

# Math Travels, volume 1

Curriculum Correlation: Ontario 1-9 Mathematics

## 1. Repeating Patterns (K-6)

### Grade 1- ALGEBRA

**C1.1** identify and describe the regularities in a variety of patterns, including patterns found in real-life contexts

**C1.2** create and translate patterns using movements, sounds, objects, shapes, letters, and numbers

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in patterns

**C3.2** read and alter existing code, including code that involves sequential events, and describe how changes to the code affect the outcomes

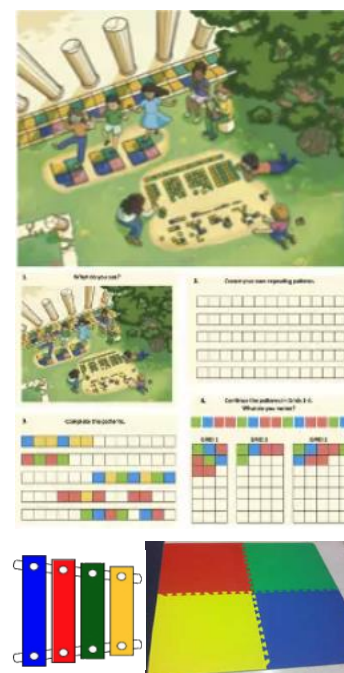
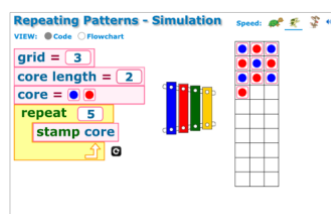
### Grade 2- ALGEBRA

**C1.1** identify and describe a variety of patterns involving geometric designs, including patterns found in real-life contexts

**C1.2** create and translate patterns using various representations, including shapes and numbers

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements

**C3.2** read and alter existing code, including code that involves sequential and concurrent events, and describe how changes to the code affect the outcomes in patterns represented with shapes and numbers



### Grade 3- NUMBER

**B2.2** recall and demonstrate multiplication facts for  $1 \times 1$  to  $10 \times 10$ , and related division facts

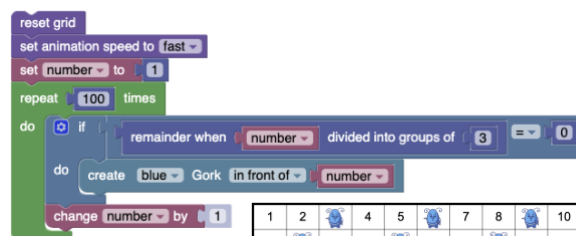
### Grade 3- ALGEBRA

**C1.1** identify and describe repeating elements and operations in a variety of patterns, including patterns found in real-life contexts

**C1.2** create and translate patterns that have repeating elements, movements, or operations using various representations, including shapes, numbers, and tables of values

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in patterns that have repeating elements, movements, or operations

**C3.2** read and alter existing code, including code that involves sequential, concurrent, and repeating events, and describe how changes to the code affect the outcomes



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

### Grade 4- NUMBER

**B2.2** recall and demonstrate multiplication facts for  $1 \times 1$  to  $10 \times 10$ , and related division facts

### Grade 4- ALGEBRA

**C1.1** identify and describe repeating and growing patterns, including patterns found in real-life contexts

**C1.2** create and translate repeating and growing patterns using various representations, including tables of values and graphs

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating and growing patterns

**C3.2** read and alter existing code, including code that involves sequential, concurrent, repeating, and nested events, and describe how changes to the code affect the outcomes

#### **Grade 5- NUMBER**

**B2.2** recall and demonstrate multiplication facts from  $0 \times 0$  to  $12 \times 12$ , and related division facts

#### **Grade 5- ALGEBRA**

**C1.1** identify and describe repeating, growing, and shrinking patterns, including patterns found in real-life contexts

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns

**C3.2** read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes

#### **Grade 6- NUMBER**

**B2.2** understand the divisibility rules and use them to determine whether numbers are divisible by 2, 3, 4, 5, 6, 8, 9, and 10

#### **Grade 6- ALGEBRA**

**C1.1** identify and describe repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and specify which growing patterns are linear

