

## 2024 Primary Montessori Math Alignment Guide

### Measurement, Geometry, and Spatial Reasoning

Concept	Objectives Montessori Method (Aims)	Montessori Materials	2025 SCCCR Standards
Spatial Reasoning	<p>The children will be able to visualize and discriminate placement of objects.</p> <p>Foundation of geometry.</p> <p>Growth towards abstraction.</p>	<ul style="list-style-type: none"> <li>● Pink Tower</li> <li>● Knobbed cylinders</li> <li>● Knobless cylinders</li> <li>● Brown stair</li> <li>● Red rods</li> <li>● Baric Tablets</li> <li>● Monomial cube</li> <li>● Binomial cube</li> <li>● Trinomial cube</li> <li>● Function of words</li> <li>● Introduction of Prepositions</li> <li>● Balance Scale</li> </ul>	<p>MTE-3e Sort familiar objects into categories (cars with cars, plates separated from cups; rectangle blocks on one shelf and square blocks on another).</p> <p>MTE-3f Identify familiar objects as the same or different.</p> <p>MTE-4i Respond to and begin to use words describing positions (in, on, over, under, etc.).</p> <p>MTE-4k Stack or line up blocks that are the same shape.</p> <p>MTE-6c Develop and consistently use intentional strategies when working with knobbed puzzles and similar materials.</p> <p>K.MGSR.2.2 Describe relative positions of objects by appropriately using terms including below, above, beside, between, inside, outside, in front of, or behind.</p>

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Geometry	<p>Realization of the variety of ways to construct a form.</p> <p>Forming and making quadrilaterals.</p> <p>Identify, model, and draw 2D and 3D geometric shapes</p>	<ul style="list-style-type: none"> <li>● Metal insets</li> <li>● Geometric cabinet</li> <li>● Constructive triangles</li> <li>● Geometric solids</li> <li>● Geo Board</li> </ul>	<p>MTE-4j Name or match a few 2- and 3-dimensional shapes (circle, sphere, square, triangle, cone) and describe their differences.</p> <p>K.MGSR.2.1 Identify and describe the attributes of triangles, squares, rectangles, circles, cubes, and spheres to include everyday situations.</p>
	<p>Realization of the variety of ways to construct a form.</p> <p>Forming and making quadrilaterals.</p> <p>Identify, model, and draw 2D and 3D geometric shapes</p>	<ul style="list-style-type: none"> <li>● Metal insets</li> <li>● Geometric cabinet</li> <li>● Geometric solids</li> </ul>	<p>M-3K-4.2 Match shapes in their environment.</p> <p>K.MGSR.2.1 Identify and describe the attributes of triangles, squares, rectangles, circles, cubes, and spheres to include everyday situations.</p>

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	<p>Realization of the variety of ways to construct a form.</p> <p>Forming and making quadrilaterals.</p> <p>Identify, model, and draw 2D and 3D geometric shapes</p>	<ul style="list-style-type: none"> <li>● Geometric solid</li> <li>● Geometric Cabinet</li> <li>● Constructive Triangles</li> <li>● Geo Board</li> </ul>	<p>K.MGSR.2.1 Identify and describe the attributes of triangles, squares, rectangles, circles, cubes, and spheres to include everyday situations.</p>
	<p>Realization of the variety of ways to construct a form.</p> <p>Forming and making quadrilaterals.</p> <p>Identify, model, and draw 2D and 3D geometric shapes</p>	<ul style="list-style-type: none"> <li>● Metal insets</li> <li>● Sensorial extensions of the Geometric Cabinet (i.e., creating shapes)</li> <li>● Art lessons</li> </ul>	<p>K.MGSR.2.1 Identify and describe the attributes of triangles, squares, rectangles, circles, cubes, and spheres to include everyday situations.</p>

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Measurement	<p>To Compare length, breadth, weight, and height of objects</p> <p>Successfully use adjectives to compare length, breadth, weight, and height of objects</p>	<ul style="list-style-type: none"> <li>● Knobbed cylinders</li> <li>● Broad stair,</li> <li>● Knobless cylinders</li> <li>● Pink tower</li> <li>● Red rods</li> <li>● Constructive triangles</li> <li>● Baric tablets</li> <li>● Line time (calendar)</li> <li>● Balance scales</li> <li>● Rulers</li> </ul>	<p>MTE-5f Use descriptive language for size, length, or weight (short, tall, long, heavy, big).</p> <p>MTE-5g Compare the size or weight of two objects and identify which one is longer/taller/ heavier than the other (“That rock is heavier than this one. I can lift it.” “The snake is longer than the worm”).</p> <p>MTE-5h Use simple measurement tools with guidance and support to informally measure objects (a ruler, measuring cup, scale).</p> <p>K.MGSR.1.2 Directly compare two objects using words including shorter, longer, taller, lighter, and heavier.</p>

