Before we start

While you are waiting for everyone to sign in, place a very brief summary of where you are at in the curriculum now. (example, counting 1-3, started on …

Kindergarten Planning Session 2
Provincial Cohort - Sept-Dec

Oct 12, 2022

Chris Zarski

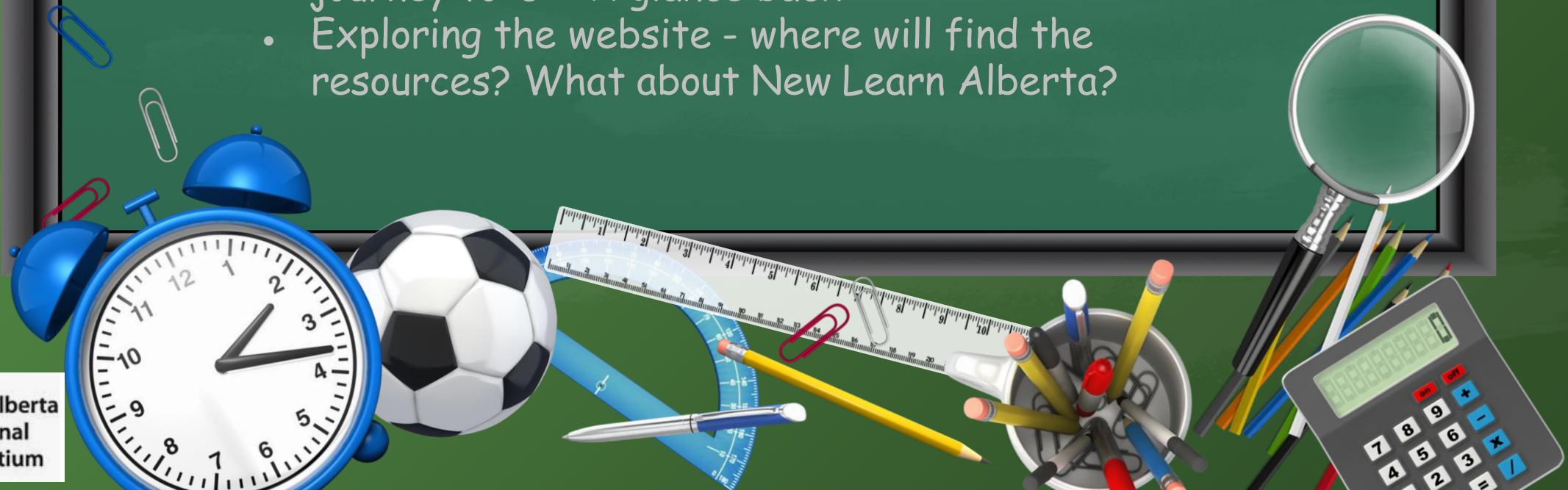
Central Alberta Regional Consortium

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 especially acknowledge the Cree, Dene and Metis who have walked and marked these lands for generations. 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.

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 '5' - A glance back
- Exploring the website - where will find the resources? What about New Learn Alberta?



