

Grade 4 Planning Session 2

Reviewing Sept/Oct - Planning for November - December

October 23, 2023 (Provincial Cohort)



Acknowledgment of Land and People

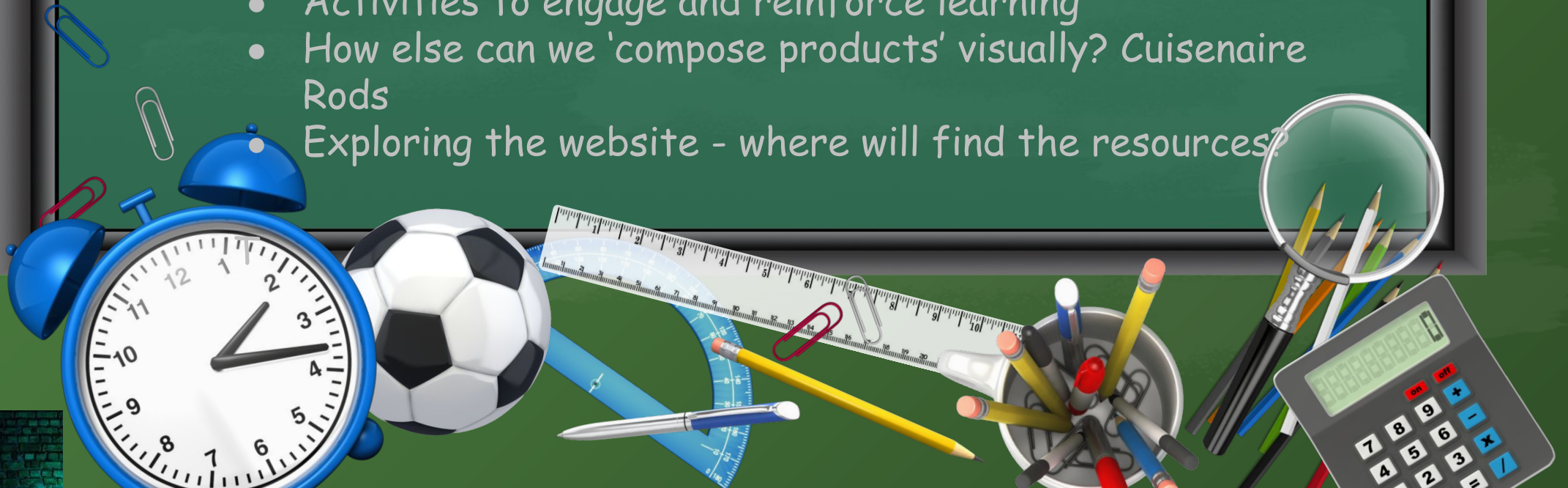
In the spirit of reconciliation, we want to acknowledge that this gathering is taking place on traditional lands across the province of Alberta, home to many diverse Indigenous, Métis and Inuit peoples. We acknowledge that this land is a traditional meeting ground giving voice to its original peoples and the story of creation of this country in a way that history has forgotten.

[Math Catcher Series](#)

Welcome back!

Agenda:

- Review of where we are - Looking at September - November
- Outcomes and Concepts - what does it mean?
- How do the Concepts link to assessment?
- Money and how we might leverage it for our journey to '100 + in decimals', whole numbers between 1000 - 5000, math facts 12x12
- Activities to engage and reinforce learning
- How else can we 'compose products' visually? Cuisenaire Rods
- Exploring the website - where will find the resources?



Success Criteria

This session will be successful if, at the end, you will ...



Confidence

... feel confident in navigating the new Math curriculum and its associated resources.



Direction

... have a sense of direction in moving forward with implementing the new curriculum.



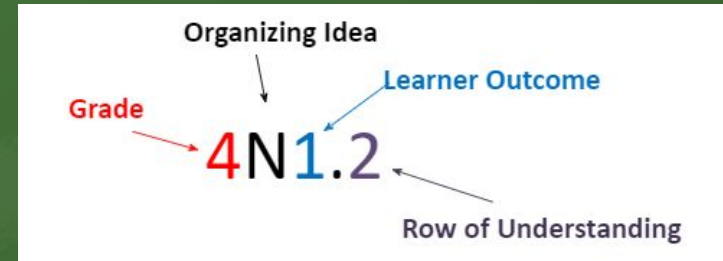
Efficacy

... have a sense of efficacy that you have the skillset and resources to make the implementation work.

Organizing Idea

- statement of the learning
- spans all or most grades
- main concepts

[Link](#)



Grade 3			Grade 4		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, <u>labelling</u> , comparing, and operating.				
Guiding Question	How can place value support organization of <u>number</u> ?		How can place value facilitate interpretation of <u>number</u> ?		
Learning Outcome	3N1 Students interpret place value within 100 000.		4N1 Students apply place value to decimal numbers.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding
	<p>For numbers in base-10, each place has 10 times the value of the place to its right.</p> <p>The digits 0 to 9 indicate the number of groups in each place in a number.</p> <p>The value of each place in a number is the product of the digit and its place value.</p> <p>Numbers can be composed in various ways using place value.</p> <p>Numbers can be rounded in contexts where an exact count is not needed.</p>	<p>Place value is the basis for the base-10 system.</p> <p>Place value determines the value of a digit based on its place in a number relative to the one's place.</p> <p>Place value is used to read, write, and compare numbers.</p>	<p>Identify the place value of each digit in a natural number.</p> <p>Relate the values of adjacent places.</p> <p>Determine the value of each digit in a natural number.</p> <p>Express natural numbers using words and numerals.</p> <p>Express various compositions of a natural number using place value.</p> <p>Round natural numbers to various places.</p>	<p>For numbers in base-10, each place has one-tenth the value of the place to its left.</p> <p>Multiplying or dividing a number by 10 corresponds to shifting place value one position to the left or right, respectively.</p> <p>The decimal separator is a point in English and a comma in French.</p> <p>Numbers, including decimal numbers, can be composed in various ways using place value.</p> <p>A zero placed to the right of the last digit in a decimal number</p>	<p>Decimal numbers are numbers between natural numbers.</p> <p>Decimal numbers are fractions with denominators of 10, 100, etc.</p> <p>The separation between <u>wholes</u> and parts, including dollars and cents, can be represented using decimal notation.</p> <p>Patterns in place value are used to read and write numbers, including <u>wholes</u> and parts.</p>

A Note on Wording

4A1.1 The conventional order of operations provides a set of rules for evaluating expressions, including the following:

- **Multiplication and division are performed before addition and subtraction.**
- **Multiplication and division are performed in order from left to right.**
- **Addition and subtraction are performed in order from left to right.**

3N 3.1 The order in which two quantities are multiplied does not affect the product (commutative property**).**

3N 3.1 Multiplication can be interpreted in various ways according to context, **such as**

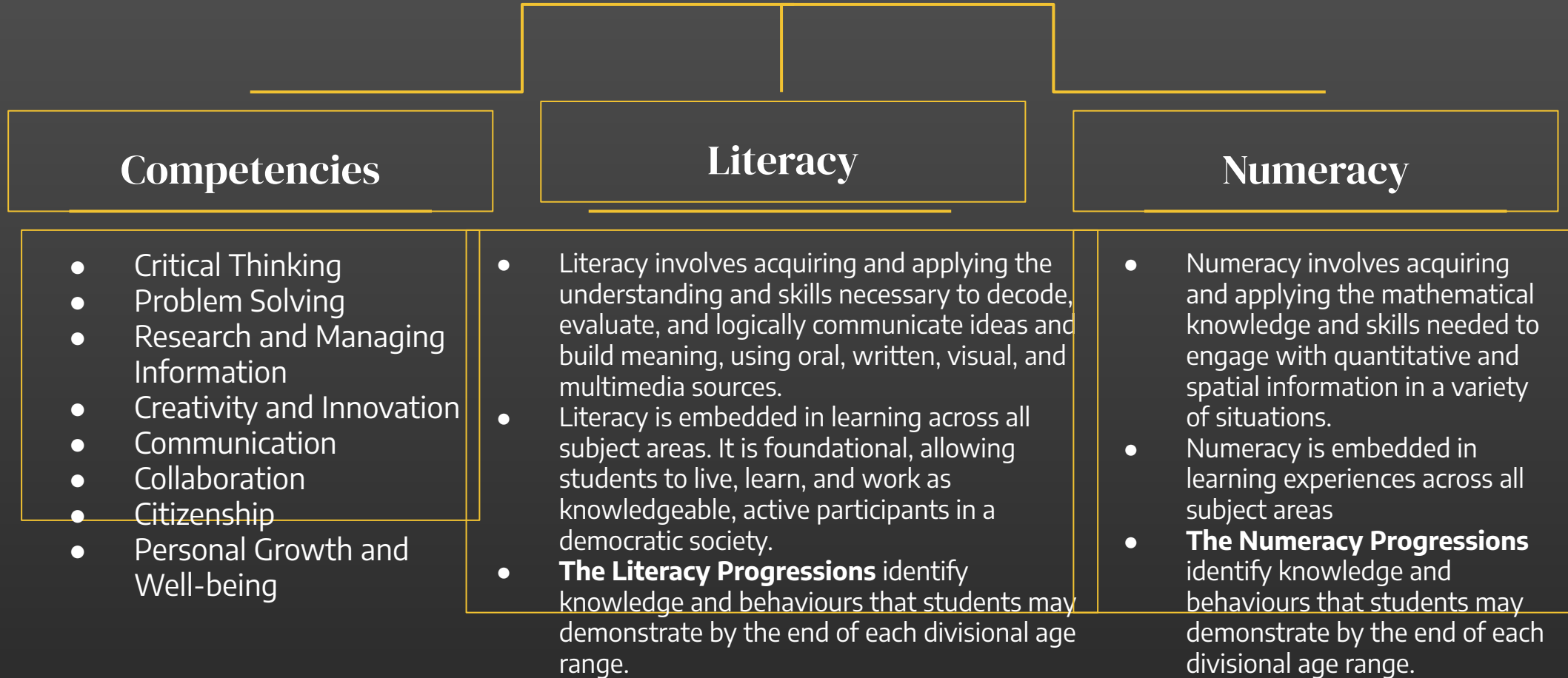
- **equal groups**
- **an array**
- **an area**

All that follows “include” must be taught, but other examples can be added.

Parenthesized words are words students need to know but can be interchanged with the alternate wording during discussions. (Age appropriateness)

What follows “such” are examples and don’t have to all be covered or can be replaced with alternatives.

Progressions





**Looking at the
curriculum
through the lens
of concepts.**

iConcepts



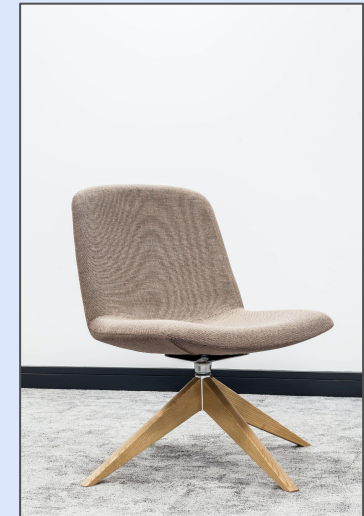
What is a concept?

A concept is ...

- organizing idea
- with distinct attributes
- that are shared across multiple examples



Chair is a concept



A concept ...

- is timeless
- is universal
- is represented in 1 or 2 words

Levels of Concepts

Broad/General Idea
or
Understanding

Furniture

Chair

More Specific Ideas
or
Understandings

Dining Chair



Form

Function

Causation





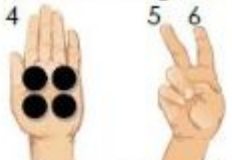


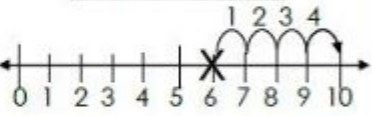
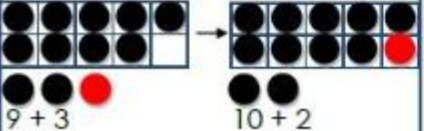
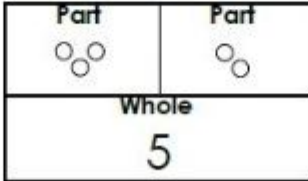
Connection

Reflection

Responsibility

Perspective

A Conceptual Lens



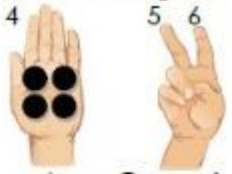


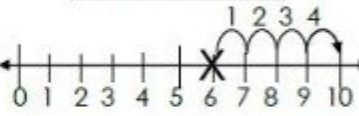
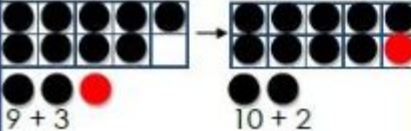
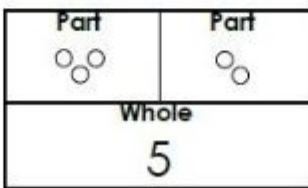
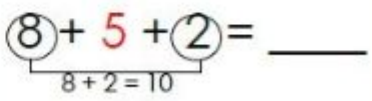
<p><u>Draw a Picture</u></p>  <p>$6 + 3 = 9$</p>	<p><u>Tally Marks</u></p>  <p>$3 + 4 = 7$</p>	<p><u>Counting On</u></p>  <p>$4 + 2 = 6$</p>
<p><u>Doubles</u> same number is added</p>  <p>$4 + 4 = 8$</p>	<p><u>Commutative Property</u> Turn-Around Facts</p>  <p>$2 + 5 = 7$ $5 + 2 = 7$</p>	<p><u>Number Line</u></p>  <p>$6 + 4 = 10$</p>
<p><u>Tens Frames</u> $9 + 3 = ?$</p> <p>think:</p>  <p>$9 + 3$ $10 + 2$</p>	<p><u>Part-Part-Whole</u></p>  <p>$3 + 2 = 5$</p>	<p><u>Associative Property</u> combine numbers</p> <p>$(8) + 5 + (2) = \underline{\quad}$</p> <p>$8 + 2 = 10$</p> <p>$10 + 5 = 15$</p>

Lens

Math Concepts

- quantity
- addition
- modelling
- representation

A Conceptual Lens

<p><u>Draw a Picture</u></p>  <p>$6 + 3 = 9$</p>	<p><u>Tally Marks</u></p>  <p>$3 + 4 = 7$</p>	<p><u>Counting On</u></p>  <p>$4 + 2 = 6$</p>
<p><u>Doubles</u> same number is added</p>  <p>$4 + 4 = 8$</p>	<p><u>Commutative Property</u> Turn-Around Facts</p>  <p>$2 + 5 = 7$ $5 + 2 = 7$</p>	<p><u>Number Line</u></p>  <p>$6 + 4 = 10$</p>
<p><u>Tens Frames</u> $9 + 3 = ?$</p> <p>think:</p>  <p>$9 + 3$ $10 + 2$</p>	<p><u>Part-Part-Whole</u></p>  <p>$3 + 2 = 5$</p>	<p><u>Associative Property</u> combine numbers</p>  <p>$10 + 5 = 15$</p>

Lens

Competencies

- critical thinking
- design

conceptual lens: concepts ‘of content’

4N3 Students explain properties of prime and composite numbers using multiplication and division.

