Aligning *Equals Math* with the Alberta Program of Studies

Grade 3

Alberta Program of Studies	Related activities from *Equals Math* resources
Number	
Counting	
N1. Say the number sequence 0 to 1000 forward and backward by: • 5s, 10s or 100s, using any starting point • 3s, using starting points that are multiples of 3 • 4s, using starting points that are multiples of 4 • 25s, using starting points that are multiples of 25.	**Emerging:** 6.B.3 count 1–50 6.B.4 skip count by tens to 100 6.B.7 use number patterns to locate 21–50 on a hundreds chart 6.B.8 identify numerals 21–50 7.D.1 count 1–100 (R) **Introductory:** 7.D.4 use number patterns to locate numbers 51–100 on hundreds chart (R) 7.D.5 identify numbers 51–99 (R) **Basic:** 8.A.2 identify 3-digit numbers (R)
Representing	
N2. Represent and describe numbers to 1000, concretely, pictorially and symbolically.	**Emerging:** 2.D.1 demonstrate understanding of the concept of 0 2.E.7 identify number words one through five 3.A.6 identify number words six through ten 5.A.2 identify sets of 11–15 5.A.3 construct a set to match 11–15 5.A.4 write numerals 11–15 to match sets 5.A.6 identify sets of 16–20 5.A.7 construct a set to match 16–20 5.A.8 write numerals 16–20 to match sets **Introductory:** 7.D.2 group objects to build numbers to 100 7.D.4 use number patterns to locate numbers 51–100 on hundreds chart (R) 7.D.5 identify numbers 51–99 (R) 8.A.6 make 100 using multiples of 10 **Basic:** 8.A.2 identify 3-digit numbers (R) 8.B.1 estimate number to represent familiar sets up to 3-digits numbers (R)

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

Alberta Program of Studies	Related activities from *Equals Math* resources
Number (continued)	
Representing (continued)	
	Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome *2.D.2 write 0* *6.B.9 write numerals 21–50* *7.D.6 write numbers 51–99* *8.A.3 write 3-digit numbers*
N5. Illustrate, concretely and pictorially, the meaning of place value for numerals to 1000.	**Emerging:** 6.B.5 count and groups objects into tens and ones **Introductory:** 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) **Basic:** 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)
Comparing	
N3. Compare and order numbers to 1000.	**Emerging:** 5.C.1 compare quantities 11–20 6.B.1 compare sets 11–20 using words: greater, fewer, most and least **Introductory:** 8.A.1 demonstrate understanding of place value to 100 (R) **Basic:** 8.C.1 demonstrate understanding of place value to 1000 (R)

Alberta Program of Studies	Related activities from *Equals Math* resources
Number (continued)	
Estimating	
N4. Estimate quantities less than 1000, using referents.	**Emerging:** 5.C.1 compare quantities 11–20 6.B.2 order quantities from most to least, least to most **Introductory:** 7.D.9 estimate number to represent familiar sets with 1- and 2-digit numbers **Basic:** 8.B.1 estimate number to represent familiar sets up to 3-digit numbers (R)
Mental Math	
N6. Describe and apply mental mathematics strategies for adding two 2-digit numerals, such as: • adding left to right • taking one addend to the nearest multiple of ten and then compensating using doubles • using doubles.	**Emerging:** 3.A.7 state one more than given number, 1–10 4.C.1 find missing addend to make 10 (R) 4.C.5 use learned strategies to solve simple word problems (R) **Introductory:** 5.C. state one more than given number, 11–20 (R) 7.A.1 identify ten more than given number 20–50 (R) 7.A.3 choose method to solve addition problems to sums 11–15 (R) 7.A.5 choose method to solve addition problems to sums 16–20 (R) 7.B.1 use addition to solve word problems joining 2 groups (R) 7.B.5 choose correct operation to solve simple word problem (R) 7.B.6 demonstrate commutative property of addition (R) 7.C.1 identify and solve doubles addition problems to sums 11–18 (R) 7.C.4 demonstrate associative property of addition (R) 7.D.7 identify ten more than given number 51–99 (R) 8.A.4 add and subtract 10 from 2-digit number (R)