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Success Criteria

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

1

Confidence

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

2

Direction

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

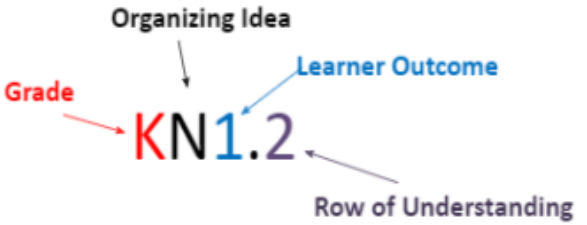
3

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



	Kindergarten			Grade 1			Grade 2		
Organizing Idea	Number: Quantity is measured with numbers that enable counting, labelling, comparing, and operating.								
Guiding Question	How can quantity contribute meaning to daily life?			How can quantity be communicated?			How can quantity contribute to a sense of number?		
Learning Outcome	KN1.1 Children investigate quantities to 10.			1N1.1 Students interpret and explain quantities to 100.			2N 1.1 Students analyze quantity to 1000.		
	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures	Knowledge	Understanding	Skills & Procedures
	Quantity can be represented using objects pictures words numerals	Quantity can be the number of objects in a set.	Recognize a number of familiar objects as a quantity. Represent a quantity in different ways. Relate a numeral to a specific quantity.	A numeral is a symbol or group of symbols used to represent a number. The absence of quantity is represented by 0.	Quantity is expressed in words and numerals based on patterns. Quantity in the world is represented in multiple ways.	Represent quantities using words, numerals, objects, or pictures. Identify a quantity of 0 in familiar situations.	Any number of objects in a set can be represented by a natural number. The values of the places in a four-digit natural number are thousands, hundreds, tens, and ones. Places that have no value within a given number use zero as a placeholder. The number line is a spatial representation of quantity.	There are infinitely many natural numbers. Every digit in a natural number has a value based on its place. Each natural number is associated with exactly one point on the number line.	Represent quantities using words and natural numbers. Identify the digits representing thousands, hundreds, tens, and ones based on place in a natural number. Relate a number, including zero, to its position on the number line.

A Note on Wording

KN 1.1 Quantity can be represented using (**including**) objects, pictures, words, and numerals.

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

KM 1.1 Size can be interpreted in many ways(according to measurable attributes) such as,

- how much a container holds (**capacity**).

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

KN1.4 Comparisons of quantity can be described by using words **such as**

- more
- less
- same
- enough
- not enough

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

Progressions

Link

Competencies

- Critical Thinking
- Problem Solving
- Research and Managing Information
- Creativity and Innovation
- Communication
- Collaboration
- Citizenship
- Personal Growth and Well-being