Knowledge	Understanding	Skills and Procedures
<p>A factor of a number is a divisor of that number.</p> <p>A number is a multiple of any of its factors.</p> <p>A prime number has factors of only itself and one.</p> <p>A composite number has factors other than one and itself.</p> <p>Zero and one are neither prime nor composite numbers.</p>	<p>Different factors can compose the same product.</p> <p>Different products can share factors.</p> <p>A number divided by one of its factors will result in a remainder of 0.</p>	<p>Determine the factors of a number within 100.</p> <p>Describe a number as prime or composite.</p> <p>Determine the first five multiples of a given number within 100.</p> <p>Recognize the greatest common factor (greatest common divisor) of two numbers within 100.</p>

conceptual lens: concepts 'of content'

4N3 Students explain properties of prime and composite numbers using multiplication and division.

Knowledge	Understanding	Skills and Procedures
<p>A factor of a number is a divisor of that number.</p> <p>A number is a multiple of any of its factors.</p> <p>A prime number has factors of only itself and one.</p> <p>A composite number has factors other than one and itself.</p> <p>Zero and one are neither prime nor composite numbers.</p>	<p>Different factors can compose the same product.</p> <p>Different products can share factors.</p> <p>A number divided by one of its factors will result in a remainder of 0.</p>	<p>Determine the factors of a number within 100.</p> <p>Describe a number as prime or composite.</p> <p>Determine the first five multiples of a given number within 100.</p> <p>Recognize the greatest common factor (greatest common divisor) of two numbers within 100.</p>

conceptual lens: concepts 'of content'

4N3 Students **explain properties** of **prime** and **composite numbers** using **multiplication** and **division**.

Knowledge	Understanding	Skills and Procedures
<p>A factor of a number is a divisor of that number.</p> <p>A number is a multiple of any of its factors.</p> <p>A prime number has factors of only itself and one.</p> <p>A composite number has factors other than one and itself.</p> <p>Zero and one are neither prime nor composite numbers.</p>	<p>Different factors can compose the same product.</p> <p>Different products can share factors.</p> <p>A number divided by one of its factors will result in a remainder of 0.</p>	<p>Determine the factors of a number within 100.</p> <p>Describe a number as prime or composite.</p> <p>Determine the first five multiples of a given number within 100.</p> <p>Recognize the greatest common factor (greatest common divisor) of two numbers within 100.</p>

Skills & Procedures

Grade 4 Math September - December

- **Model** equivalent fractions by partitioning a whole in multiple ways.
- **Visualize** and **Model** the area of various rectangles as two- dimensional arrays of square shaped units.
- **Compare** and **order** numbers, including decimal numbers.
- **Relate** the values of adjacent places, including tenths and hundredths.
- **Determine** the value of each digit in a number, including tenths and hundredths.
- **Describe** a number as prime or composite.
- **Identify** the place value of each digit in a number, including tenths and hundredths.
- **Investigate** patterns in multiplication and division of natural numbers by 10, 100, and 1000.
- **Express** numbers, including decimal numbers, using words and numerals.
- **Recognize** decimal notation expressed in English and in French.
- **Evaluate** expressions according to the order of operations.
- **Solve** problems using addition and subtraction, including problems involving money.
- **Assess** the reasonableness of a sum or difference using estimation.
- **Recall** and **apply** multiplication number facts, with factors to 12, and related division number facts.
- **Examine** standard algorithms for multiplication and division.
- **Simplify** a given fraction by dividing the numerator and denominator by a common factor.
- **Create** various expressions of the same number using one or more operations.
- **Measure** area with non-standard units by tiling.
- **Multiply** and divide 3-digit natural numbers by 1-digit natural numbers using personal strategies.

Number: Quantity is measured with numbers that enable counting, labelling, comparing and operating.

4N1 Students apply place value to decimal numbers (within 100)

- Decimal numbers are numbers between natural numbers
- Decimal numbers are fractions with denominators of 10, 100, etc. (introduce with basic money skills/fractions initially - unit fractions of denominator 10 & 100, number lines)
- The separation between wholes and parts, including dollars and cents, can be represented using decimal notation. (introduce with basic money skills/fractions initially)
- Patterns in place value are used to read and write numbers, including wholes and parts. (relate to money initially)

4N2 Students add and subtract within 10 000, including decimal numbers to hundredths.

- Standard algorithms for addition and subtraction may be used for any decimal numbers (initially whole numbers to 1000)

4N4 Students multiply and divide natural numbers within 10 000. (facts to 100 10x10)

- Multiplication and division strategies can be chosen based on the nature of the numbers

4N5.1 Students apply equivalence to the interpretation of fractions

- There are infinitely many equivalent fractions that

4N1 Students apply place value to decimal numbers (within 100)

- Decimal numbers are numbers between natural numbers
- Decimal numbers are fractions with denominators of 10, 100, etc.
- The separation between wholes and parts, including dollars and cents, can be represented using decimal notation.
- Patterns in place value are used to read and write numbers, including wholes and parts. (relate to money)

4N2 Students add and subtract within 10 000, including decimal numbers to hundredths.

- Standard algorithms for addition and subtraction may be used for any decimal numbers (whole numbers to 1000 - 5000, dollar amounts < \$100)

4N4 Students multiply and divide natural numbers within 10 000. (facts 12 x 12)

- Multiplication and division strategies can be chosen based on the nature of the numbers *this should be ongoing throughout the year

4N3 Students explain properties of prime and composite numbers using multiplication and division

- Different factors can compose the same product.
- Different products can share factors.
- A number divided by one of its factors will result in a remainder of 0.

4N2 Students add and subtract within 10 000, including decimal numbers to hundredths.

- Standard algorithms for addition and subtraction may be used for any decimal numbers (move towards 10 000)

4N3 Students explain properties of prime and composite numbers using multiplication and division

- Different factors can compose the same product.
- Different products can share factors.
- A number divided by one of its factors will result in a remainder of 0.

4N4 Students multiply and divide natural numbers within 10 000. (facts 12 x 12)

- Multiplication and division strategies can be chosen based on the nature of the numbers *this should be ongoing throughout the year

September

October

November

represent the same number. (limit to money with dimes and pennies initially)

- Exactly one of infinitely many equivalent fractions is in simplest form. (initially limit to money with pennies and dimes)

4N5.2 Students apply equivalence to the interpretation of fractions.

- Decimal numbers that terminate (do not repeat) are fractions with denominators of 10, 100, etc.
- Fractions and decimal numbers that represent the same number are associated with the same point on the number line (use this part understanding as your initial conversation)

4N5.2 Students apply equivalence to the interpretation of fractions.

- Decimal numbers that terminate (do not repeat) are fractions with denominators of 10, 100, etc.
- Fractions and decimal numbers that represent the same number are associated with the same point on the number line

Measurement: Attributes such as length, area, volume, and angle are quantified by measurement.

4M1.1 Students interpret and express area

- Area is a measurable attribute that describes the amount of two-dimensional space contained within a region. (Tie into math facts initially beginning with familiar 10x10)
- Area may be interpreted as the result of motion of a length.
- An area remains the same when decomposed or rearranged. (Link to math facts 4N4)
- Area is measured with equal-sized units that themselves have area and do not need to resemble the

4M1.1 Students interpret and express area

- Area is a measurable attribute that describes the amount of two-dimensional space contained within a region.
- Area may be interpreted as the result of motion of a length.
- An area remains the same when decomposed or rearranged.
- Area is measured with equal-sized units that themselves have area and do not need to resemble the region being measured.

September	October	November
-----------	---------	----------

	<p>region being measured.</p> <ul style="list-style-type: none"> The area of a rectangle can be perceived as square-shaped units structured in a two-dimensional array. (start with arrays for Math Facts) 	<p>4M1.2 Students interpret and express area</p> <ul style="list-style-type: none"> Area can be estimated when less accuracy is required
--	---	---

Algebra: Equations express relationships between quantities.

<p>4A1.1 Students represent and apply equality in multiple ways</p> <ul style="list-style-type: none"> There are infinitely many expressions that represent the same number. (start with money) The order in which operations are performed can affect the value of an expression (leave for Nov) 		<p>4A1.1 Students represent and apply equality in multiple ways</p> <ul style="list-style-type: none"> There are infinitely many expressions that represent the same number. The order in which operations are performed can affect the value of an expression
---	--	--

Patterns: Awareness of patterns supports problem solving in various situations.

--	--	--

Time: Duration is described and quantified with time.

<p>4T1 Students communicate duration with standard units of time</p> <ul style="list-style-type: none"> Analog clocks can relate duration to a circle. Ongoing - use for number (skip counting, link to unit fractions, link to angles, fractions, conversions) 	<p>4T1 Students communicate duration with standard units of time</p> <ul style="list-style-type: none"> Analog clocks can relate duration to a circle. Ongoing - use for number (skip counting, link to unit fractions, link to angles, fractions, conversions) 	<p>4T1 Students communicate duration with standard units of time</p> <ul style="list-style-type: none"> Analog clocks can relate duration to a circle. Ongoing - use for number (skip counting, link to unit fractions, link to angles, fractions, conversions)
--	--	--

Number: Quantity is measured with numbers that enable counting, labelling, comparing and operating.

4N2 Students add and subtract within 10 000, including decimal numbers to hundredths.

- Standard algorithms for addition and subtraction may be used for any decimal numbers (Tie into Financial Literacy)

4N4 Students multiply and divide natural numbers within 10 000. (facts 12 x 12)

- Multiplication and division strategies can be chosen based on the nature of the numbers
*this should be ongoing throughout the year

4N2 Students add and subtract within 10 000, including decimal numbers to hundredths.

- Standard algorithms for addition and subtraction may be used for any decimal numbers (Tie into Financial Literacy)

4N4 Students multiply and divide natural numbers within 10 000. (facts 12 x 12)

- Multiplication and division strategies can be chosen based on the nature of the numbers
*this should be ongoing throughout the year

--	--

Algebra: Equations express relationships between quantities.

4A1.1 Students represent and apply equality in multiple ways

- There are infinitely many expressions that represent the same number.
- The order in which operations are performed can affect the value of an expression

Measurement: Attributes such as length, area, volume and angle

4M2
units.

-
-

Time: Duration is described and quantified with time.

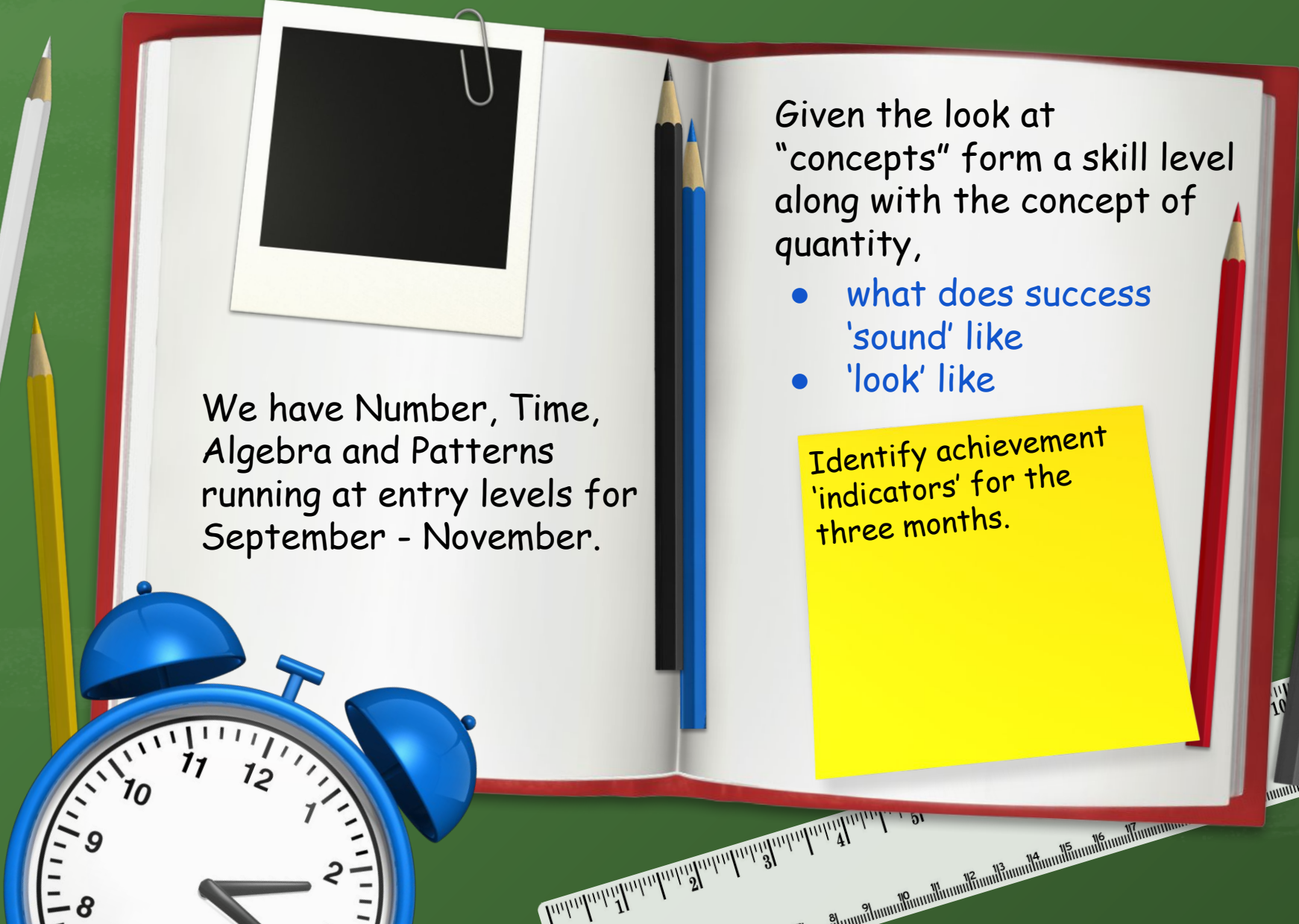
4T1 Students communicate duration with standard units of time

- Analog clocks can relate duration to a circle.
Ongoing - use for number (skip counting, link to unit fractions, link to angles, fractions, conversions)

4T1 S
time

-

Assessment



We have Number, Time, Algebra and Patterns running at entry levels for September - November.

Given the look at "concepts" form a skill level along with the concept of quantity,

- what does success 'sound' like
- 'look' like

Identify achievement 'indicators' for the three months.

Number: Quantity is measured with numbers that enable counting, labelling, comparing and operating.

