


**Planning for  
Start-Up in the New  
Grade 3 Math  
Provincial Cohort  
August 22, 2022  
Session 1**



**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.**

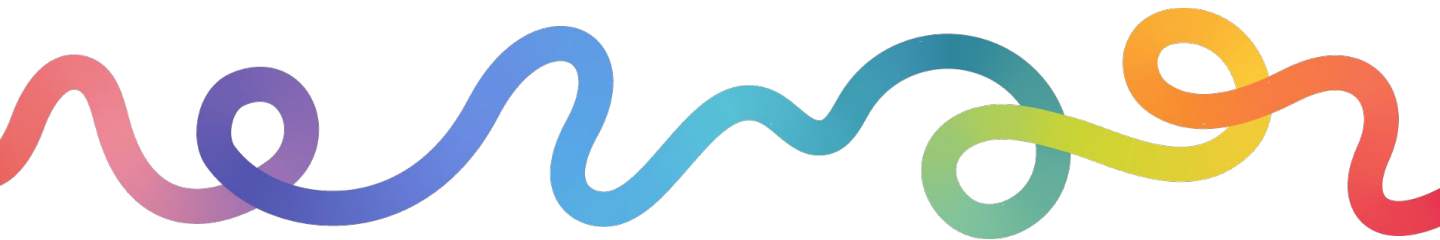
## **Treaty 6 Acknowledgement**



# Before we start

List the activities/assessments you undertake when you start Grade 3 in any given year?

Why are you starting at these points?



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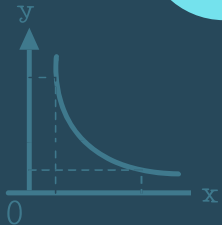
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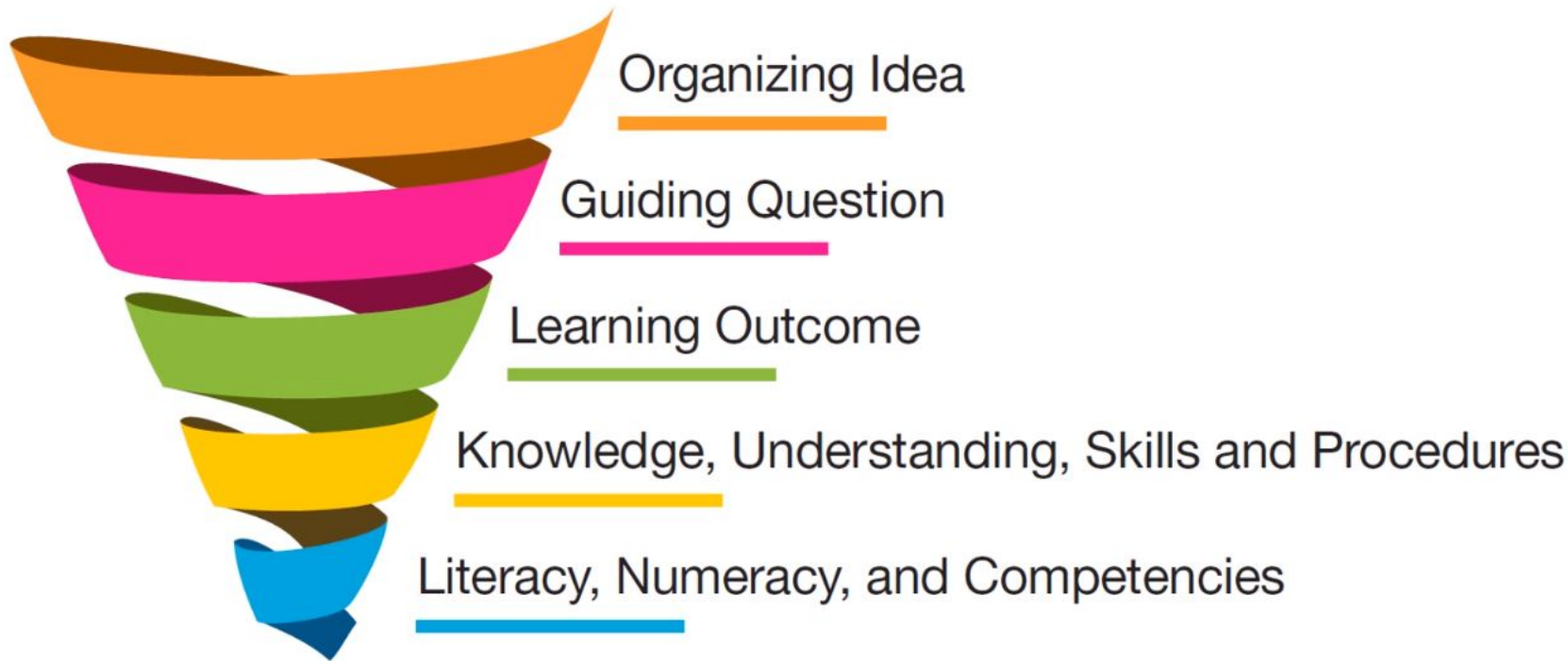
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# Grade 3 Document Overview



# Architecture and Design of Provincial K–12 Curriculum

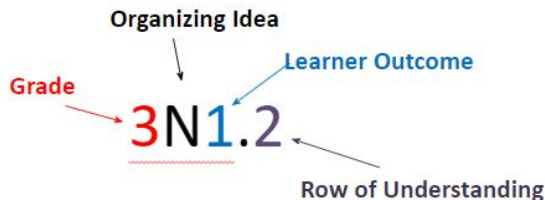


Document  
Overview

Numbered Outcomes  
including Financial Literacy  
Outcomes



**Mathematics Kindergarten to Grade 6 Curriculum  
& Financial Literacy for K-2**



	Grade 3			Grade 4		
<b>Organizing Idea</b>	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.					
<b>Guiding Question</b>	How can place value support organization of <u>number</u> ?			How can place value facilitate interpretation of <u>number</u> ?		
<b>Learning Outcome</b>	3N1 Students interpret place value within 100 000.			4N1 Students apply place value to decimal numbers.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	<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>The less than sign, &lt;, and the greater than sign, &gt;, are used to show the relationship between two unequal numbers.</p> <p>A zero in the leftmost place of a natural number does not change the value of the number.</p> <p>The dollar sign, \$, is placed to the left of the dollar value in English and to the right of the dollar value in French.</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>Compare and order natural numbers.</p> <p>Express the relationship between two numbers using &lt;, &gt;, or =.</p> <p>Count and represent the value of a collection of nickels, dimes, and quarters as cents.</p> <p>Count and represent the value of a collection of loonies, toonies, and bills as dollars.</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 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 &lt;, &gt;, or =.</p>

	Grade 3			Grade 4		
<b>Organizing Idea</b>	Algebra: Equations express relationships between quantities.					
<b>Guiding Question</b>	How can equality facilitate agility with <u>number</u> ?			How can equality create opportunities to reimagine <u>number</u> ?		
<b>Learning Outcome</b>	3A1.1 Students illustrate equality with equations.			4A1.1 Students represent and apply equality in multiple ways.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	<p>An equation uses the equal sign to indicate equality between two expressions.</p> <p>The left and right sides of an equation are interchangeable.</p>	Two expressions are equal if they represent the same number.	Write equations that represent equality between a number and an expression or between two different expressions of the same number.	<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"> <li>◦ Multiplication and division are performed before addition and subtraction.</li> <li>◦ Multiplication and division are performed in order from left to right.</li> <li>◦ Addition and subtraction are performed in order from left to right.</li> </ul>	<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>
<b>Learning Outcome</b>	3A1.2 Students illustrate equality with equations			4A1.2 Students represent and apply equality in multiple ways.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	<p>Equations can be <u>modelled</u> using a balance.</p> <p>A symbol may represent an unknown value in an equation.</p>	Equations can include unknown values.	<p>Model equations that include an unknown value, including with a balance.</p> <p>Determine an unknown value on the left or right side of an equation, limited to equations with one operation.</p> <p>Solve problems using equations, limited to equations with one operation.</p>	Equations can be solved through a process of adding, subtracting, multiplying, or dividing the same number on both sides of the equation (preservation of equality).	An equation is solved by determining an unknown value that makes the left and right sides of the equation equal.	<p>Write equations involving one operation to represent a situation.</p> <p>Investigate preservation of equality using a balance model.</p> <p>Investigate preservation of equality using an equation without an unknown value.</p> <p>Apply preservation of equality to determine the unknown value in</p>

# Language Conventions

Language Convention	Interpretation for Implementation	Example from Curriculum
including/include(s)	A list following “including” or “include(s)” contains <b>required</b> knowledge. Students must know all elements of the list in order to achieve the learning outcome.	Subtraction can be applied in various contexts, <b>including</b> <ul style="list-style-type: none"><li>• comparing two quantities</li><li>• taking away one quantity from another</li><li>• finding a part of a whole</li></ul>
such as	A list following “such as” provides a list of <b>illustrative examples</b> that support the learning outcome. Teachers may use any of these examples, or they may choose others.	Right angles can be identified using various referents, <b>such as</b> <ul style="list-style-type: none"><li>• the corner of a piece of paper</li><li>• the angle between the hands on an analog clock at 3:00</li><li>• a capital letter L</li></ul>
content in parentheses	Words in parentheses are <b>subject-specific terms</b> for teachers and parents. These words follow the associated age-appropriate terms for students.	A shape can change orientation or position through slides ( <b>translations</b> ), turns ( <b>rotations</b> ), or flips ( <b>reflections</b> ).