Alberta Program of Studies	Related activities from *Equals Math* resources
Number (continued)	
Mental Math (continued)	
	Basic: 8.A.5 add and subtract 100 from 3-digit number (R) 8.B.2 round numbers to tens place value (R) 8.B.3 round numbers to estimate sums and difference to tens place value (R) 8.B.4 round numbers to hundreds place value (R) 8.B.5 round numbers to estimate sums and difference to hundreds place value (R) *Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome* *4.C.3 use a calculator to add and subtract sums to 10 (R)*
N7. Describe and apply mental mathematics strategies for subtracting two 2-digit numerals, such as: • taking the subtrahend to the nearest multiple of ten and then compensating • thinking of addition • using doubles.	**Emerging:** 3.A.8 state one less than given number, 1–10 4.C.1 find missing addend to make 10 (R) 4.C.4 use doubles to solve subtraction problems with corresponding sums 2–10 (R) 4.C.5 use learned strategies to solve simple word problems (R) **Introductory:** 5.C.6 state one less than given number, 11–20 (R) 7.A.2 identify ten less than given number 20–50 7.A.4 choose method to solve subtraction problems to corresponding sums 11–15 (R) 7.A.6 choose method to solve subtraction problems to corresponding sums 16–20 (R) 7.B.2 use subtraction to solve word problems with removal (R) 7.B.3 use subtraction to solve word problems with comparison (R) 7.B.4 use subtraction to solve word problems with missing part of a set (R) 7.B.5 choose correct operation to solve simple word problem (R) 7.C.2 solve subtraction problems with corresponding sums 11–18 using doubles (R) 7.D.8 identify ten less than given number 51–99 (R) 8.A.4 add and subtract 10 from 2-digit number (R)

Alberta Program of Studies	Related activities from *Equals Math* resources
Number (continued)	
Mental Math (continued)	
	Basic: 8.A.5 add and subtract 100 from 3-digit number (R) 8.B.2 round numbers to tens place value (R) 8.B.4 round numbers to hundreds place value (R) 8.B.3 round numbers to estimate sums and difference to tens place value (R) 8.B.5 round numbers to estimate sums and difference to hundreds place value (R) *Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome* *4.C.3 use a calculator to add and subtract sums to 10 (R)*
N8. Apply estimation strategies to predict sums and differences of two 2-digit numerals in a problem solving context.	**Emerging:** 4.C.5 use learned strategies to solve simple word problems (R) **Introductory:** 7.A.3 choose method to solve addition problems to sums 11–15 (R) 7.A.4 choose method to solve subtraction problems to corresponding sums 11–15 (R) 7.A.5 choose method to solve addition problems to sums 16–20 (R) 7.A.6 choose method to solve subtraction problems to corresponding sums 16–20 (R) 7.B.5 choose correct operation to solve simple word problem (R) **Basic:** 8.B.3 round numbers to estimate sums and difference to tens place value (R) 8.B.5 round numbers to estimate sums and difference to hundreds place value (R) *Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome* *4.C.3 use a calculator to add and subtract sums to 10 (R)*

Alberta Program of Studies	Related activities from *Equals Math* resources
Number (continued)	
Mental Math (continued)	
N10. Apply mental mathematics strategies and number properties, such as: • using doubles • making 10 • using the commutative property • using the property of zero • thinking addition for subtraction for basic addition facts and related subtraction facts to 18.	**Emerging:** 4.C.1 find missing addend to make 10 4.C.4 use doubles to solve subtraction problems with corresponding sums 2–10 (R) 4.C.5 use learned strategies to solve simple word problems (R) **Introductory:** 5.C.5 state one more than given number, 11–20 (R) 5.C.6 state one less than given number, 11–20 (R) 7.A.3 choose method to solve addition problems to sums 11–15 (R) 7.A.4 choose method to solve subtraction problems to corresponding sums 11–15 (R) 7.A.5 choose method to solve addition problems to sums 16–20 (R) 7.A.6 choose method to solve subtraction problems to corresponding sums 16–20 (R) 7.C.1 identify and solve doubles addition problems to sums 11–18 (R) 7.C.2 solve subtraction problems with corresponding sums 11–18 using doubles (R) **Basic: (repeat Introductory activities)** 5.C.5 state one more than given number, 11–20 (R) 5.C.6 state one less than given number, 11–20 (R) 7.A.3 choose method to solve addition problems to sums 11–15 (R) 7.A.4 choose method to solve subtraction problems to corresponding sums 11–15 (R) 7.A.5 choose method to solve addition problems to sums 16–20 (R) 7.A.6 choose method to solve subtraction problems to corresponding sums 16–20 (R) 7.C.1 identify and solve doubles addition problems to sums 11–18 (R) 7.C.2 solve subtraction problems with corresponding sums 11–18 using doubles (R)