4N1 Students apply place value to decimal numbers (within 100)

- Decimal numbers are numbers between natural numbers
- Decimal numbers are fractions with denominators of 10, 100, etc. (introduce with basic money skills/fractions initially - unit fractions of denominator 10 & 100, number lines)
- The separation between wholes and parts, including dollars and cents, can be represented using decimal notation. (introduce with basic money skills/fractions initially)
- Patterns in place value are used to read and write numbers, including wholes and parts. (relate to money initially)

4N2 Students add and subtract within 10 000, including decimal numbers to hundredths.

- Standard algorithms for addition and subtraction may be used for any decimal numbers (initially whole numbers to 1000)

4N4 Students multiply and divide natural numbers within 10 000. (facts to 100 10x10)

- Multiplication and division strategies can be chosen based on the nature of the numbers

4N5.1 Students apply equivalence to the interpretation of fractions

- There are infinitely many equivalent fractions that

4N1 Students apply place value to decimal numbers (within 100)

- Decimal numbers are numbers between natural numbers
- Decimal numbers are fractions with denominators of 10, 100, etc.
- The separation between wholes and parts, including dollars and cents, can be represented using decimal notation.
- Patterns in place value are used to read and write numbers, including wholes and parts. (relate to money)

4N2 Students add and subtract within 10 000, including decimal numbers to hundredths.

- Standard algorithms for addition and subtraction may be used for any decimal numbers (whole numbers to 1000 - 5000, dollar amounts < \$100)

4N4 Students multiply and divide natural numbers within 10 000. (facts 12 x 12)

- Multiplication and division strategies can be chosen based on the nature of the numbers
*this should be ongoing throughout the year

4N3 Students explain properties of prime and composite numbers using multiplication and division

- Different factors can compose the same product.
- Different products can share factors.
- A number divided by one of its factors will result in a remainder of 0.

4N2 Students add and subtract within 10 000, including decimal numbers to hundredths.

- Standard algorithms for addition and subtraction may be used for any decimal numbers (move towards 10 000)

4N3 Students explain properties of prime and composite numbers using multiplication and division

- Different factors can compose the same product.
- Different products can share factors.
- A number divided by one of its factors will result in a remainder of 0.

4N4 Students multiply and divide natural numbers within 10 000. (facts 12 x 12)

- Multiplication and division strategies can be chosen based on the nature of the numbers
*this should be ongoing throughout the year

4N1 Students apply place value to decimal numbers.

Knowledge	Understanding	Skills & Procedures
<p>For numbers in base-10, each place has one-tenth the value of the place to its left.</p> <p>Multiplying or dividing a number by 10 corresponds to shifting place value one position to the left or right, respectively.</p> <p>The decimal separator is a point in English and a comma in French.</p> <p>Numbers, including decimal numbers, can be composed in various ways using place value.</p> <p>A zero placed to the right of the last digit in a decimal number does not change the value of the number.</p> <p>The word <i>and</i> is used to indicate the decimal point when reading a number.</p>	<p>Decimal numbers are numbers between natural numbers.</p> <p>Decimal numbers are fractions with denominators of 10, 100, etc.</p> <p>The separation between <u>wholes</u> and parts, including dollars and cents, can be represented using decimal notation.</p> <p>Patterns in place value are used to read and write numbers, including <u>wholes</u> and parts.</p>	<p>Identify the place value of each digit in a number, including tenths and hundredths.</p> <p>Relate the values of adjacent places, including tenths and hundredths.</p> <p>Determine the value of each digit in a number, including tenths and hundredths.</p> <p>Express numbers, including decimal numbers, using words and numerals.</p> <p>Express various compositions of a number, including decimal numbers, using place value.</p> <p>Recognize decimal notation expressed in English and in French.</p> <p>Round numbers to various places, including tenths.</p> <p>Compare and order numbers, including decimal numbers.</p> <p>Express the relationship between two numbers, including decimal numbers, using $<$, $>$, or $=$.</p> <p>Express a monetary value in cents as a monetary value in dollars using decimal notation.</p>

4N1 and 4N2 deal with natural numbers, decimals numbers, addition, subtraction and using personal strategies to add or subtract numbers, including the 'standard algorithm'.

What strategies do we offer students for addition and subtraction of numbers? Especially if they struggle with regrouping?

Money should be our first go to for both operations and place value.

DOLLARS				CENTS	
\$1000	\$100	\$10	\$1	dimes	pennies

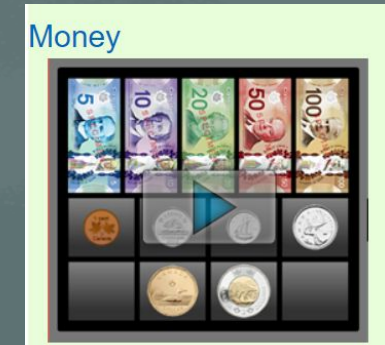
Dollars and Cents

Place Value



Curriculum Planning and Assessment Resource (CPAR) 4N1

- Understanding “Money” and its role in many other concepts.
- Understanding how it connects between grades and end goals.
- “Money is a Leader”
- A Physical “tool” - should be related to other “tools”
- Culturally Common - Common Context regardless of language
- Note: Canadian Money has **colour** as part of its identification - try to use stay away from black/white unless there are no other options and then ensure the coins are [realistic!](#)



Writing Large Numbers; Reading & Writing

Billions			Millions			Thousands			Hundreds-Ones		
H	T	O	H	T	O	H	T	O	H	T	O

DOLLARS				CENTS	
\$1000	\$100	\$10	\$1	dimes	pennies

Show Me! Paper and Pencil Take a Rest!

twenty four dollars

below that - thirty five dollars

sixteen dollars

twenty five dollars

one hundred fourteen dollars

seventy seven dollars

one thousand two hundred twelve dollars

one hundred ninety nine dollars

Work on Mastery to 100

Tens

Ones



What number is this?

What digit is in the tens place?

How many tens in this number?

How many ones in this number?

What number is this?

What digit is in the tens place?

How many tens in this number?

How many ones in this number?

How many tens in...



How many ones?

Work on Mastery to 100

Hundreds

Tens

Ones



What number is this?

What digit is in the tens place?

How many tens in this number?

How many ones in this number?

\$100

\$10

\$1



\$100

\$10

\$1



4



3



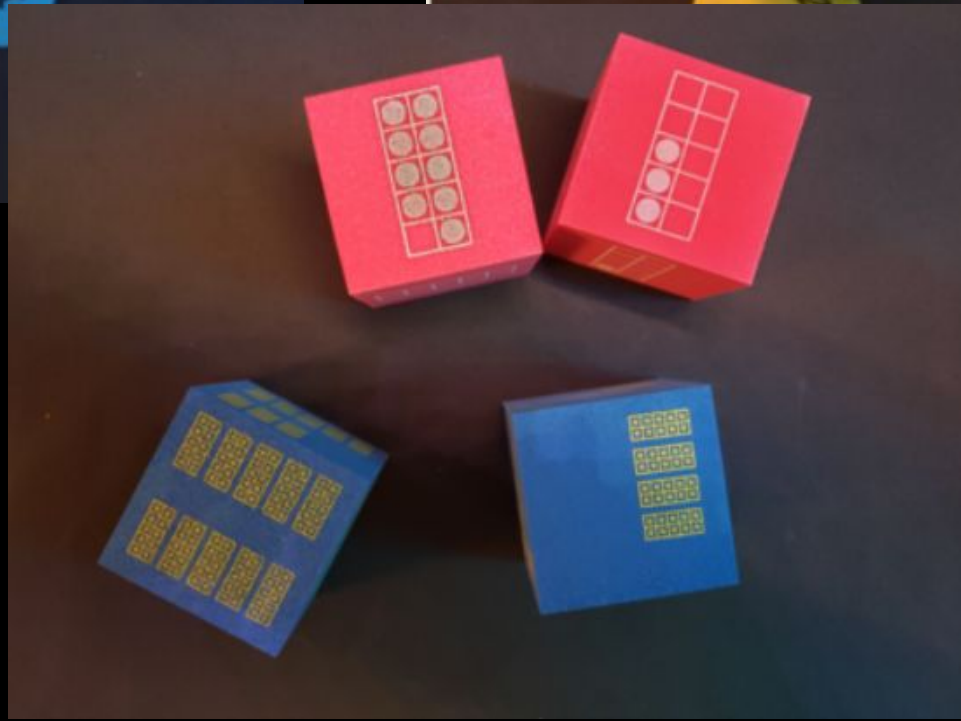
4

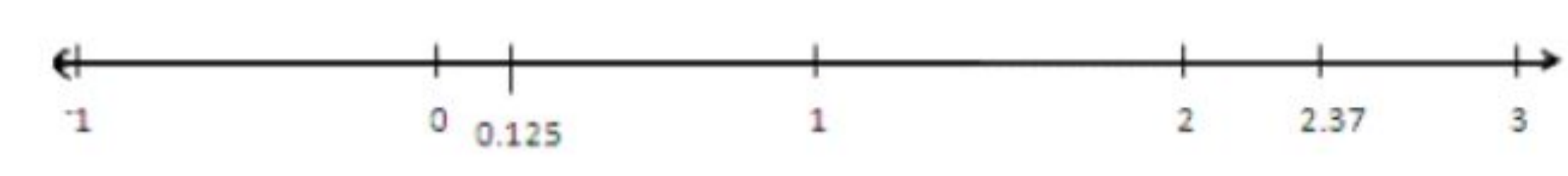
Place Value Chart Beginning with Money (Dime, Loonie, \$5, \$10, \$20, \$100)

 (not legal tender)					

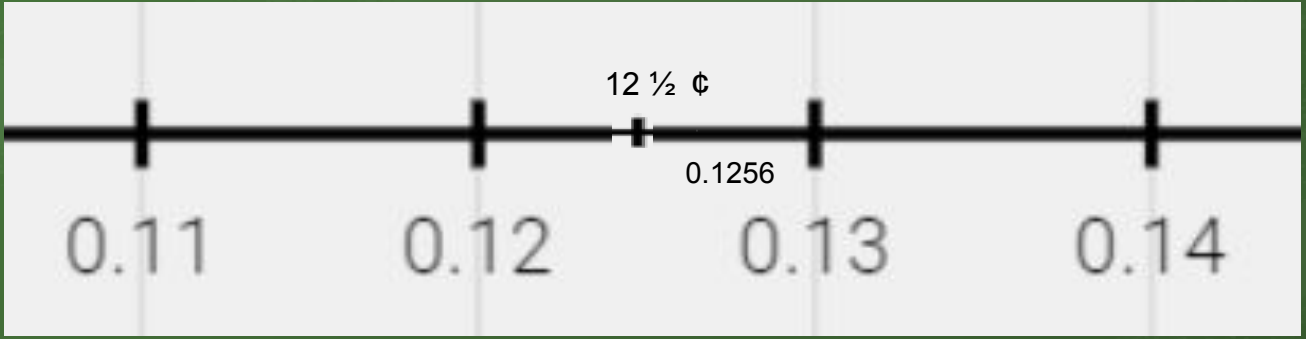
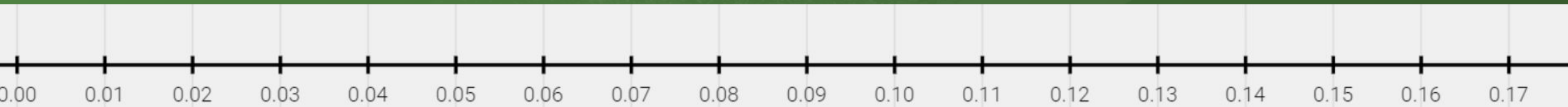
[Template](#)












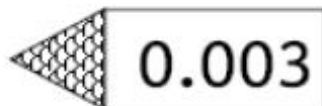


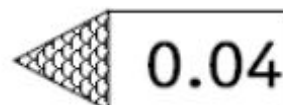
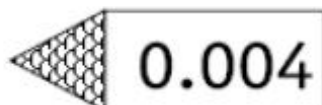


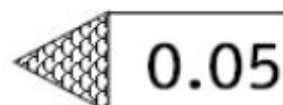
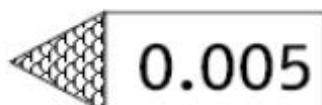


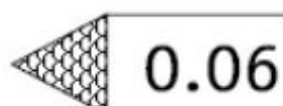
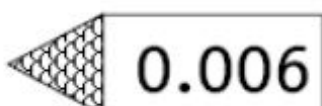



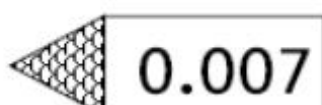



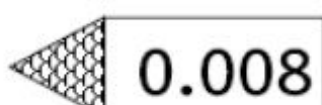



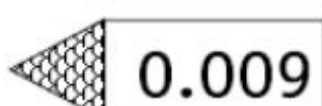
As of January 1, 2021, the \$1, \$2, \$25, \$500 and \$1,000 bills from every Bank of Canada series are no longer legal tender.





How are 0.12 and 0.13 related? OR 12 ¢ or 13 ¢
 Where would 12 ½ ¢ fit? How are 12 ½ ¢ related to 0.125 (Grade 5 and up)



 1.	 0.1	 0.01	 0.001
 2.	 0.2	 0.02	 0.002
 3.	 0.3	 0.03	 0.003
 4.	 0.4	 0.04	 0.004
 5.	 0.5	 0.05	 0.005
 6.	 0.6	 0.06	 0.006
 7.	 0.7	 0.07	 0.007
 8.	 0.8	 0.08	 0.008
 9.	 0.9	 0.09	 0.009

Dealing with Decimals

New Zealand Maths Project

Explaining the meaning of decimals in decimal numbers.

Cut off thousandths for Grade 4



How can understanding of addition and subtraction be extended to decimal numbers?

4N2 Students add and subtract within 10 000, including decimal numbers to hundredths.

Knowledge	Understanding	Skills & Procedures
<p>Standard algorithms for addition and subtraction of decimal numbers are conventional procedures based on place value.</p> <p>Estimation can be used to check the reasonableness of a sum or difference.</p>	<p>Standard algorithms for addition and subtraction may be used for any decimal numbers.</p> <p>What addition <u>strategies</u> do they have?</p>	<p>Add and subtract numbers, including decimal numbers, using standard algorithms.</p> <p>Assess the reasonableness of a sum or difference using estimation.</p> <p>Solve problems using addition and subtraction, including problems involving money.</p>

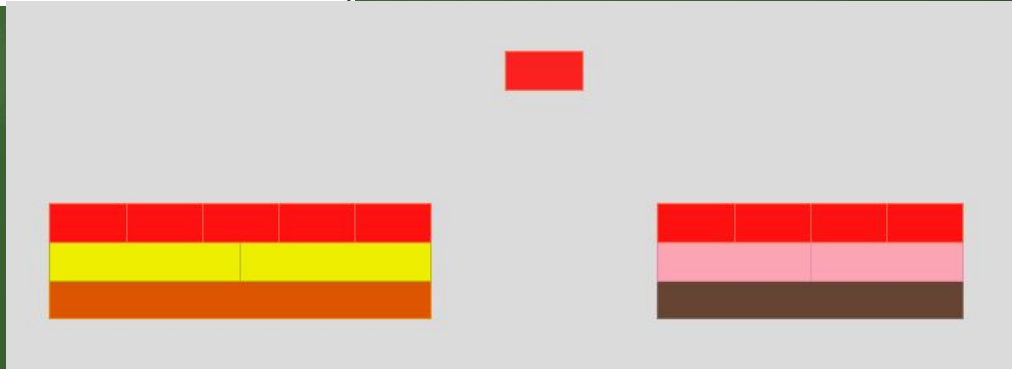
How can multiplication and division characterize the composition of numbers?

