

Aligning *Equals Math* with the Alberta Program of Studies



Knowledge and Employability 10-4

Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Number	
Representing	
<p>N2. represent and describe the relationships between proper/improper fractions, equivalent fractions and mixed numbers concretely, pictorially and symbolically</p>	<p><i>Emerging:</i> 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><i>Introductory:</i> 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) 12.C.4 identify mixed numbers in recipe</p> <p><i>Basic:</i> No related activities identified.</p>
<p>N4. represent and explain the meaning of integers in everyday contexts concretely, pictorially and symbolically</p>	<p><i>Emerging:</i> 7.D.1 count 1–100</p> <p><i>Introductory:</i> 6.B.6 demonstrate understanding of place value to 50 (R) 7.D.3 demonstrate understanding of place value from 51–99 (R) 8.A.1 demonstrate understanding of place value to 100 (R) 8.C.1 demonstrate understanding of place value to 1000(R)</p> <p><i>Basic:</i> No related activities identified.</p>

<p>N9. determine the value of a power, using a whole number base with exponents of 2 and 3</p>	<p><i>Emerging:</i> 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) 8.C.2 identify 4-digit numerals (R) 8.C.6 identify 5- and 6-digit numerals(R) 8.C.8 compare large numbers up to 6-digits(R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>
<p>N10. recognize and explain numbers in scientific notation form</p>	<p><i>Emerging:</i> 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) 8.C.2 identify 4-digit numerals (R) 8.C.6 identify 5- and 6-digit numerals(R) 8.C.8 compare large numbers up to 6-digits(R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>
<p>Estimating</p>	
<p>N1. use estimation strategies to estimate and round numbers to the nearest unit, tenth and hundredth to solve problems in everyday contexts</p>	<p><i>Emerging:</i> 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><i>Introductory:</i> 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><i>Basic:</i> No related activities identified.</p>
<p>Fractions, Decimals and Percents</p>	
<p>N3. convert among fractions, decimals and percents concretely, pictorially and symbolically to facilitate the solving of problems</p>	<p><i>Emerging:</i> 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)</p>

	<p>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) <i>Introductory:</i> 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) 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 <i>Introductory:</i> 12.D.1 use models to identify fractions in tenths 12.D.2 convert fractions to decimals <i>Basic:</i> No related activities identified.</p>
Adding, Subtracting, Multiplying and Dividing	
<p>N5. estimate and apply arithmetic operations to solve everyday problems involving:</p> <ul style="list-style-type: none"> • whole numbers • decimals • fractions • mixed numbers • percents 	<p><i>Emerging:</i> 4.C.2 write addition and subtraction equations (R) 7.B.5 choose correct operation to solve simple word problem (R) 8.A.7 use a calculator to add and subtract 2- and 3-digit numbers (R) 8.A.9 add and subtract 3-digit numbers, no re-grouping (R) 8.B.7 add and subtract 3-digit numbers, with re-grouping (R) 8.C.5 use a calculator to add and subtract 4-digit numbers (R) <i>Introductory:</i> 11.B.5 solve 2-digit multiplication problem with calculator (R) 11.C.3 use manipulatives to solve division problems(R) 11.C.5 use inverse relationship to solve division problems(R) 11.D.3 use division to solve word problem with equal sets(R) 11.D.6 choose multiplication and division to solve word problem(R) <i>Basic:</i> No related activities identified.</p>

