Brickton
MONTESSORI

Lower Elementary Curriculum: Material Skill Set Chart

Mathematics

In our Mathematics curriculum, students work with Montessori materials to practice advanced concepts and four operations. Children are able to experience concepts not only through visual and auditory activities and lessons, but also by kinesthetic activities, which strengthens understanding, leading to mastery. This approach allows students to be introduced to advanced concepts early on and gives them time to practice with the materials to gain mastery. As students exit the program, we will often begin moving from concrete Montessori materials to abstract ideas and concepts.

Numeration

Concept	Materials	Skills
Rote Counting	• Red and blue rods • Hundred Board • Bead chains	• Can skip count abstractly by -2s -5s -10s -25s -100s
Place Value	• Ten board • Teen board • Golden beads • Numeral cards • Math cards (order, place value, expanded notation, and numeration)	• Understands place value to millions • Reads numbers to millions • Associates complex quantities to symbols • Can exchange in operations accurately • Determines specific place value within a complex quantity

Patterns and Relationships

Concept	Materials	Skills
Comparing and ordering numbers	• Greater than/less than	• Recognizes odd and even

	• Odd/even • Bead bars • Factors/multiples • Fraction insets • Math cards (patterns, order, and numeration) • Numeral cards	• Solves greater than/less than problems with appropriate signs • Can find factors for one and two digit numbers • Can detect and continue a pattern • Begins to round numbers • Compares and orders numbers into the millions

Computation/Operations

Concept	**Materials**	**Skills**
Math facts	• Addition stripboard • Subtraction stripboard • Multiplication bead board • Division bead board • Addition dice bingo • Multiplication dice bingo • Bingo boards • Flashcards • Addition snake game • Subtraction snake game • Multiplication snake game • Addition finger charts • Subtraction finger charts • Multiplication finger charts • Division finger charts • Pythagorean board (x) • Cubico (+ and -) • Multiplication puzzles	• Knows all addition facts up to sums of 20 with speed and accuracy • Knows all subtraction facts with minuends up to 20 with speed and accuracy • Knows all multiplication facts up to products of 100 with speed and accuracy • Understands that addition and subtraction are inverse operations • Understands that multiplication and division are inverse operations
Operations	• Golden beads • Small bead frame • Large bead frame • Stamp game • Checkerboard • Test tube division	• Performs static and dynamic addition for two complex quantities abstractly • Performs static and dynamic subtraction for two complex quantities abstractly

	• Golden bead frame	• Performs static and dynamic multiplication for two complex quantities with one multiplier abstractly • Performs multiplication for two complex quantities with multiple multipliers using Montessori materials • Performs long division with a complex quantity as the dividend and at least one divisor using Montessori materials

Problem Solving

Concept	**Materials/Activities**	**Skills**
Graphing	• Surveys • Line graphs • Bar graphs	• Collects, presents and analyzes data to create graphs • Analyzes information from reading a graph
Measurement	• Measurement basket • Measurement commands • Measuring angles with protractor	• Knows the names of standard and metric units • Takes precise whole number readings using standard and metric units • Compares different units of measurement • Understands the relationship between standard measurements • Measures the perimeter of shapes
Money	• Money basket and commands • Money word problems	• Names of coins and bills • Identifies value of coins and bills • Counts coins and bills

		• Solves money word problems

Geometry

Concept	Materials/Activities	Skills
Geometric terminology	• Three part cards • Command cards • Stick box	• Learns nomenclature related to geometry • Names and draws the four basic principles of geometry (point, line, surface, solid) • Names and draws different lines (intersecting, parallel, convergent, divergent and perpendicular) • Names and draws different polygons to ten sides • Understands definition of symmetry
2 dimensional and 3 dimensional figures	• Geometry cabinet • Geometric solids and command cards • Constructive triangle boxes geoboard • Stick box • Detective triangle game	• Learns nomenclature related to two and three dimensional figures • Recreates two and three dimensional figures • Identifies and builds different types of triangles by side and angle

Language

The Lower Elementary language program is designed to develop student's basic skills in reading and writing. Upon exiting the program, they are expected to have the ability to "read to learn", to accurately express their feelings, thoughts and needs in both oral and written form, and complete a multi-paragraph research project on an ancient civilization, addressing the fundamental needs of people.