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## Numerical Reasoning

Concept	Objectives Montessori Method (Aims)	Montessori Materials	2025 SCCCR Standards
Number Sense	<p>Help the child associate the numbers 1-10 with their precise quantity or meaning.</p> <p>Sensorial exploration of base ten.</p> <p>One-to-one correspondence.</p> <p>Explore with concrete materials to ten.</p>	<ul style="list-style-type: none"> <li>● Tonging</li> <li>● Knobbed cylinders</li> <li>● knobless cylinders</li> <li>● Pink Tower</li> <li>● Brown Stair</li> <li>● Red Rods</li> <li>● Sets baskets (cover it up, 1-5 materials)</li> <li>● Spindle box</li> <li>● Number Rods</li> <li>● Short bead stair</li> <li>● Memory game</li> <li>● Cards and counters</li> <li>● Teen board</li> <li>● Tens board</li> <li>● Building teens with red and blue rods</li> <li>● Line time activities</li> </ul>	<p>K.NR.1.1 Read, write, and represent the numerals 0 to 20 and represent the written numeral with concrete models.</p> <p>K.NR.2.3 Given a group of up to 20 objects, count the number of objects in that group and represent the number of objects with a written numeral. State the number of objects in a rearrangement of that group without recounting.</p> <p>K.NR.2.4 Given a number from 0 to 20, count out that many objects.</p>
	Explore ordinal positions	<ul style="list-style-type: none"> <li>● Pink tower</li> <li>● Brown stair</li> <li>● Red rods</li> <li>● Sandpaper numerals</li> <li>● Line time activities</li> </ul>	

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Numeration 1-10	<p>Sensorial exploration of the shape of each numeral</p> <p>Use one-to-one correspondence to count 1-10</p> <p>Subitize using the bead stair colors</p> <p>Compare quantities as greater than, less than, equal to</p> <p>Odd and even</p>	<ul style="list-style-type: none"> <li>● Sandpaper numerals</li> <li>● Red and blue rods,</li> <li>● Cards and counters (odd and even),</li> <li>● Spindle boxes,</li> <li>● Memory game,</li> <li>● Bead stair,</li> <li>● Snake Game</li> </ul>	<p>MTE-1l Rote count to 10 with increasing accuracy.</p> <p>MTE-1m Count up to 5 objects arranged in a line using one-to-one correspondence with increasing accuracy and answer the question, “How many are there?”</p> <p>MTE-1o Recognize numerals up to 5 during play and daily activities.</p> <p>MTE-1n Match numerals 1-5 to sets of objects, with guidance and support.</p> <p>MTE-2c Show they understand that putting objects together in a set will make a bigger set, and removing objects from a set will make a smaller set.</p> <p>K.NR.2.2 Subitize a quantity of up to 10 objects in an organized arrangement without counting, explaining how one grouped the objects within the set to determine the total quantity.</p> <p>K.NR.2.3 Given a group of up to 20 objects, count the number of objects in that group and represent the number of objects with a written numeral. State the number of objects in a rearrangement of that group without recounting.</p> <p>K.NR.2.4 Given a number from 0 to 20, count out that many objects.</p>

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	<p>Compare numerals</p> <p>Visuals recognition of the placement of numerals in a number line</p>	<ul style="list-style-type: none"> <li>● Bead comparison</li> <li>● Graphing</li> <li>● Exchange/Dice game</li> <li>● Snake game</li> </ul>	<p>K.NR.3.1 Compare up to 10 objects in one set to another set of up to 10 objects using the phrases more than, fewer than, or the same as.</p>