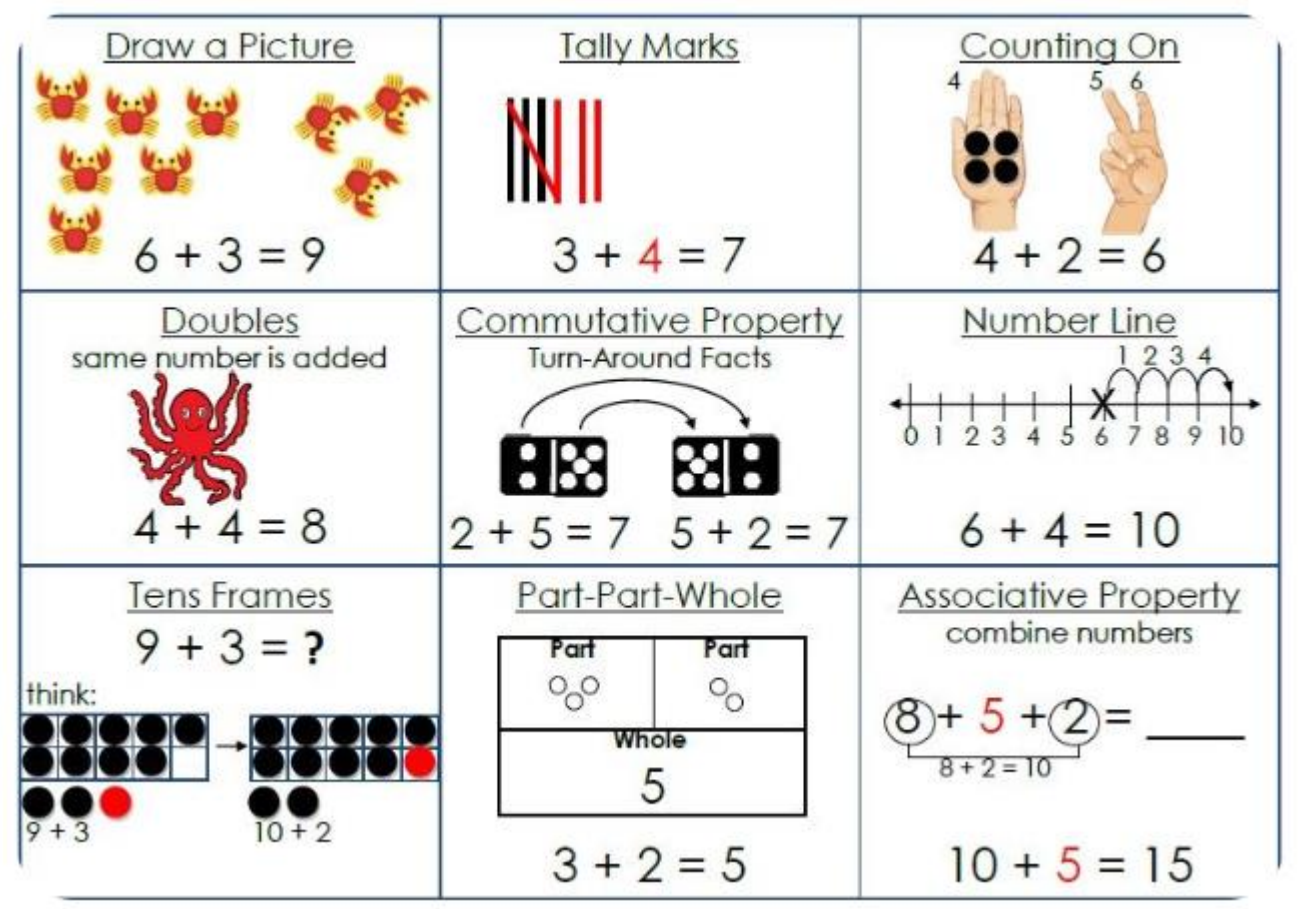
Literacy

- Literacy involves acquiring and applying the understanding and skills necessary to decode, evaluate, and logically communicate ideas and build meaning, using oral, written, visual, and multimedia sources.
- Literacy is embedded in learning across all subject areas. It is foundational, allowing students to live, learn, and work as knowledgeable, active participants in a democratic society.
- **The Literacy Progressions** identify knowledge and behaviours that students may demonstrate by the end of each divisional age range.

Numeracy

- Numeracy involves acquiring and applying the mathematical knowledge and skills needed to engage with quantitative and spatial information in a variety of situations.
- Numeracy is embedded in learning experiences across all subject areas
- **The Numeracy Progressions** identify knowledge and behaviours that students may demonstrate by the end of each divisional age range.