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns,

**C3.2** read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code

## 2. Growing Patterns (1-9)

### Grade 1 - NUMBER

**B2.2** recall and demonstrate addition facts for numbers up to 10, and related subtraction facts

**B2.3** use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 20, and explain the strategies used

### Grade 1 - ALGEBRA

**C1.1** identify and describe the regularities in a variety of patterns, including patterns found in real-life contexts

**C1.2** create and translate patterns using movements, sounds, objects, shapes, letters, and numbers

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in patterns

**C1.4** create and describe patterns to illustrate relationships among whole numbers up to 50

**C2.1** identify quantities that can change and quantities that always remain the same in real-life contexts

**C3.2** read and alter existing code, including code that involves sequential events, and describe how changes to the code affect the outcomes

### Grade 2 - NUMBER

**B2.2** recall and demonstrate addition facts for numbers up to 20, and related subtraction facts

**B2.3** use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 50, and explain the strategies used

### Grade 2 - ALGEBRA

**C1.1** identify and describe a variety of patterns involving geometric designs, including patterns found in real-life contexts

**C1.2** create and translate patterns using various representations, including shapes and numbers

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements

**C1.4** create and describe patterns to illustrate relationships among whole numbers up to 100

**C2.1** identify when symbols are being used as variables, and describe how they are being used

**C3.2** read and alter existing code, including code that involves sequential and concurrent events, and describe how changes to the code affect the outcomes in patterns represented with shapes and numbers

### Grade 3 - NUMBER

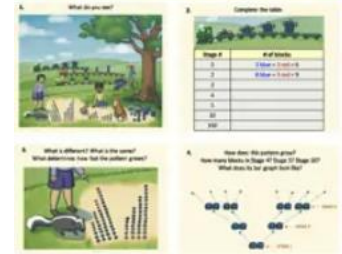
**B2.2** recall and demonstrate multiplication facts of 2, 5, and 10, and related division facts

**B2.3** use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 1000, and explain the strategies used

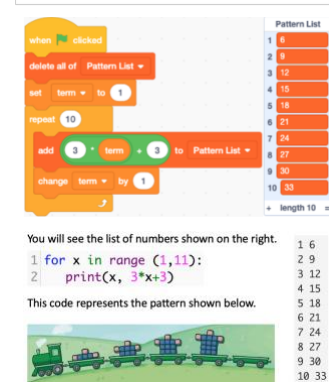
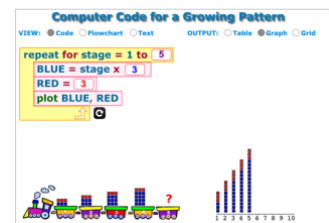
### Grade 3 - ALGEBRA

**C1.1** identify and describe repeating elements and operations in a variety of patterns, including patterns found in real-life contexts

**C1.2** create and translate patterns that have repeating elements, movements, or operations using various representations, including shapes, numbers, and tables of values



Stage #	# of blocks
1	3 blue + 3 red = 6
2	6 blue + 3 red = 9
3	9 blue + 3 red = 12
4	12 blue + 3 red = 15
5	15 blue + 3 red = 18
10	30 blue + 3 red = 33
100	300 blue + 3 red = 103



**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in patterns that have repeating elements, movements, or operations

**C1.4** create and describe patterns to illustrate relationships among whole numbers up to 1000

**C2.1** describe how variables are used, and use them in various contexts as appropriate

**C3.2** read and alter existing code, including code that involves sequential, concurrent, and repeating events, and describe how changes to the code affect the outcomes

#### Grade 4 - NUMBER

**B2.2** recall and demonstrate multiplication facts for  $1 \times 1$  to  $10 \times 10$ , and related division facts

**B2.3** use mental math strategies to multiply whole numbers by 10, 100, and 1000, divide whole numbers by 10, and add and subtract decimal tenths, and explain the strategies used

#### Grade 4 - ALGEBRA

**C1.1** identify and describe repeating and growing patterns, including patterns found in real-life contexts

**C1.2** create and translate repeating and growing patterns using various representations, including tables of values and graphs

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating and growing patterns

**C2.1** translate among words, algebraic expressions, and visual representations that describe equivalent relationships

**C3.2** read and alter existing code, including code that involves sequential, concurrent, repeating, and nested events, and describe how changes to the code affect the outcomes

#### Grade 5 - ALGEBRA

**C1.1** identify and describe repeating, growing, and shrinking patterns, including patterns found in real-life contexts