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	<p>Compare numerals</p> <p>Visuals recognition of the placement of numerals in a number line</p>	<ul style="list-style-type: none"> <li>● Sandpaper numerals</li> <li>● Cards and counters</li> <li>● Graphing</li> <li>● Exchange/Dice game</li> </ul>	<p>MTE-1k Visually compare two groups of objects that are obviously equal or unequal in quantity and communicate that they are the same or different, and, if appropriate, which one has more and/or which one has less. (If child is offered two plates of crackers can select the preferred amount and can explain that he wanted more or less).</p> <p>K.NR.3.1 Compare up to 10 objects in one set to another set of up to 10 objects using the phrases more than, fewer than, or the same as.</p> <p>K.DPSR.1.2 Answer questions about data organized in a t-chart, object graph, or picture graph.</p>
Linear counting	<p>Learn the conventional number names: 11-19.</p> <p>Counting progressively and regressively to and from one hundred.</p> <p>Making combinations of tens and units.</p>	<ul style="list-style-type: none"> <li>● Teens board</li> <li>● Red and blue rods (large, table top)</li> <li>● Snake game</li> </ul>	<p>K.NR.1.2 Compose and decompose numbers from 11 to 19 into tens and ones by using concrete objects, pictorial models, or drawings to demonstrate understanding that the teen numbers are composed of one set of ten ones and a few more ones.</p> <p>K.NR.2.3 Given a group of up to 20 objects, count the number of objects in that group and represent the number of objects with a written numeral. State the number of objects in a rearrangement of that group without recounting.</p> <p>K.NR.2.4 Given a number from 0 to 20, count out that many objects.</p>

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	<p>Learn the order of numbers by rote counting.</p> <p>Counting by tens</p> <p>Facilitate and clarify understanding of the decimal system</p> <p>Counting progressively and regressively to and from 100.</p> <p>Provide counting practice</p> <p>Identify number names 11-19</p> <p>Facilitate learning and counting using conventional number names</p>	<ul style="list-style-type: none"> <li>● Snake game</li> <li>● Bead cabinet with numeral arrows (squaring chains and cubing chains)</li> <li>● Hundred board</li> <li>● Tens board</li> <li>● Clock lesson</li> <li>● Currency lessons</li> <li>● Line time activities</li> <li>● Zero game</li> <li>● Sets baskets</li> <li>● Teens board</li> <li>● Tens Board</li> <li>● Hundred board</li> <li>● Clock lesson</li> <li>● Calendar</li> </ul>	<p>K.NR.2.1 Count forward by ones and tens to 100 and backward from 10 by ones.</p> <p>K.NR.1.1 Read, write, and represent the numerals 0 to 20 and represent the written numeral with concrete models.</p>

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Decimal System	<p>To clarify and facilitate understanding of place value.</p> <p>Distinguish between units, tens, hundreds and thousands.</p> <p>To give practice in changing units, tens, and hundreds for one in the next category.</p>	<ul style="list-style-type: none"> <li>● Introduction to Place Value</li> <li>● Building tray (fetching),</li> <li>● Large numeral cards</li> <li>● 45 card (decimal) layout (bird's eye view),</li> <li>● Nines Tray</li> <li>● Bank Dice Game</li> <li>● The Dice Game</li> <li>● Teens Board</li> </ul>	<p>K.NR.1.2 Compose and decompose numbers from 11 to 19 into tens and ones by using concrete objects, pictorial models, or drawings to demonstrate understanding that the teen numbers are composed of one set of ten ones and a few more ones.</p>

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## Patterns, Algebra, and Functional Reasoning

Concept	Objectives Montessori Method (Aims)	Montessori Materials	2025 SCCCR Standards
Patterns	To understand and create patterns	<ul style="list-style-type: none"> <li>● Patterning (copy, extend, create)</li> <li>● Sensorial extensions</li> </ul>	<p>MTE-3g Recognize simple repeating patterns (AB type patterns) and attempt to repeat or extend them during play (repeat a movement pattern during a song, extend a line of blocks in alternating colors).</p> <p>K.PAFR.2.1 Describe, extend, and create (to the next term) simple repeating patterns in the form of AB, AAB, ABB, and ABC.</p>
Addition	<p>To understand the operation of addition to sums of 9,999</p> <p>To give practice in fluency of addition.</p>	<ul style="list-style-type: none"> <li>● Intro to addition</li> <li>● Addition with tabletop rods</li> <li>● Addition with bank material</li> <li>● Addition with bead bars</li> <li>● Addition strip board</li> <li>● Stamp Game</li> <li>● Addition Charts</li> <li>● Addition Box</li> </ul>	<p>K.PAFR.1.1 Add and subtract number combinations within 5.</p> <p>K.PAFR.1.2 Create a sum of 10 using objects and drawings when given one of two addends 0–9, to include real-world situations.</p> <p>K.PAFR.1.3 Compose and decompose numbers up to 10 in different ways. Record using objects or drawings.</p> <p>K.PAFR.1.4 Solve add-to/joining, take-from/separating, part-part-whole (total unknown), part-part whole (both addends unknown) real-world situations to find sums and differences within 10.</p>