A Conceptual Lens

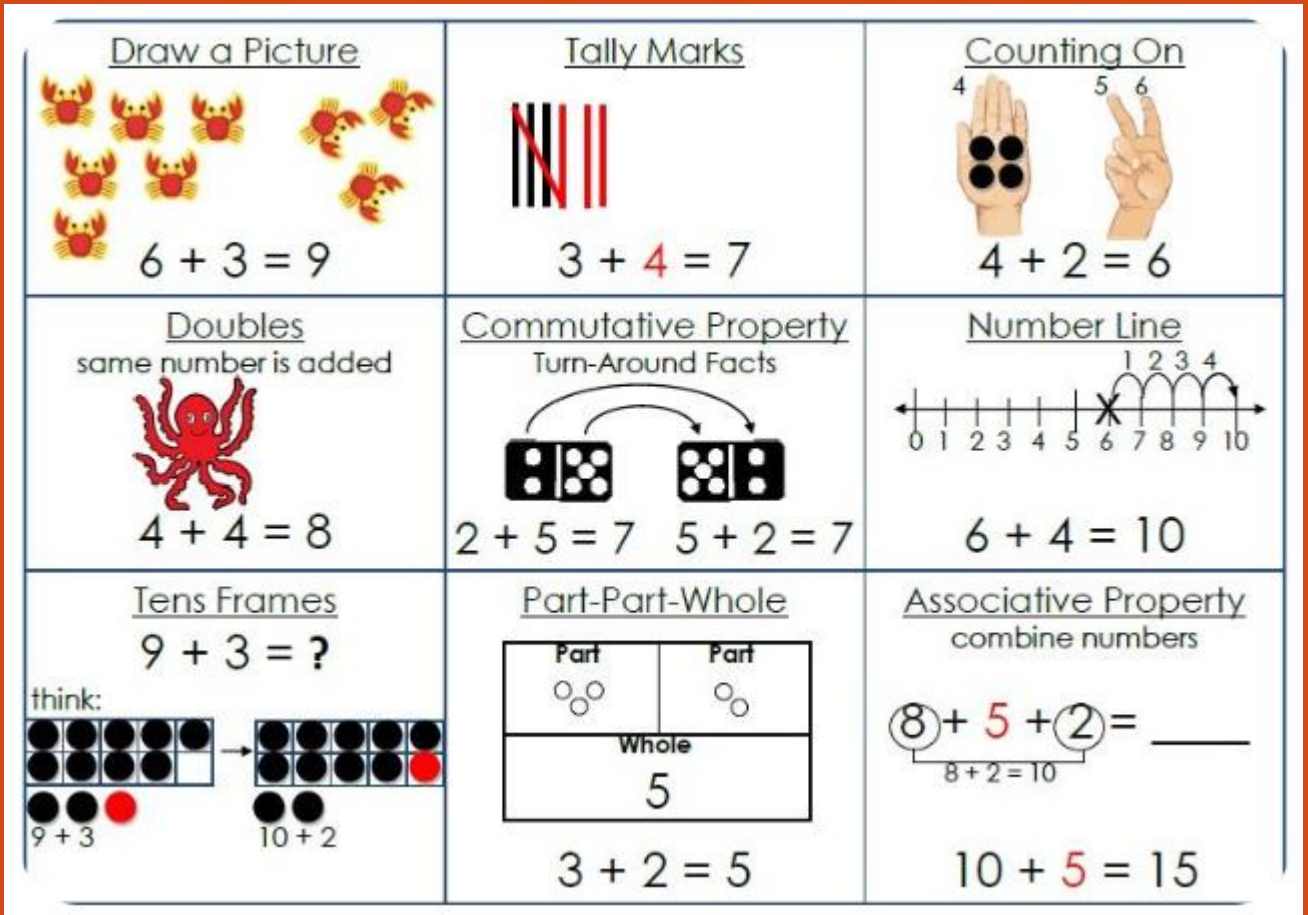


Lens

Math Concepts

- quantity
- addition
- modelling
- representation

A Conceptual Lens



Lens

Competencies

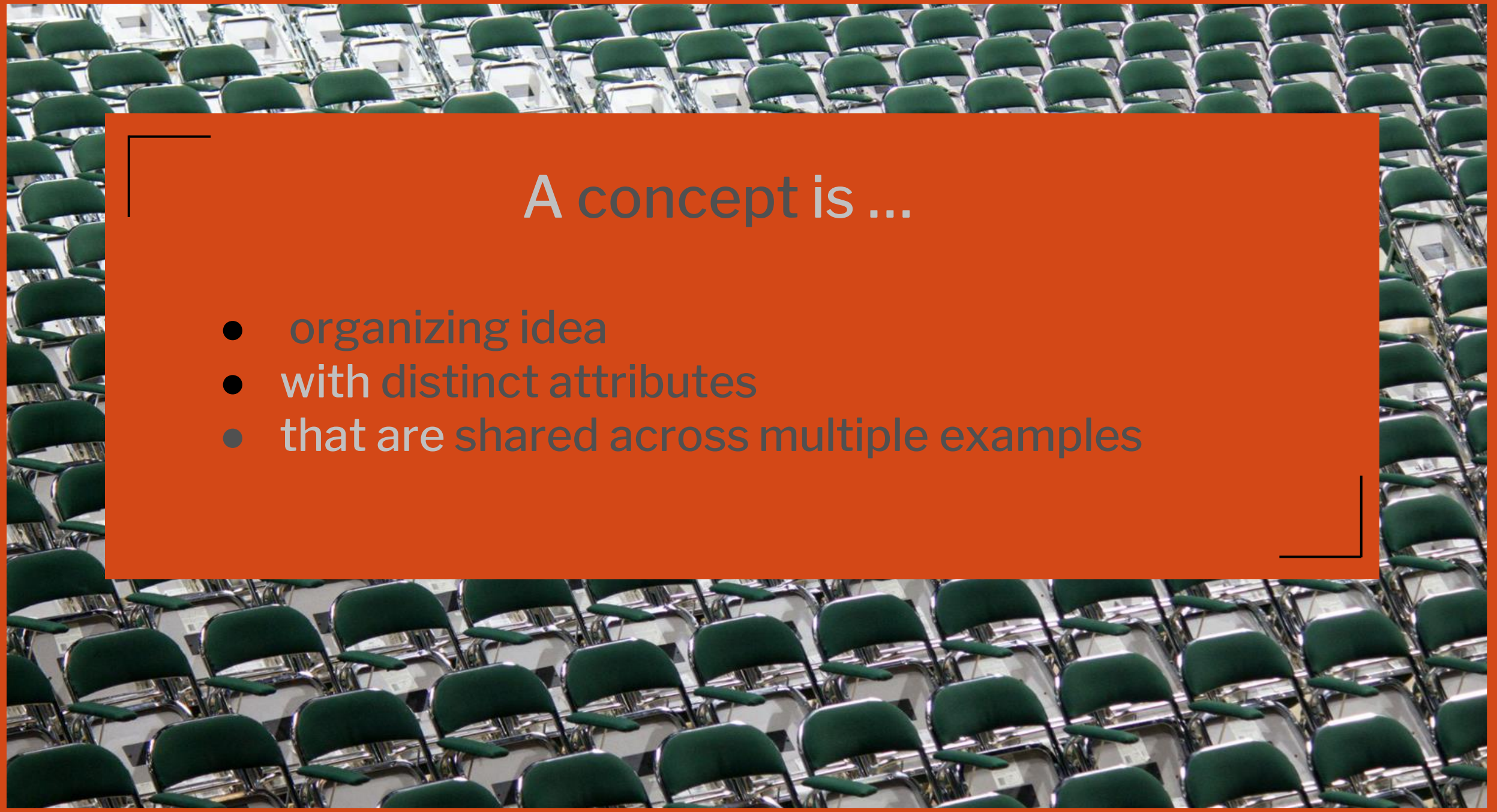