Oral Communication

Concept	Materials/Activities	Skills
Vocabulary Development	• Three part cards • Dictionary skills • Word study drawers • Picture or object/word matching	• Understands synonyms, antonyms, homonyms • Identifies common prefixes and suffixes • Recognizes compound words • Becomes familiar with commonly used words • Uses nomenclature from cultural subjects
Public Speaking	• Agenda meetings • Research presentations • Writer's chair • Field trips	• Clearly states problems and come up with solutions in class discussions • Makes announcements to peers • Asks and responds to questions orally • Verbalizes and listens to stories and jokes • Presents research to class • Presents personal writing to group

Written Communication

Concept	Materials/Activities	Skills
Fiction Writing	• Sequence story writing cards • Picture prompt cards • Sentence starter cards • Punctuation packets • Paragraph skills • Six traits of Writing program	• Knows difference between a phrase and a sentence • Develops a story with beginning, middle, end • Develops a story with a conflict and resolution • Adds details to give reader information • Has a main idea and

		supporting details • Writes narrative, descriptive and expository paragraphs • Applies understanding of ideas, organization, voice, word choice, sentence fluency and conventions when writing
Research Writing	• Research skills • Recording of work ranging from short research projects through the Needs of People project	• Creates questions about a subject • Gathers appropriate resources • Gathers data and identifies pertinent information and main ideas • Analyzes information • Presents information in written form

Grammar

Concept	**Materials/Activities**	**Skills**
Parts of speech	• Grammar symbols • Grammar charts • Grammar drawers • Parsing • Noun hunt • Verb commands • Noun sort • Noun cards	• Distinguishes eight parts of speech • Understands functions of parts of speech within a sentence • Parses sentences based on parts of speech • Identifies singular/plural, masculine/feminine nouns
Sentence analysis	• Sentence analysis works	• Identifies subjects and predicates • Understands parts of a sentence

Conventions

Concept	Materials/Activities	Skills
Capitalization/Punctuation	• Moveable Alphabet • Dictation	• Capitalizes start of sentence and puts appropriate end mark • Capitalizes proper names and "I" • Uses commas appropriately for dates, lists, addresses and in large numbers • Makes contractions with apostrophe in proper place
Spelling	• Spellwell • Moveable Alphabet • Pink, Blue, Green series	• Selects proper letters to make up a word • Listens for commonality between words to strategize spelling • Identifies long vowel sounds • Spells grade appropriate sight words • Understands common rules for making words plural

Reading

Concept	Materials/Activities	Skills
Phonics	• Object boxes • Vowel tree • Picture/word matching • Flip books	• Decodes words with understanding of consonant and vowel sounds, digraphs and consonant blends
Beginning reading activities	• Pink series • Blue series • Green series	• Reads three letter phonetic words • Rhymes words by vowel

	• Rhyming • Picture/word matching • Picture/sentence matching • Easy CBM reading fluency	sounds, consonant blends and digraphs • Identifies words within sentences with particular characteristics • Demonstrates grade level fluency when reading text passages • Segments words by syllable • Recognizes grade appropriate sight words
Comprehension	• Three part cards • New Practice Readers • Reading boxes • Starting Comprehension workbooks	• Reads the written word to gain meaning • Is able to answer comprehension questions and locate facts in text • Is able to identify the main idea and details in the text • Makes logical predictions • Draws conclusions based on text given
Using resources	• Dictionaries • Encyclopedias • Atlas • Thesauruses • Research material	• Locates words by alphabetical order • Uses guide words to find item • Uses resources to find word or phrase meaning • Uses table of contents and indexes • Finds locations using map grids

Cultural Subjects

In our cultural subjects we hold true to Maria Montessori's idea of Cosmic Education. We introduce concepts as "big picture" to spark an interest in the student, encouraging them to ask questions and complete further research. We begin each year with the *Big Bang Great Lesson* to give an impression of how things came to be. Then we begin to classify different objects and

cover concepts such as organic/inorganic, plant/animal, vertebrate/invertebrate. This lesson is also the basis of our studies of the Earth's geography as well as the solar system. The Fundamental Needs Lesson allows students to explore humans and civilizations throughout time and how they met their needs.

