

## Mathematics Curriculum – Reception 1

### Standard 1: Read, write, model and compute with whole numbers, decimals and fractions.

Benchmarks	The student will:
1.1 Understand numbers, ways of representing numbers, relationships among numbers, and number systems.	<ul style="list-style-type: none"> <li>• Develop number sense for whole numbers through 20.</li> <li>• Recognize and read numbers 1 to 20.</li> <li>• Rote count in sequence from 1 to 20.</li> <li>• Count with one-to-one correspondence through 20 to solve a problem.</li> <li>• Know the difference between numbers and letters.</li> <li>• Write numbers 1-10.</li> <li>• Match sets of concrete objects, up to 10 items, to the appropriate corresponding number.</li> <li>• Arrange and count equivalent sets of objects.</li> <li>• Add to a given set of objects by counting forward from the last item.</li> <li>• Compare two sets of objects using more than, less than or equal to each other.</li> </ul>
1.2 Understand meanings of operations and how they relate to one another.	<ul style="list-style-type: none"> <li>• Create and solve number stories using concrete modeling.</li> <li>• Explore part-whole relationships (e.g. 5 is made of 2 and 3).</li> </ul>
1.3 Compute fluently and make reasonable estimate.	<ul style="list-style-type: none"> <li>• Combine or separate sets of objects. Count to find the total or difference.</li> </ul>
1.4 Use a variety of strategies to solve problems.	<ul style="list-style-type: none"> <li>• Understand the problem.</li> <li>• Make guesses/estimate.</li> <li>• Choose a strategy.</li> <li>• Solve the problem.</li> <li>• Check the problem.</li> <li>• Use tools to think systematically about a problem and communicate thinking.</li> </ul>

### Standard 2: Demonstrate an understanding of patterns and mathematical relationships.

Benchmarks	The student will:
2.1 Understand patterns, relations, and functions.	<ul style="list-style-type: none"> <li>• Identify properties or a collection of objects.</li> <li>• Sort the collection by categories.</li> <li>• Name one attribute used to group common objects.</li> <li>• Identify whether two items are the same or different and name at least two differences.</li> <li>• Copy and extend a pattern with at least two attributes.</li> <li>• Predict what comes next in a pattern.</li> </ul>

2.2 Represent and analyze mathematical situations and structures using algebraic symbols.	<ul style="list-style-type: none"> <li>• Not appropriate at this age level.</li> </ul>
2.3 Use mathematical models to represent and understand quantitative relationships.	<ul style="list-style-type: none"> <li>• Not appropriate at this age level.</li> </ul>
2.4 Analyze change in various contexts.	<ul style="list-style-type: none"> <li>• Not appropriate at this age level.</li> </ul>
2.5 Use a variety of strategies to solve problems.	<ul style="list-style-type: none"> <li>• Understand the problem.</li> <li>• Make guesses/estimate.</li> <li>• Choose a strategy.</li> <li>• Solve the problem.</li> <li>• Check the problem.</li> <li>• Use tools to think systematically about a problem and communicate thinking.</li> </ul>

**Standard 3: Identify, describe, draw, build and use 2D and 3D geometric figures and perform simple transformations.**

<b>Benchmarks</b>	<b>The student will:</b>
3.1 Analyze characteristics and properties of two- and three-dimensional geometric shapes and develop mathematical arguments about geometric relationships.	<ul style="list-style-type: none"> <li>• Comprehend and use the vocabulary for two dimensional shapes (circle, square, triangle, rectangle, diamond, oval, star, crescent, heart and hexagon).</li> <li>• Explore and use of shape in pictures and the environment.</li> </ul>
3.2 Specify locations and describe spatial relationships using coordinate geometry and other representational systems.	<ul style="list-style-type: none"> <li>• Comprehend and use the vocabulary for three dimensional shapes.</li> <li>• Compare three dimensional shapes and discuss their properties in informal language (cube and sphere).</li> <li>• Follow teacher directions using the following spatial vocabulary: over, under, in front of, behind, above, below, top, bottom, beside, next to, between, first, middle, last.</li> </ul>
3.3 Apply transformations and use symmetry to analyze mathematical situations.	<ul style="list-style-type: none"> <li>• Complete simple spatial visualization tasks and jigsaw puzzles.</li> <li>• Compare properties and select appropriate shape to solve a problem or complete a pattern.</li> </ul>
3.4 Use visualization, spatial reasoning and geometric modeling to solve problems.	<ul style="list-style-type: none"> <li>• Not appropriate at this age level.</li> </ul>
3.5 Use a variety of strategies to solve problems.	<ul style="list-style-type: none"> <li>• Understand the problem.</li> <li>• Make guesses/estimate.</li> <li>• Choose a strategy.</li> <li>• Solve the problem.</li> <li>• Check the problem.</li> <li>• Use tools to think systematically about a problem and communicate thinking.</li> </ul>

**Standard 4: Recognize and use non-standard and standard units of measurement.**

<b>Benchmarks</b>	<b>The student will:</b>
4.1 Understand measurable attributes of objects and the units, systems and processes of measurement.	<ul style="list-style-type: none"> <li>• Compare objects using appropriate vocabulary (color, texture, size, weight).</li> <li>• Identify and use the vocabulary for length and width (longer-shorter; longest-shortest; taller-tallest; wide-narrow; the same).</li> <li>• Expressively identify objects and pictures by size and color.</li> <li>• Compare attributes between objects or events.</li> <li>• Recognize concepts of time using appropriate vocabulary.</li> <li>• Locate events in time by referring to calendars.</li> <li>• Demonstrate awareness that days and months have names.</li> <li>• Sequence events and discuss the daily schedule.</li> <li>• Relate to the analog clock as a way to tell time.</li> </ul>
4.2 Apply appropriate techniques, tools and formulas to determine measurements.	<ul style="list-style-type: none"> <li>• Measure an object or liquid using non-standard units.</li> </ul>
4.3 Use a variety of strategies to solve problems.	<ul style="list-style-type: none"> <li>• Solve problems using time.</li> </ul>

**Standard 5: Understand and use data and simple probability concepts.**

<b>Benchmarks</b>	<b>The student will:</b>
5.1 Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.	<ul style="list-style-type: none"> <li>• Collect data in response to a question.</li> </ul>
5.2 Select and use appropriate statistical methods to analyze data.	<ul style="list-style-type: none"> <li>• Sort by categories and discuss group properties or attributes.</li> </ul>
5.3 Develop and evaluate inferences and predictions that are based on data.	<ul style="list-style-type: none"> <li>• Display and compare data.</li> <li>• Create concrete (real) and symbolic graphs containing 3 or 4 groups.</li> <li>• Compare different types of graphs (picture graph or real graph).</li> </ul>
5.4 Understand and apply basic concepts of probability.	<ul style="list-style-type: none"> <li>• Discuss and interpret data using least, most, more less, altogether, the same as, equal.</li> </ul>
5.5 Use a variety of strategies to solve problems.	<ul style="list-style-type: none"> <li>• Understand the problem.</li> <li>• Make guesses/estimate.</li> <li>• Choose a strategy.</li> <li>• Solve the problem.</li> <li>• Check the problem.</li> <li>• Use tools to think systematically about a problem and communicate thinking.</li> </ul>