<p>N6. estimate, add and subtract integers concretely, pictorially and symbolically in everyday contexts</p>	<p><i>Emerging:</i> 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 (R) 4.C.2 write addition and subtraction equations (R) 7.B.5 choose correct operation to solve simple word problem (R) 8.A.7 use a calculator to add and subtract 2- and 3-digit numbers (R) 8.A.9 add and subtract 3-digit numbers, no regrouping (R) 8.B.7 add and subtract 3-digit numbers, with regrouping (R) 8.C.5 use a calculator to add and subtract 4-digit numbers (R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>
<p>N7. assess the reasonableness of applied calculations and problem-solving strategies, using a variety of tools and/or strategies; e.g., estimation, charts, graphs, calculators and/or computers</p>	<p><i>Emerging:</i> 4.C.2 write addition and subtraction equations (R) 7.B.5 choose correct operation to solve simple word problem (R) 8.A.7 use a calculator to add and subtract 2- and 3-digit numbers (R) 8.A.9 add and subtract 3-digit numbers, no regrouping (R) 8.B.7 add and subtract 3-digit numbers, with regrouping (R) 8.C.5 use a calculator to add and subtract 4-digit numbers (R)</p> <p><i>Introductory:</i> 11.B.5 solve 2-digit multiplication problem with calculator (R) 11.C.3 use manipulatives to solve division problems(R) 11.C.5 use inverse relationship to solve division problems(R) 11.D.3 use division to solve word problem with equal sets(R) 11.D.6 choose multiplication and division to solve word problem(R)</p> <p><i>Basic:</i> No related activities identified.</p>

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Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Patterns and Relations	
Graphs and Tables	
<p>PR1. identify, describe and draw conclusions, in oral and written form, about patterns and relationships in nature and everyday contexts</p>	<p><i>Emerging:</i> 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><i>Introductory/Basic:</i> No related activities identified.</p>
<p>PR2. create expressions, make predictions and develop rules to describe, complete and extend patterns and relationships in everyday contexts</p>	<p><i>Emerging:</i> 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><i>Introductory/Basic:</i> No related activities identified.</p>
<p>PR4. graph relationships, using everyday home, community and workplace contexts, and draw conclusions, using patterns and relationships</p>	<p><i>Emerging:</i> 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><i>Introductory/Basic:</i> No related activities identified.</p>
Equations	
<p>PR3. distinguish between the use of variables and constants in everyday situations</p>	<p><i>Emerging:</i> 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><i>Introductory/Basic:</i> No related activities identified.</p>

<p>PR5. use variables, formulas and/or substitutions to solve problems in practical situations</p>	<p><i>Emerging:</i> 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><i>Introductory/Basic:</i> No related activities identified.</p>
<p>PR6. substitute numbers for variables in expressions and graph and examine the relationship</p>	<p><i>Emerging:</i> 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><i>Introductory/Basic:</i> No related activities identified.</p>

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Alberta Program of Studies	Related activities from <i>Equals Math</i> resources
Shape and Space	
Metric and Imperial	
SS3. compare, convert and apply metric (SI) and imperial units of measure, as appropriate in everyday contexts	<p><i>Emerging:</i> 6.C.1 identify common elements between measurement tools (R) 6.C.2 identify measurement tools(R) 6.C.3 match measurement attributes to tools(R) 6.C.4 match measurement tools to everyday situations(R) 6.C.5 compare measurement attributes(R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>
SS5. use conversion charts, calculators and/or other tools to compare and convert common metric (SI) and imperial units of measure, as required in everyday contexts	<p><i>Emerging:</i> 6.C.1 identify common elements between measurement tools (R) 6.C.2 identify measurement tools(R) 6.C.3 match measurement attributes to tools(R) 6.C.4 match measurement tools to everyday situations(R) 6.C.5 compare measurement attributes(R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>
Length, Mass and Volume	
SS1. select and use appropriate metric (SI) and imperial measuring devices and units to take measurements in home and work-related contexts, including: <ul style="list-style-type: none"> • length • mass (weight) • volume (capacity) 	<p><i>Emerging:</i> 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 11.E.1 measure perimeter (R)</p> <p><i>Introductory:</i> 9.D.4 count sides and vertices on two-dimensional net 11.E.2 measure area (R) 11.E.4 determine the volume of a box (R) 11.E.5 identify dry and liquid measured amounts (R) 11.E.6 identify measuring spoon amounts (R) 11.E.7 measure dry ingredients (R) 11.E.8 measure liquid ingredients (R) 11.E.9 measure dry and liquid ingredients with spoons (R)</p>