# Verbs Are Defined by Context

## Kindergarten: Number

**LO:** Children **interpret** compositions of quantities within 10.

Verbs from Associated Skills and Procedures

**Identify**  
**Compose**  
**Recognize**

## Grade 1: Geometry

**LO:** Students **interpret** shape in two and three dimensions.

Verbs from Associated Skills and Procedures

**Identify**  
**Model**  
**Sort**  
**Compose**  
**Decompose**  
**Investigate**

## Grade 3: Number

**LO:** Students **interpret** fractions in relation to one whole.

Verbs from Associated Skills and Procedures

**Model**  
**Visualize**  
**Identify**  
**Name**  
**Express**  
**Compare**

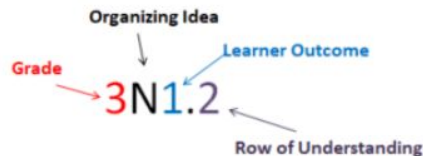
# Curriculum Comparison Document

Document  
Overview

Year At A Glance



## Grade 3 Math Curriculum Comparison Shifts for the New Alberta Curriculum



**N = Number**      **P= Patterns**      **M = Measurement**      **Time = T**      **Geometry = G**      **Statistics = ST**      **Algebra = A**      **Coordinate Geometry = CG**

Outcomes from 2007 Curriculum	Understandings from New Curriculum (New Understandings)	Outcomes, Knowledge, Skills and Procedures	
<b>Number Strand</b>	<b>Number (N)</b>		
<p><b>Specific Outcome 1</b> Say the number sequence 0 to 1000 forward and backward by:</p> <ul style="list-style-type: none"> <li>• 5s, 10s or 100s, using any starting point</li> <li>• 3s, using starting points that are multiples of 3</li> <li>• 4s, using starting points that are multiples of 4</li> <li>• 25s, using starting points that are multiples of 25. &lt;moved to grade 2&gt;</li> </ul>			
<p><b>Specific Outcome 2</b> Represent and describe numbers to 1000, concretely, pictorially and symbolically. &lt;moved to grade 2&gt;</p> <p><b>Specific Outcome 3</b> Compare and order numbers to 1000.</p> <p><b>Specific Outcome 4</b> Estimate quantities less than 1000, using referents. &lt;moved to grade 2&gt; (but changed to benchmarks instead of referents)</p> <p><b>Specific Outcome 5</b> Illustrate, concretely and pictorially, the meaning of place value for numerals to 1000.</p>	<p><b>UNDERSTANDING</b> Place value is the <b>basis for the base-10 system</b>.</p> <p>Place value determines the value of a digit based on its place in a number, <b>relative to the one's place</b>.</p> <p>Place value is used to read and write numbers.</p>	<p><b>LEARNING OUTCOME</b> 3N1.1 Students interpret place value within <b>100 000</b>.</p> <p><b>KNOWLEDGE</b></p> <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><b>SKILLS &amp; PROCEDURES</b> Identify the place value of each digit in a <b>natural number</b>.</p> <p>Relate the values of adjacent places.</p> <p>Determine the value of each digit in a <b>natural number</b>.</p> <p>Express <b>natural numbers</b> using words and numerals.</p> <p>Express various compositions of a <b>natural number</b> using place value.</p> <p>Round natural numbers to various places.</p> <p>Compare and order natural numbers.</p>

		<p>A zero in the leftmost place of a natural number does not change the value of the number.</p> <p>The dollar sign, \$, is placed to the left of the dollar value in English and to the right of the dollar value in French.</p> <p>The cent sign, ¢, is placed to the right of the cent value in English and in French.</p>	<p>Count and represent the value of a collection of loonies, toonies, and bills as dollars.</p> <p>Recognize French and English symbolic representations of monetary values.</p>
<p><b>Specific Outcome 6</b> Describe and apply mental mathematics strategies for adding two 2-digit numerals.</p> <p><b>Specific Outcome 7</b> Describe and apply mental mathematics strategies for subtracting two 2-digit numerals.</p> <p><b>Specific Outcome 8</b> Apply estimation strategies to predict sums and differences of two 2-digit numerals in a problem-solving context.</p> <p><b>Specific Outcome 9</b> Demonstrate an understanding of addition and subtraction of numbers with answers to 1000 (limited to 1-, 2- and 3-digit numerals), concretely, pictorially and symbolically, by:</p> <ul style="list-style-type: none"> <li>using personal strategies for adding and subtracting with and without the support of manipulatives</li> <li>creating and solving problems in context that involve addition and subtraction of numbers.</li> </ul> <p><b>Specific Outcome 10</b> Apply <b>mental</b> mathematics strategies and number properties in order to understand and recall basic addition facts and related subtraction facts to 18. <b>&lt;moved to grade 2&gt; but, mental mathematics strategies are no longer included and it is changed from "to 18" to "with addends to 10"</b></p>	<p><b>UNDERSTANDING</b> Addition and subtraction <b>strategies can be chosen</b> based on the nature of the numbers.</p> <p>Standard algorithms for addition and subtraction <b>may</b> be used for any natural numbers.</p>	<p><b>LEARNING OUTCOME</b> 3N2.1 Students apply addition and subtraction within 1000.</p> <p><b>KNOWLEDGE</b> Recall of addition and subtraction number facts facilitates addition and subtraction strategies.</p> <p>Standard algorithms for addition and subtraction are conventional procedures based on place value.</p> <p>Estimation can be used to support addition and subtraction in everyday situations, including</p> <ul style="list-style-type: none"> <li>when an exact sum or difference is <b>not needed</b></li> <li>to check if an answer is reasonable</li> </ul>	<p><b>SKILLS &amp; PROCEDURES</b> Relate strategies for the addition and subtraction of two-digit numbers to strategies for the addition and subtraction of three-digit numbers.</p> <p>Model regrouping by place value for addition and subtraction.</p> <p>Explain the standard algorithms for addition and subtraction of natural numbers.</p> <p>Add and subtract natural numbers using standard algorithms.</p> <p>Estimate sums and differences.</p> <p>Solve problems using addition and subtraction</p>
<p><b>Specific Outcome 11</b> Demonstrate an understanding of multiplication to <math>5 \times 5</math> by:</p> <ul style="list-style-type: none"> <li>representing and explaining multiplication using equal grouping and arrays</li> <li>creating and solving problems in context that involve multiplication</li> <li><b>modelling</b> multiplication using concrete and visual representations, and recording the process symbolically</li> <li>relating multiplication to repeated addition</li> <li>relating multiplication to division.</li> </ul> <p><b>Specific Outcome 12</b> Demonstrate an understanding of division (limited to division related to multiplication facts up to <math>5 \times 5</math>) by:</p>	<p><b>UNDERSTANDING</b> Quantities can be composed and decomposed through multiplication and division.</p>	<p><b>LEARNING OUTCOME</b> 3N3.1 Students analyze and apply strategies for multiplication and division within 100.</p> <p><b>KNOWLEDGE</b> Multiplication and division are inverse mathematical operations.</p> <p>Multiplication is repeated addition.</p> <p>Multiplication can be interpreted in various ways according to context, such as</p> <ul style="list-style-type: none"> <li>equal groups</li> <li>an array</li> <li>an area</li> </ul>	<p><b>SKILLS &amp; PROCEDURES</b> Compose a product using equal groups of objects.</p> <p>Relate multiplication to repeated addition.</p> <p>Relate multiplication to skip counting.</p> <p>Investigate multiplication by 0.</p> <p>Model a quotient by partitioning a quantity into equal groups or groups of a certain size, with or without remainders.</p> <p>Visualize and model products and quotients as arrays.</p> <p>Recognize interpretations of multiplication and division in</p>

September

October

November

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

3N1. Students interpret place value within 100 000. (100)

- Place value is the basis for the base-10 system. (bridging into 100 with Money)
- Place value determines the value of a digit based on its place in a number, relative to the one's place.
- Place value is used to read, write, and compare numbers.

3N2. Students apply addition and subtraction within 1000. (100)

- Addition and subtraction strategies can be chosen based on the nature of the numbers.
- Standard algorithms are universal tools for addition and subtraction and may be used for any natural numbers independently of their nature.

3N1. Students interpret place value within 100 000. (100-1000)

- Place value is the basis for the base-10 system.
- Place value determines the value of a digit based on its place in a number, relative to the one's place.
- Place value is used to read, write, and compare numbers.

3N2. Students apply addition and subtraction within 1000. (100-1000)

- Addition and subtraction strategies can be chosen based on the nature of the numbers.
- Standard algorithms are universal tools for addition and subtraction and may be used for any natural numbers independently of their nature.

3N1. Students interpret place value within 100 000. (1000 - 10 000)

- Place value is the basis for the base-10 system.
- Place value determines the value of a digit based on its place in a number, relative to the one's place.
- Place value is used to read, write, and compare numbers.

3N2. Students apply addition and subtraction within 1000. (100-1000)

- Addition and subtraction strategies can be chosen based on the nature of the numbers.
- Standard algorithms are universal tools for addition and subtraction and may be used for any natural numbers independently of their nature.

**Algebra:** Equations express relationships between quantities.

3A1.1 Students illustrate equality with equations.

- Two expressions are equal if they represent the same number. (20-100 with money)

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## Sample Year at a Glance: Mathematics - Grade 3

September 2022 ----- November 2022

September

October

November

ongoing

ongoing

ongoing

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

3P1.1 Students analyze patterns in numerical sequences.

- A sequence is a list of terms arranged in a certain order.
- Sequences may be finite or infinite

3P1.2 Students analyze patterns in numerical sequences.

- A sequence can progress according to a pattern.

Ongoing - begin with money

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3P1.2 Students analyze patterns in numerical sequences.

- A sequence can progress according to a pattern.

Ongoing - begin with money

**Time: Duration is described and quantified with time.**

3T1. Students tell time using clocks.

- Clocks are standard measuring tools used to communicate time.

Ongoing - use for number (skip counting, link to unit fractions, link to angles)

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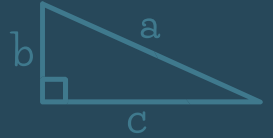
Ongoing - use for number (skip counting, link to unit fractions, link to angles)

$2+2=4$

$42:9$

x

# Taking Inventory



+

+

%

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

3N1. Students interpret place value within 100 000. (to 100)

- Place value is the basis for the base-10 system. (bridging into 100 with Money)
- Place value determines the value of a digit based on its place in a number, relative to the one's place.

- Place value is used to read, write, and compare numbers.

3N2. Students apply addition and subtraction within 1000. (100)

- Addition and subtraction strategies can be chosen based on the nature of the numbers.
- Standard algorithms are universal tools for addition and subtraction and may be used for any natural numbers independently of their nature.