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns

**C2.2** evaluate algebraic expressions that involve whole numbers

**C3.2** read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes

#### Grade 6 - ALGEBRA

**C1.1** identify and describe repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and specify which growing patterns are linear

**C1.2** create and translate repeating, growing, and shrinking patterns using various representations, including tables of values, graphs, and, for linear growing patterns, algebraic expressions and equations

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns,

**C2.2** evaluate algebraic expressions that involve whole numbers and decimal tenths

**C3.2** read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code

#### Grade 7 - ALGEBRA

**C1.1** identify and compare a variety of repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and compare linear growing patterns on the basis of their constant rates and initial values

**C1.2** create and translate repeating, growing, and shrinking patterns involving whole numbers and decimal numbers using various representations, including algebraic expressions and equations for linear growing patterns

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns involving whole numbers and decimal numbers, and use algebraic representations of the pattern rules to solve for unknown values in linear growing patterns

**C1.4** create and describe patterns to illustrate relationships among integers

**C2.2** evaluate algebraic expressions that involve whole numbers and decimal numbers

**C3.2** read and alter existing code, including code that involves events influenced by a defined count and/or sub-program and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code

**Grade 8 - ALGEBRA**

**C1.1** identify and compare a variety of repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and compare linear growing and shrinking patterns on the basis of their constant rates and initial values

**C1.2** create and translate repeating, growing, and shrinking patterns involving rational numbers using various representations, including algebraic expressions and equations for linear growing and shrinking patterns

**C3.2** read and alter existing code involving the analysis of data in order to inform and communicate decisions, and describe how changes to the code affect the outcomes and the efficiency of the code

**Grade 9 - ALGEBRA**

**C1.2** create algebraic expressions to generalize relationships expressed in words, numbers, and visual representations, in various contexts

**C1.3** compare algebraic expressions using concrete, numerical, graphical, and algebraic methods to identify those that are equivalent, and justify their choices

**C1.4** simplify algebraic expressions by applying properties of operations of numbers, using various representations and tools, in different contexts

**C1.5** create and solve equations for various contexts, and verify their solutions

**C2.** apply coding skills to represent mathematical concepts and relationships dynamically, and to solve problems, in algebra and across the other strands

**C4.** demonstrate an understanding of the characteristics of various representations of linear and non-linear relations, using tools, including coding when appropriate

## 3. Number Patterns (1-8)

### Grade 1- NUMBER

**B1.3** compare and order whole numbers up to and including 50, in various contexts

**B1.5** count to 50 by 1s, 2s, 5s, and 10s, using a variety of tools and strategies

**B2.2** recall and demonstrate addition facts for numbers up to 10, and related subtraction facts

**B2.3** use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 20, and explain the strategies used

### Grade 1- ALGEBRA

**C1.1** identify and describe the regularities in a variety of patterns, including patterns found in real-life contexts

**C1.4** create and describe patterns to illustrate relationships among whole numbers up to 50

**C2.3** identify and use equivalent relationships for whole numbers up to 50, in various contexts

**C3.2** read and alter existing code, including code that involves sequential events, and describe how changes to the code affect the outcomes

### Grade 2- NUMBER

**B1.3** compare and order whole numbers up to and including 200, in various contexts

**B1.4** count to 200, including by 20s, 25s, and 50s, using a variety of tools and strategies

**B2.2** recall and demonstrate addition facts for numbers up to 20, and related subtraction facts

**B2.3** use mental math strategies, including estimation, to add and subtract whole numbers that add up to no more than 50, and explain the strategies used

**B2.5** represent multiplication as repeated equal groups, including groups of one half and one fourth, and solve related problems, using various tools and drawings

### Grade 2- ALGEBRA

**C1.1** identify and describe a variety of patterns involving geometric designs, including patterns found in real-life contexts

**C1.4** create and describe patterns to illustrate relationships among whole numbers up to 100

**C2.3** identify and use equivalent relationships for whole numbers up to 100, in various contexts

**C3.2** read and alter existing code, including code that involves sequential and concurrent events, and describe how changes to the code affect the outcomes