4N3 Students explain properties of prime and composite numbers using multiplication and division.

Knowledge	Understanding	Skills & Procedures
<p>A factor of a number is a divisor of that number.</p> <p>A number is a multiple of any of its factors.</p> <p>A prime number has factors of only itself and one.</p> <p>A composite number has factors other than one and itself.</p> <p>Zero and one are neither prime nor composite numbers.</p>	<p>Different factors can compose the same product.</p> <p>Different products can share factors.</p> <p>A number divided by one of its factors will result in a remainder of 0.</p>	<p>Determine the factors of a number within 100.</p> <p>Describe a number as prime or composite.</p> <p>Determine the first five multiples of a given number within 100.</p> <p>Recognize the greatest common factor (greatest common divisor) of two numbers within 100.</p>

Students should see the visual image of the mat facts they are learning as well as to understand the difference between prime and composite numbers. (Visually what does it mean to say *a number divisible by one and itself is prime?*)

One manipulative you can use: [Cuisenaire Rods](#)



How can multiplication and division be interpreted?

4N4 Students multiply and divide natural numbers within 10 000.

Knowledge	Understanding	Skills & Procedures
-----------	---------------	---------------------

Recall of multiplication and division number facts facilitates multiplication and division strategies.

Standard algorithms facilitate multiplication and division of natural numbers that have multiple digits.

Estimation can be used to check the reasonableness of a product or quotient.

Multiplication and division strategies can be chosen based on the nature of the numbers.

Recall and apply multiplication number facts, with factors to 12, and related division number facts.

Investigate patterns in multiplication and division of natural numbers by 10, 100, and 1000.

Multiply and divide 3-digit natural numbers by 1-digit natural numbers using personal strategies.

Examine standard algorithms for multiplication and division.

Multiply and divide 3-digit natural numbers by 1-digit natural numbers using standard algorithms.

Divide and express a quotient with or without a remainder.

Investigate strategies for estimation of products and quotients.

Assess the reasonableness of a product or quotient using estimation.

Solve problems using multiplication and division.

Examine a variety of strategies for multiplication inclusive of the standard approach to see what resonates with students understanding.

Multiplication and Division with Base 10 Blocks - will be posted in the ARPDC series
[Enhancing My Pedagogical Toolbox Through Manipulatives](#)

Strategies

Window

$$42 \times 35 = \textcircled{1,470}$$

	40	2
30	1200	60
5	200	10

$$\begin{array}{r} 1200 \\ 200 \\ 60 \\ + 10 \\ \hline 1,470 \end{array}$$

Breaking

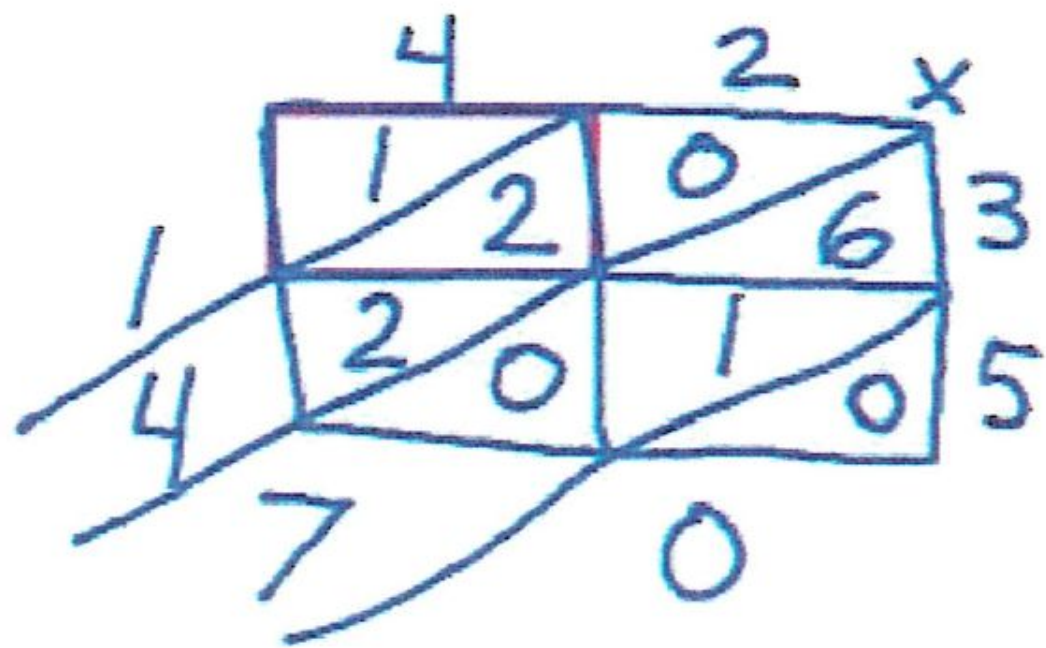
$$42 \times 35 =$$

40 2 30 5

Apart

$$\begin{array}{r} 40 \times 30 = 1,200 \\ 40 \times 5 = 200 \\ 2 \times 5 = 10 \\ 2 \times 30 = +60 \\ \hline 1,470 \end{array}$$

42x35 Lattice

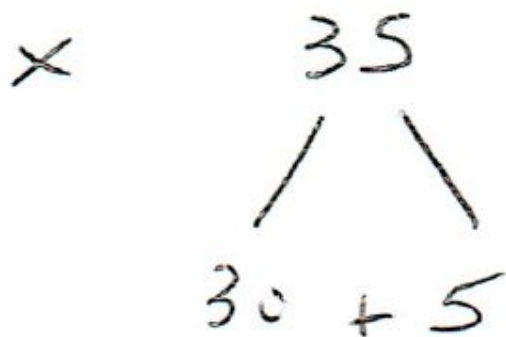
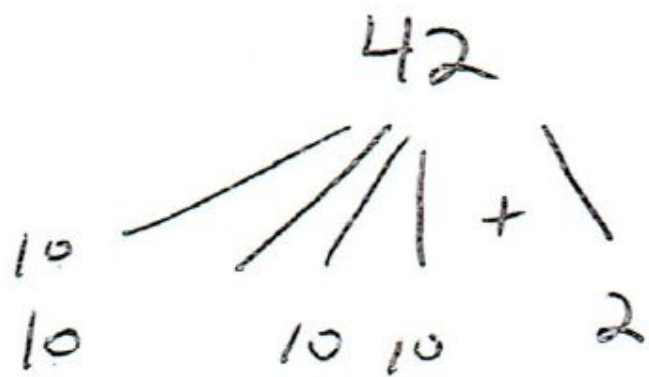


Traditional

$$\begin{array}{r}
 +142 \\
 \times 35 \\
 \hline
 210 \\
 +1260 \\
 \hline
 1470
 \end{array}$$

5×2 ↑
 5×4 ↙
 ☺
 3×2 ↗
 3×4 ↑
 add +

Using 10's



$$10 \times 30 = 300$$

$$10 \times 5 = 50$$

$$10 \times 30 = 300$$

$$10 \times 5 = 50$$

$$10 \times 30 = 300$$

$$10 \times 5 = 50$$

$$10 \times 30 = 300$$

$$10 \times 5 = 50$$

$$2 \times 30 = 60$$

$$2 \times 5 = 10$$

How can fractions be characterized in different ways?

4N5.1 Students apply equivalence to the interpretation of fractions.

Knowledge	Understanding	Skills & Procedures
<p>Equivalent fractions are associated with the same point on the number line.</p> <p>Equivalent fractions can be created by partitioning each equal part of a fraction in the same way.</p> <p>Partitioning a fraction can be interpreted as multiplying the numerator and denominator of a fraction by the same number.</p> <p>A fraction can be simplified to an equivalent form by dividing the numerator and denominator by a common factor.</p> <p>The numerator and denominator of a fraction in simplest form have no common factors.</p> <p>Dividing the numerator and denominator of a fraction by their greatest common factor will <u>achieve simplest form</u>.</p>	<p>There are infinitely many equivalent fractions that represent the same number.</p> <p>Exactly one of infinitely many equivalent fractions is in simplest form.</p>	<p>Model equivalent fractions by partitioning a whole in multiple ways.</p> <p>Determine fractions equivalent to a given fraction.</p> <p>Relate the position of equivalent fractions on the number line.</p> <p>Identify fractions in which the numerator and denominator have a common factor.</p> <p>Simplify a given fraction by dividing the numerator and denominator by a common factor.</p> <p>Express a fraction in simplest form.</p> <p>Compare and order fractions.</p>

Counting by unit fractions in the same way we teach students to count on a number line will help them with multiplication of fractions.

4N5.2 Students apply equivalence to the interpretation of fractions.

Knowledge

Fractions and decimal numbers can represent the same number.

Decimals can be expressed as fractions with a denominator that is equivalent to the place value of the last non-zero digit of the decimal number.

Understanding

Decimal numbers that terminate (do not repeat) are fractions with denominators of 10, 100, etc.

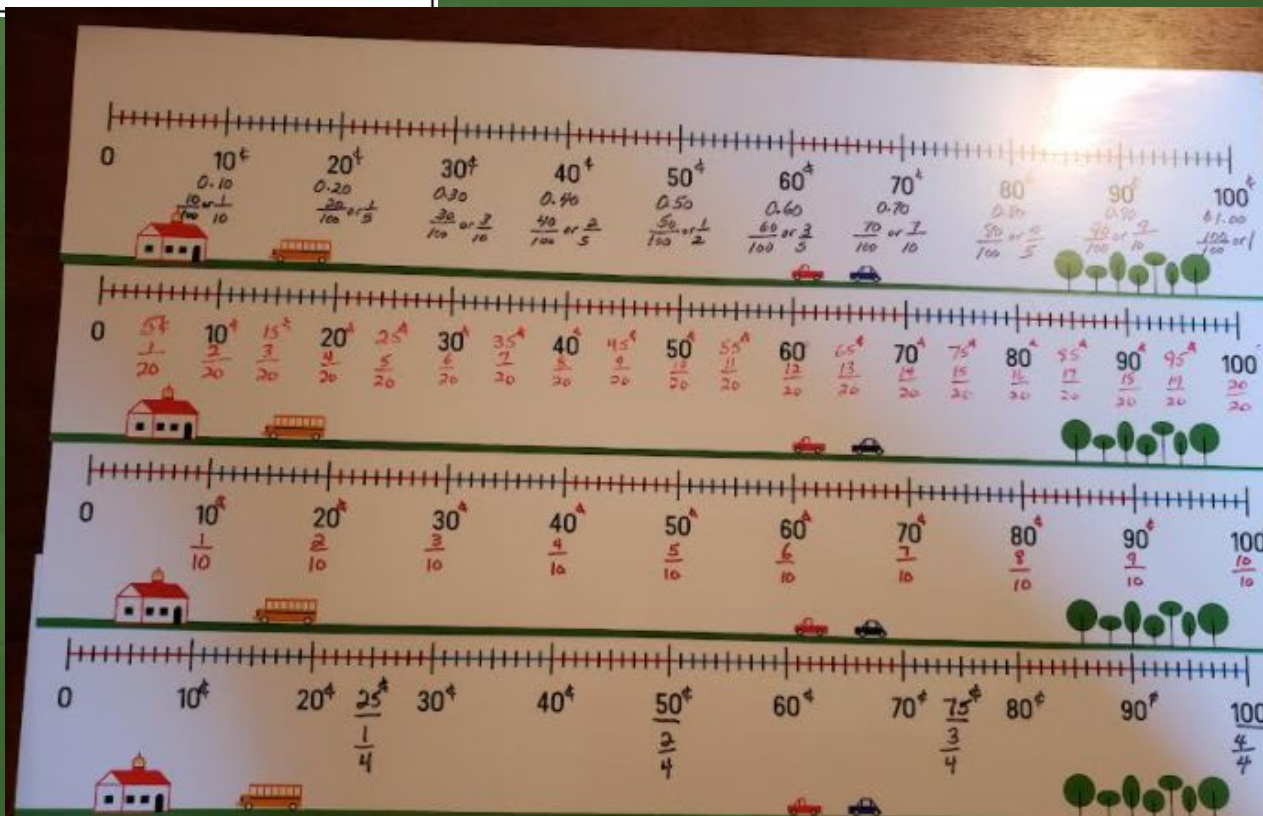
Fractions and decimal numbers that represent the same number are associated with the same point on the number line.

Skills & Procedures

Relate fractions and equivalent decimal numbers to their positions on the number line.

Express fractions as decimal numbers and vice versa, limited to tenths and hundredths.

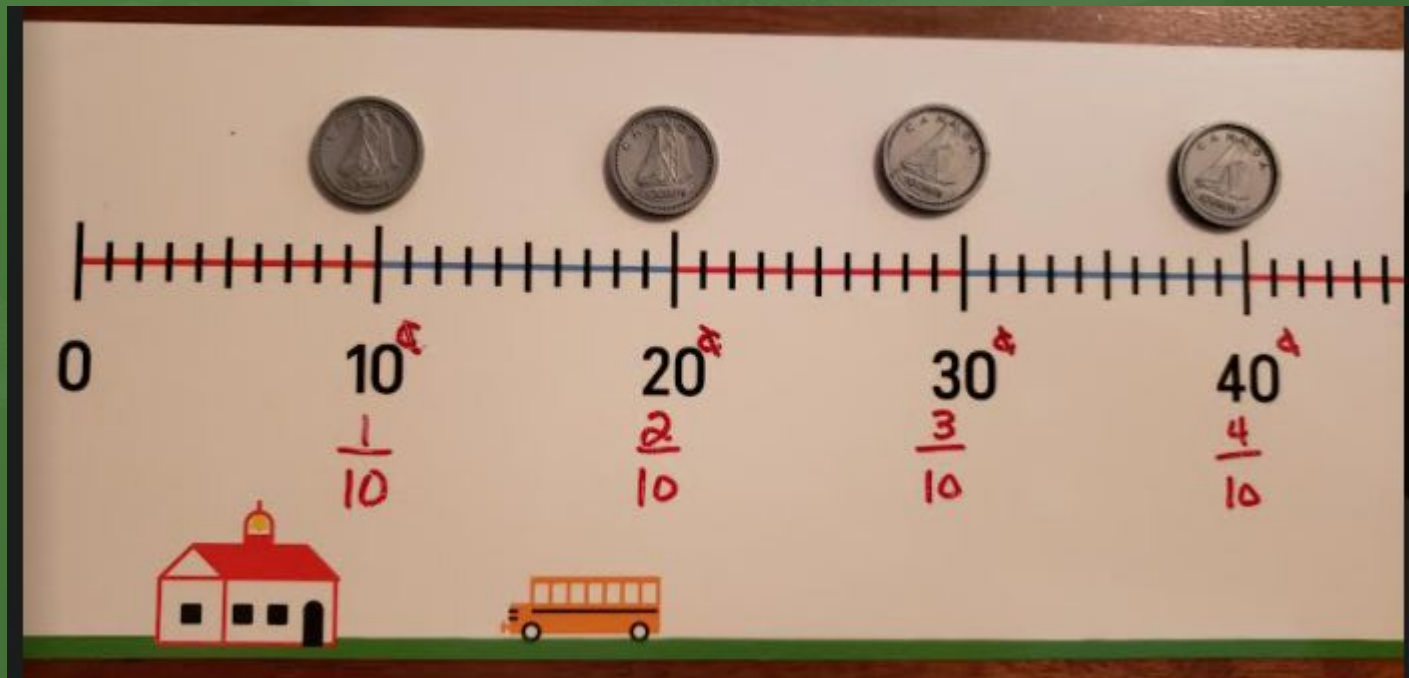
Consider starting with *Fractions* as a relationship. We could use money to create common unit fractions and count by those fractions; find patterns for equivalent fractions BEFORE we give them a rule about multiplying or dividing the numerator and denominator.