3N1. Students interpret place value within 100 000. (to 100)

- Place value is the basis for the base-10 system.
- Place value determines the value of a digit based on its place in a number, relative to the one's place.

- Place value is used to read, write, and compare numbers.

3N2. Students apply addition and subtraction within 1000. (100-1000)

- Addition and subtraction strategies can be chosen based on the nature of the numbers.
- Standard algorithms are universal tools for addition and subtraction and may be used for any natural numbers independently of their nature.

**Algebra:** Equations express relationships between quantities.

3A1.1 Students illustrate equality with equations.

- Two expressions are equal if they represent the same number. (20-100 with money)

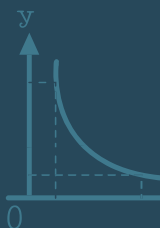
ongoing

3A1.1 Students illustrate equality with equations.

- Two expressions are equal if they represent the same number. (20-100 with money)

ongoing

x  
y



Guiding Question	How can place value support organization of number?		
Learning Outcome	3N1 Students interpret place value within 100 000.		
	Knowledge	Understanding	Skills & Procedures
	<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>The less than sign, <math>&lt;</math>, and the greater than sign, <math>&gt;</math>, are used to show the relationship between two unequal numbers.</p> <p>A zero in the leftmost place of a natural number does not change the value of the number.</p> <p>The dollar sign, \$, is placed to the left of the dollar value in English and to the right of the dollar value in French.</p> <p>The cent sign, ¢, is placed to the right of the cent value in English and in French.</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>Compare and order natural numbers.</p> <p>Express the relationship between two numbers using <math>&lt;</math>, <math>&gt;</math>, or <math>=</math>.</p> <p>Count and represent the value of a collection of nickels, dimes, and quarters as cents.</p> <p>Count and represent the value of a collection of loonies, toonies, and bills as dollars.</p> <p>Recognize French and English symbolic representations of monetary values.</p>

**Notes:** How do you leverage money?

- Work within 100
- Learn money and values
- Put together 2 digit whole number dollar amounts
- Count out bills to end in a 2-digit whole dollar amount
- Make change to a dollar, \$5.00, \$10.00, change for \$100.00
- Addition and subtraction by counting back change
- Compare money amounts
- Describe a 2 digit/3 digit dollar amount in place value terms
- Practice reading and writing 3 digit numbers - relate to \$100/\$10/loonies
- Regroup money - use mats \*\*\* must be comfortable and fluent in money

Guiding Question	How can processes be established for addition and subtraction?		
Learning Outcome	3N2 Students apply strategies for addition and subtraction within 1000.		
	Knowledge	Understanding	Skills & Procedures
	<p>Recall of addition and subtraction number facts facilitates addition and subtraction strategies.</p> <p>Standard algorithms for addition and subtraction are conventional procedures based on place value.</p> <p>Estimation can be used to support addition and subtraction in everyday situations, including</p> <ul style="list-style-type: none"> <li>◦ when an exact sum or</li> <li>◦ difference is not needed to check if an answer is reasonable</li> </ul>	<p>Addition and subtraction strategies can be chosen based on the nature of the numbers.</p> <p>Standard algorithms for addition and subtraction may be used for any natural numbers.</p>	<p>Relate strategies for the addition and subtraction of two-digit numbers to strategies for the addition and subtraction of three-digit numbers.</p> <p>Model regrouping by place value for addition and subtraction.</p> <p>Explain the standard algorithms for addition and subtraction of natural numbers.</p> <p>Add and subtract natural numbers using standard algorithms.</p> <p>Estimate sums and differences.</p> <p>Solve problems using addition and subtraction.</p>

**Notes:** How do you leverage money?

- Estimation with money - about how much?
- Domino addition and missing dots
- Same with money - dots are dollars (write units in answer)

**Algebra:** Equations express relationships between quantities.

3A1.1 Students illustrate equality with equations.  
 • Two expressions are equal if they represent the same number. (20-100 with money)

ongoing

3A1.1 Students illustrate equality with equations.  
 • Two expressions are equal if they represent the same number. (20-100 with money)

ongoing

**Notes:**

- Expressions are not equations
- Have students generate different compositions of the same amount of money to start
- $\$4 + \$6 = \$5 + \$5$
- Show me 126 cents

**Guiding Question**

How can equality facilitate agility with number?

**Learning Outcome**

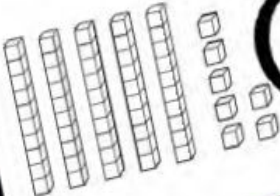
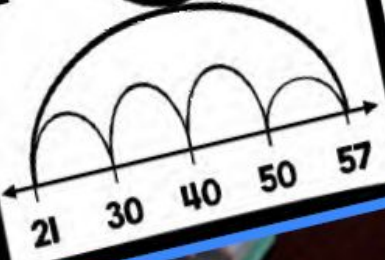
3A1.1 Students illustrate equality with equations.

	Knowledge	Understanding	Skills & Procedures
	<p>An equation uses the equal sign to indicate equality between two expressions.</p> <p>The left and right sides of an equation are interchangeable.</p>	<p>Two expressions are equal if they represent the same number.</p>	<p>Write equations that represent equality between a number and an expression or between two different expressions of the same number.</p>

$57 - 21$

$50 - 20$   
 $7 - 1$

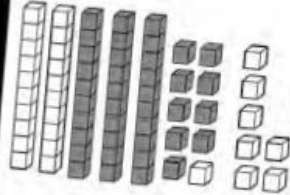
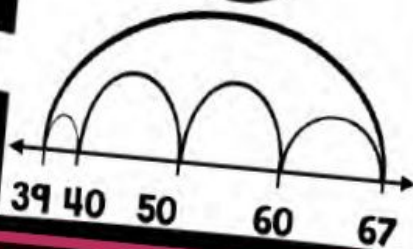
**36**

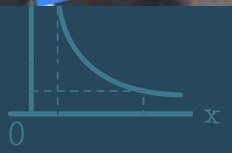
$67 - 39$

$60 - 30$   
 $7 - 9$

**28**

Base ten blocks should be used AFTER money - replace that model with money instead.



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

3P1.1 Students analyze patterns in numerical sequences.

- A sequence is a list of terms arranged in a certain order.
- Sequences may be finite or infinite

3P1.2 Students analyze patterns in numerical sequences.

- A sequence can progress according to a pattern.

Ongoing - begin with money

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**Time:** Duration is described and quantified with time.

3T1. Students tell time using clocks.

- Clocks are standard measuring tools used to communicate time.

Ongoing - use for number (skip counting, link to unit fractions, link to angles)

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- Clocks are standard measuring tools used to communicate time.

Ongoing - use for number (skip counting, link to unit fractions, link to angles)

**Statistics:** The science of collecting, analyzing, visualizing and interpreting data can inform understanding and decision making.

3ST1.1 Students interpret and explain representations of data..

- Representation connects data to a statistical question.

3ST1. 2 Students interpret and explain representation.

- Representation expresses data specific to a unique time and place.
- Representation tells a story about data.

Could be addressed throughout the year in science as well.

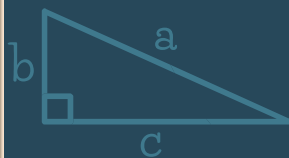
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Could be addressed throughout the year in science as well.



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

How can diverse representations of patterns contribute to interpretation of change?

3P1.1 Students analyze patterns in numerical sequences.

Knowledge	Understanding	Skills & Procedures
Ordinal numbers can indicate position in a sequence.  Finite sequences, such as a countdown, have a definite end.  Infinite sequences, such as the natural numbers, never end.	A sequence is a list of terms arranged in a certain order.  Sequences may be finite or infinite.	Recognize familiar numerical sequences, including the sequence of even or odd numbers.  Describe position in a sequence using ordinal numbers.  Differentiate between finite and infinite sequences.

3P1.2 Students analyze patterns in numerical sequences.

Knowledge	Understanding	Skills & Procedures
Numerical sequences can be constructed using addition, subtraction, multiplication, or division.	A sequence can progress according to a pattern.	Recognize skip-counting sequences in various representations, including rows or columns of a multiplication table.  Determine any missing term in a skip-counting sequence using multiplication.  Describe the change from term to term in a numerical sequence using mathematical operations.

Notes:

- Sequence of \$5,10,15,20 etc. What is the rule (link to skip counting on a clock as well) Where do they see skip counting of any value around them? In the school? On the highway...
- Have students make their own - partner guesses - ALL with money
-

## Notes:

**Time: Duration is described and quantified by time.**

**How can duration be communicated?**

**3T1 Students tell time using clocks.**

Knowledge	Understanding	Skills & Procedures
<p>Clocks relate seconds to minutes and hours according to a base-60 system.</p> <p>The basic unit of time is the second.</p> <p>One second is <math>\frac{1}{60}</math> of a minute.</p> <p>One minute is <math>\frac{1}{60}</math> of an hour.</p> <p>Analog and digital clocks represent time of day.</p> <p>Time of day can be expressed as a duration relative to 12:00 in two 12-hour cycles.</p> <p>Time of day can be expressed as a duration relative to 0:00 in one 24-hour cycle in some contexts, including French-language contexts.</p>	<p>Clocks are standard measuring tools used to communicate time.</p>	<p>Investigate relationships between seconds, minutes, and hours using an analog clock.</p> <p>Relate minutes past the hour to minutes until the next hour.</p> <p>Describe time of day as a.m. or p.m. relative to 12-hour cycles of day and night.</p> <p>Tell time using analog and digital clocks.</p> <p>Express time of day in relation to one 24-hour cycle.</p>

In what ways can money be used?

1F1 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"><li>• coins</li><li>• bills</li><li>• debit cards</li><li>• credit cards</li></ul>	<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</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</p>
<p>Canadian coins and bills come in different denominations, such as</p> <ul style="list-style-type: none"><li>• nickels</li><li>• dimes</li><li>• quarters</li><li>• loonies</li><li>• toonies</li><li>• \$5</li><li>• \$10</li><li>• \$20</li><li>• \$50</li><li>• \$100</li></ul> <p>Images on Canadian coins and bills include</p> <ul style="list-style-type: none"><li>• wildlife</li><li>• sports</li><li>• boats</li><li>• emblems</li><li>• historic figures</li></ul> <p>Money can be</p> <ul style="list-style-type: none"><li>• shared</li><li>• earned</li><li>• saved</li><li>• spent</li></ul>	<p>features to represent its value.</p>	<p>exchanged for money.</p>

Notes: What do your students need to know about money to enter your Number Outcomes?