	<p><i>Basic:</i> 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>
SS2. measure within acceptable degrees of accuracy	<p><i>Emerging:</i> 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 11.E.1 measure perimeter (R)</p> <p><i>Introductory/Basic:</i> 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>
SS4. solve problems involving perimeter, area, mass (weight) and volume (capacity)	<p><i>Emerging:</i> 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 11.E.1 measure perimeter (R)</p> <p><i>Introductory:</i> 5.D.3 place two-dimensional shapes to fill an area (R) 9.D.4 count sides and vertices on two-dimensional net (R) 11.E.2 measure area (R) 11.E.4 determine the volume of a box (R) 11.E.5 identify dry and liquid measured amounts (R) 11.E.6 identify measuring spoon amounts (R) 11.E.7 measure dry ingredients (R) 11.E.8 measure liquid ingredients (R) 11.E.9 measure dry and liquid ingredients with spoons (R)</p> <p><i>Basic:</i> 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>
Angles	
SS6. estimate the measurements of angles in a diagram and in various environments	<p><i>Emerging:</i> 9.C.1 identify right angle (R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>

Circles

<p>SS7. measure and draw angles, using a straightedge, protractor and other technology</p>	<p><i>Emerging:</i> 9.C.1 identify right angle (R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>
<p>SS8. estimate, measure and calculate the area of a circle</p>	<p><i>Emerging:</i> 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 11.E.1 measure perimeter (R)</p> <p><i>Introductory:</i> 5.D.3 place two-dimensional shapes to fill an area (R) 9.D.4 count sides and vertices on two-dimensional net (R) 11.E.2 measure area (R)</p> <p><i>Basic:</i> No related activities identified.</p>
<p>SS9. calculate the unknown when given the circumference, diameter and/or radius of a circle to solve everyday problems</p>	<p><i>Emerging:</i> 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 11.E.1 measure perimeter (R)</p> <p><i>Introductory:</i> 5.D.3 place two-dimensional shapes to fill an area (R) 9.D.4 count sides and vertices on two-dimensional net (R) 11.E.2 measure area (R)</p> <p><i>Basic:</i> No related activities identified.</p>
<p>SS10. estimate and calculate the area of a circle to solve problems in everyday contexts</p>	<p><i>Emerging:</i> 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 11.E.1 measure perimeter (R)</p> <p><i>Introductory:</i> 5.D.3 place two-dimensional shapes to fill an area (R) 9.D.4 count sides and vertices on two-dimensional net (R) 11.E.2 measure area (R)</p> <p><i>Basic:</i> No related activities identified.</p>

Time	
SS11. estimate and apply a variety of arithmetic operations, using hours and minutes, in everyday applications	<p><i>Emerging:</i> 3.C.1 name days of the week (R) 3.C.2 find days of the week on calendar (R) 3.C.3 name months (R) 3.C.4 find a given date on a calendar (R) 3.C.5 use calendar to count days to event (R)</p> <p><i>Introductory:</i> 5.B.1 tell time to the hour 5.B.2 tell time to 1/2 hour 5.B.2 tell time to 1/4 hour</p> <p><i>Basic:</i> 5.B.4 match analog and digital time 5.B.5 use common language to tell time 8.E.1 tell time to 5 minutes 8.E.2 use common language to tell time at 5-minute intervals</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> 3.C.6 identify 4 seasons given name of month (R)</p>
2- D Shapes and 3-D Objects	
SS13. measure and classify pairs of angles as either complementary or supplementary	<p><i>Emerging:</i> 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 9.C.1 identify right angle (R)</p> <p><i>Introductory:</i> 9.C.2 identify acute and obtuse angles 9.D.4 count sides and vertices on two-dimensional net (R)</p> <p><i>Basic:</i> No related activities identified.</p>
SS14. represent, examine and describe enlargements and reductions	<p><i>Emerging:</i> 5.D.6 identify three-dimensional shapes 5.D.5 find and match three-dimensional shapes in the environment 9.A.4 identify length with lines and pictured ruler (R) 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 9.B.1 match two-dimensional shape to three-dimensional face 9.C.1 identify right angle (R) 9.D.1 identify three-dimensional faces, vertices, and edges 9.D.2 count three-dimensional faces, vertices, and angles</p>

