

Aligning *Equals Math* with the Alberta Program of Studies

Grade 5



Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Number	
Representing	
<p>N1. Represent and describe whole numbers to 1 000 000. [ICT: C6–2.2]</p>	<p>Emerging: 8.A.2 identify 3-digit numbers (R) 8.B.1 estimate number to represent familiar sets up to 3-digits numbers (R) 8.C.1 demonstrate understanding of place value to 1000 (R)</p> <p>Introductory: 8.C.2 identify 4-digit numerals (R) 8.C.6 identify 5- and 6-digit numerals</p> <p>Basic: 8.C.8 compare large numbers up to 6-digits</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> 8.A.3 write 3-digit numbers 8.C.7 write 5- and 6-digit numerals</p>
Estimating	
<p>N2. Use estimation strategies, including:</p> <ul style="list-style-type: none"> • front-end rounding • compensation • compatible numbers in problem-solving contexts. 	<p>Emerging: 7.D.9 estimate number to represent familiar sets with 1- and 2-digit numbers 8.A.1 demonstrate understanding of place value to 100 (R)</p> <p>Introductory: 8.B.1 estimate number to represent familiar sets up to 3-digit numbers (R) 8.C.1 demonstrate understanding of place value to 1000 (R) 8.C.4 estimate number to represent familiar sets up to 4-digit numbers</p> <p>Basic: No related activities identified.</p>

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

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Number (continued)	
Mental Math	
<p>N3. Apply mental mathematics strategies and number properties, such as:</p> <ul style="list-style-type: none"> • skip counting from a known fact • using doubling or halving • using patterns in the 9s facts • using repeated doubling or halving <p>to determine, with fluency, answers for basic multiplication facts to 81 and related division facts.</p>	<p>Emerging:</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>11.B.4 use multiplication to solve word problem with repeated addition problem (R)</p> <p>11.B.6 demonstrate commutative property of multiplication (R)</p> <p>11.C.1 identify sets that can be divided into equal groups (R)</p> <p>11.C.2 demonstrate division with array and grouping (R)</p> <p>11.C.3 use manipulatives to solve division problems (R)</p> <p>11.C.5 use inverse relation to solve division problems (R)</p> <p>11.D.3 use division to solve word problem with equal sets (R)</p> <p>11.D.6 choose multiplication or division to solve word problem (R)</p> <p>Introductory:</p> <p>11.A.5 solve multiplication problems with factors 6–9 (R)</p> <p>11.B.1 write a multiplication equation (R)</p> <p>11.B.2 solve multiplication problems with factor of 10 (R)</p> <p>11.B.3 multiply with 10 and 100 (R)</p> <p>11.B.5 solve two-digit multiplication problem with calculator (R)</p> <p>11.C.4 solve division problems with corresponding factors 6–9 (R)</p> <p>11.D.1 write a division problem (R)</p> <p>11.D.2 solve division problems with divisor of 10 (R)</p> <p>11.D.4 divide by 10s and 100s (R)</p> <p>11.D.5 solve division problem with 2-digit divisor using calculator (R)</p> <p>11.D.6 choose multiplication and division to solve word problem (R)</p>

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Number (continued)	
Mental Math (continued)	
	<p>Basic (repeat Introductory activities):</p> <p>11.A.5 solve multiplication problems with factors 6–9 (R)</p> <p>11.B.1 write a multiplication equation (R)</p> <p>11.B.2 solve multiplication problems with factor of 10 (R)</p> <p>11.B.3 multiply with 10 and 100 (R)</p> <p>11.B.5 solve two-digit multiplication problem with calculator (R)</p> <p>11.C.4 solve division problems with corresponding factors 6–9 (R)</p> <p>11.D.1 write a division problem (R)</p> <p>11.D.2 solve division problems with divisor of 10 (R)</p> <p>11.D.4 divide by 10s and 100s (R)</p> <p>11.D.5 solve division problem with 2-digit divisor using calculator (R)</p> <p>11.D.6 choose multiplication and division to solve word problem (R)</p>
<p>N4. Apply mental mathematics strategies for multiplication, such as:</p> <ul style="list-style-type: none"> • annexing then adding zero • halving and doubling • using the distributive property. 	<p>Emerging:</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</p> <p>11.A.4 skip count to solve multiplication problems (R)</p> <p>11.B.1 write a multiplication equation (R)</p> <p>Introductory:</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.B.1 write a multiplication equation (R)</p> <p>Basic:</p> <p>No related activities identified.</p>