Money dump - where are your students at - where do you need to plan to start?

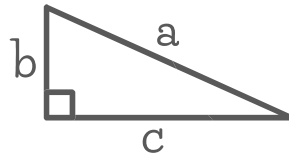
## Notes:

How does decision making influence money management?		
2F1 Students relate money and decision making.		
Knowledge	Understanding	Skills & Procedures
<p>Decisions about money include how much to</p> <ul style="list-style-type: none"> <li>• spend</li> <li>• save</li> <li>• share</li> </ul> <p>Individuals can have a limited amount of</p>	<p>Managing money involves making decisions.</p> <p>Decisions related to money are based on needs and wants.</p>	<p>Distinguish between a paying job and volunteer work.</p> <p>Describe how money can be divided for different purposes.</p>
<p>money to spend.</p> <p>Money spent on one item means less money for other items or activities.</p> <p>Individuals can save money for an item, an event, or the future.</p> <p>Individuals can donate money through charities, organizations, and agencies to help others or support a cause.</p> <p>Money can be earned in exchange for work that is done or goods and services that are provided.</p> <p>Responsible decision making involves spending money on needs before wants.</p>		<p>Practise making money-related decisions in a variety of contexts.</p>

**Grade 3**

<b>Organizing Idea</b>	Financial Literacy: Informed financial decision making contributes to the well-being of individuals, groups, and communities.	
<b>Guiding Question</b>	In what ways can money management be supported?	What is p
<b>Learning Outcome</b>	Students describe strategies that support responsible money management.	Students

	Knowledge	Understanding	Skills & Procedures	
	<p>Good money habits allow individuals to appreciate the value of money and the importance of managing it.</p> <p>Responsible spending can be supported through strategies, such as</p> <ul style="list-style-type: none"> <li>• buying needed items first</li> <li>• buying items that are affordable</li> <li>• taking time when making purchases</li> <li>• not purchasing more than is needed</li> </ul> <p>Saving means not spending in order to keep money aside for unexpected expenses and to pay for purchases, activities, and future plans or goals.</p> <p>Responsible saving can be supported through strategies, such as</p> <ul style="list-style-type: none"> <li>• considering needs and wants</li> <li>• setting financial goals</li> <li>• establishing a savings account</li> <li>• putting earned money aside on a regular basis</li> </ul> <p>Responsible money management can allow individuals to help others in need through donation.</p>	<p>Individuals can develop good habits early in life to make responsible money decisions now and in the future.</p> <p>Saving is essential for personal short-term and long-term goals.</p> <p>Donating money can have a significant impact on the well-being of others.</p>	<p>Discuss the importance of responsible spending and saving.</p> <p>Identify possible short-term and long-term saving goals.</p>	<p>Money is the form</p> <ul style="list-style-type: none"> <li>• curren</li> <li>• credit</li> <li>• debit</li> <li>• electr</li> <li>• prepa</li> </ul> <p>Currenc</p> <p>money.</p> <p>Credit ca</p> <p>borrow n</p> <p>financial</p> <p>Credit ca</p> <ul style="list-style-type: none"> <li>• have</li> <li>• must</li> <li>• have</li> <li>paid c</li> <li>• are is</li> <li>institu</li> </ul> <p>Debit ca</p> <p>access r</p> <p>bank acc</p> <p>Prepaid</p> <p>of mone</p> <p>Factors l</p> <p>include</p> <ul style="list-style-type: none"> <li>• budg</li> <li>• price</li> <li>• qualit</li> <li>• needs</li> </ul>

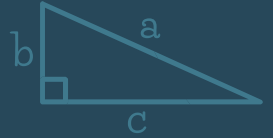


$2+2=4$

42:9

x

# Activity Time



OPEN Questions only



+

+

%

# 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)

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.

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.

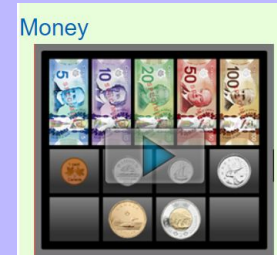
Compare the same fraction of different-sized wholes.

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.

- Understanding “Money” and its role in many other concepts.
- Understanding how it connects between grades and end goals.
- “Money is a Leader”
- The 4 C’s - Concept, Content, Clarifier & Context
- 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!*





Let's move to  
some September  
& October Focus  
Areas and  
Activities

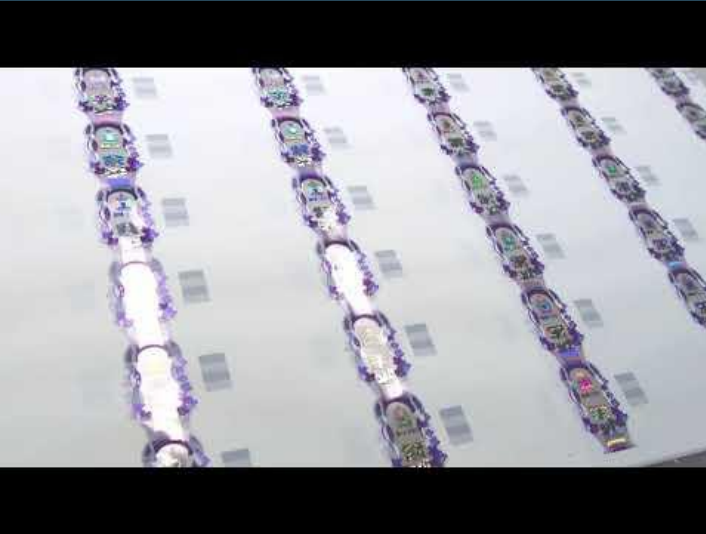


# Starting Off the Year being Intentional with Money

**Feel free to copy and use  
these slides if they help!**



# The Making of a Bank Note



## Canada's New Banknotes



## The Secrets of the Canadian Dollar

What did we see when we emptied our bowl on the table?





# Money - Manipulative or Concept?





What is a COIN?

Do you have any coins?





# The Story of Our Coins



# Hi! I'm the Penny

Pennies can help you learn to count!

Queen Elizabeth II on the **back** of the Penny.



Did you know they do not make me anymore!

Maple leaves: On the **front** of the Penny

I am worth **1 ¢**

# Greater, less, or equal?



Drag the symbols between the coins to show if the coins are greater than, less than, or equal to each other.



# Who has more?



A

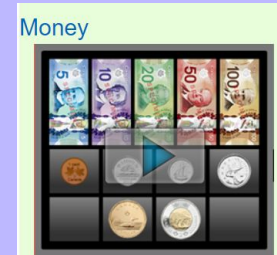


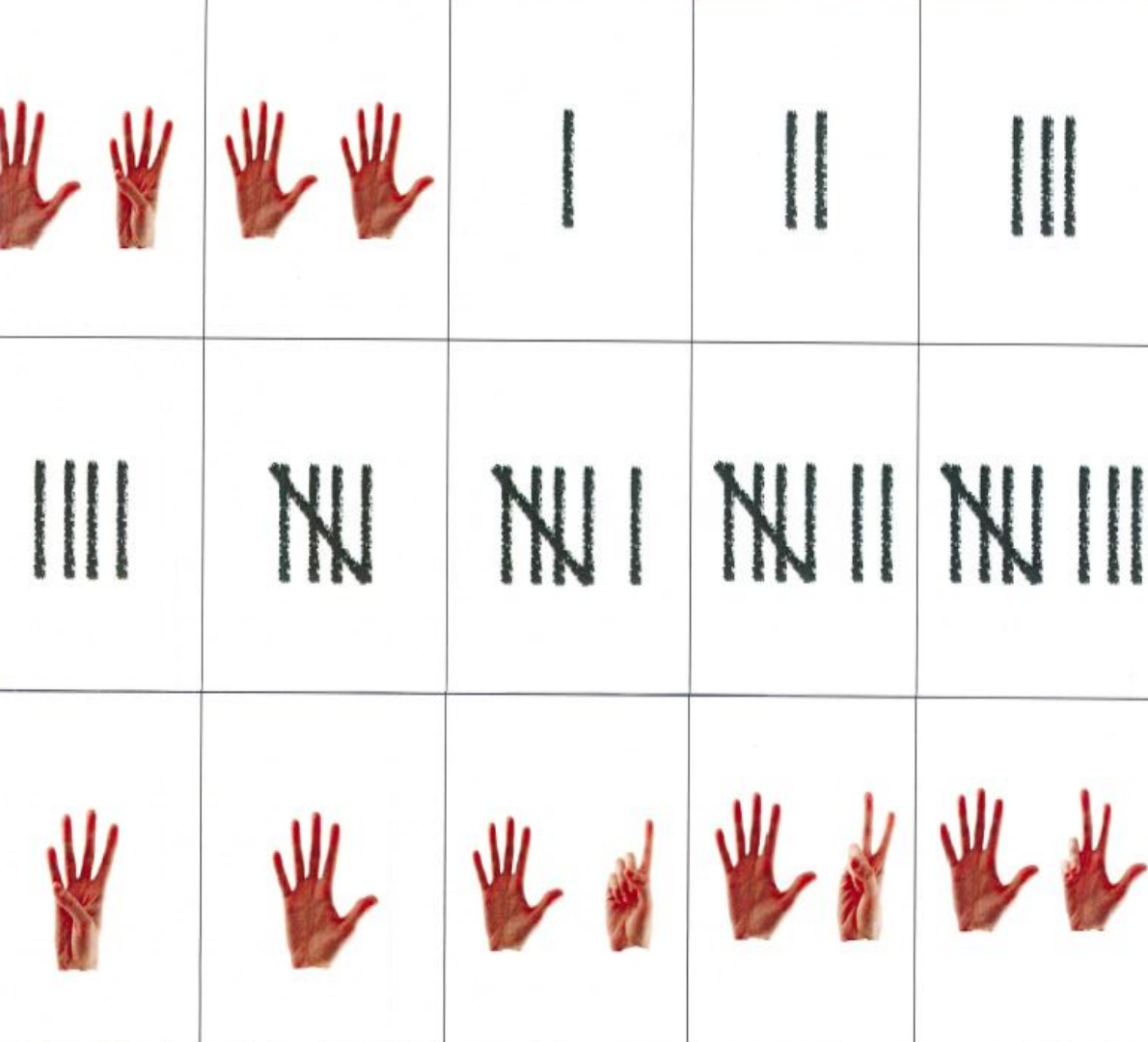
B



[Click here to explain how you know.](#)