Science

Concept	**Materials/Activities**	**Skills**
Botany	• Botany impressionistic charts • Botany riddles • Botany stories • Botany three part cards • Plants we eat • Leaf cabinet	• Becomes familiar with plant parts and functions • Becomes aware of how people use plants in daily life • Is able to distinguish ways families of plants differ • Experiments with plants and seeds
Zoology	• Organic/inorganic • Plant/animal • Vertebrate/invertebrate • Animal riddles • Vertebrate three part cards • Invertebrate three cards • Animal stories • Carnivore/omnivore/herbivore • Parts of the body • Skeletal system of the body and organs	• Discriminates between living and non-living things • Discriminates between plants and animals • Discriminates between vertebrates and invertebrates • Names external parts of vertebrates and invertebrates • Names external parts, major bones and major organs of the human body • Explores the hierarchy of classification with the animal kingdom chart • Classifies animals by using their characteristics • Knows the five major phyla of vertebrates • Explores the major phyla of invertebrates

Ecology	• Organic/inorganic • Plant/animal • Recycling activities • Conservation activities	• Explores simple food webs • Understands the importance of reusing, reducing and recycling materials
Scientific inquiry	• Magnetism • Force • Water cycle • Gravity • Sound • Air • Light/shadows • Friction • Three states of matter • Scientific method write ups for experiments	• Creates a hypothesis about a topic and make a logical prediction applicable for experiments • Records observations with details • Makes conclusions based on scientific data • Performs simple experiments independently • Understands differences between solids, liquids and gases • Has basic understanding of gravity • Understands centrifugal and centripetal forces • Determines magnetic vs. non-magnetic • Demonstrates beginning understanding of the cycle of water

Social Studies

Concept	**Materials/Activities**	**Skills**
Geography	• Puzzle maps • Globe • Land and water forms (basic and advanced) • Impressionistic charts • Three part geography cards: parts of the river, volcano,	• Identifies four oceans and seven continents • Names continent location by hemisphere • Identifies major land and water formations in isolation and resource

	mountain • Weather matching • Cloud cards • Planet cards • Phases of the moon cards • Rocks: sedimentary , igneous, and metamorphic • Pin maps • Research sheets	tools • Accurately names home location by city, state, country, and continent • Identifies types of weather and their elements • Names three types of rocks and how they are created • Identifies planets and properties of each • Identifies cloud types and properties of each • Understands the relationship of the moon to the Earth and tracks its changes
History	• Judy clock • Clock of eras chart and rope • Impressionistic charts • Time line of life • Montessori great lessons • • Seasons work • Days of the week cards • Months of the year cards • Black rope coming of humans lesson • Fundamental Needs of People cards • Past, present, future cards •	• Is able to read analog clock to the minute • Describes different eras of the Earth • Recognizes changes to the Earth over its history • Is able to define seasons and characteristics • Understands the concepts of past, present and future • Creates personal timelines • Names days of the week and months in order • Describes what people need in order to survive and how different civilizations reached their needs • Notes similarities and differences between people of today and ancient civilizations

Civics	• World of Difference curriculum • World religions • Civilizations • Needs of People • Timeline • Flag work	• Builds respect for differences in cultures, race, gender and abilities • Identifies different religions • Understands what people need and how those needs are met in a variety of different regions • Understands the uses and importance of flags in defining groups of people • Finds meaning in different flags