	<p>9.D.3 use a table to organize three-dimensional shapes 11.E.1 measure perimeter (R) 11.E.2 measure area (R) 11.E.4 determine the volume of a box (R)</p> <p><i>Introductory:</i> 9.B.2. identify congruent shapes(R) 9.B.5. identify symmetrical shapes(R) 9.D.4 count sides and vertices on two-dimensional net (R) 9.D.5 build, identify, and compare three-dimensional shape to net (R)</p> <p><i>Basic:</i> No related activities identified.</p>
Transformations	
<p>SS15. interpret scale models and identify the geometric properties associated with figures and shapes used in representations</p>	<p><i>Emerging:</i> 9.B.3 predict and confirm results of transformations (R) 9.B.4 describe motion (s) to prove congruency (R)</p> <p><i>Introductory:</i> 9.B.2. identify congruent shapes(R) 9.B.5. identify symmetrical shapes(R) 9.D.4 count sides and vertices on two-dimensional net (R) 9.D.5 build, identify, and compare three-dimensional shape to net (R)</p> <p><i>Basic:</i> No related activities identified.</p>
<p>SS16. reproduce drawings or objects to scale, using a variety of strategies; e.g., grid paper, dot paper and/or computer software</p>	<p><i>Emerging:</i> 9.B.3 predict and confirm results of transformations (R) 9.B.4 describe motion (s) to prove congruency (R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>
<p>SS17. draw designs, using ordered pairs in all four quadrants of a coordinate grid, with translation and reflection images</p>	<p><i>Emerging:</i> 9.B.3 predict and confirm results of transformations (R) 9.B.4 describe motion (s) to prove congruency (R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>

Knowledge and Employability 10-4

Alberta Program of Studies	Related Activities from Equals Math
Statistics and Probability	
Collecting, Displaying and Analyzing Data	
<p>SP1. predict, interpret, make comparisons and communicate information from graphs, tables, charts and other sources at home and in the workplace</p>	<p><i>Emerging:</i> 3.D.6 interpret a bar graph by comparison (R) 3.E.3 place data in simple bar graph with symbolic representation (R) 3.E.4 compare amounts on bar graph with symbolic representation (R) 3.E.5 use data from bar graph to solve simple problem (R) 6.A.5 make a bar graph with categorical data (R) 6.A.6 communicate conclusions drawn from bar graph (R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>
<p>SP2. recognize the uses of data and data collection and display tools in everyday and work-related situations</p>	<p><i>Emerging:</i> 3.D.6 interpret a bar graph by comparison (R) 3.E.3 place data in simple bar graph with symbolic representation (R) 3.E.4 compare amounts on bar graph with symbolic representation (R) 3.E.5 use data from bar graph to solve simple problem (R) 6.A.5 make a bar graph with categorical data (R) 6.A.6 communicate conclusions drawn from bar graph (R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>
<p>SP4. examine a plan for collecting and processing information and modify it as appropriate for everyday situations</p>	<p><i>Emerging:</i> 6.A.1 choose a survey question 6.A.2 make a prediction about opinion-based data 6.A.3 tally categorical data from opinion survey 6.A.4 use categorical data to organize answers 6.A.5 make a bar graph with categorical data (R) 6.A.6 communicate conclusions drawn from bar graph (R)</p> <p><i>Introductory/Basic:</i> No related activities identified.</p>