### Grade 3- NUMBER

**B1.3** compare and order whole numbers up to and including 1000, in various contexts

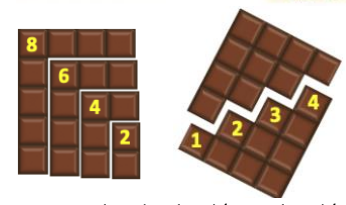
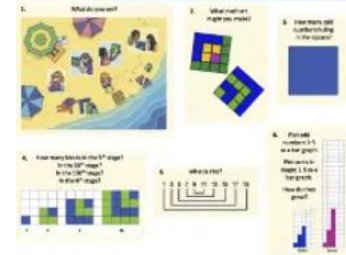
**B1.4** count to 1000, including by 50s, 100s, and 200s, using a variety of tools and strategies

**B2.2** recall and demonstrate multiplication facts of 2, 5, and 10, and related division facts

**B2.4** demonstrate an understanding of algorithms for adding and subtracting whole numbers by making connections to and describing the way other tools and strategies are used to add and subtract

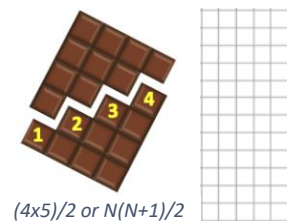
### Grade 3- ALGEBRA

**C1.1** identify and describe repeating elements and operations in a variety of patterns, including patterns found in real-life contexts

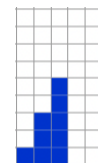


$4 \times 5$  or  $N(N+1)$

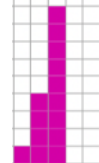
$(4 \times 5) / 2$  or  $N(N+1) / 2$



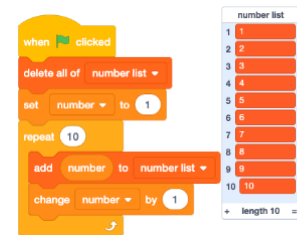
$(4 \times 5) / 2$  or  $N(N+1) / 2$



Odds



Sums



```
1 for N in range (1,6):
2   print (2*N)
```

2  
4  
6  
8  
10

- C1.4** create and describe patterns to illustrate relationships among whole numbers up to 1000
- C2.3** identify and use equivalent relationships for whole numbers up to 1000, in various contexts
- C3.2** read and alter existing code, including code that involves sequential, concurrent, and repeating events, and describe how changes to the code affect the outcomes

#### Grade 4- NUMBER

- B1.2** compare and order whole numbers up to and including 10 000, in various contexts
- B2.1** use the properties of operations, and the relationships between addition, subtraction, multiplication, and division, to solve problems involving whole numbers,
- B2.2** recall and demonstrate multiplication facts for  $1 \times 1$  to  $10 \times 10$ , and related division facts
- B2.4** represent and solve problems involving the addition and subtraction of whole numbers that add up to no more than 10 000 and of decimal tenths, using appropriate tools and strategies, including algorithms
- B2.5** represent and solve problems involving the multiplication of two- or three-digit whole numbers by one-digit whole numbers and by 10, 100, and 1000, using appropriate tools, including arrays

#### Grade 4- ALGEBRA

- C1.1** identify and describe repeating and growing patterns, including patterns found in real-life contexts
- C1.2** create and translate repeating and growing patterns using various representations, including tables of values and graphs
- C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating and growing patterns
- C2.1** identify and use symbols as variables in expressions and equations
- C3.2** read and alter existing code, including code that involves sequential, concurrent, repeating, and nested events, and describe how changes to the code affect the outcomes

#### Grade 5- NUMBER

- B1.2** compare and order whole numbers up to and including 100 000, in various contexts
- B2.1** use the properties of operations, and the relationships between operations, to solve problems involving whole numbers
- B2.2** recall and demonstrate multiplication facts from  $0 \times 0$  to  $12 \times 12$ , and related division facts
- B2.3** use mental math strategies to multiply whole numbers by 10, 100, and 1000, divide whole numbers by 10,
- B2.4** represent and solve problems involving the addition and subtraction of whole numbers that add up to no more than 100 000, and of decimal numbers up to hundredths, using appropriate tools, strategies, and algorithms
- B2.6** represent and solve problems involving the multiplication of two-digit whole numbers by two-digit whole numbers using the area model and using algorithms, and make connections between the two methods

#### Grade 5- ALGEBRA

- C1.1** identify and describe repeating, growing, and shrinking patterns, including patterns found in real-life contexts
- C1.2** create and translate growing and shrinking patterns using various representations, including tables of values and graphs
- C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns
- C2.1** translate among words, algebraic expressions, and visual representations that describe equivalent relationships
- C2.2** evaluate algebraic expressions that involve whole numbers
- C3.2** read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes

#### Grade 6- NUMBER

- B1.3** compare and order whole numbers up to and including 50, in various contexts
- B2.2** understand the divisibility rules and use them to determine whether numbers are divisible by 2, 3, 4, 5, 6, 8, 9, and 10

#### Grade 6- ALGEBRA

- C1.1** identify and describe repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and specify which growing patterns are linear

**C1.2** create and translate repeating, growing, and shrinking patterns using various representations, including tables of values, graphs, and, for linear growing patterns, algebraic expressions and equations

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns, and use algebraic representations of the pattern rules to solve for unknown values in linear growing patterns

**C3.2** read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code

#### **Grade 7- NUMBER**

**B1.3** compare and order whole numbers up to and including 50, in various contexts

#### **Grade 7- ALGEBRA**

**C1.1** identify and compare a variety of repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and compare linear growing patterns on the basis of their constant rates and initial values

**C1.2** create and translate repeating, growing, and shrinking patterns involving whole numbers and decimal numbers using various representations, including algebraic expressions and equations for linear growing patterns

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns involving whole numbers and decimal numbers, and use algebraic representations of the pattern rules to solve for unknown values in linear growing patterns

**C3.2** read and alter existing code, including code that involves events influenced by a defined count and/or sub-program and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code

#### **Grade 8- NUMBER**

**B1.3** compare and order whole numbers up to and including 50, in various contexts

#### **Grade 8- ALGEBRA**

**C1.1** identify and compare a variety of repeating, growing, and shrinking patterns, including patterns found in real-life contexts, and compare linear growing and shrinking patterns on the basis of their constant rates and initial values

**C1.2** create and translate repeating, growing, and shrinking patterns involving rational numbers using various representations, including algebraic expressions and equations for linear growing and shrinking patterns

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in growing and shrinking patterns involving rational numbers, and use algebraic representations of the pattern rules to solve for unknown values in linear growing and shrinking patterns

**C3.2** read and alter existing code involving the analysis of data in order to inform and communicate decisions, and describe how changes to the code affect the outcomes and the efficiency of the code



## 4. Infinity Patterns (2-9)

### Grade 2 - NUMBER

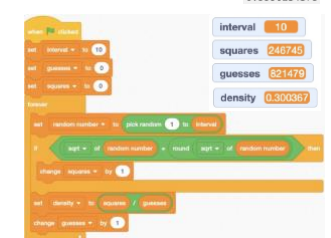
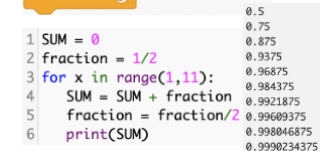
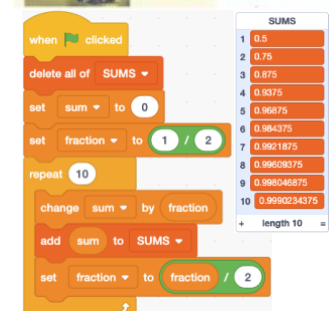
**B1.6** use drawings to represent, solve, and compare the results of fair-share problems that involve sharing up to 10 items among 2, 3, 4, and 6 sharers, including problems that result in whole numbers, mixed numbers, and fractional amounts

**B1.7** recognize that one third and two sixths of the same whole are equal, in fair-sharing contexts

### Grade 2 - ALGEBRA

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in patterns represented with shapes and numbers

**C3.2** read and alter existing code, including code that involves sequential and concurrent events, and describe how changes to the code affect the outcomes



### Grade 3 - NUMBER

**B1.6** use drawings to represent, solve, and compare the results of fair-share problems that involve sharing up to 20 items among 2, 3, 4, 5, 6, 8, and 10 sharers, including problems that result in whole numbers, mixed numbers, and fractional amounts

**B1.7** represent and solve fair-share problems that focus on determining and using equivalent fractions, including problems that involve halves, fourths, and eighths; thirds and sixths; and fifths and tenths

**B2.8** represent the connection between the numerator of a fraction and the repeated addition of the unit fraction with the same denominator using various tools and drawings, and standard fractional notation

### Grade 3 - ALGEBRA

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in patterns that have repeating elements, movements, or operations