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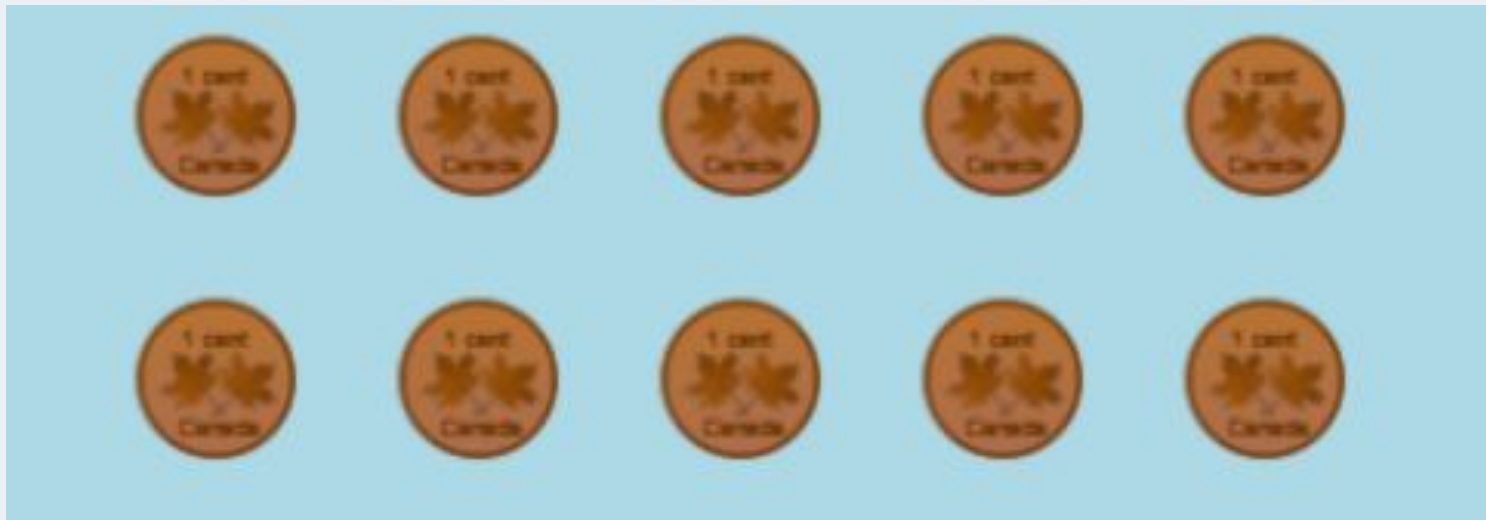


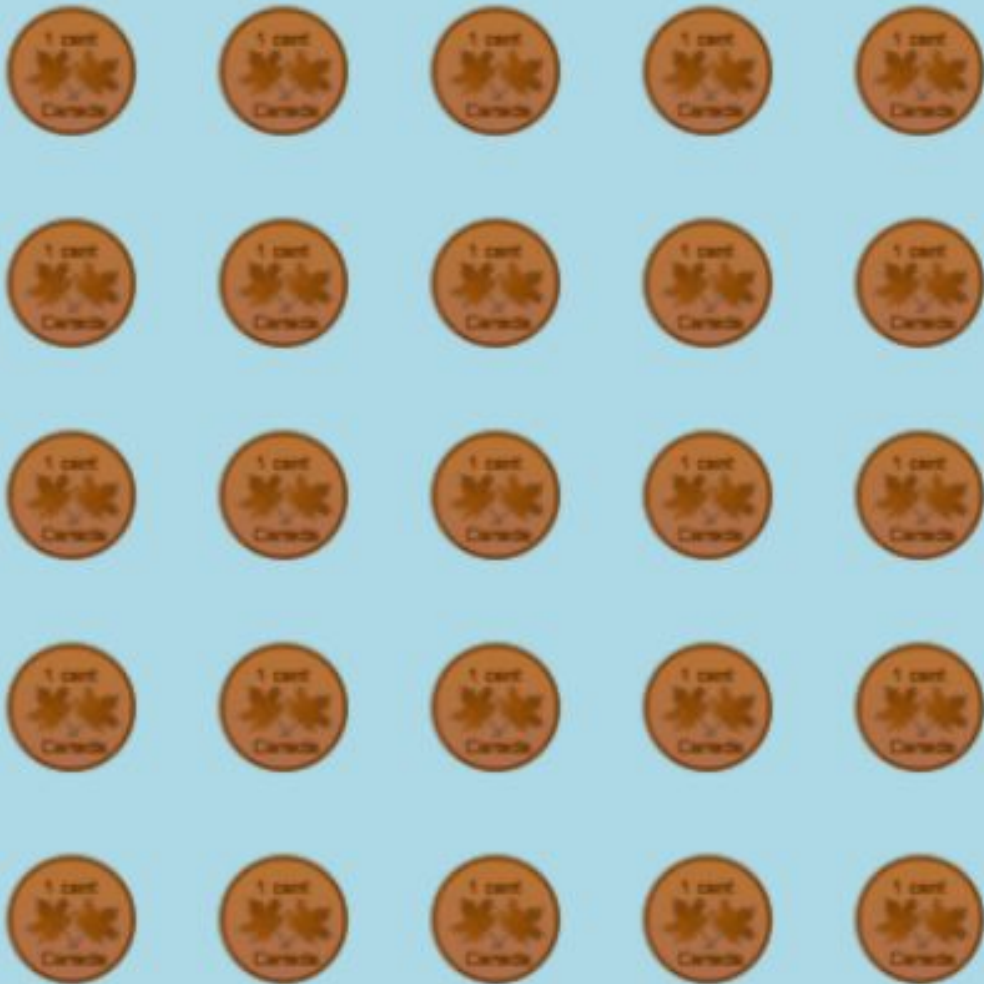
Every child should have their own subitizing cards!