Create the Unit Fractions **Visually**

- no fraction terminology





How can equality create opportunities to reimagine number?

4A1.1 Students represent and apply equality in multiple ways.

Knowledge	Understanding	Skills & Procedures
<p>An expression can include multiple operations.</p> <p>The conventional order of operations provides a set of rules for evaluating expressions, including the following:</p> <ul style="list-style-type: none">◦ Multiplication and division are performed before addition and subtraction.◦ Multiplication and division are performed in order from left to right.◦ Addition and subtraction are performed in order from left to right.	<p>There are infinitely many expressions that represent the same number.</p> <p>The order in which operations are performed can affect the value of an expression.</p>	<p>Evaluate expressions according to the order of operations.</p> <p>Create various expressions of the same number using one or more operations.</p>

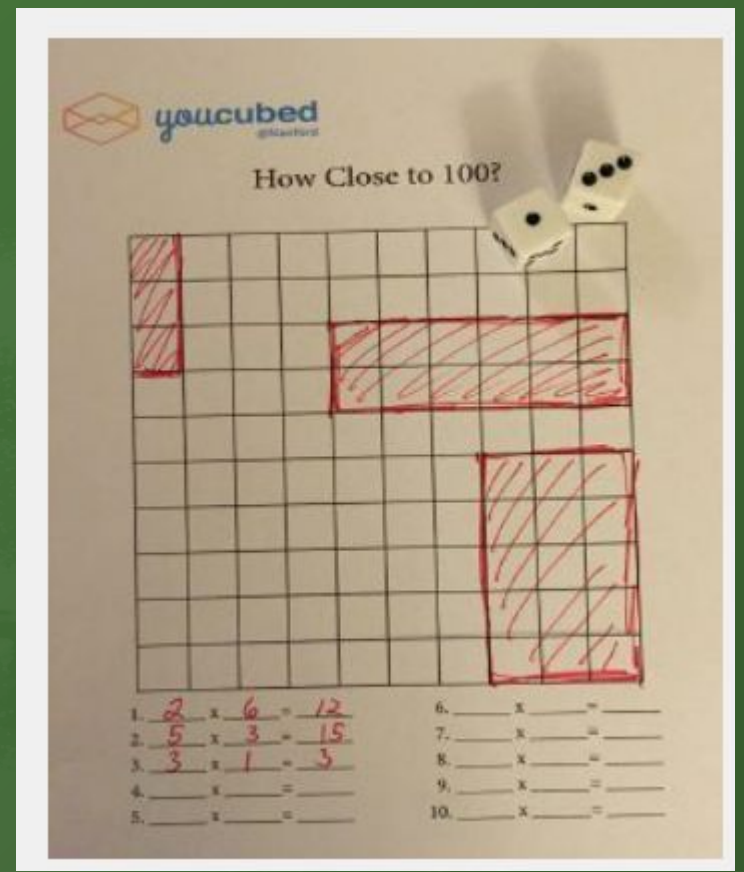


Great explanation and example for 'why' we need an agreed order to solve operations. After 2:10 min, the example will begin with parentheses and brackets. Stop at exponents.

How can area characterize space?

4M1.1 Students interpret and express area

Knowledge	Understanding	Skills & Procedures
<p>Tiling is the process of measuring an area with many copies of a unit, without gaps or overlaps.</p> <p>The unit can be chosen based on the area to be measured.</p> <p>Area can be measured with non-standard units or standard units.</p> <p>The area of a rectangle equals the product of its perpendicular side lengths.</p>	<p>Area is a measurable attribute that describes the amount of two-dimensional space contained within a region.</p> <p>Area may be interpreted as the result of motion of a length.</p> <p>An area remains the same when decomposed or rearranged.</p> <p>Area is measured with equal-sized units that themselves have area and do not need to resemble the region being measured.</p> <p>The area of a rectangle can be perceived as square-shaped units structured in a two-dimensional array.</p>	<p>Model area by dragging a length using hands-on materials or digital applications.</p> <p>Recognize the rearrangement of area in First Nations, Métis, or Inuit design.</p> <p>Compare non-standard units that tile to non-standard units that do not tile.</p> <p>Measure area with non-standard units by tiling.</p> <p>Measure area with standard units by tiling with square <u>centimetres</u>.</p> <p>Visualize and model the area of various rectangles as two-dimensional arrays of square shaped units.</p> <p>Determine the area of a rectangle using multiplication.</p> <p>Solve problems involving <u>area</u> of rectangles.</p>



How Close to 100 Jo Boler

What might be the relevance of duration to daily living?

4T1 Students communicate duration with standard units of time.

Knowledge	Understanding	Skills & Procedures
<p>Time of day can be expressed with fractions of a circle, including</p> <ul style="list-style-type: none">◦ quarter past the hour◦ half past the hour◦ quarter to the hour <p>Duration can be determined by finding the difference between a start time and an end time.</p>	<p>Analog clocks can relate duration to a circle.</p>	<p>Relate durations of 15 minutes, 20 minutes, 30 minutes, 40 minutes, and 45 minutes to fractions of a circle.</p> <p>Express time of day using fractions.</p> <p>Determine duration in minutes using a clock.</p> <p>Apply addition and subtraction strategies to the calculation of duration.</p> <p>Convert between hours, minutes, and seconds.</p> <p>Compare the duration of events using standard units.</p> <p>Solve problems involving duration.</p>

Leave for when we do fractions after Christmas - $\frac{1}{2}$, $\frac{1}{4}$

Skip Counting time -

[Math Learning Centre](#) - virtual clock manipulative

Brainiac.com

[Mathigon](#)

Financial Literacy: Informed financial decision making contributes to the well-being of individuals, groups, and communities.

What is money?	In what ways can money be used?
Children explore money.	Students explore money and how it is used for everyday living.

Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
<p>Canadian money comes in many forms, such as</p> <ul style="list-style-type: none"> • coins • bills <p>Canadian coins and bills come in different denominations, such as</p> <ul style="list-style-type: none"> • loonies • toonies • \$5 • \$10 <p>Canadian coins and bills have different features, such as</p> <ul style="list-style-type: none"> • colour • number • images • size 	<p>Money has unique features to represent its value.</p>	<p>Explore the value of Canadian coins and bills.</p> <p>Identify features of Canadian coins and bills.</p>	<p>Canadian money comes in many forms, such as</p> <ul style="list-style-type: none"> • coins • bills • debit cards • credit cards <p>Canadian coins and bills come in different denominations, such as</p> <ul style="list-style-type: none"> • nickels • dimes • quarters • loonies • toonies • \$5 • \$10 • \$20 • \$50 • \$100 <p>Images on Canadian coins and bills include</p> <ul style="list-style-type: none"> • wildlife • sports • boats • emblems • historic figures <p>Money can be</p> <ul style="list-style-type: none"> • shared • earned • saved • spent • borrowed <p>Goods are things that</p>	<p>Money can be used to exchange for goods and services.</p> <p>Money has value and purpose in everyday living.</p> <p>Money has unique features to represent its value.</p>	<p>Explore the value of Canadian coins and bills.</p> <p>Sort Canadian coins and bills.</p> <p>Identify goods and services that can be exchanged for money.</p>

Counter first

Skip counting by 2, 5, 10, 20, 50, ...

Arrays for addition/subtraction equal, not equal

Financial Literacy will start when money is well understood.
 “spending, saving, earning, wants and needs”

Guiding Question	What is money?		
Learning Outcome	Children explore money.		
	Knowledge	Understanding	Skills & Procedures
<p data-bbox="318 349 631 435">They begin as our “counters”</p> <p data-bbox="326 549 463 592">Shapes</p> <p data-bbox="333 721 700 806">Colour - comparative language</p> <p data-bbox="343 1078 631 1163">Canadian Living Things - animals</p>	<p data-bbox="815 292 1210 428">Canadian money comes in many forms, such as</p> <ul data-bbox="815 442 968 528" style="list-style-type: none"> • coins • bills <p data-bbox="815 592 1210 771">Canadian coins and bills come in different denominations, such as</p> <ul data-bbox="815 785 1006 971" style="list-style-type: none"> • loonies • toonies • \$5 • \$10 <p data-bbox="815 1035 1184 1170">Canadian coins and bills have different features, such as</p> <ul data-bbox="815 1185 1006 1370" style="list-style-type: none"> • colour • number • images • size 	<p data-bbox="1274 292 1656 428">Money has unique features to represent its value.</p> <p data-bbox="1363 1292 1567 1335"><u>Money APP</u></p>	<p data-bbox="1732 292 2102 428">Explore the value of Canadian coins and bills.</p> <p data-bbox="1732 492 2102 628">Identify features of Canadian coins and bills.</p>

In what ways can money be used?

Students explore money and how it is used for everyday living.

Knowledge	Understanding	Skills & Procedures
<p>Canadian money comes in many forms, such as</p> <ul style="list-style-type: none">• coins• bills• debit cards• credit cards <p>Canadian coins and bills come in different denominations, such as</p> <ul style="list-style-type: none">• nickels• dimes• quarters• loonies• toonies• \$5• \$10• \$20• \$50• \$100 <p>Images on Canadian coins and bills include</p> <ul style="list-style-type: none">• wildlife• sports• boats• emblems• historic figures <p>Money can be</p> <ul style="list-style-type: none">• shared• earned• saved• spent• borrowed <p>Goods are things that are made and produced and can be touched, such as</p>	<p>Money can be used to exchange for goods and services.</p> <p>Money has value and purpose in everyday living.</p> <p>Money has unique features to represent its value.</p>	<p>Explore the value of Canadian coins and bills.</p> <p>Sort Canadian coins and bills.</p> <p>Identify goods and services that can be exchanged for money.</p>

A piggy bank pig with pink and white fur is looking towards the camera. In the background, there are several stacks of gold coins on a wooden surface. The scene is set against a white background with a green border on the left and right sides.

On the Road to Financial Literacy

Don't forget students need to learn the money before they contextually apply it. Use it as a *Concept* to learn and a *Manipulative* to teach your other outcomes.

FPPT.com

How would you model, exemplify or teach the following using money?

Kindergarten:

- Quantities using objects, words, pictures, numbers
- Counting objects
- Subitize to 5/10
- “like/unlike/more/less/same”/enough/too many/too few
- Compose quantities within 10 in various ways
- “Share” - this is the beginning of fractions
- Describe a shape using words such as flat, curved, straight, or round.
- Sort shapes according to one attribute and describe the sorting rule.
- Measurable attributes can include • length • area • capacity • mass
- “longer • taller • shorter • heavier • lighter • bigger • smaller • big enough • too big • too small”
- Describe the size of an object in relation to another object, using comparative language.
Describe the size of an object in relation to a purpose or need, using comparative language.
- Identify the pattern core, up to three elements, in a repeating pattern.
- Predict the next elements in a repeating pattern. Create a repeating pattern with a pattern core of up to three elements.

How would you model, exemplify or teach the following using money?

Grade 1

No quantity represented by 0

Know all coins and bills including 100

Know value of each coin and bill

Skip count to 100 by 5, 10; 20 by 2"s

Symbols for equal, not equal

Words greater than, less than, Compose quantities within 20 in various ways

Model transactions with money, limited to dollar values within 20

In a part-part-whole relationship, the sum represents the whole and the difference represents a missing part.

Sharing involves partitioning a quantity into a certain number of groups.

$\frac{1}{2}$, one- half of the whole quantity.(not using fraction)

Length may refer to the size of any one dimensional measurable attribute of an object, including: • **height** • **width** • **depth** • **diameter**

Compare the **length**, area, mass, or capacity of two objects directly, or indirectly using a third object.

Describe the **size of an object in relation to another object**, using comparative language.

Pattern core, up to four elements, in a cycle. Identify a missing element in a repeating pattern or cycle.

Describe change and constancy in repeating patterns and cycles.

Create different representations of the same repeating pattern or cycle, limited to a pattern core of up to four elements.

Extend a sequence of elements in various ways to create repeating patterns

Grade 2

Decompose into groups of 100

Skip count by 20, 25, 50, (review skip counting by 1's, 2's, 5's, 10's)

Determine the value of bills or coins of the same denomination by skip counting

<, >, =

sum composed in multiple ways

Model transactions with money, limited to dollar values within \$100 or 100 cents

$\frac{1}{2}$, $\frac{1}{4}$ and unit fractions with denominators or 10 or less

Common geometric attributes include. • sides • vertices • faces or surfaces

Length can be measured with nonstandard units or standard units (e.g., centimetres).

Identify referents for a centimetre. Estimate length by visualizing the iteration of a referent for a centimetre.

Change can be an increase or a decrease in the number and size of elements.

Create and express a repeating pattern with a pattern core of up to four elements that change by more than one attribute.

Grade 3

The **dollar sign \$** is placed to the left of the dollar value in English and to the right of the dollar value in French.

The **cent sign** is placed to the right of the cent value in English and in French.

How can work with money support the work for place value?

Count and represent the value of a collection of nickels, dimes, and quarters as cents.

Count and represent the value of a collection of loonies, toonies, and bills as dollars.

Compare French and English symbolic representations of **monetary values**.

Estimation can be used when an exact sum or difference is not needed and to check if an answer is reasonable.

Model regrouping by place value for addition and subtraction.

Relate multiplication to repeated addition. Relate multiplication to **skip counting**.

