

# Aligning *Equals Math* with the Alberta Program of Studies

## Grade 6



Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
<b>Number</b>	
<b>Representing</b>	
<p>N1. Demonstrate an understanding of place value, including numbers that are:</p> <ul style="list-style-type: none"> <li>• greater than one million</li> <li>• less than one thousandth.</li> </ul>	<p><b>Emerging:</b></p> <p>8.A.2 identify 3-digit numbers (R)</p> <p>8.B.1 estimate number to represent familiar sets up to 3-digit numbers (R)</p> <p>8.C.1 demonstrate understanding of place value to 1000 (R)</p> <p>8.C.2 identify 4-digit numerals (R)</p> <p>8.C.6 identify 5- and 6-digit numerals</p> <p><b>Introductory:</b></p> <p>8.C.8 compare large numbers up to 6 digits</p> <p><b>Basic:</b></p> <p>No related activities identified.</p> <p><i>Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome</i></p> <p>8.A.3 write 3-digit numbers</p> <p>8.C.7 write 5- and 6-digit numerals</p>
<p>N3. Demonstrate an understanding of factors and multiples by:</p> <ul style="list-style-type: none"> <li>• determining multiples and factors of numbers less than 100</li> <li>• identifying prime and composite numbers</li> <li>• solving problems using multiples and factors.</li> </ul>	<p><b>Emerging:</b></p> <p>11.A.1 demonstrate multiplication with repeated sets (R)</p> <p>11.A.2 use manipulatives to solve multiplication problems (R)</p> <p>11.A.3 use 10:1 or 2:1 relationships to solve a multiplication problem (R)</p> <p>11.A.4 skip count to solve multiplication problems (R)</p> <p><b>Introductory:</b></p> <p>11.B.2 solve multiplication problems with factor of 10</p> <p>11.B.4 use multiplication to solve word problem with repeated addition problem</p> <p><b>Basic:</b></p> <p>11.D.7 identify multiples and factors</p>

(R) = Repeated activity at one or more grade level alignments.

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
<b>Number (continued)</b>	
<b>Representing (continued)</b>	
<p>N7. Demonstrate an understanding of integers, concretely, pictorially and symbolically.</p>	<p><b>Emerging:</b> 7.D.1 count 1–100</p> <p><b>Introductory:</b> 6.B.6 demonstrate understanding of place value to 50 7.D.3 demonstrate understanding of place value from 51–99 8.A.1 demonstrate understanding of place value to 100 (R) 8.C.1 demonstrate understanding of place value to 1000</p> <p><b>Basic:</b> No related activities identified.</p>
<b>Adding, Subtracting, Multiplying and Dividing</b>	
<p>N2. Solve problems involving whole numbers and decimal numbers. [ICT: C6–2.4]</p>	<p><b>Emerging:</b> 4.C.2 write addition and subtraction equations 7.B.5 choose correct operation to solve simple word problem 8.A.7 use a calculator to add and subtract 2- and 3-digit numbers 8.A.9 add and subtract 3-digit numbers, no re-grouping 8.B.7 add and subtract 3-digit numbers, with re-grouping</p> <p><b>Introductory:</b> 8.C.5 use a calculator to add and subtract 4-digit numbers 11.B.5 solve 2-digit multiplication problem with calculator 11.C.3 use manipulatives to solve division problems 11.C.5 use inverse relationship to solve division problems 11.D.3 use division to solve word problem with equal sets</p> <p><b>Basic:</b> 11.D.6 choose multiplication and division to solve word problem</p>

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
<b>Number (continued)</b>	
<b>Fractions, Ratios and Percent</b>	
<p>N4. Relate improper fractions to mixed numbers and mixed numbers to improper fractions.</p>	<p><b>Emerging:</b> No related activities identified.</p> <p><b>Introductory:</b> 12.B.3 identify fractions of a set (R) 12.B.4 order common fractions (R) 12.B.5 compare common fractions (R) 12.B.6 identify fractions of linear measurement (R)</p> <p><b>Basic:</b> 12.C.4 identify mixed numbers in recipe</p>
<p>N5. Demonstrate an understanding of ratio, concretely, pictorially and symbolically.</p>	<p><b>Emerging:</b> No related activities identified.</p> <p><b>Introductory:</b> No related activities identified.</p> <p><b>Basic:</b> No related activities identified.</p>
<p>N6. Demonstrate an understanding of percent (limited to whole numbers), concretely, pictorially and symbolically.</p>	<p><b>Emerging:</b> No related activities identified.</p> <p><b>Introductory:</b> 12.B.3 identify fractions of a set (R) 12.B.4 order common fractions (R) 12.B.5 compare common fractions (R) 12.B.6 identify fractions of linear measurement (R)</p> <p><b>Basic:</b> 12.D.7 match fractions to percentages</p>

