerPoint with internet for research and presenting</p> <p>Spreadsheet Basic skills and intermediate skills (specific format, create simple formulas)</p> <p>Web design Basic</p> <p>Publish MM Publish</p> <p>Media Society Legal, ethical behaviours, social effects</p> <p>Troubleshoot Solve simple PC & printer problems</p> <p>Network Sharing files</p> <p>E-mail Outlook</p>

Music

Children's House	Lower Elementary	Upper Elementary	Middle School
<p><i>The Orff approach to teaching Music is introduced by the Music Specialist.</i></p> <p><i>This method utilises four stages to organise the process of teaching music: imitation, exploration, improvisation and composition. These four stages establish fundamental building blocks for children to develop musical literacy.</i></p> <p><i>The theory connects the musical experience with movement, dance and speech.</i></p> <p>Rhythm</p> <ul style="list-style-type: none"> • Introduction to steady beat, then uneven beat • Rhythm sticks leading to barred instrument <p>Instrumental</p> <p>Gradual introduction of colour instruments and concept of melody using the instruments to enhance songs – mallet technique exercises</p> <p>Vocal</p> <p>Short songs with limited pitches involving movement, songs with repetition, dramatisation of songs, emphasis on use of props such as scarves, hats, puppets, introduction to concept of high and low, sounds/pitch</p> <p>Volume</p> <p>Concept of loud and soft - Dynamics</p> <p>Bells</p> <p>Use of the Montessori 'bells' in the classroom environment for tone matching and composition</p> <p>Music appreciation</p> <p>Listen to musical stories</p>	<p><i>Development characteristics: socially gregarious, enjoy ensemble and group work, developing greater sensitivity to peer pressure group musical experiences, encourage group participation.</i></p> <p><i>Introduce interrelated dimensions of music.</i></p> <p>Rhythm</p> <p>Introduce rhythm and tonal colour, identify rhythmic notation, introduce written notation.</p> <p>Instrumental</p> <p>Introduce accompaniment using barred instruments, beginning with pentatonic scale, and non-barred instruments</p> <p>Vocal</p> <p>Greater melodic development of vocals</p> <p>Percussion</p> <p>Begin with rhythmic pieces using body percussion to start moving and add instruments such as drums, maracas, tambourines, gathering drums, hand drums</p> <p>Movement</p> <p>Movement sequences to music</p> <p>Pitch</p> <p>Introduce pitch syllables</p> <p>Improvisation</p> <p>On pitched instruments beginning with limited pitch building to more complex (glockenspiel and xylophone)</p> <p>Music appreciation</p> <p>Listening exercises</p> <p>Performance</p> <p>As an extension of the music class experience</p>	<p><i>Developmental characteristics: sensitive to peer pressure and less eager to perform (self-conscious); singing has less appeal for this age.</i></p> <p>Instrumental</p> <p>All barred and percussion instruments including metallophone, xylophone, glockenspiel and keyboard</p> <p>Vocal</p> <p>Sing more complex pieces, introduction to canon</p> <p>Percussion</p> <p>Continuation of 6–9 yr. old curriculum – use of hand drums</p> <p>Movement</p> <p>Folk dances, create artistic motion (use props for the purpose of creativity)</p> <p>Music appreciation</p> <p>Study of different periods and composers (Classical, Baroque, 20th Century, Contemporary), independent research of a composer</p> <p>Performance</p> <p>As an extension of the music class experience</p>	<p><i>Montessori's course of studies indicates that students should have free choice in the selection of artistic occupations at this stage of development. Some opportunities for self expression should be individual and some with the group.</i></p> <p>Music</p> <ul style="list-style-type: none"> • The recognition of a composition, the composer, the period, as is done in literary studies • Practice in playing instruments individually, both solo and in ensembles <p><i>(Often this is part of the humanities course of studies as well as that of personal expression). (ex. Music of the 20th century)</i></p>