Model a **quotient by partitioning a quantity** into equal groups with or without remainders. Visualize and model products and quotients as **arrays**.

Examine patterns in multiplication and division, including patterns in multiplication tables and skip counting.

Recognize families of related multiplication and division number facts. Recall multiplication number facts, with factors to 10, and related division facts. **(10 x 10)**

Fraction notation (a/b) relates the numerator 'a' as a number of equal parts, 'b' to the as the total number of equal parts in the whole. (leave until the end)

Green shows where money will LEAD the Fraction work

A **whole quantity** can be a whole set of objects or a whole object that can be **partitioned**. Each fraction is associated with a point on the number line.

A unit fraction is any one part of a whole divided into equal parts.

Fractions with common denominators are multiples of the same unit fraction

A unit fraction is any one part of a whole divided into equal parts.

Fractions with common denominators are multiples of the same unit fraction

Decompose a fraction into unit fractions.

Express a fraction as repeated addition of a unit fraction. Relate repeated addition of a unit fraction to multiplication of a natural number by a unit fraction.

Add and subtract fractions within one whole, limited to common denominators of 12 or less. Solve problems involving fractions, limited to common denominators of 12 or less.

***Unit Fractions will LEAD the work

Fractions can be compared by considering the number of parts or the size of parts.

Partition a whole into 12 or fewer equal parts.

Describe a whole as a fraction, limited to denominators of 12 or less.

Model fractions of a whole, limited to denominators of 12 or less. Express fractions symbolically. Relate a fraction less than one to its position on the number line, limited to denominators of 12 or less.

Compare fractions to benchmarks 0, $\frac{1}{2}$, and 1.

Recognize the whole to which a fraction refers in various situations.

Compare the same fraction of different-sized wholes.

Compare different fractions with the same denominator.

Compare different fractions with the same numerator.

Write equations that represent equality between a number and an expression or between two different expressions of the same number.

Grade 4

Money could be used initially to teach the outcome

Lines in white are best approached outside of money

For numbers in base-10, each place has one-tenth the value of the place to its left.

Multiplying or dividing a number by 10 corresponds to shifting place value one position to the left or right, respectively.

Numbers, including decimal numbers, can be composed in various ways using place value.

A zero placed to the right of the last digit in a decimal number does not change the value of the number.

The word *and* is used to indicate the decimal point when reading a number.

Identify the place value of each digit in a number, including tenths and hundredths.

Relate the values of adjacent places, including tenths and hundredths.

Determine the value of each digit in a number, including tenths and hundredths.

Express numbers, including decimal numbers, using words and numerals.

Express various compositions of a number, including decimal numbers, using place value.

Round numbers to various places, including tenths.

Compare and order numbers, including decimal numbers.

Express the relationship between two numbers, including decimal numbers, using $<$, $>$, or $=$.

Express a monetary value in cents as a monetary value in dollars using decimal notation.

Grade 4

Standard algorithms for addition and subtraction of decimal numbers are conventional procedures based on place value.

Estimation can be used to check the reasonableness of a sum or difference.

Add and subtract numbers, including decimal numbers, using standard algorithms.

Assess the reasonableness of a sum or difference using estimation.

Solve problems using addition and subtraction, including problems involving money.

A factor of a number is a divisor of that number.

A number is a multiple of any of its factors.

A prime number has factors of only itself and one.

A composite number has factors other than one and itself.

Zero and one are neither prime nor composite numbers.

Determine the factors of a number within 100.

Describe a number as prime or composite.

Determine the first five multiples of a given number within 100.

Recognize the greatest common factor (greatest common divisor) of two numbers within 100.

Recall of multiplication and division number facts facilitates multiplication and division strategies.

Recall and apply multiplication number facts, with factors to 12, and related division number facts.

Investigate patterns in multiplication and division of natural numbers by 10, 100, and 1000.

Grade 4

- Determine the factors of a number within 100.
- Describe a number as prime or composite.
- Determine the first five multiples of a given number within 100.
- Recognize the greatest common factor (greatest common divisor) of two numbers within 100.
- Recall of multiplication and division number facts facilitates multiplication and division strategies.
- Recall and apply multiplication number facts, with factors to 12, and related division number facts.
- Investigate patterns in multiplication and division of natural numbers by 10, 100, and 1000.
- Equivalent fractions are associated with the same point on the number line
- Equivalent fractions can be created by partitioning each equal part of a fraction in the same way.
- Partitioning a fraction can be interpreted as multiplying the numerator and denominator of a fraction by the same number.
- A fraction can be simplified to an equivalent form by dividing the numerator and denominator by a common factor.

Grade 4

Standard algorithms facilitate multiplication and division of natural numbers that have multiple digits.

Estimation can be used to check the reasonableness of a product or quotient.

Model equivalent fractions by partitioning a whole in multiple ways.

Multiply and divide 3-digit natural numbers by 1-digit natural numbers using personal strategies.

Examine standard algorithms for multiplication and division.

Multiply and divide 3-digit natural numbers by 1-digit natural numbers using standard algorithms.

Divide and express a quotient with or without a remainder.

Investigate strategies for estimation of products and quotients.

Assess the reasonableness of a product or quotient using estimation.

Solve problems using multiplication and division.

Grade 4

- Determine fractions equivalent to a given fraction.
- Relate the position of equivalent fractions on the number line.
- Identify fractions in which the numerator and denominator have a common factor.
- Simplify a given fraction by dividing the numerator and denominator by a common factor.
- Compare and order fractions.

- Express a fraction in simplest form.

- Fractions and decimal numbers can represent the same number.
- Decimals can be expressed as fractions with a denominator that is equivalent to the place value of the last non-zero digit of the decimal number.
- Percentage is represented symbolically with %.
- Decimals can be expressed as percentages by multiplying by 100.
- Percentages can be expressed as decimals by dividing by 100.
- One percent represents one hundredth of a whole.

Grade 4

Investigate percentage in familiar situations.

Compare percentages within 100%.

Express the fraction, decimal, and percentage representations of the same part-whole relationship.

There are infinitely many expressions that represent the same number.

The order in which operations are performed can affect the value of an expression.

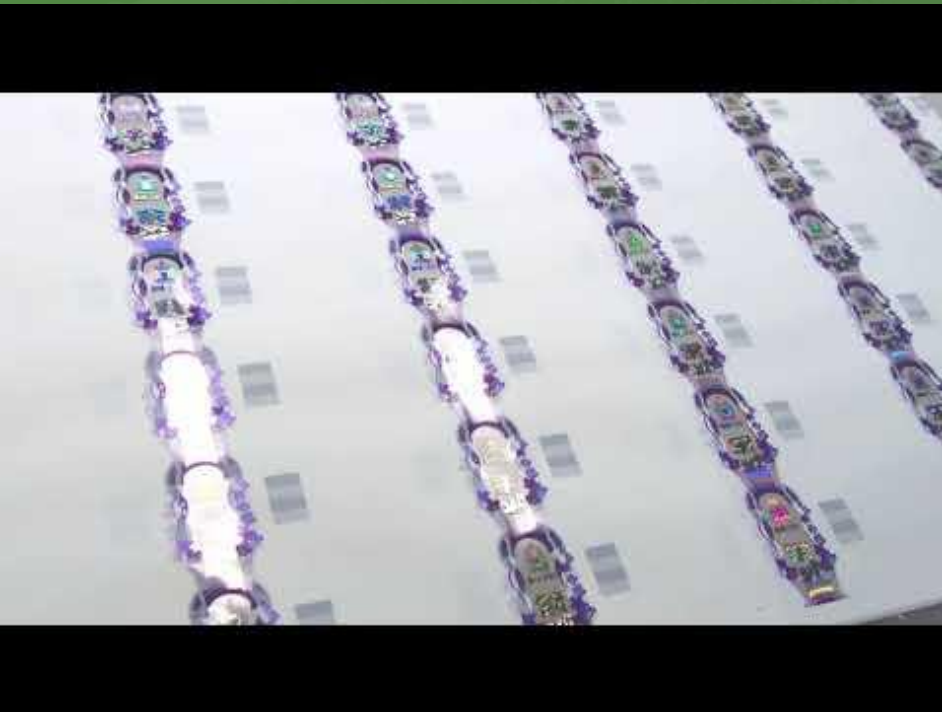
An equation is solved by determining an unknown value that makes the left and right sides of the equation equal.

Geometric properties are measurable.

Geometric properties define a hierarchy for classifying shapes.

A shape resembling a polygon that does not share the defining geometric properties of the polygon is a close approximation.

The Making of a Bank Note

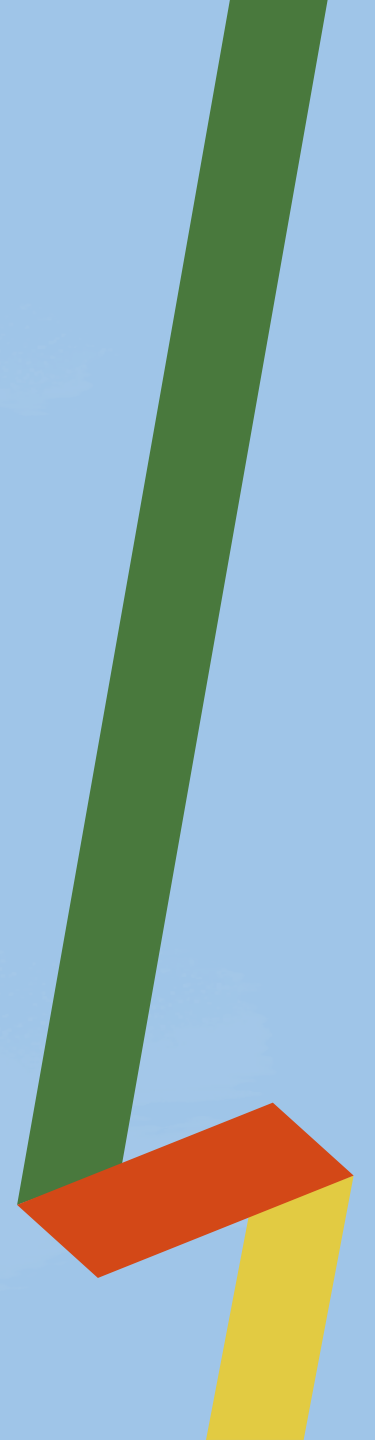
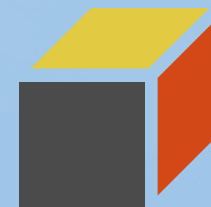


Canada's New Banknotes

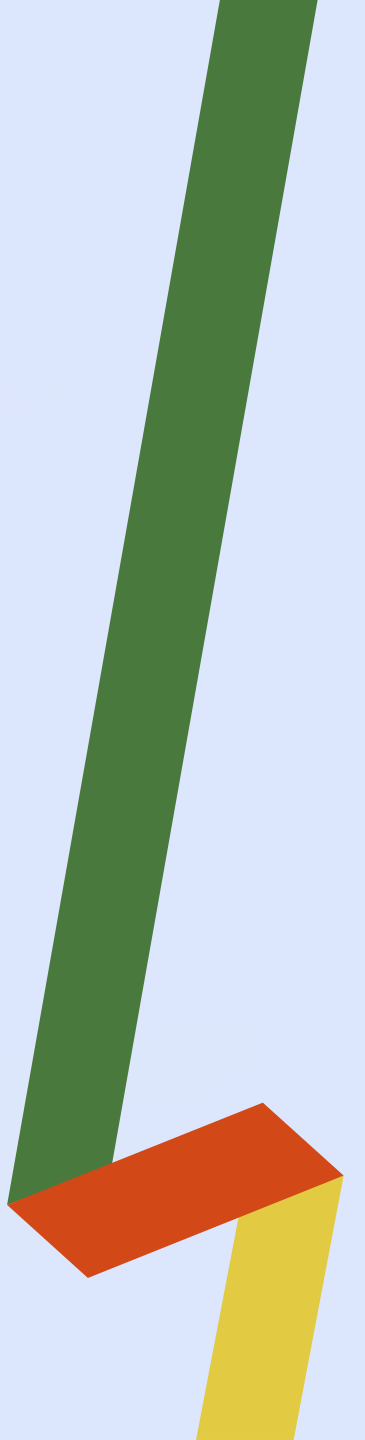
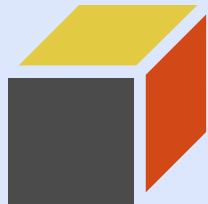
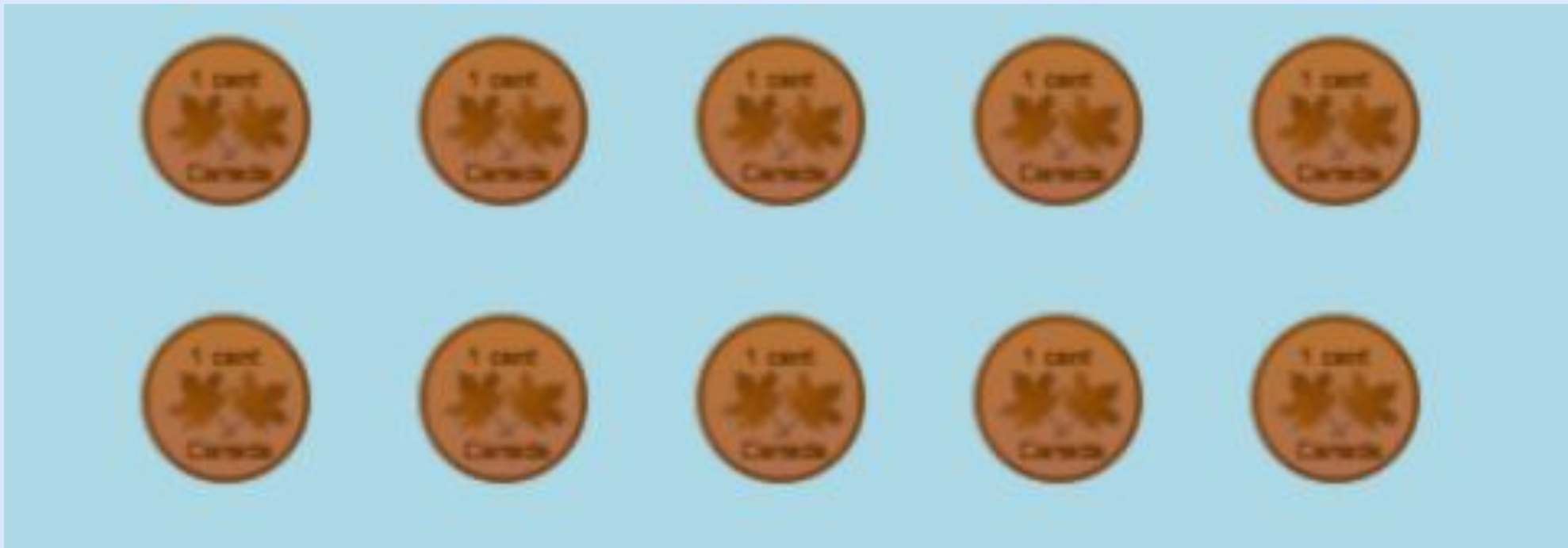