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
<b>Number (continued)</b>	
<b>Multiplying and Dividing Decimals</b>	
<p>N8. Demonstrate an understanding of multiplication and division of decimals (1-digit whole number multipliers and 1-digit natural number divisors).</p>	<p><b>Emerging:</b>            11.A.1 demonstrate multiplication with repeated sets (R)            11.A.2 use manipulatives to solve multiplication problems (R)            11.A.3 use 10:1 or 2:1 relationships to solve a multiplication problem (R)            11.A.4 skip count to solve multiplication problems (R)            11.B.1 write a multiplication equation            11.C.1 identify sets that can be divided into equal groups            11.C.2 demonstrate division with array and grouping            11.C.3 use manipulatives to solve division problems            11.C.5 use inverse relationship to solve division problems</p> <p><b>Introductory:</b>            11.D.5 solve division problem with 2-digit divisor using calculator</p> <p><b>Basic:</b>            No related activities identified.</p>
<b>Order of Operations</b>	
<p>N9. Explain and apply the order of operations, excluding exponents, with and without technology (limited to whole numbers).            [ICT: C6–2.4, C6–2.7]</p>	<p><b>Emerging:</b>            No related activities identified.</p> <p><b>Introductory:</b>            No related activities identified.</p> <p><b>Basic:</b>            No related activities identified.</p>

## Grade 6

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
<b>Patterns and Relations</b>	
<b>Graphs and Tables</b>	
<p>PR1. Represent and describe patterns and relationships, using graphs and tables. [ICT: C6–2.3]</p>	<p><b>Emerging:</b>            10.C.5 extend number pattern with constant increment (R)            10.C.6 use a table representing constant rate of change (R)            10.C.7 describe number pattern in table with constant rate of change (R)</p> <p><b>Introductory:</b>            No related activities identified.</p> <p><b>Basic:</b>            No related activities identified.</p>
<p>PR2. Demonstrate an understanding of the relationships within tables of values to solve problems. [ICT: C6–2.3]</p>	<p><b>Emerging:</b>            10.C.5 extend number pattern with constant increment (R)            10.C.6 use a table representing constant rate of change( R)            10.C.7 describe number pattern in table with constant rate of change (R)</p> <p><b>Introductory:</b>            No related activities identified.</p> <p><b>Basic:</b>            No related activities identified.</p>

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
<b>Patterns and Relations (continued)</b>	
<b>Equations</b>	
<p>PR3. Represent generalizations arising from number relationships, using equations with letter variables.</p>	<p><b>Emerging:</b>            10.C.1 use notation for equivalent expression (R)            10.C.2 complete problem solving with missing addend (R)            10.C.3 solve addition equation with a variable (R)            10.C.4 identify equal and equivalent sets (R)</p> <p><b>Introductory:</b>            No related activities identified.</p> <p><b>Basic:</b>            No related activities identified.</p>
<p>PR4. Express a given problem as an equation in which a letter variable is used to represent an unknown number.</p>	<p><b>Emerging:</b>            10.C.1 use notation for equivalent expression (R)            10.C.2 complete problem solving with missing addend (R)            10.C.3 solve addition equation with a variable (R)            10.C.4 identify equal and equivalent sets (R)</p> <p><b>Introductory:</b>            No related activities identified.</p> <p><b>Basic:</b>            No related activities identified.</p>
<p>PR5. Demonstrate and explain the meaning of preservation of equality, concretely and pictorially.</p>	<p><b>Emerging:</b>            10.C.1 use notation for equivalent expression (R)            10.C.2 complete problem solving with missing addend (R)            10.C.3 solve addition equation with a variable (R)            10.C.4 identify equal and equivalent sets (R)</p> <p><b>Introductory:</b>            No related activities identified.</p> <p><b>Basic:</b>            No related activities identified.</p>

## Grade 6

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
<b>Shape and Space</b>	
<b>Angles</b>	
SS1. Demonstrate an understanding of angles by: <ul style="list-style-type: none"> <li>• identifying examples of angles in the environment</li> <li>• classifying angles according to their measure</li> <li>• estimating the measure of angles, using <math>45^\circ</math>, <math>90^\circ</math> and <math>180^\circ</math> as reference angles</li> <li>• determining angle measures in degrees</li> <li>• drawing and labelling angles when the measure is specified.</li> </ul>	<b>Emerging:</b> No related activities identified.  <b>Introductory:</b> 9.C.1 identify right angle (R)  <b>Basic:</b> 9.C.2 identify acute and obtuse angles (R)
SS2. Demonstrate that the sum of interior angles is: <ul style="list-style-type: none"> <li>• <math>180^\circ</math> in a triangle</li> <li>• <math>360^\circ</math> in a quadrilateral.</li> </ul>	<b>Emerging:</b> No related activities identified.  <b>Introductory:</b> 9.C.1 identify right angle (R)  <b>Basic:</b> No related activities identified.
<b>Formulas for Perimeter, Area and Volume</b>	
SS3. Develop and apply a formula for determining the: <ul style="list-style-type: none"> <li>• perimeter of polygons</li> <li>• area of rectangles</li> <li>• volume of right rectangular prisms.</li> </ul>	<b>Emerging:</b> 11.E.1 measure perimeter 11.E.2 measure area  <b>Introductory:</b> 11.E.4 determine the volume of a box  <b>Basic:</b> No related activities identified.