- critical thinking
- design

Looking at the curriculum through the lens of concepts.

¡Concepts

!

What is a concept?

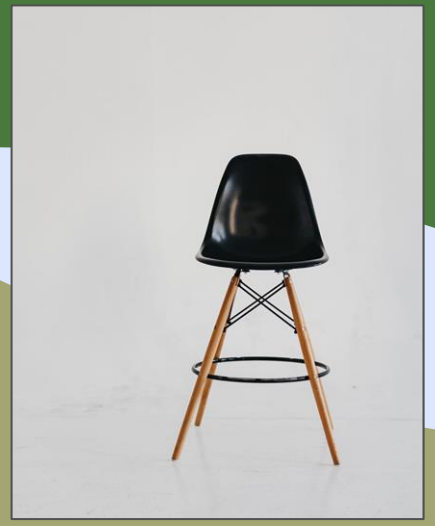


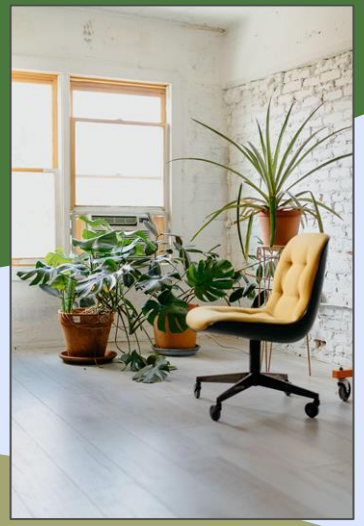
A concept is ...