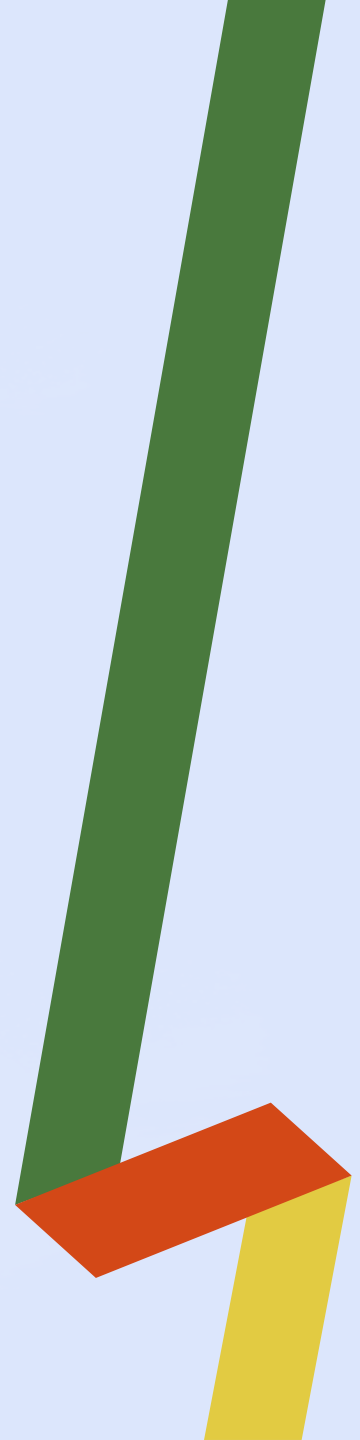
The Secrets of the Canadian Dollar

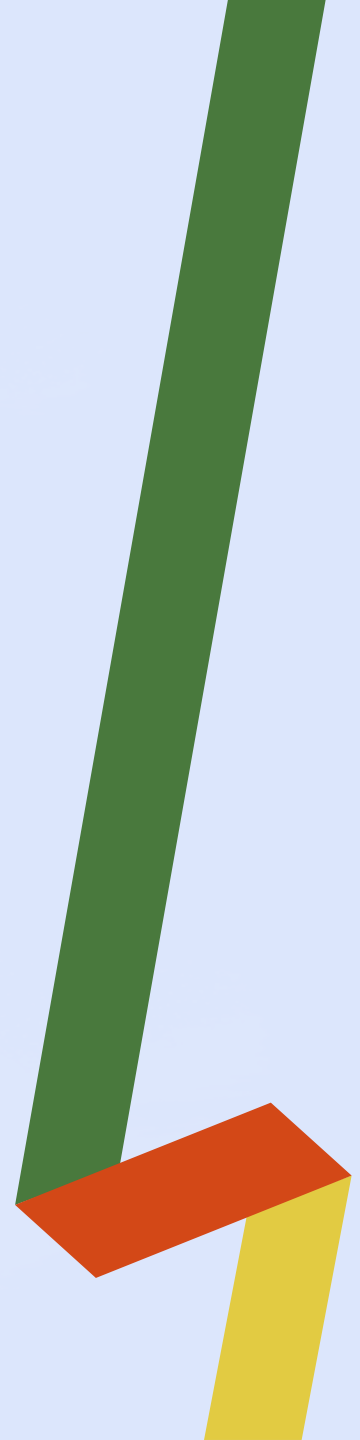
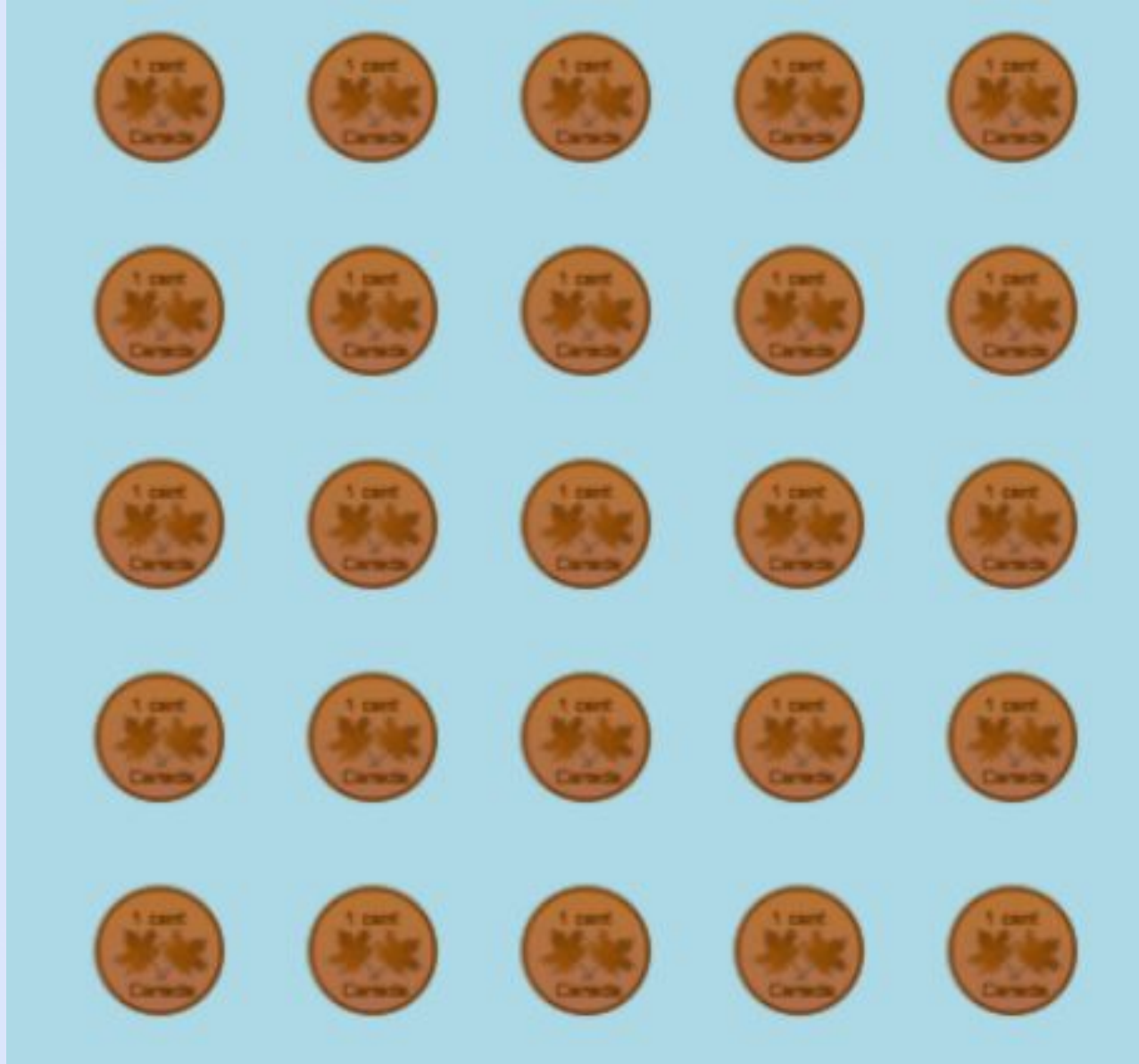
Understanding Place value

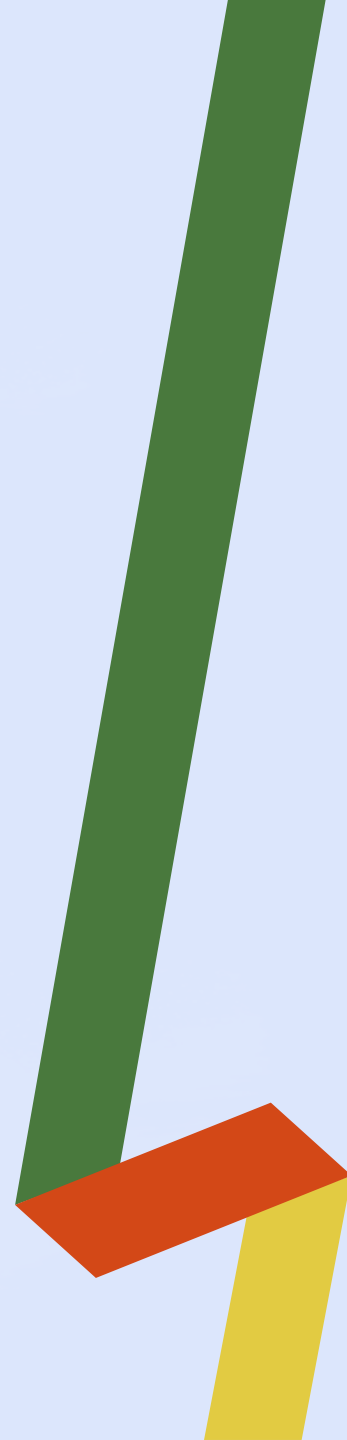
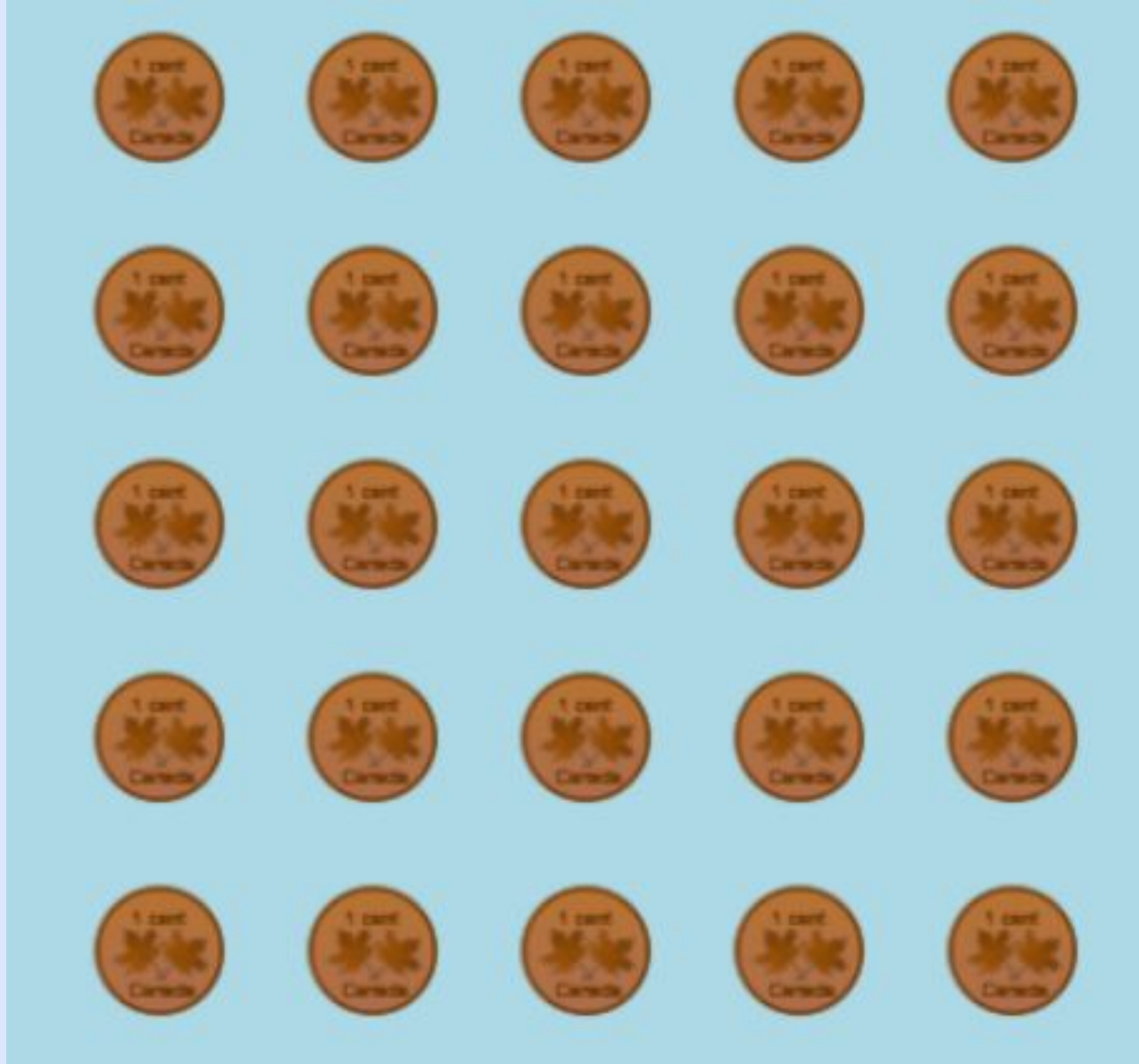