Alberta Program of Studies	Related activities from *Equals Math* resources
Number (continued)	
Mental Math (continued)	
	Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome *4.C.3 use a calculator to add and subtract sums to 10*
Adding and Subtracting	
N9. Demonstrate an understanding of addition and subtraction of numbers with answers to 1000 (limited to 1-, 2- and 3-digit numerals), concretely, pictorially and symbolically, by: • using personal strategies for adding and subtracting with and without the support of manipulatives • creating and solving problems in context that involve addition and subtraction of numbers.	**Emerging:** 4.B.1 solve addition problems to sums of 5 4.B.2 solve addition problems with counting on, number line 4.B.4 solve subtraction problems with corresponding sums of 5 4.B.5 solve subtraction problems with counting back, number line 4.B.6 solve addition problems with sums 6–9 4.B.7 solve subtraction problems with corresponding sums 6–9 4.B.8 solve addition and subtraction problems with sums to 10 4.C.2 write addition and subtraction equations 7.C.3 add single digit numbers **Introductory:** 7.A.1 identify ten more than a given number 20–50 (R) 7.A.2 identify ten less than a given number 20–50 (R) 7.B.1 use addition to solve word problems joining 2 groups (R) 7.B.2 use subtraction to solve word problems with removal (R) 7.B.3 use subtraction to solve word problems with comparison (R) 7.B.4 use subtraction to solve word problems with missing part of a set (R) 7.B.5 choose correct operation to solve simple word problem (R) 7.B.6 demonstrate commutative property of addition (R) 7.C.4 demonstrate associative property of addition (R) 7.D.7 identify ten more than given number 51–99 (R) 7.D.8 identify ten less than given number 51–99 (R)

Alberta Program of Studies	Related activities from *Equals Math* resources
Number (continued)	
Adding and Subtracting (continued)	
	8.A.4 add and subtract 10 from 2-digit number (R) 8.A.8 add and subtract 2-digit numbers, no re-grouping 8.B.6 add and subtract 2-digit numbers, with re-grouping **Basic:** 8.A.5 add and subtract 100 from 3-digit number (R) 8.A.9 add and subtract 3-digit numbers, no re-grouping 8.B.7 add and subtract 3-digit numbers, with re-grouping *Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome* *7.C.5 use a calculator to add 3 single-digit numbers* *8.A.7 use a calculator to add and subtract 2- and 3-digit numbers*
Multiplication	
N11. Demonstrate an understanding of multiplication to 5 × 5 by: • representing and explaining multiplication using equal grouping and arrays • creating and solving problems in context that involve multiplication • modelling multiplication using concrete and visual representations, and recording the process symbolically • relating multiplication to repeated addition • relating multiplication to division.	**Emerging:** 4.C.4 use doubles to solve subtraction problems with corresponding sums 2–10 (R) **Introductory:** 7.C.1 identify and solve doubles addition problems to sums 11–18 (R) 7.C.2 solve subtraction problems with corresponding sums 11–18 using doubles (R) **Basic:** 11.A.1 demonstrate multiplication with repeated sets 11.A.2 use manipulatives to solve multiplication problems 11.A.3 use 10:1 or 2:1 relationships to solve a multiplication problem 11.A.4 skip count to solve multiplication problems 11.B.1 write a multiplication equation 11.B.4 use multiplication to solve word problem with repeated addition problem 11.B.6 demonstrate commutative property of multiplication
Alberta Program of Studies	Related activities