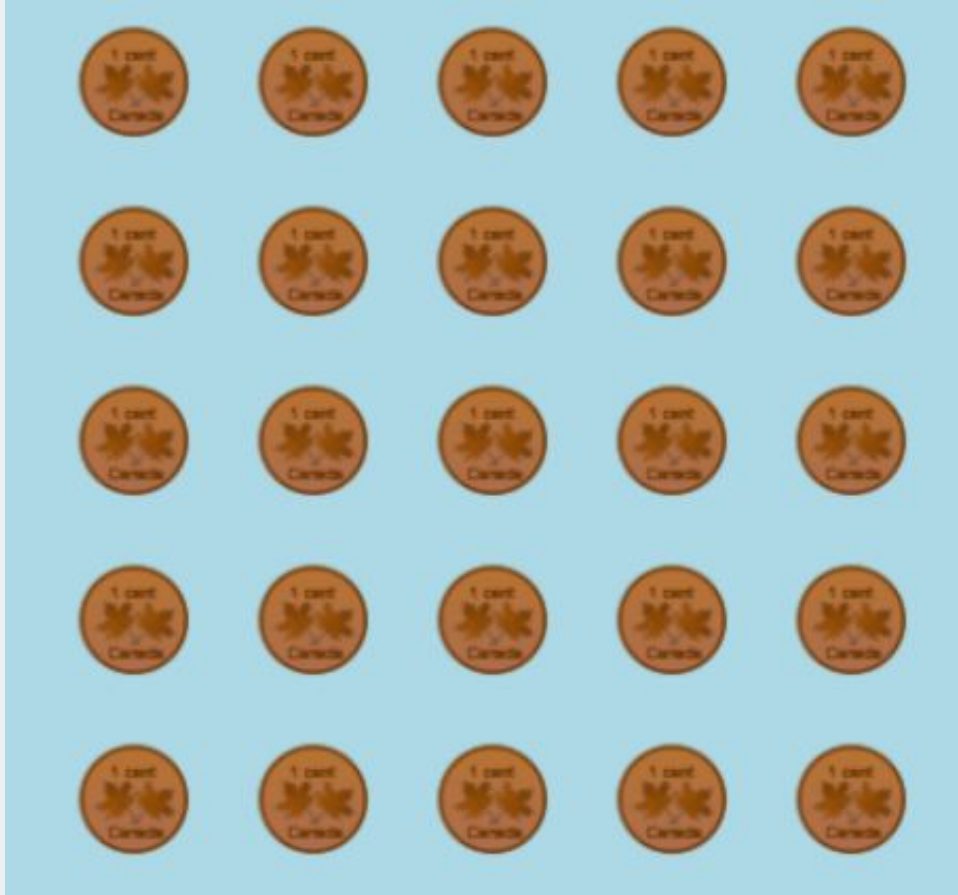
# Understanding Place value

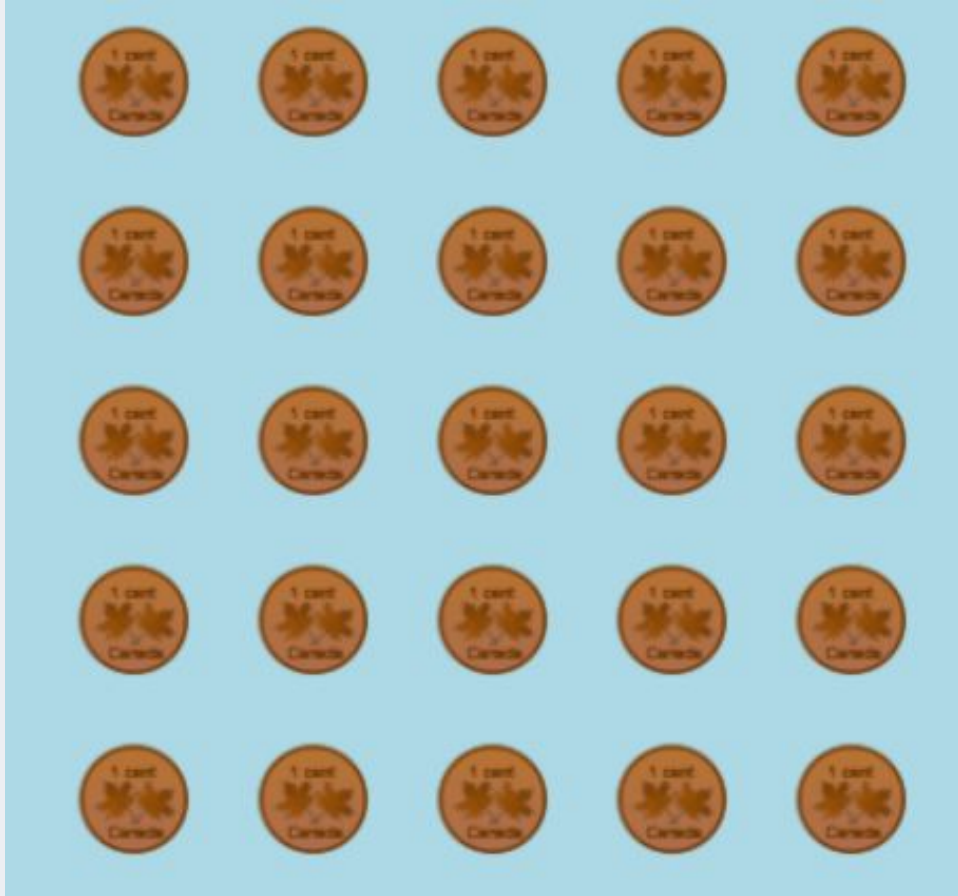


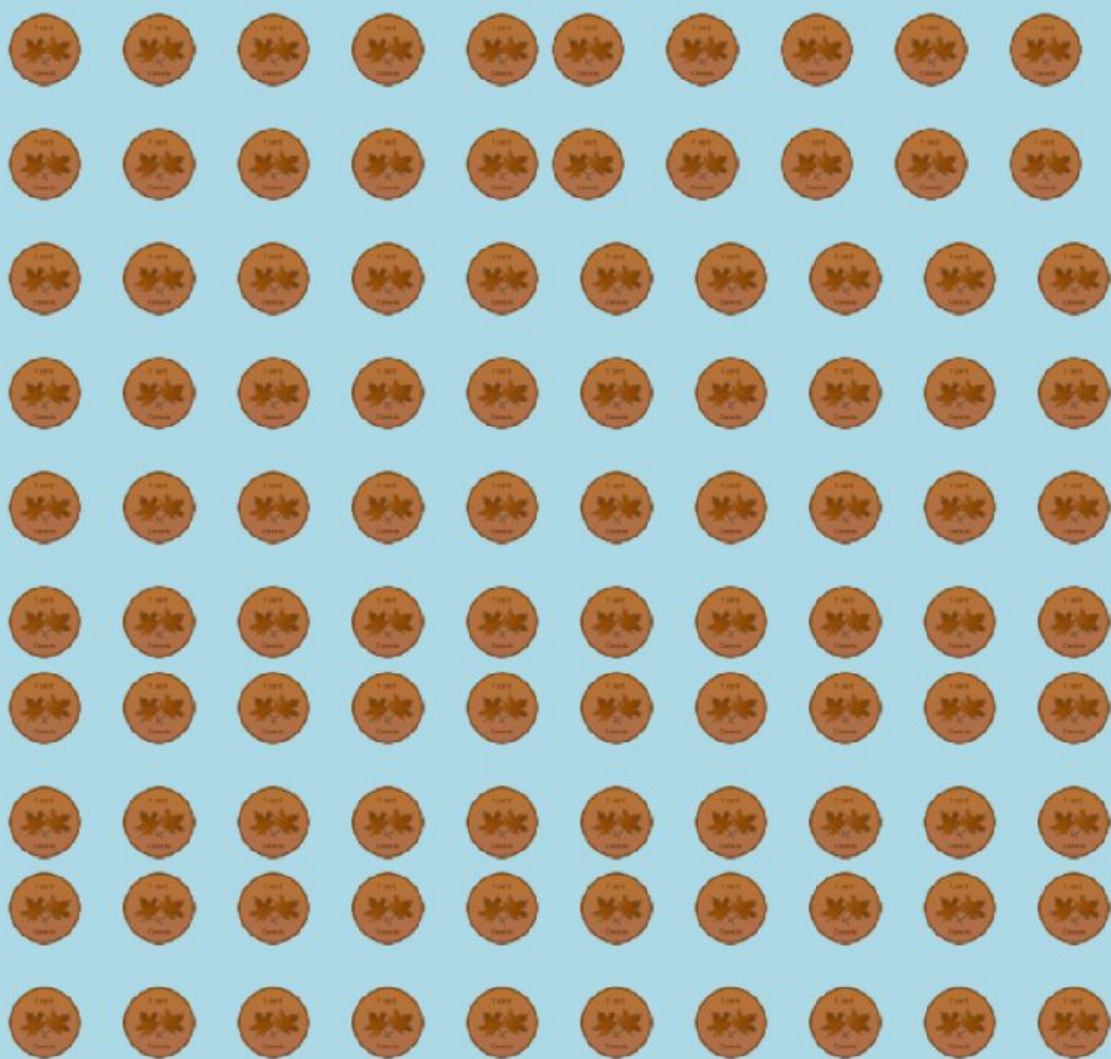


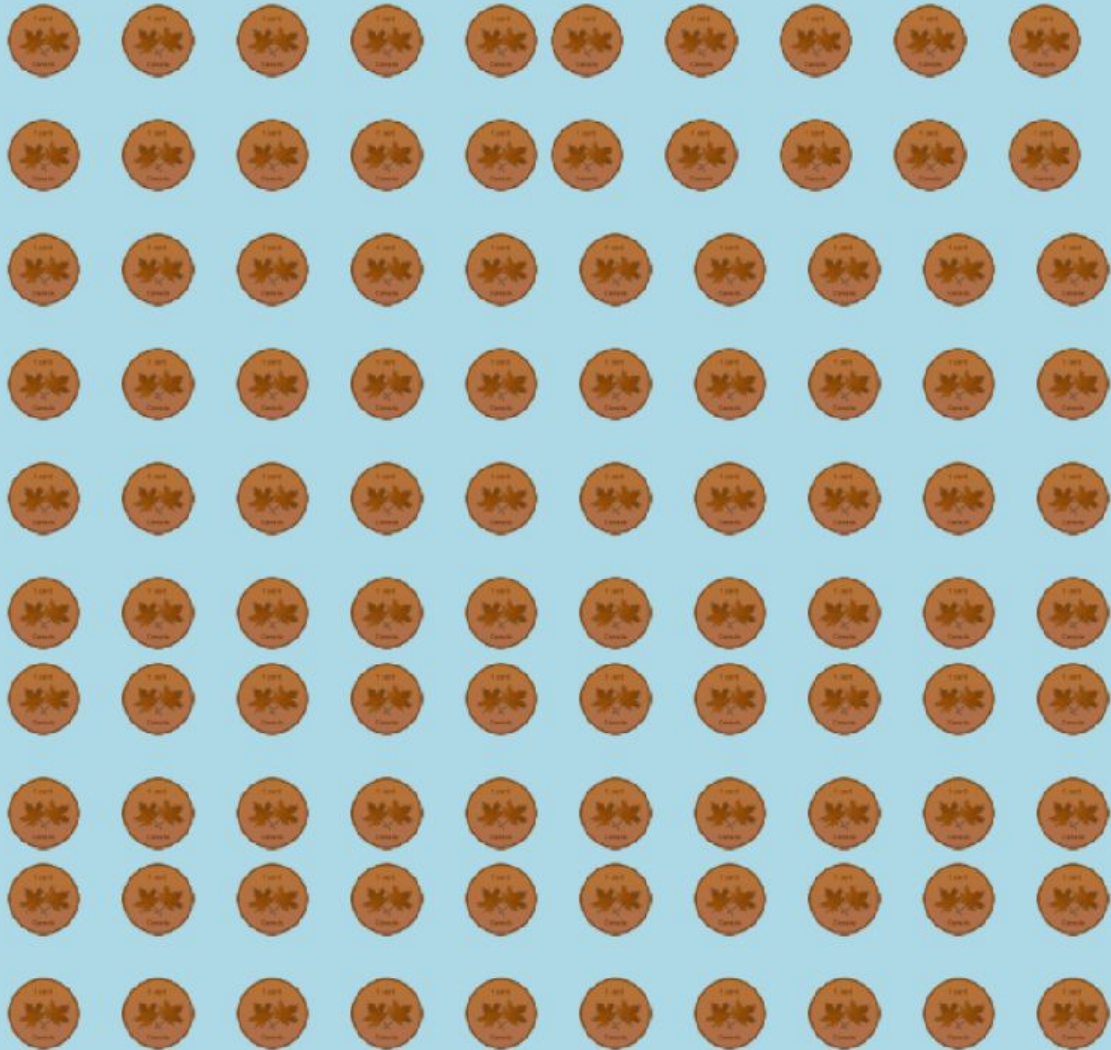












Unit Fractions  
get built from  
this  
understanding  
and activity.



# Making Money Many Ways

\$250.00



Blank rounded rectangular area for notes or calculations.

Blank rounded rectangular area for notes or calculations.



Blank rounded rectangular area for notes or calculations.

Blank rounded rectangular area for notes or calculations.