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Number (continued)	
Multiplication and Division	
<p>N5. Demonstrate, with and without concrete materials, an understanding of multiplication (2-digit by 2-digit) to solve problems.</p>	<p>Emerging:</p> <ul style="list-style-type: none"> 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.4 use multiplication to solve word problem with repeated addition problem (R) 11.B.6 demonstrate commutative property of multiplication (R) <p>Introductory:</p> <ul style="list-style-type: none"> 11.A.5 solve multiplication problems with factors 6–9 (R) 11.B.1 write a multiplication equation (R) 11.B.2 solve multiplication problems with factor of 10 (R) 11.B.3 multiply with 10 and 100 (R) 11.B.5 solve two-digit multiplication problem with calculator (R) 11.D.6 choose multiplication and division to solve word problem (R) <p>Basic: No related activities identified.</p>
<p>N6. Demonstrate, with and without concrete materials, an understanding of division (3-digit by 1-digit), and interpret remainders to solve problems.</p>	<p>Emerging:</p> <ul style="list-style-type: none"> 11.C.1 identify sets that can be divided into equal groups (R) 11.C.2 demonstrate division with array and grouping (R) 11.C.3 use manipulatives to solve division problems (R) 11.C.5 use inverse relation to solve division problems (R) 11.D.3 use division to solve word problem with equal sets (R) 11.D.6 choose multiplication or division to solve word problem (R)

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Number (continued)	
Multiplication and Division (continued)	
	<p>Introductory:</p> <p>11.C.4 solve division problems with corresponding factors 6–9 (R)</p> <p>11.D.1 write a division problem (R)</p> <p>11.D.2 solve division problems with divisor of 10 (R)</p> <p>11.D.4 divide by 10s and 100s (R)</p> <p>11.D.6 choose multiplication and division to solve word problem (R)</p> <p>Basic:</p> <p>11.D.5 solve division problem with 2-digit divisor using calculator (R)</p>
Fractions and Decimals	
<p>N7. Demonstrate an understanding of fractions by using concrete, pictorial and symbolic representations to:</p> <ul style="list-style-type: none"> • create sets of equivalent fractions • compare fractions with like and unlike denominators. 	<p>Emerging:</p> <p>12.A.1 sort equal fraction pieces (R)</p> <p>12.A.2 show half of object and array (R)</p> <p>12.A.3 assemble and name matching fraction pieces (R)</p> <p>12.A.4 identify 2 ways to make a square into fourths (R)</p> <p>12.A.5 define meaning of numerator and denominator (R)</p> <p>12.A.6 write fraction name (R)</p> <p>12.B.1 identify fractions with numerator greater than 1 (R)</p> <p>12.B.2 match equivalent fractions with models (R)</p> <p>12.C.1 identify fractions with common denominator (R)</p> <p>Introductory:</p> <p>12.B.3 identify fractions of a set</p> <p>12.B.4 order common fractions</p> <p>12.B.5 compare common fractions</p> <p>12.B.6 identify fractions of linear measurement</p> <p>Basic (repeat Introductory activities):</p> <p>12.B.3 identify fractions of a set</p> <p>12.B.4 order common fractions</p> <p>12.B.5 compare common fractions</p> <p>12.B.6 identify fractions of linear measurement</p>

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Number (continued)	
Fractions and Decimals (continued)	
<p>N8. Describe and represent decimals (tenths, hundredths, thousandths), concretely, pictorially and symbolically.</p>	<p>Emerging: 8.B.1 estimate number to represent familiar sets up to 3-digits numbers (R) 8.C.1 demonstrate understanding of place value to 1000 (R)</p> <p>Introductory: 12.D.3 read decimals to tenths place (R) 12.D.4 read decimals in money terms (R)</p> <p>Basic: No related activities identified.</p>
<p>N9. Relate decimals to fractions and fractions to decimals (to thousandths).</p>	<p>Emerging: 12.A.1 sort equal fraction pieces (R) 12.A.2 show half of object and array (R) 12.A.3 assemble and name matching fraction pieces (R) 12.A.4 identify 2 ways to make a square into fourths (R) 12.A.5 define meaning of numerator and denominator (R) 12.A.6 write fraction name (R) 12.B.1 identify fractions with numerator greater than 1 (R) 12.B.2 match equivalent fractions with models (R) 12.C.1 identify fractions with common denominator (R)</p> <p>Introductory: 12.D.3 read decimals to tenths place (R) 12.D.4 read decimals in money terms (R) 12.D.6 match decimals and fractions and relate time and money</p> <p>Basic: 12.D.1 use models to identify fractions in tenths 12.D.2 convert fractions to decimals</p>