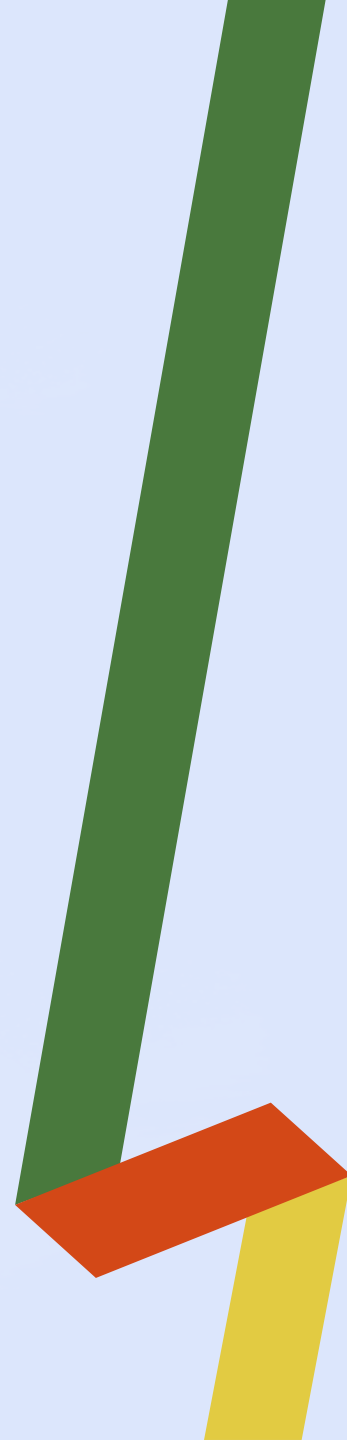
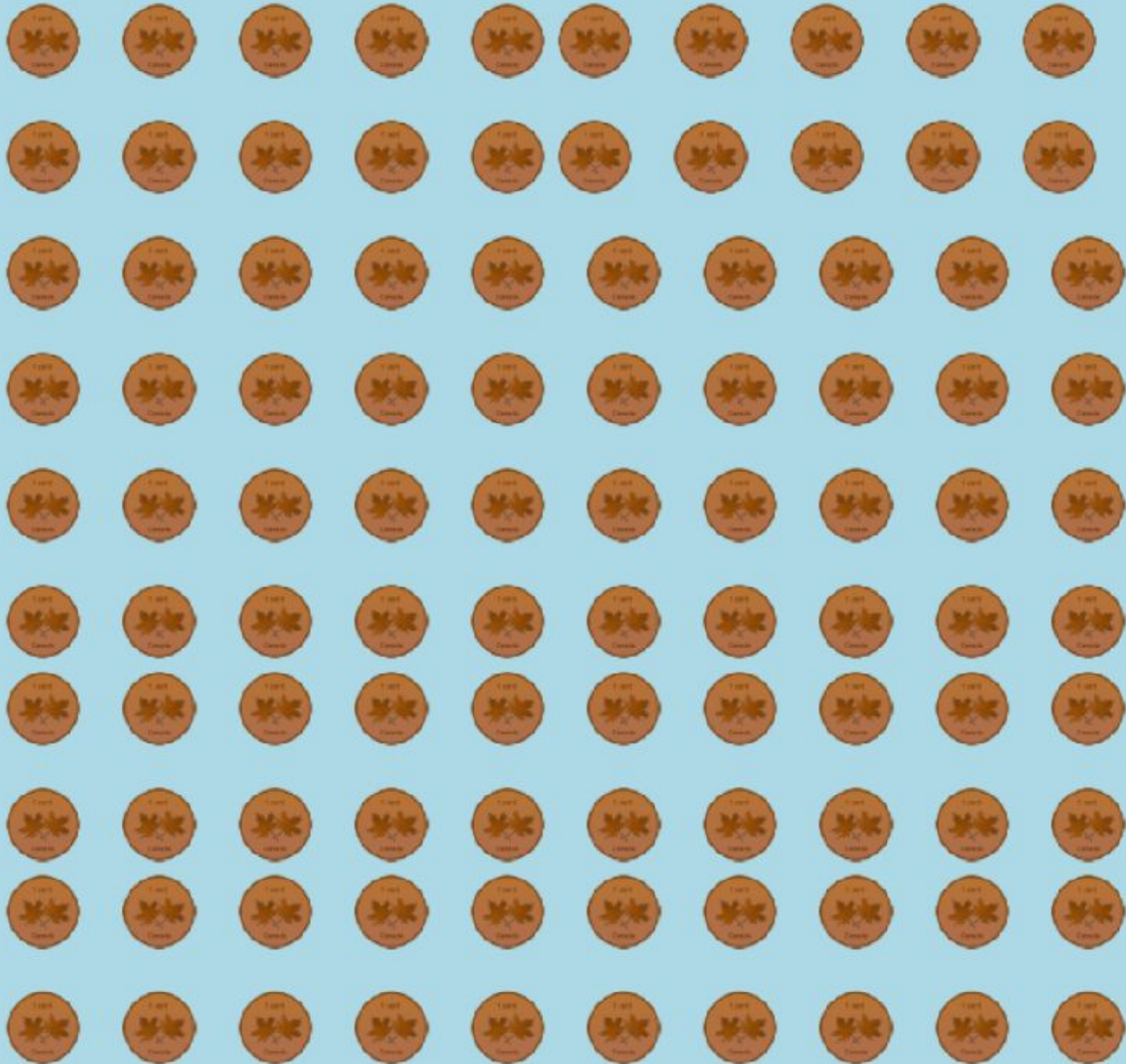


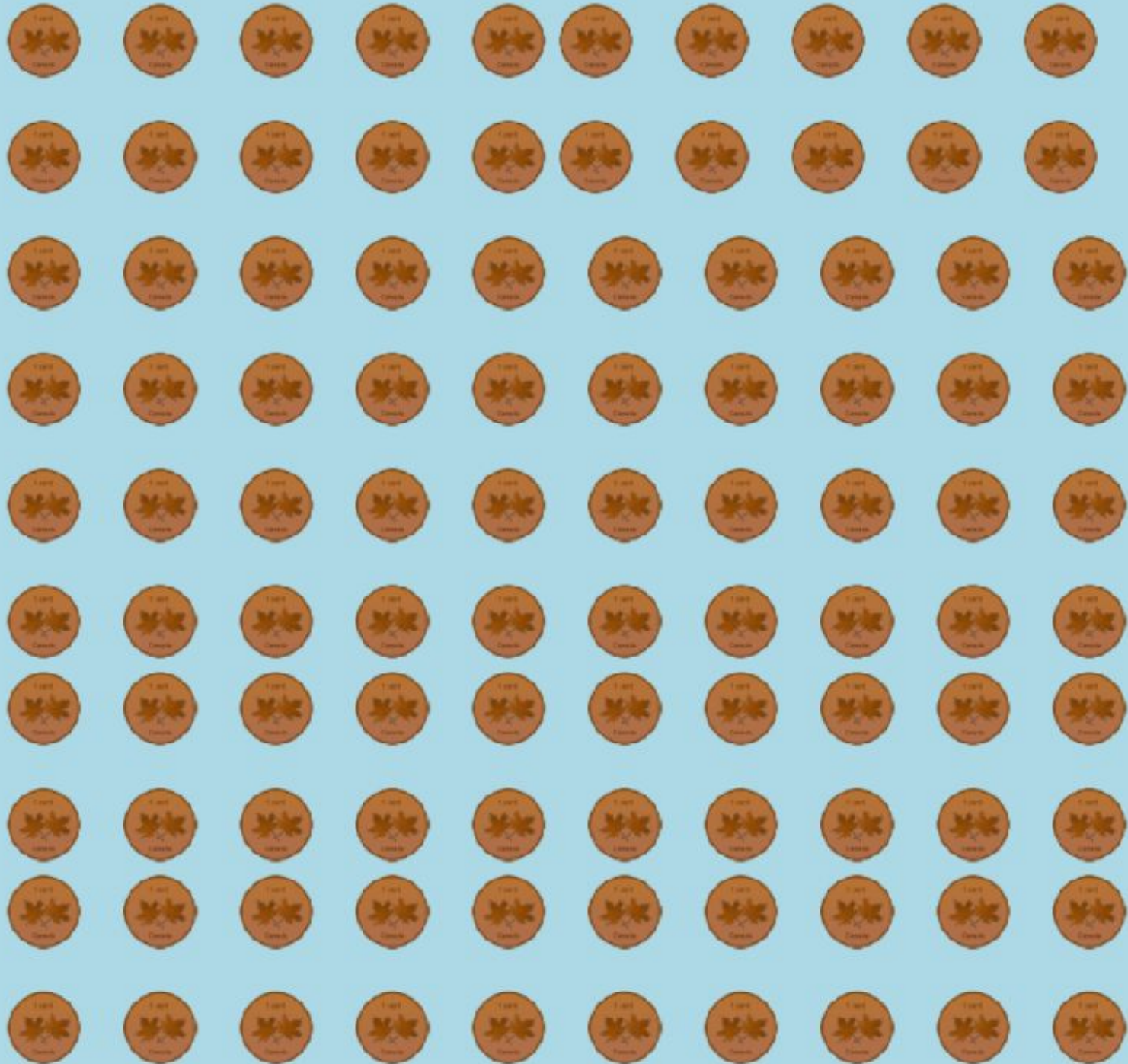






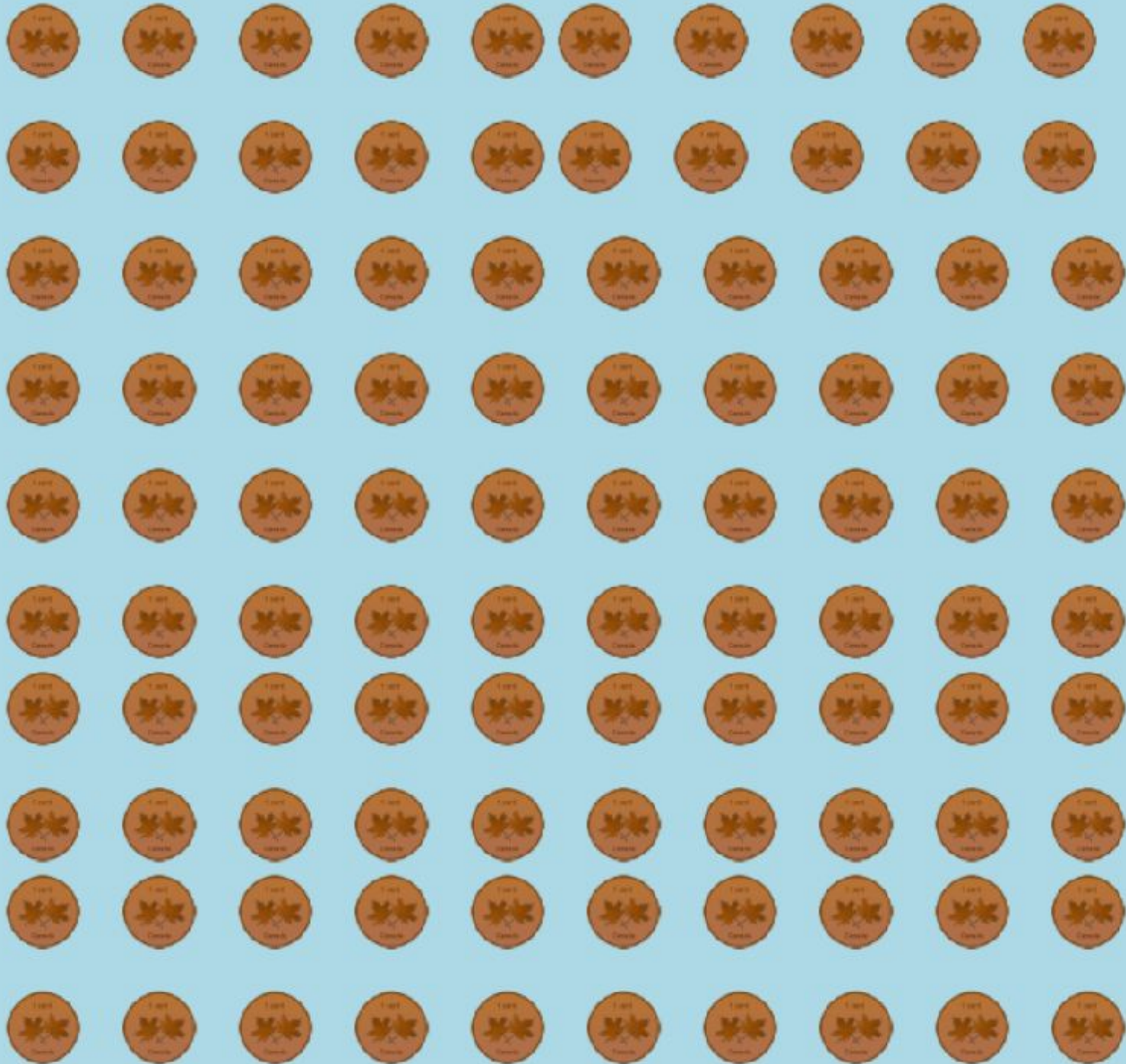






Arrays galore!!!

Used for Unit Fraction Review before we do more work in fractions.



Build your math facts here.
All they need is a copy of any money you are studying, use pencil crayons or markers to identify all possible arrays. Write them out.



Close to 100

Tens	Ones

Each player rules up a column for “tens” and a column for “ones”. The aim of the game is to get a total as close to 100 as possible. The student tosses a dice and decides whether the number will be put in the ones or the tens place. For example, if a four is thrown, it could either be 40 or four. The dice is rolled a total of seven times. All seven numbers must be used. The total of all the columned numbers may exceed 100, but the students will need to decide which player has got closer to 100.

Extension Activity

Use larger numbers and decimals for the target numbers. Vary the number of throws and what the thrown number can represent, such as:

Closest to 1 000: 10 throws of hundreds, tens, or ones.

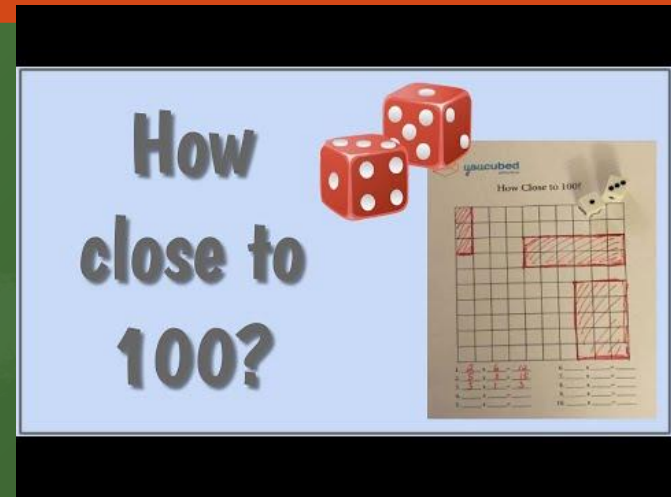
Closest to 10: 10 throws of ones, tenths, or hundredths.

Closest to 1: 10 throws of tenths, hundredths, or thousandths

Don't wait until I have learned my facts to play, let me learn them while I play!

Close to 100 Using grids and Multiplication Facts

Greatest total area covered wins!





Making Money Many Ways

11¢



[Link](#)

Group

Impress me! Money - Assessment

Select numbers to best show your understanding of Money.

Name/Record	Count	Make/Represent
<ol style="list-style-type: none"> 1. Write a dollar amount greater than \$22.00 2. Write your dollar amount in words. 3. Round your dollar amount to the nearest ten. 4. What is the value of each digit in your dollar amount? 	<ol style="list-style-type: none"> 1. Write the number after your dollar amount. 2. Write the number before your dollar amount. 3. What is ten more than your dollar amount? 4. What is ten less than your dollar amount? 5. What is one hundred more? 6. What is one hundred less? 7. Include your number in a counting pattern- include bridging. 	<ol style="list-style-type: none"> 1. Draw a number using "Show Me the Money" Mat (Can you show the number in four different ways? (one should be efficiently)
Compare/Order	Rename	Calculate
<ol style="list-style-type: none"> 1. What number is ten times larger? 2. What number is ten times smaller? 3. Put 5 two digit dollar amounts in order from smallest to largest 4. Place your original dollar amount on a number line 5. Select two dollar <u>amounts</u> your number is between. 	<ol style="list-style-type: none"> 1. Rename dollar amount in as many ways as you can. Can you show 10 different ways? 	<ol style="list-style-type: none"> 1. Your dollar amount $\times 10$ 2. Your dollar amount $\div 10$ 3. Add \$19.00 to your number 4. Subtract \$18.00 from your number

Name _____

Impress Me!

Date: _____

Name/Record	Count	Make/Represent
Compare/Order	Rename	Calculate



[Spectrum Number](#) Lines

Thank You

Do not hesitate to reach out for to your local consortia representative for anything you might need.