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	Moving to Abstraction	<ul style="list-style-type: none"> <li>● Intro to addition</li> <li>● Addition with tabletop rods</li> <li>● Addition with bank materials</li> <li>● Addition with bead bars</li> <li>● Addition strip board</li> <li>● Addition charts</li> </ul>	<p>K.PAFR.1.1 Add and subtract number combinations within 5.</p> <p>K.PAFR.1.2 Create a sum of 10 using objects and drawings when given one of two addends 0–9, to include real-world situations.</p> <p>K.PAFR.1.3 Compose and decompose numbers up to 10 in different ways. Record using objects or drawings.</p> <p>K.PAFR.1.4 Solve add-to/joining, take-from/separating, part-part-whole (total unknown), part-part whole (both addends unknown) real-world situations to find sums and differences within 10.</p>
Multiplication*	<p>To understand the operation of multiplication.</p> <p>To give practice in repeated addition.</p> <p>To show the children the organization and operation of the material and to give the nomenclature for multiplication</p>	<ul style="list-style-type: none"> <li>● Intro to Multiplication</li> <li>● Multiplication with bead box</li> <li>● Multiplication board</li> <li>● Multiplication charts</li> </ul>	

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Subtraction	<p>To understand the operation of subtraction.</p> <p>To give practice in subtraction fluency.</p>	<ul style="list-style-type: none"> <li>● Intro to Subtraction</li> <li>● Subtraction strip board</li> <li>● Subtraction charts</li> <li>● Subtraction with the bank</li> <li>● Snake game</li> </ul>	<p>K.PAFR.1.1 Add and subtract number combinations within 5.</p> <p>K.PAFR.1.3 Compose and decompose numbers up to 10 in different ways. Record using objects or drawings.</p> <p>K.PAFR.1.4 Solve add-to/joining, take-from/separating, part-part-whole (total unknown), part-part whole (both addends unknown) real-world situations to find sums and differences within 10.</p>
	Movement to Abstraction	<ul style="list-style-type: none"> <li>● Intro to subtraction</li> <li>● Subtraction strip board</li> <li>● Subtraction charts</li> <li>● Subtraction with bank materials</li> </ul>	<p>K.PAFR.1.1 Add and subtract number combinations within 5.</p> <p>K.PAFR.1.3 Compose and decompose numbers up to 10 in different ways. Record using objects or drawings.</p> <p>K.PAFR.1.4 Solve add-to/joining, take-from/separating, part-part-whole (total unknown), part-part whole (both addends unknown) real-world situations to find sums and differences within 10.</p>

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Division*	To understand the operation of division.	<ul style="list-style-type: none"> <li>● Intro to division</li> <li>● Division with the bank</li> </ul>	

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## Data, Probability, and Statistical Reasoning

Concept	Objectives Montessori Method (Aims)	Montessori Materials	2025 SCCCR Standards
Data	Classify objects by measurable attributes	<ul style="list-style-type: none"> <li>● Graphing lessons (controlled and polled)</li> <li>● Picture graphs</li> <li>● Line time activities</li> <li>● Sorting lessons (i.e., Science, Practical Life, Language)</li> <li>● Color Boxes</li> <li>● Currency lessons</li> <li>● Fraction circles/squares</li> </ul>	<p>K.DPSR.1.1 Sort pictures or objects into at least two categories. Count to determine how many are in each category. Limit to 20 pictures or objects.</p> <p>K.DPSR.1.2 Answer questions about data organized in a t-chart, object graph, or picture graph.</p>
Fractions*	Observation of the parts of a whole.	<ul style="list-style-type: none"> <li>● Fraction skittles</li> <li>● Fraction insets</li> </ul>	

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Time and Money	<p>Identify coins and their value</p> <p>Identify the parts of analog and digital clock</p>	<ul style="list-style-type: none"> <li>● Clock lesson</li> <li>● Matching time lessons</li> <li>● Currency lessons</li> </ul>	K.MGSR.1.1 Identify a penny, nickel, dime, and quarter.

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