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Number (continued)	
Fractions and Decimals (continued)	
<p>N10. Compare and order decimals (to thousandths) by using:</p> <ul style="list-style-type: none"> • benchmarks • place value • equivalent decimals. 	<p>Emerging:</p> <p>8.B.1 estimate number to represent familiar sets up to 3-digits numbers (R)</p> <p>8.C.1 demonstrate understanding of place value to 1000 (R)</p> <p>Introductory:</p> <p>12.D.3 read decimals to tenths place (R)</p> <p>12.D.4 read decimals in money terms (R)</p> <p>Basic:</p> <p>No related activities identified.</p>
Adding and Subtracting Decimals	
<p>N11. Demonstrate an understanding of addition and subtraction of decimals (limited to thousandths).</p>	<p>Emerging:</p> <p>8.A.8 add and subtract 2-digit numbers, no re-grouping (R)</p> <p>8.B.6 add and subtract 2-digit numbers, with re-grouping (R)</p> <p>Introductory:</p> <p>8.A.5 add and subtract 100 from 3-digit number (R)</p> <p>8.A.9 add and subtract 3-digit numbers, no re-grouping (R)</p> <p>8.B.7 add and subtract 3-digit numbers, with re-grouping (R)</p> <p>Basic:</p> <p>12.D.5 add and subtract decimals in money terms</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.7 use a calculator to add and subtract 2- and 3-digit numbers (R)</p>

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Patterns and Relations	
Pattern Rule	
<p>PR1. Determine the pattern rule to make predictions about subsequent elements.</p>	<p>Emerging: No related activities identified.</p> <p>Introductory: 10.C.5 extend number pattern with constant increment 10.C.6 use a table representing constant rate of change 10.C.7 describe number pattern in table with constant rate of change</p> <p>Basic: No related activities identified.</p>
Equations	
<p>PR2. Express a given problem as an equation in which a letter variable is used to represent an unknown number (limited to whole numbers).</p>	<p>Emerging: 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>Introductory: No related activities identified.</p> <p>Basic: No related activities identified.</p>
<p>PR3. Solve problems involving single-variable, one-step equations with whole number coefficients and whole number solutions.</p>	<p>Emerging: 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>Introductory: No related activities identified.</p> <p>Basic: No related activities identified.</p>

Grade 5

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Shape and Space	
Angles	
SS1. Identify 90° angles.	<p>Emerging: No related activities identified.</p> <p>Introductory: No related activities identified.</p> <p>Basic: 9.C.1 identify right angle</p>
Perimeter and Area	
SS2. Design and construct different rectangles, given either perimeter or area, or both (whole numbers), and make generalizations.	<p>Emerging: 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 11.E.1 measure perimeter (R)</p> <p>Introductory: 5.D.3 place two-dimensional shapes to fill an area 9.D.4 count sides and vertices on two-dimensional net 11.E.2 measure area (R)</p> <p>Basic: 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> 9.A.6 measure line in decimeters (R)</p>
Length	
SS3. Demonstrate an understanding of measuring length (mm) by: <ul style="list-style-type: none"> • selecting and justifying referents for the unit mm • modelling and describing the relationship between mm and cm units, and between mm and m units. 	<p>Emerging: 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 11.E.1 measure perimeter (R)</p> <p>Introductory: No related activities identified.</p> <p>Basic: 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> 9.A.6 measure line in decimeters (R)</p>