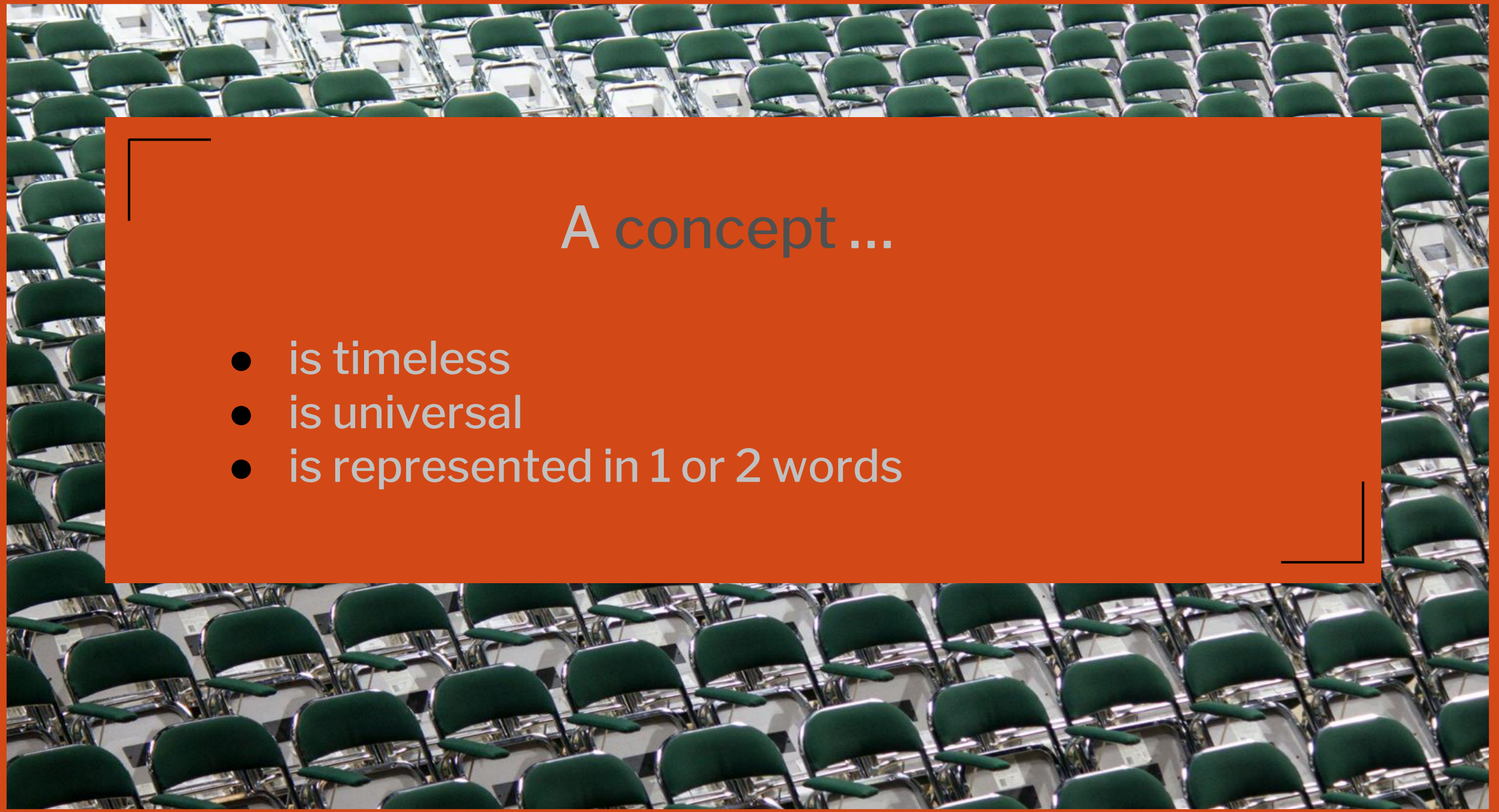
- organizing idea
- with distinct attributes
- that are shared across multiple examples