Visual Arts and Dance

Children's House	Lower Elementary	Upper Elementary	Middle School
<p><i>The Montessori Children's House program sees art as a continuing process in conjunction with the day-to-day work of the child.</i></p> <p><i>Each child works at his/her own pace using a variety of media to stimulate choice and innovation.</i></p> <p>Exploring Exploration of the various media available: colouring, drawing, painting at an easel, watercolour painting, clay, collage; exploration of simple tools, media and ways of making things. Children will use their hands in ways to develop control in manipulation and the development of the hand.</p> <p>Creating Observation and experimenting with simple techniques and different media to structure art and gain independence in making decisions; enjoy the experience of making something unique.</p> <p>Refining Learning how to look at his/her own work and appreciate the work of others, share the responsibility of clean-up and preparation</p>	<p><i>The Lower Elementary students will recognise that art is found in many places and each person creates with a unique style. They will learn about artists, art history, and the language of art. They will be able to acquire skills in a variety of media through observation, repetition and experimentation.</i></p> <p>Exploring Develop an understanding that almost any material can be art media; see art as man's story of history and explore cultural heritage; become familiar with personal expressions of artists – past and present; explore: drawing, painting (landscape, seascape, still life, portraiture and abstract), printmaking, sculpture, puppetry, textile arts and crafts; realise that artists are of many different kinds: painters, sculptors, architects, etc.</p> <p>Creating Begin the development of art techniques and experiment to gain knowledge of the structure of art</p>	<p><i>The Upper Elementary students will notice that knowledge and skill increase confidence in creating art. They will continue to explore the language of art, artists as a part of history and practice a variety of techniques and mediums.</i></p> <p>Exploring Expand the study of design principles to increase the ability to express, e.g. moods of colour, value, intensities; continue to explore drawing, painting, printmaking, sculpture, puppetry, textile arts and crafts; concentrate on the Principles of Art: space, rhythm, balance, variety, contract, emphasis and repetition</p> <p>Creating Incorporate design components in his/her work and experiment to gain knowledge of the structure of art</p>	<p><i>Drawing, modelling, reproduction of nature, creative work of the imagination. It is not to be thought of as proper training in art but rather a means of giving expression to individual aesthetic feeling with special reference to handwork and to the learning of modern techniques.</i></p> <p>Personal expression sessions in photography, sketching, paper mache, metal working, cartooning, pottery, jewellery making, glass work. Using a variety of mediums are part of the student's experience of choice. The study of artists and art history aids in the studies of the humanities.</p> <p>DANCE Students will gain artistic skills and discipline, as well as expose young people of all learning abilities to a cultural form through which they can express their own identity and experience cultures from around the world.</p> <p>Performance <i>skills building and presenting to an audience</i> Perform own longer, more complex sequences in time to music. Consistently perform and apply skills and techniques with accuracy and control.</p> <p>Choreography (creating) Perform and apply skills and techniques with control and accuracy.</p> <p>Evaluate Thoroughly evaluate their own and others' work, suggesting thoughtful and appropriate improvements</p>

DANCE

- Experiment with different ways of moving.
- Develop good control and coordination in large and small movements.
- Demonstrate and identify locomotor movements—roll, slither, crawl, walk, run, jump, slide, gallop, and march.
- Tempo: Respond in dance to a fast or slow tempo.
- Rhythm: Move with a steady beat.
- Patterns: Follow a simple rhythmic pattern while moving one part of the body.
- Music: Respond to music in dance.

DANCE

At this stage, children perform dances, focusing on creating, adapting and linking a range of dance actions. These are inspired by a variety of subjects including some traditional, social and historical dances. Children think about how to use movement to explore and communicate ideas and their own feelings and thoughts.

Acquiring and developing skills

Performing dances using a range of movement patterns

Selecting and applying skills and compositional ideas

Solve problems and overcome challenges

Knowledge and understanding of fitness and health

Develop flexibility, strength and stamina

DANCE

Students will continue to apply and develop a broader range of skills, learning how to use them in different ways and to link them to make actions and sequences of movement. They should enjoy communicating, and collaborating with each other. They will develop an understanding of how to improve in different physical activities and learn how to evaluate and recognise their own success.

Body

- Align and organize the body while still and while dancing.
- Breathing: Demonstrate awareness of breathing while moving.

Elements of Dance

Compose a dance that reflects the chosen dance style. Confidently improvise with a partner or on their own. Compose longer dance sequences in a small group.

Performance Values

Dance with purpose.

Physical Education/Health and Wellbeing

Children's House	Lower Elementary	Upper Elementary	Middle School
<p><i>Emphasis: How I move in my environment, identify self-space and locomotor movements. Children are in a sensitive period for movement, and order.</i></p> <p>Movement Skills & Movement Knowledge</p> <ul style="list-style-type: none"> • Develop locomotor 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 <p>Self-Image, Personal and Social Development</p> <p>Appreciate the body's ability to move through large muscle activities, parallel play, taking turns, following directions, sharing, listening, safety while moving in space</p>	<p><i>Emphasis: Moving through space and time, continuity and change of movement, cooperative group play and developing patience to learn new games and skills.</i></p> <p>Movement Skills & Movement Knowledge</p> <ul style="list-style-type: none"> • Move in different directions at varying speeds; 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/job for basketball, soccer, and other games (8–9 yr. old) • Skills to develop strength, endurance and flexibility (through Upper Elementary) <p>Self-Image, Personal and Social Development</p> <p>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</p>	<p><i>Emphasis: Manipulating objects through space and with accuracy and speed, teamwork and camaraderie, self-control.</i></p> <p>Movement Skills and Movement Knowledge</p> <p>Throw and catch with increasing accuracy, strive to master previously learned skills such as dodge, roll, catch, kick, strike, engage in cooperative group activities as well as competitive organised games, develop knowledge of sports specific skills, and game rules, know the importance of teamwork and cooperation: play fair with peers, recognise the value of sports in understanding other cultures, participate in warm-up activities.</p> <p>Self-Image, Personal and Social Development</p> <p>Learning to understand self-control, health and wellness for oneself, teamwork and camaraderie: helping and supporting one another, activities that will help students to have fun, feel good and gain self-confidence</p>	<p><i>Emphasis: Special attention given to the physiological condition of adolescence. Previously learned skills are further developed including movement skills, team sports, self-image, personal and social development.</i></p> <p>The program offerings vary and may include: tennis, swimming, volleyball, biking, hiking, rock climbing, team ethics, basketball, running, and other activities promoting life long physical expression.</p>



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inspiring young minds