	from *Equals Math* resources
Number (continued)	
Multiplication (continued)	
	Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome *7.C.5 use a calculator to add 3 single-digit numbers (R)*
Division	
N12. Demonstrate an understanding of division (limited to division related multiplication facts up to 5 × 5) by: • representing and explaining division using equal sharing and equal grouping • creating and solving problems in context that involve equal sharing and equal grouping • modelling equal sharing and equal grouping using concrete and visual representations, and recording the process symbolically • relating division to repeated subtraction • relating division to multiplication.	**Emerging:** No related activities identified. **Introductory:** No related activities identified. **Basic:** 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 relation to solve division problems 11.D.1 write a division problem 11.D.3 use division to solve word problem with equal sets 11.D.6 choose multiplication or division to solve word problem
Fractions	
N13. Demonstrate an understanding of fractions by: • explaining that a fraction represents a part of a whole • describing situations in which fractions are used • comparing fractions of the same whole that have like denominators.	**Emerging:** No related activities identified. **Introductory:** No related activities identified. **Basic:** 12.A.1 sort equal fraction pieces 12.A.2 show half of object and array 12.A.3 assemble and name matching fraction pieces 12.A.4 identify 2 ways to make a square into fourths 12.A.5 define meaning of numerator and denominator 12.A.6 write fraction name 12.B.1 identify fractions with numerator greater than 1 12.B.2 match equivalent fractions with models 12.C.1 identify fractions with common denominator

Grade 3

Alberta Program of Studies	Related activities from *Equals Math* resources
Patterns and Relations	
Patterns (Increasing and Decreasing)	
PR1. Demonstrate an understanding of increasing patterns by: • describing • extending • comparing • creating numerical (numbers to 1000) and non-numerical patterns using manipulatives, diagrams, sounds and actions.	**Emerging:** No related activities identified. **Introductory:** 8.D.7 determine missing unit in number pattern **Basic:** 10.C.5 extend number pattern with constant increment
PR2. Demonstrate an understanding of decreasing patterns by: • describing • extending • comparing • creating numerical (numbers to 1000) and non-numerical patterns using manipulatives, diagrams, sounds and actions.	**Emerging:** No related activities identified. **Introductory:** No related activities identified. **Basic:** No related activities identified.
Sorting	
PR3. Sort objects or numbers, using one or more than one attribute.	**Emerging:** 1.C.1 match objects to duplicates 1.C.2 match objects by colour 1.C.3 sort objects by colour 1.C.6 sort objects by size 1.C.7 find objects that share 1 attribute **Introductory:** No related activities identified. **Basic:** 3.D.2 use a Venn diagram to sort objects 3.D.3 find object that doesn't belong

Alberta Program of Studies	Related activities from *Equals Math* resources
Patterns and Relations (continued)	
Equations	
PR4. Solve one-step addition and subtraction equations involving a symbol to represent an unknown number.	**Emerging:** 9.A.1 use a balance scale to demonstrate equal **Introductory:** No related activities identified. **Basic:** 10.C.1 use notation for equivalent expression 10.C.2 complete problem solving with missing addend 10.C.3 solve addition equation with a variable 10.C.4 identify equal and equivalent sets

Grade 3

Alberta Program of Studies	Related activities from *Equals Math* resources
Shape and Space	
Time	
SS1. Relate the passage of time to common activities, using nonstandard and standard units (minutes, hours, days, weeks, months, years).	**Emerging:** 1.D.7 anticipate special event on calendar (R) **Introductory:** 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) **Basic:** 5.B.1 tell time to the hour (R) 5.B.2 tell time to 1/2 hour (R) 5.B.2 tell time to 1/4 hour (R) *Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome* *1.D.8 identify 4 seasons (R)* *1.D.9 match appropriate clothing to temperature (R)* *3.C.6 identify 4 seasons given name of month (R)*
SS2. Relate the number of seconds to a minute, the number of minutes to an hour and the number of days to a month in a problem-solving context.	**Emerging:** 1.D.7 anticipate special event on calendar (R) **Introductory:** 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) **Basic:** 5.B.1 tell time to the hour (R) 5.B.2 tell time to 1/2 hour (R) 5.B.2 tell time to 1/4 hour (R) *Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome* *1.D.8 identify 4 seasons (R)* *1.D.9 match appropriate clothing to temperature (R)* *3.C.6 identify 4 seasons given name of month (R)*