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
<b>Shape and Space (continued)</b>	
<b>2-D Shapes</b>	
<p>SS4. Construct and compare triangles, including:</p> <ul style="list-style-type: none"> <li>• scalene</li> <li>• isosceles</li> <li>• equilateral</li> <li>• right</li> <li>• obtuse</li> <li>• acute</li> </ul> <p>in different orientations.</p>	<p><b>Emerging:</b> 9.C.3 identify polygons and quadrilaterals (R) 9.C.4 identify rhombus, hexagon, and octagon (R)</p> <p><b>Introductory:</b> No related activities identified.</p> <p><b>Basic:</b> No related activities identified.</p>
<p>SS5. Describe and compare the sides and angles of regular and irregular polygons.</p>	<p><b>Emerging:</b> 9.C.3 identify polygons and quadrilaterals (R) 9.C.4 identify rhombus, hexagon, and octagon (R)</p> <p><b>Introductory:</b> 9.C.1 identify right angle (R)</p> <p><b>Basic:</b> 9.C.2 identify acute and obtuse angles (R)</p>



Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
<b>Shape and Space (continued)</b>	
<b>Transformations</b>	
<p>SS6. Perform a combination of translations, rotations and/or reflections on a single 2-D shape, with and without technology, and draw and describe the image.</p>	<p><b>Emerging:</b> No related activities identified.</p> <p><b>Introductory:</b> 9.B.3 predict and confirm results of transformations (R) 9.B.4 describe motion (s) to prove congruency (R)</p> <p><b>Basic:</b> No related activities identified.</p>
<p>SS7. Perform a combination of successive transformations of 2-D shapes to create a design, and identify and describe the transformations.</p>	<p><b>Emerging:</b> No related activities identified.</p> <p><b>Introductory:</b> 9.B.3 predict and confirm results of transformations (R) 9.B.4 describe motion (s) to prove congruency (R)</p> <p><b>Basic:</b> No related activities identified.</p>
<p>SS8. Identify and plot points in the first quadrant of a Cartesian plane, using whole number ordered pairs.</p>	<p><b>Emerging:</b> No related activities identified.</p> <p><b>Introductory:</b> No related activities identified.</p> <p><b>Basic:</b> No related activities identified.</p>
<p>SS9. Perform and describe single transformations of a 2-D shape in the first quadrant of a Cartesian plane (limited to whole number vertices). [ICT: C6–2.1]</p>	<p><b>Emerging:</b> No related activities identified.</p> <p><b>Introductory:</b> No related activities identified.</p> <p><b>Basic:</b> No related activities identified.</p>

## Grade 6

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
<b>Statistics and Probability</b>	
<b>Line Graphs</b>	
SP1. Create, label and interpret line graphs to draw conclusions.	<b>Basic:</b> 10.B.4 find coordinates on a graph 10.B.5 interpret line graph 10.B.8 plot data on line graph 10.B.9 communicate conclusions drawn from line graph
<b>Collecting Data</b>	
SP2. Select, justify and use appropriate methods of collecting data, including: <ul style="list-style-type: none"> <li>• questionnaires</li> <li>• experiments</li> <li>• databases</li> <li>• electronic media.</li> </ul> [ICT: C4–2.2, C6–2.2, C7–2.1, P2–2.1, P2–2.2]	<b>Emerging:</b> 6.A.1 choose a survey question 6.A.2 make a prediction about opinion-based data  <b>Introductory:</b> 3.E.2 tally data amounts in a set 6.A.3 tally categorical data from opinion survey 6.A.4 use categorical data to organize answers 10.A.1 collect data on hand size to nearest centimeter 10.A.2 order numerical data 10.A.3 plot data on line plot graph  <b>Basic:</b> No related activities identified.
SP3. Graph collected data, and analyze the graph to solve problems. [ICT: C6–2.5, C7–2.1, P2–2.1, P2–2.2]	<b>Emerging:</b> No related activities identified.  <b>Introductory:</b> No related activities identified.  <b>Basic:</b> No related activities identified.

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
<b>Statistics and Probability (continued)</b>	
<b>Probability</b>	
<p>SP4. Demonstrate an understanding of probability by:</p> <ul style="list-style-type: none"> <li>• identifying all possible outcomes of a probability experiment</li> <li>• differentiating between experimental and theoretical probability</li> <li>• determining the theoretical probability of outcomes in a probability experiment</li> <li>• determining the experimental probability of outcomes in a probability experiment</li> <li>• comparing experimental results with the theoretical probability for an experiment.</li> </ul> <p>[ICT: C6–2.1, C6–2.4]</p>	<p><b>Emerging:</b> No related activities identified.</p> <p><b>Introductory:</b> 10.B.3 describe variable and result</p> <p><b>Basic:</b> 10.B.6 predict probability regarding change over time 10.B.7 collect data from experiment</p>

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