Group

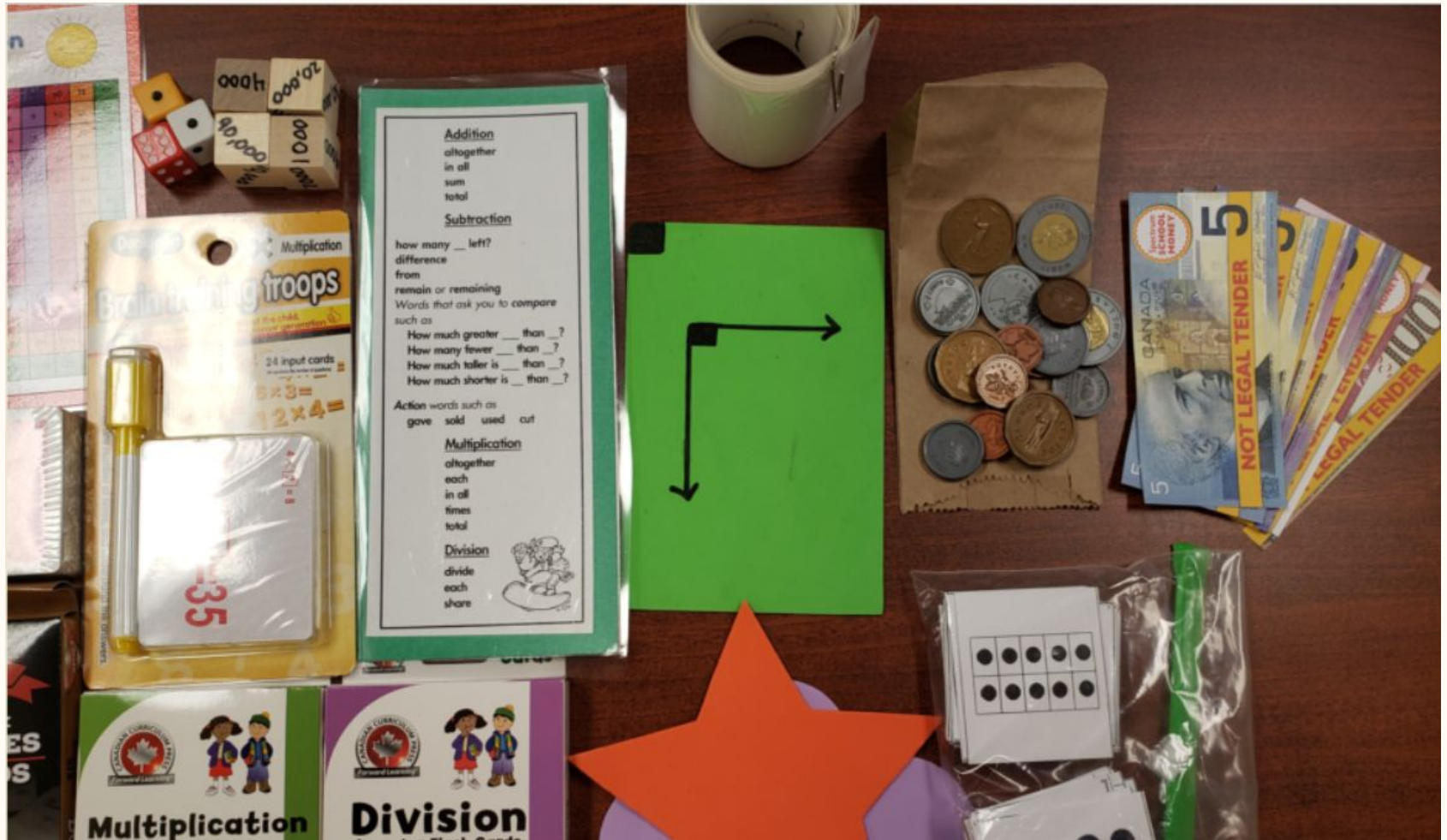


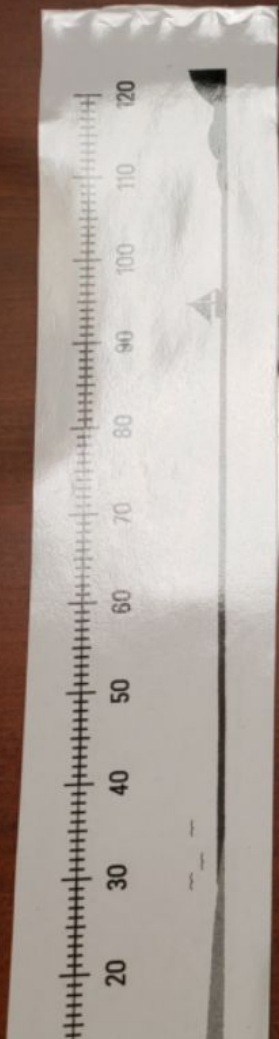
# Create the Unit Fractions **Visually**

- no fraction terminology



# Content Overview





### MY HUNDREDS Chart

NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

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
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120

### Multiplication Chart 1-12

x	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10 <td>20<td>30<td>40<td>50<td>60<td>70<td>80<td>90<td>100<td>110<td>120</td></td></td></td></td></td></td></td></td></td></td>	20 <td>30<td>40<td>50<td>60<td>70<td>80<td>90<td>100<td>110<td>120</td></td></td></td></td></td></td></td></td></td>	30 <td>40<td>50<td>60<td>70<td>80<td>90<td>100<td>110<td>120</td></td></td></td></td></td></td></td></td>	40 <td>50<td>60<td>70<td>80<td>90<td>100<td>110<td>120</td></td></td></td></td></td></td></td>	50 <td>60<td>70<td>80<td>90<td>100<td>110<td>120</td></td></td></td></td></td></td>	60 <td>70<td>80<td>90<td>100<td>110<td>120</td></td></td></td></td></td>	70 <td>80<td>90<td>100<td>110<td>120</td></td></td></td></td>	80 <td>90<td>100<td>110<td>120</td></td></td></td>	90 <td>100<td>110<td>120</td></td></td>	100 <td>110<td>120</td></td>	110 <td>120</td>	120
11	11 <td>22<td>33<td>44<td>55<td>66<td>77<td>88<td>99<td>110<td>121<td>132</td></td></td></td></td></td></td></td></td></td></td>	22 <td>33<td>44<td>55<td>66<td>77<td>88<td>99<td>110<td>121<td>132</td></td></td></td></td></td></td></td></td></td>	33 <td>44<td>55<td>66<td>77<td>88<td>99<td>110<td>121<td>132</td></td></td></td></td></td></td></td></td>	44 <td>55<td>66<td>77<td>88<td>99<td>110<td>121<td>132</td></td></td></td></td></td></td></td>	55 <td>66<td>77<td>88<td>99<td>110<td>121<td>132</td></td></td></td></td></td></td>	66 <td>77<td>88<td>99<td>110<td>121<td>132</td></td></td></td></td></td>	77 <td>88<td>99<td>110<td>121<td>132</td></td></td></td></td>	88 <td>99<td>110<td>121<td>132</td></td></td></td>	99 <td>110<td>121<td>132</td></td></td>	110 <td>121<td>132</td></td>	121 <td>132</td>	132
12	12 <td>24<td>36<td>48<td>60<td>72<td>84<td>96<td>108<td>120<td>132<td>144</td></td></td></td></td></td></td></td></td></td></td>	24 <td>36<td>48<td>60<td>72<td>84<td>96<td>108<td>120<td>132<td>144</td></td></td></td></td></td></td></td></td></td>	36 <td>48<td>60<td>72<td>84<td>96<td>108<td>120<td>132<td>144</td></td></td></td></td></td></td></td></td>	48 <td>60<td>72<td>84<td>96<td>108<td>120<td>132<td>144</td></td></td></td></td></td></td></td>	60 <td>72<td>84<td>96<td>108<td>120<td>132<td>144</td></td></td></td></td></td></td>	72 <td>84<td>96<td>108<td>120<td>132<td>144</td></td></td></td></td></td>	84 <td>96<td>108<td>120<td>132<td>144</td></td></td></td></td>	96 <td>108<td>120<td>132<td>144</td></td></td></td>	108 <td>120<td>132<td>144</td></td></td>	120 <td>132<td>144</td></td>	132 <td>144</td>	144



**Addition**  
altogether  
in all  
sum  
total

**Subtraction**  
how many left?  
difference  
minus  
change or remaining  
words that ask you to compare  
more or  
how much greater  
how many fewer  
how much taller  
how much shorter