Alberta Program of Studies	Related activities from *Equals Math* resources
Shape and Space (continued)	
Measurement	
SS3. Demonstrate an understanding of measuring length (cm, m) by: • selecting and justifying referents for the units cm and m • modelling and describing the relationship between the units cm and m • estimating length, using referents • measuring and recording length, width and height.	**Emerging:** 6.C.3 match measurement attributes to tools (R) 6.C.4 match measurement tools to everyday situations (R) **Introductory:** 9.A.4 identify length with lines and pictured ruler (R) **Basic:** 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 11.E.1 measure perimeter (R) *Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome* *9.A.6 measure line in decimeters (R)*
SS4. Demonstrate an understanding of measuring mass (g, kg) by: • selecting and justifying referents for the units g and kg • modelling and describing the relationship between the units g and kg • estimating mass, using referents • measuring and recording mass.	**Emerging:** 6.C.3 match measurement attributes to tools (R) 6.C.4 match measurement tools to everyday situations (R) **Introductory:** 6.C.5 compare measurement attributes **Basic:** 9.A.2 weigh objects in grams and kilograms 9.A.3 identify 2 common weights
SS5. Demonstrate an understanding of perimeter of regular and irregular shapes by: • estimating perimeter, using referents for cm or m • measuring and recording perimeter (cm, m) • constructing different shapes for a given perimeter (cm, m) to demonstrate that many shapes are possible for a perimeter.	**Emerging:** 6.C.3 match measurement attributes to tools (R) 6.C.4 match measurement tools to everyday situations (R) **Introductory:** 9.A.4 identify length with lines and pictured ruler (R) **Basic:** 9.A.5 measure line in centimeters (R) 9.A.7 measure line in meters (R) 11.E.1 measure perimeter (R) *Activities that are beyond the scope of the Alberta Program of Studies, but can be used to support the related outcome* 9.A.6 measure *line* in decimeters (R)

Alberta Program of Studies	Related activities from *Equals Math* resources
Shape and Space (continued)	
2-D Shapes and 3-D Objects	
SS6. Describe 3-D objects according to the shape of the faces and the number of edges and vertices.	**Emerging:** No related activities identified. **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 **Basic:** 9.D.6 sort polyhedral shapes from other shapes
Sorting	
SS7. Sort regular and irregular polygons, including: • triangles • quadrilaterals • pentagons • hexagons • octagons according to the number of sides.	**Emerging:** 1.D.3 sort similar two-dimensional shapes 1.D.4 choose one attribute to sort shapes **Introductory:** 5.D.2 draw a rectangle 9.C.5 use a table to organize two-dimensional shapes **Basic:** 9.C.3 identify polygons and quadrilaterals 9.C.4 identify rhombus, hexagon, and octagon

Grade 3

Alberta Program of Studies	Related activities from *Equals Math* resources
Statistics and Probability	
First Hand Data	
SP1. Collect first-hand data and organize it using: • tally marks • line plots • charts • lists to answer questions. [ICT: C4–1.3]	**Emerging:** No related activities identified. **Introductory:** 6.A.1 choose a survey question 6.A.2 make a prediction about opinion-based data **Basic:** 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
Bar Graphs	
SP2. Construct, label and interpret bar graphs to solve problems. [ICT: C4–1.3, C7–1.3, C7–1.4]	**Emerging:** No related activities identified. **Introductory:** 3.D.4 construct bars in an object bar graph 3.D.5 construct pictograph bars **Basic:** 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