Chair is a concept

- **organizing idea : Chair**
- **with distinct attributes 1) object 2) manufactured or designed for sitting)**
- **that are shared across multiple examples**







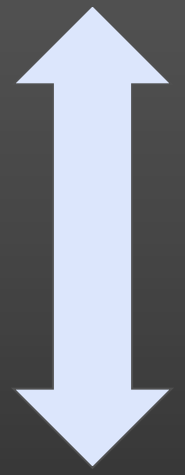
A concept ...

- 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
Change
Change
Connection
Reflection
Responsibility
Perspective

conceptual lens: concepts

KN1.1 Learner Outcome: Children investigate quantity to 10.		
Knowledge	**Understanding**	**Skills and Procedures**
Quantity can be represented using • objects • pictures • words • numerals	Quantity can be the number of objects in a set.	Recognize a number of familiar objects as a quantity. Represent a quantity in different ways. Relate a numeral to a specific quantity.

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conceptual lens: concepts

KN1.1 Learner Outcome: Children investigate quantity to 10.		
Knowledge	**Understanding**	**Skills and Procedures**
Quantity can be represented using • objects • pictures • words • numerals	Quantity can be the number of objects in a set.	Recognize a number of familiar objects as a quantity. Represent a quantity in different ways. Relate a numeral to a specific quantity.

conceptual lens: skill related concepts

KN1.1 Learner Outcome: Children investigate quantity to 10.		
Knowledge	**Understanding**	**Skills and Procedures**
Quantity can be represented using • objects • pictures • words • numerals	Quantity can be the number of objects in a set.	Recognize a number of familiar objects as a quantity. Represent a quantity in different ways. Relate a numeral to a specific quantity.

Skills & Procedures

Kindergarten Math September - December

- **Recognize** a number of familiar objects as a quantity.
- **Relate** a numeral to a specific quantity.
- **Represent** a quantity in different ways.
- **Count -** a quantity can be **determined** by **counting.** (Stable order)
- **Count** - same sequence; order irrelevance;one-to-one; cardinality; counting as a set (abstraction)
- **Subitize** - quantity can be **determined** without counting.
- **Compare** the size of two sets using one-to-one correspondence. (similarities and differences)
- **Describe** quantities relative to each other using ***comparative*** language.
- **Describe** a quantity in relation to purpose or need using comparative language.
- **Describe** a shape using words such as...
- **Solve problems** in familiar situations by counting.
- **Identify** and **create** repeating patterns.
- **Represented** - a shape can be **represented** using objects, pictures or words.
- **Investigate** quantities to 10.
- **Interpret** time as a sequence of events.

Skills & Procedures

Kindergarten Math September - December

- **Recognize** a number of familiar objects as a quantity.
- **Relate** a numeral to a specific quantity.
- **Represent** a quantity in different ways. **Is able to represent quantities to ___ in different ways.**
- **Count -** a quantity can be **determined** by **counting.** (Stable order)
- **Count** - same sequence; order irrelevance;one-to-one; cardinality; counting as a set (abstraction)
- **Subitize** - quantity can be **determined** without counting.
- **Compare** the size of two sets using one-to-one correspondence. (similarities and differences)
- **Describe** quantities relative to each other using ***comparative*** language. **Is able to use comparative language for quantities up to ____.**
- **Describe** a quantity in relation to purpose or need using comparative language.
- **Describe** a shape using words such as... **Is able to describe shapes of ___ using words such as ____.**
- **Solve problems** in familiar situations by counting.
- **Identify** and **create** repeating patterns.
- **Represented** - a shape can be **represented** using objects, pictures or words.
- **Investigate** quantities to 10.
- **Interpret** time as a sequence of events.

