

## Grade One Mathematics Curriculum

### Math Strand: Number and Operations

<b>Curriculum Standards</b>	<b>Learner Outcomes</b>
Understand numbers, ways of representing numbers, relationships among numbers, and number systems	<ul style="list-style-type: none"><li>• Count with understanding and recognize "how many" in sets of objects up to 50</li><li>• Counts in intervals of 2's, 5's and 10's</li><li>• Use multiple models to develop initial understandings of place value and the base-ten number system</li><li>• Develop understanding of the relative position and magnitude of whole numbers and of ordinal and cardinal numbers and their connections up to 30</li><li>• Develop a sense of whole numbers and represent and use them in flexible ways, including relating, composing, and decomposing numbers up to 50</li><li>• Connect number words and numerals to the quantities they represent, using various physical models and representations up to 20</li></ul>
Understand meanings of operations and how they relate to one another	<ul style="list-style-type: none"><li>• Understand various meanings of addition and subtraction of whole numbers and the relationship between the two operations up to 20</li><li>• Understand the effects of adding and subtracting whole numbers up to 20 using concrete materials</li><li>• Understand situations that entail multiplication and division, such as equal groupings of objects and sharing equally</li></ul>
Compute fluently and make reasonable estimates	<ul style="list-style-type: none"><li>• Develop and use strategies for whole-number computations, with a focus on addition and subtraction up to 20</li><li>• Develop fluency with basic number combinations for addition and subtraction up to 10</li><li>• Use a variety of methods and tools to compute, including objects, mental computation, estimation, paper and pencil, and calculators</li></ul>

### **Math Strand: Algebra**

<b>Curriculum Standards</b>	<b>Learner Outcomes</b>
Understand patterns, relations, and functions	<ul style="list-style-type: none"><li>• Sort, classify, and order objects by size, number, and other properties</li><li>• Recognize, describe, and extend patterns such as sequences of sounds and shapes or simple numeric patterns and translate from one representation to another</li><li>• Analyze how both repeating and growing patterns are generated up to three attributes</li></ul>
Represent and analyze mathematical situations and structures using algebraic symbols	<ul style="list-style-type: none"><li>• Illustrate general principles and properties of operations, such as commutativity, using specific numbers</li><li>• Use concrete, pictorial, and verbal representations to develop an understanding of invented and conventional symbolic notations</li></ul>
Use mathematical models to represent and understand quantitative relationships	<ul style="list-style-type: none"><li>• Model situations that involve the addition and subtraction of whole numbers, using objects, pictures, and symbols up to 20</li></ul>

### **Math Strand: Geometry**

<b>Curriculum Standards</b>	<b>Learner Outcomes</b>
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>• Recognize, name, compare, and sort two- and three-dimensional shapes</li><li>• Describe attributes and parts of two- and three-dimensional shapes</li><li>• Investigate the results of putting together and taking apart two- and three-dimensional shapes</li></ul>
Specify locations and describe spatial relationships using coordinate geometry and other representational systems	<ul style="list-style-type: none"><li>• Describe, name, and interpret relative positions in space and apply ideas about relative position</li><li>• Describe, name, and interpret direction in navigating space and apply ideas about direction</li><li>• Find and name locations with simple relationships such as "near to" and in coordinate systems such as maps</li></ul>

Apply transformations and use symmetry to analyze mathematical situations	<ul style="list-style-type: none"> <li>• Recognize and apply slides, flips, and turns</li> <li>• Recognize and create shapes that have symmetry</li> </ul>
Use visualization, spatial reasoning, and geometric modeling to solve problems	<ul style="list-style-type: none"> <li>• Create mental images of geometric shapes using spatial memory and spatial visualization</li> <li>• Recognize from different perspectives</li> <li>• Recognize geometric shapes and structures in the environment and specify their location</li> </ul>

**Math Strand: Measurement**

<b>Curriculum Standards</b>	<b>Learner Outcomes</b>
Understand measurable attributes of objects and the units, systems, and processes of measurement	<ul style="list-style-type: none"> <li>• Recognize the attributes of length, using non-standard units and inches</li> <li>• Recognizes the attributes of time – o'clock and half past</li> <li>• Compare and order objects according to these attributes</li> <li>• Understand how to measure using nonstandard and standard units</li> <li>• Select an appropriate unit and tool for the attribute being measured</li> </ul>
Apply appropriate techniques, tools, and formulas to determine measurements	<ul style="list-style-type: none"> <li>• Measure with multiple copies of units of the same size, such as paper clips laid end to end</li> <li>• Use repetition of a single unit to measure something larger than the unit, for instance, measuring the length of a room with a single meter stick</li> <li>• Use tools to measure</li> <li>• Develop common referents for measures to make comparisons and estimates</li> </ul>

### Math Strand: Data Analysis and Probability

<b>Curriculum Standards</b>	<b>Learner Outcomes</b>
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>• Pose questions and gather data about themselves and their surroundings</li><li>• Sort and classify objects according to their attributes and organize data about the objects</li><li>• Represent data using concrete objects, pictures, and graphs</li></ul>
Select and use appropriate statistical methods to analyze data	<ul style="list-style-type: none"><li>• Describe parts of the data and the set of data as a whole to determine what the data show</li></ul>

### Math Resources

<b>Educational Support Materials</b>	<b>Technology Integration</b>
<i>Investigations Math Program Grade 1</i> , Pearson Base ten blocks Learning clocks for telling time	<b>Software:</b> Shape Investigation Mighty Math Carnival Math Blaster 6-8 <b>Websites:</b> <a href="http://www.mathfactcafe.com/">http://www.mathfactcafe.com/</a> <a href="http://www.mathforum.com">www.mathforum.com</a> <a href="http://www.AAAmath.com">www.AAAmath.com</a> <a href="http://www.coolmath.com">www.coolmath.com</a> <a href="http://www.bbc.co.uk/education/megamaths/tables.html">www.bbc.co.uk/education/megamaths/tables.html</a> <a href="http://www.funbrain.com/brain/MathBrain/MathBrain.html">http://www.funbrain.com/brain/MathBrain/MathBrain.html</a> <a href="http://www.woodlands-junior.kent.sch.uk/maths/">http://www.woodlands-junior.kent.sch.uk/maths/</a>