

MATHEMATICS – Patterning and Algebra

<p>Grade 1 identify, describe, extend, and create repeating patterns.</p> <p>Grade 2 identify, describe, extend, and create repeating patterns, growing patterns, and shrinking patterns.</p> <p>Grade 3 describe, extend, and create a variety of numeric patterns and geometric patterns.</p>	<p><i>[Name]</i> is able to create and extend repeating patterns. <i>[He/She]</i> demonstrates this during <i>[specific task, such as class calendar time when we make and extend a pattern on each day of the month]</i>.</p> <p><i>[Name]</i> is able to create and extend a variety of patterns. <i>[He/She]</i> used pattern blocks to make and extend a geometric pattern made of shapes.</p>	<p><i>[Name]</i> is encouraged to work on creating patterns. Finding patterns in <i>[his/her]</i> environment and practicing colouring simple patterns would help <i>[Name]</i> develop this skill.</p>
<p>Grade 4 describe, extend, and create a variety of numeric and geometric patterns, make predictions related to the patterns, and investigate repeating patterns involving reflections.</p> <p>Grade 5 determine, through investigation using a table of values, relationships in growing and shrinking patterns, and investigate repeating patterns involving translations.</p> <p>Grade 6 describe and represent relationships in growing and shrinking patterns (where the terms are whole numbers), and investigate repeating patterns involving rotations.</p>	<p><i>[Name]</i> can accurately create a sequence of numbers based on a pattern rule involving addition, subtraction, or multiplication (e.g., “start at 1 and multiply each term by 2 to get the next term”).</p>	<p><i>[Name]</i> should practice recording number patterns in the form of a table of values (a simple chart that shows the sequence of numbers created by following the pattern). Examples of this are found in <i>[specific resource]</i>.</p>
<p>Grade 7 represent linear growing patterns (where the terms are whole numbers) using concrete materials, graphs, and algebraic expressions.</p> <p>Grade 8 represent linear growing patterns (where the terms are</p>	<p><i>[Name]</i> represented linear growing patterns <i>[specific evidence, such as by placing tiles on an x-, y-axis on a large piece of grid paper]</i>. These patterns were also written as algebraic expressions (e.g., $x+4$; $2x + 1$)</p> <p><i>[Name]</i> represented linear growing patterns <i>[specific</i></p>	<p>Spending some time at home using computer resources such as CLIPS would be beneficial to help <i>[Name]</i> understand how to represent linear growing patterns and write them as algebraic expressions.</p>

<p>whole numbers) using graphs, algebraic expressions, and equations.</p>	<p><i>evidence, such as by placing tiles on an x-, y-axis on a large piece of grid paper]. These patterns were also written as an algebraic expressions (e.g., $x+4$; $2x + 1$) and as equations (e.g., $y=x+7$).</i></p>	
<p>Grade 1 demonstrate an understanding of the concept of equality, using concrete materials and addition and subtraction to 10.</p> <p>Grade 2 demonstrate an understanding of the concept of equality between pairs of expressions, using concrete materials, symbols, and addition and subtraction to 18.</p> <p>Grade 3 demonstrate an understanding of equality between pairs of expressions, using addition and subtraction of one- and two-digit numbers.</p>	<p>Using cubes and other manipulatives, <i>[Name]</i> shows understanding of addition and subtraction to 10 <i>[or further]</i>.</p>	
<p>Grade 4 demonstrate an understanding of equality between pairs of expressions, using addition, subtraction, and multiplication.</p> <p>Grade 5 demonstrate, through investigation, an understanding of the use of variables in equations.</p> <p>Grade 6 use variables in simple algebraic expressions and equations to describe relationships.</p>	<p><i>[Name]</i> understands how to rephrase equations involving multiplication in ways that make them easier to calculate (e.g., “I know that $15 \times 7 \times 2$ equals $15 \times 2 \times 7$, which is easier to multiply in my head.”).</p>	<p><i>[Name]</i> could improve <i>[his/her]</i> understanding of multiplication by using guess and check (with or without a calculator) to fill in the missing number in equations involving one- and two-digit numbers (e.g., $___ \times 4 = 24$).</p>
<p>Grade 7 model real-life linear relationships graphically and algebraically, and solve simple algebraic equations using a variety of strategies, including inspection and guess and check.</p> <p>Grade 8 model linear relationships graphically and algebraically,</p>	<p>Given <i>[specific evidence, such as a table of values]</i>, <i>[Name]</i> is able to model information in an algebraic equation (e.g., $3x+4$). <i>[He/she]</i> can also solve for an unknown in simple algebraic equations.</p> <p>Given <i>[specific evidence, such as a table of values]</i>, <i>[Name]</i> is able to model information in an algebraic equation (e.g., $3x+4$).</p>	<p>Keeping organized notes of the main ideas learned in math class each day and reviewing those notes would help <i>[Name]</i> formulate questions that <i>[he/she]</i> can ask to help clarify understanding.</p> <p>Spending some time at home using computer resources such as CLIPS would help <i>[Name]</i></p>

and solve and verify algebraic equations, using a variety of strategies, including inspection, guess and check, and using a "balance" model.	<i>[He/she]</i> can also solve for an unknown in simple algebraic equations and verify that <i>[his/her]</i> answer was correct.	develop <i>[his/her]</i> understanding of algebra.
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