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Shape and Space (continued)	
Volume and Capacity	
<p>SS4. Demonstrate an understanding of volume by:</p> <ul style="list-style-type: none"> • selecting and justifying referents for cm³ or m³ units • estimating volume, using referents for cm³ or m³ • measuring and recording volume (cm³ or m³) • constructing right rectangular prisms for a given volume. 	<p>Emerging: 11.E.1 measure perimeter (R)</p> <p>Introductory: 11.E.2 measure area (R)</p> <p>Basic: 11.E.4 determine the volume of a box</p>
<p>SS5. Demonstrate an understanding of capacity by:</p> <ul style="list-style-type: none"> • describing the relationship between mL and L • selecting and justifying referents for mL or L units • estimating capacity, using referents for mL or L • measuring and recording capacity (mL or L). 	<p>Emerging: No related activities identified.</p> <p>Introductory: No related activities identified.</p> <p>Basic: 11.E.5 identify dry and liquid measured amounts 11.E.6 identify measuring spoon amounts 11.E.7 measure dry ingredients 11.E.8 measure liquid ingredients 11.E.9 measure dry and liquid ingredients with spoons</p>
2-D Shapes and 3-D Objects	
<p>SS6. Describe and provide examples of edges and faces of 3-D objects, and sides of 2-D shapes that are:</p> <ul style="list-style-type: none"> • parallel • intersecting • perpendicular • vertical • horizontal. <p>[ICT: C6–2.2, P5–2.3]</p>	<p>Emerging: No related activities identified.</p> <p>Introductory: 9.D.1 identify three-dimensional faces, vertices, and edges 9.D.2 count three-dimensional faces, vertices, and angles 9.D.3 use a table to organize three-dimensional shapes 5.D.6 identify three-dimensional shapes 5.D.5 find and match three-dimensional shapes in the environment</p> <p>Basic: No related activities identified.</p>

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Shape and Space (continued)	
2-D Shapes and 3-D Objects (continued)	
<p>SS7. Identify and sort quadrilaterals, including:</p> <ul style="list-style-type: none"> • rectangles • squares • trapezoids • parallelograms • rhombuses <p>according to their attributes.</p>	<p>Emerging: 9.C.3 identify polygons and quadrilaterals 9.C.4 identify rhombus, hexagon, and octagon</p> <p>Introductory: No related activities identified.</p> <p>Basic: No related activities identified.</p>
Transformations	
<p>SS8. Identify and describe a single transformation, including a translation, rotation and reflection of 2-D shapes. [ICT: C6–2.1]</p>	<p>Emerging: No related activities identified.</p> <p>Introductory: No related activities identified.</p> <p>Basic: 9.B.3 predict and confirm results of transformations (R) 9.B.4 describe motion (s) to prove congruency (R)</p>
<p>SS9. Perform, concretely, a single transformation (translation, rotation or reflection) of a 2-D shape, and draw the image. [ICT: C6–2.1]</p>	<p>Emerging: No related activities identified.</p> <p>Introductory: No related activities identified.</p> <p>Basic: 9.B.3 predict and confirm results of transformations (R) 9.B.4 describe motion (s) to prove congruency (R)</p>

Grade 5

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Statistics and Probability	
First Hand and Second Hand Data	
<p>SP1. Differentiate between first-hand and second-hand data. [ICT: C1–2.2, P5–2.3]</p>	<p>Emerging: 6.A.1 choose a survey question 6.A.2 make a prediction about opinion-based data</p> <p>Introductory: 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</p> <p>Basic: No related activities identified.</p>
Double Bar Graphs	
<p>SP2. Construct and interpret double bar graphs to draw conclusions. [ICT: C6–2.2, P5–2.3]</p>	<p>Emerging: 3.D.6 interpret a bar graph by comparison 3.E.3 place data in simple bar graph with symbolic representation 3.E.4 compare amounts on bar graph with symbolic representation 3.E.5 use data from bar graph to solve simple problem 6.A.5 make a bar graph with categorical data 6.A.6 communicate conclusions drawn from bar graph</p> <p>Introductory: No related activities identified.</p> <p>Basic: No related activities identified.</p>

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Statistics and Probability (continued)	
Probability	
<p>SP3. Describe the likelihood of a single outcome occurring, using words such as:</p> <ul style="list-style-type: none"> • impossible • possible • certain. 	<p>Emerging: No related activities identified.</p> <p>Introductory: No related activities identified.</p> <p>Basic: 10.B.1 predict probability of outcomes 10.B.2 describe outcome of experiment</p>
<p>SP4. Compare the likelihood of two possible outcomes occurring, using words such as:</p> <ul style="list-style-type: none"> • less likely • equally likely • more likely. 	<p>Emerging: No related activities identified.</p> <p>Introductory: No related activities identified.</p> <p>Basic: 10.B.3 describe variable and result</p>

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