Using words such as  
have sold used out

**Multiplication**  
altogether  
each  
in all  
times  
total

**Division**  
divide  
each  
share

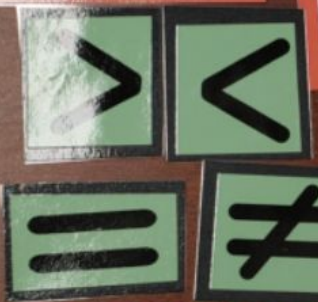
**Denksport** **Multiplication**

**Brain training troops**

24 input cards

$10 \times 4 =$   $6 \times 3 =$   
 $7 \times 7 =$   $12 \times 4 =$

$7 \times \square = 35$



**Classic**  
**DOUBLE SIX DOMINOES**  
**DOMINOS**

4+

WARNING: small parts

2-4 PLAYERS

**Multiplication Learning Flash Cards**

$8 \times 9$

$7 \times 6$

**Division Learning Flash Cards**

$90 \div 10$

$80 \div 10$

# Suggested amounts of Money for each Ziplock Bag



10 pennies

6 nickels

10 dimes

6 quarters

4 loonies

3 toonies

2 x \$5.00

2 x \$10.00

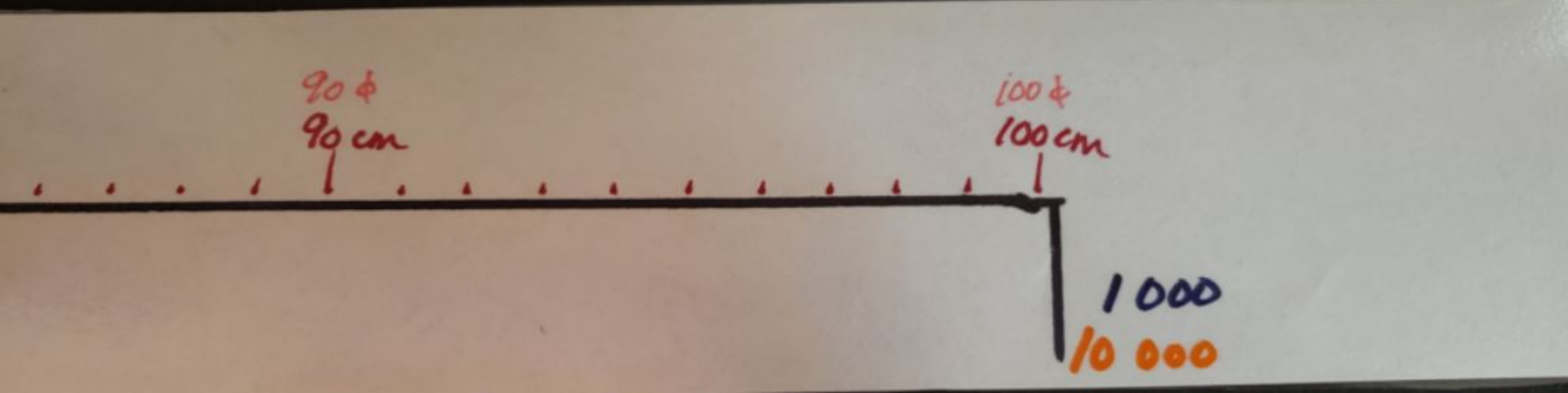
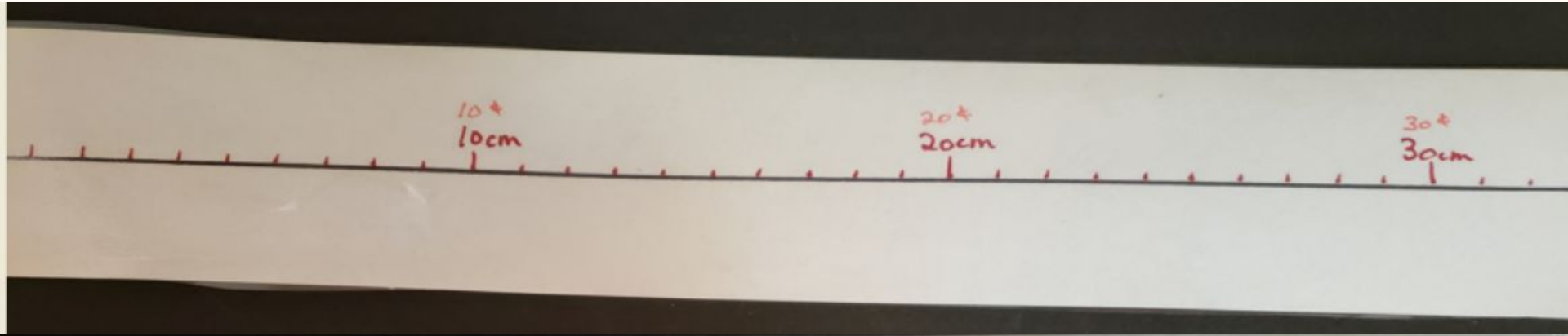
2 x \$20.00

2 x \$50.00

1 x \$100.00

Additional cash, if needed, can be retrieved from the “Bank”

# Counting and Visualizing 1000, 10 000, 100 000






Wooden  
cubes are 1  
inch cubes  
- available  
at  
Dollarama



Dollarama

## Place Value Chart Beginning with Money (Penny, Nickel, Dime)

Dime 	Nickel 	Penny 



twenty



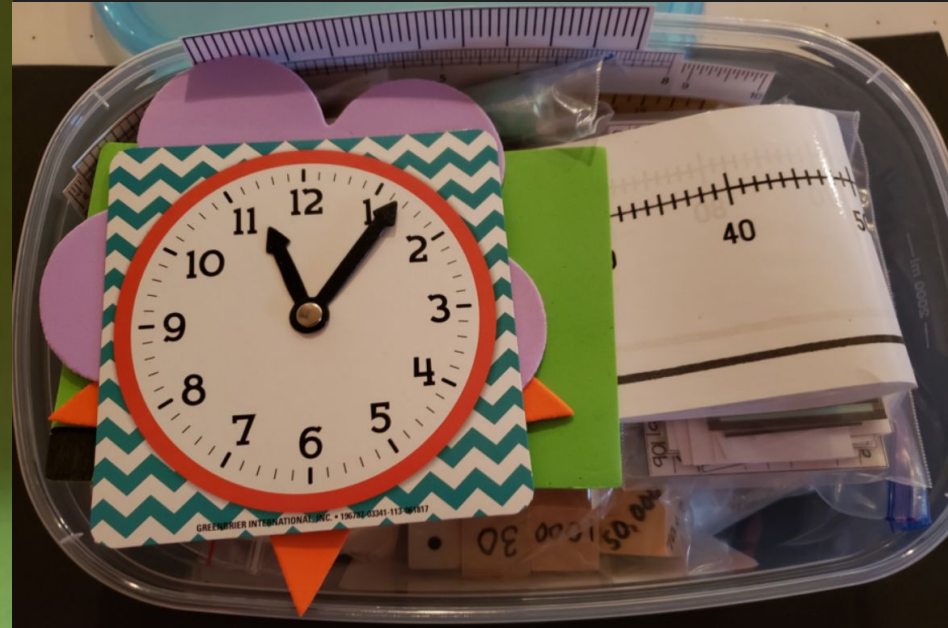
three



4








# Finished kit - container from Dollarama



Container fits in a student desk or cubby.




## Place Value Chart Beginning with Money (Loonie, \$5, \$10, \$50, \$100)

$$\square + \square + \square + \square + \square$$



## Place Value Chart Beginning with Money (Loonie, \$5, \$10, \$100, \$1000)



THOUSAND (\$1000.00)			

+  +  +



\$1000.00 = 100 000¢

## Place Value Chart Beginning with Money (Penny, Nickel, Dime, Quarters)

Quarter 	Dime 	Nickel 	Penny 

# INFUSING INDIGENOUS KNOWLEDGE INTO CURRICULUM

ALBERTA GRADES 1 TO 9

This website shares documents for Grades 1 to 9 English Language Arts, Social Studies, Science and Math that aim to provide:

Clarity and consistency related to the Grades 1 to 9 Essential Learning Outcomes in the four core subject areas in Alberta Education's Programs of Study

Understandings of curriculum sequencing from grade to grade for each of the identified subject areas

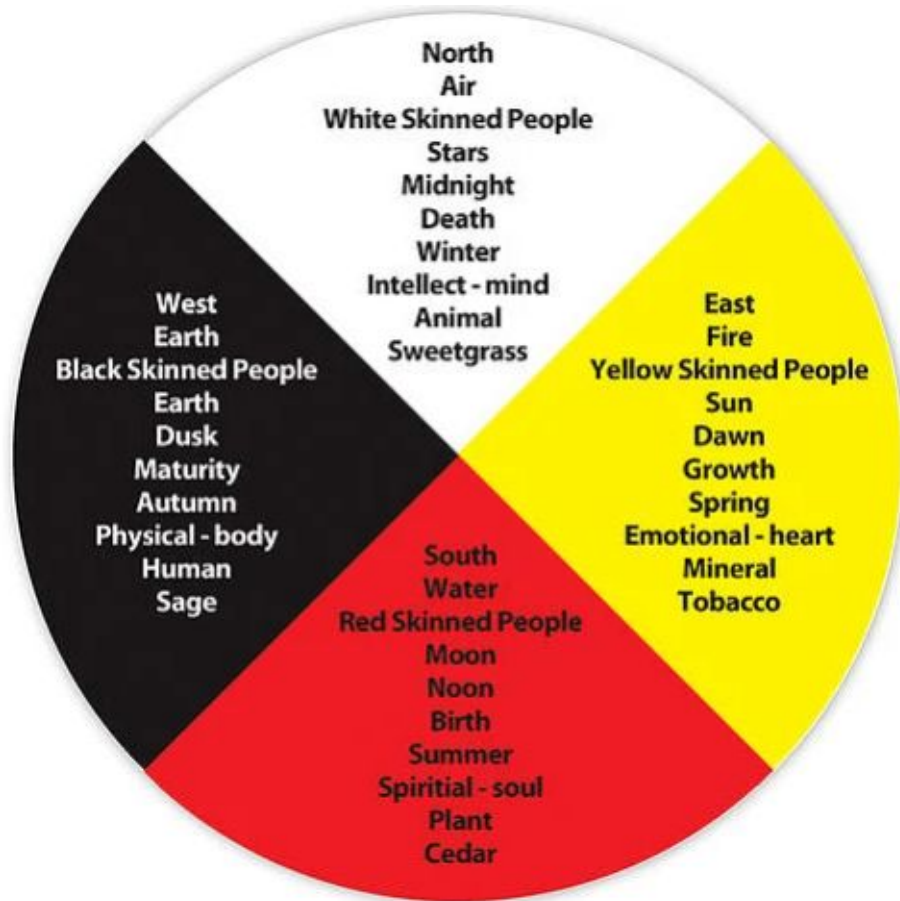
Understandings of what must be assessed (for and of) in each of the identified subject areas per grade

Common and consistent curriculum across an authority



Keewatin Tribal Council Educational Authority, identified ELOs by viewing curriculum through the lens of **land based learning (LBL)**, **Cree ways of knowing and being (Nehiyaw Ways of Knowing)**, and the learning needs of students in their communities.

<https://sites.google.com/arpdc.ab.ca/infusingindigenousknowledge>



Seasonal  
Wheels by the  
[Kwakiutl](#) (BC  
Indigenous)

[IKWC](#) (Indigenous  
Knowledge and  
Wisdom Centre)

Wilfred [Buck](#)

Learning [to Do](#)  
(scroll to the  
bottom and select  
Grade 2 Math)



# Resource website

[www.movingforwardcurriculum.ca](http://www.movingforwardcurriculum.ca)

Key Documents, Kits and Additional Resources for the website will be found at this site. Look across the top bar on the home page for Math, French Immersion, Science and Additional resources to help support your planning.

$n\sqrt{x}$

$x/2y$