**C3.2** read and alter existing code, including code that involves sequential, concurrent, and repeating events, and describe how changes to the code affect the outcomes

### Grade 4 - NUMBER

**B1.4** represent fractions from halves to tenths using drawings, tools, and standard fractional notation, and explain the meanings of the denominator and the numerator

**B1.5** use drawings and models to represent, compare, and order fractions representing the individual portions that result from two different fair-share scenarios involving any combination of 2, 3, 4, 5, 6, 8, and 10 sharers

**B1.6** count to 10 by halves, thirds, fourths, fifths, sixths, eighths, and tenths, with and without the use of tools

**B2.7** represent the relationship between the repeated addition of a unit fraction and the multiplication of that unit fraction by a whole number, using tools, drawings, and standard fractional notation

### Grade 4 - ALGEBRA

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating and growing patterns

**C3.2** read and alter existing code, including code that involves sequential, concurrent, repeating, and nested events, and describe how changes to the code affect the outcomes

### Grade 5 - NUMBER

**B1.3** represent equivalent fractions from halves to twelfths, including improper fractions and mixed numbers, using appropriate tools, in various contexts

**B1.4** compare and order fractions from halves to twelfths,

**B1.7** describe relationships and show equivalences among fractions, decimal numbers up to hundredths, and whole number percents, using appropriate tools and drawings, in various contexts

**B2.5** add and subtract fractions with like denominators, in various contexts

**B2.8** multiply and divide one-digit whole numbers by unit fractions, using appropriate tools and drawings

#### **Grade 5 - ALGEBRA**

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns

**C3.2** read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes

#### **Grade 6 - NUMBER**

**B1.6** describe relationships and show equivalences among fractions and decimal numbers up to thousandths, using appropriate tools and drawings, in various contexts

**B2.5** add and subtract fractions with like and unlike denominators, using appropriate tools, in various contexts

**B2.9** multiply whole numbers by proper fractions, using appropriate tools and strategies

#### **Grade 6 - ALGEBRA**

**C1.3** determine pattern rules and use them to extend patterns, make and justify predictions, and identify missing elements in repeating, growing, and shrinking patterns, and use algebraic representations of the pattern rules to solve for unknown values in linear growing patterns

**C3.2** read and alter existing code, including code that involves conditional statements and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code

#### **Grade 7 - NUMBER**

**B1.4** use equivalent fractions to simplify fractions, when appropriate, in various contexts

**B1.7** convert between fractions, decimal numbers,

**B2.5** add and subtract fractions, including by creating equivalent fractions, in various contexts

**B2.8** multiply and divide fractions by fractions, using tools in various contexts

#### **Grade 7 - ALGEBRA**

**C3.2** read and alter existing code, including code that involves events influenced by a defined count and/or sub-program and other control structures, and describe how changes to the code affect the outcomes and the efficiency of the code

#### **Grade 8 - NUMBER**

**B2.5** add and subtract fractions, using appropriate strategies, in various contexts

**B2.6** multiply and divide fractions by fractions, as well as by whole numbers and mixed numbers, in various contexts

#### **Grade 8 - ALGEBRA**

**C1.4** create and describe patterns to illustrate relationships among rational numbers

**C3.2** read and alter existing code involving the analysis of data in order to inform and communicate decisions, and describe how changes to the code affect the outcomes and the efficiency of the code

#### **Grade 9 - NUMBER**

**B1.1** research a number concept to tell a story about its development and use in a specific culture, and describe its relevance in a current context

**B1.2** describe how various subsets of a number system are defined, and describe similarities and differences between these subsets

**B1.3** use patterns and number relationships to explain density, infinity, and limit as they relate to number sets

**B3.2** apply an understanding of unit fractions and their relationship to other fractional amounts, in various contexts, including the use of measuring tools

#### **Grade 9 - ALGEBRA**

**C2.** apply coding skills to represent mathematical concepts and relationships dynamically, and to solve problems, in algebra and across the other strands

**C2.3** read code to predict its outcome, and alter code to adjust constraints, parameters, and outcomes to represent a similar or new mathematical situation

**C3.1** compare the shapes of graphs of linear and non-linear relations to describe their rates of change, to make connections to growing and shrinking patterns, and to make predictions

**C4.1** compare characteristics of graphs, tables of values, and equations of linear and non-linear relations