Year at a Glance: Mathematics – Kindergarten

September 2022 ---------- November 2022

September	October	November
SpecificNumber: Quantity is measured with numbers that enable counting, labelling, comparing and operating.		
KN1.2a. Children investigate quantities to 10.(to 5) • A quantity is always counted using the same sequence of words (counting principle: stable order) KN1.1 Children investigate quantities to 10.(to 5) • Quantity can be the number of objects in a set. KN1.4 Children investigate quantities to 10..(to 5) • A quantity can be described in relation to a purpose or need.	KN1.2a. Children investigate quantities to 10..(to 5) • A quantity is always counted using the same sequence of words (counting principle: stable order) KN1.1 Children investigate quantities to 10..(to 5) • Quantity can be the number of objects in a set. KN1.4 Children investigate quantities to 10..(to 5) • A quantity can be described relative to another quantity. • A quantity can be described in relation to a purpose or need. **Subitizing begins and carries forward.**	KN1.2a. Children investigate quantities to 10...(to 5 • A quantity is always counted using the same sequence of words (counting principle: stable order) KN1.1 Children investigate quantities to 10...(to 5 • Quantity can be the number of objects in a set. KN1.4 Children investigate quantities to 10....(to 5 • A quantity can be described relative to another quantity. • A quantity can be described in relation to a purpose or need.
Exposure and Intro to Patterns		**Patterns: Awareness of patterns supports problem solving in various situations.**
		KP1. Children identify and create repeating patterns. • Pattern is characterized by how the elements change or remain the same. **copy - extending - creating**
Time: Duration is described and quantified with time.		
KT1. Children interpret time as a sequence of events. • Time can be perceived as a sequence. **Agenda's & Calendars right from day 1!**	KT1. Children interpret time as a sequence of events. • Time can be perceived as a sequence. **Agenda's & Calendars right from day 1!**	KT1. Children interpret time as a sequence of events. • Time can be perceived as a sequence. **Agenda's & Calendars right from day 1!**
Geometry: Shapes are defined and related by geometric attributes.		
KG 1. Children acquire an understanding of shape. • Shape is structured two-dimensional or three-dimensional space. (focus on 2D)	KG 1. Children acquire an understanding of shape. • Shape is structured two-dimensional or three-dimensional space. (focus on 2D)	KG 1. Children investigate shape. • Shape is structured two-dimensional or three-dimensional space. (2D & 3D)(focus on 2D

December 2022 ——————————————————————————————— ——————————————— March 2023

December	January	February	March

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

KN1.2a. Children investigate quantities to 10...(to 5) perhaps 6 to use dice

- A quantity is always counted using the same sequence of words (counting principle: stable order)

KN1.1 Children investigate quantities to 10.(to 5) perhaps 6 to use dice

- Quantity can be the number of objects in a set.

KN1.4 Children investigate quantities to 10.(to 5) perhaps 6 to use dice

- A quantity can be described relative to another quantity.
- A quantity can be described in relation to a purpose or need.

KN1.1 Children investigate quantities to 10.

- Quantity can be the number of objects in a set.

KN1.4 Children investigate quantities to 10.

- A quantity can be described relative to another quantity.
- A quantity can be described in relation to a purpose or need.

KN1.2 Children investigate quantities to 10.

- A quantity is always counted using the same sequence of words (counting principle: stable order)
- A quantity remains the same no matter the order in which the objects are counted (counting principle: order irrelevance).
- A quantity can be determined by counting each object in a set once and only once (counting principle: one-to-one correspondence).

KN1.2 Children investigate quantities to 10.

- A quantity is always counted using the same sequence of words (counting principle: stable order)
- A quantity remains the same no matter the order in which the objects are counted (counting principle: order irrelevance).
- A quantity can be determined by counting each object in a set once and only once (counting principle: one-to-one correspondence).
- The last number used to count represents the quantity (counting principle: cardinality).
- Any quantity of like or unlike objects can be counted as a set (counting principle: abstraction).

KN1.3 Children investigate quantities to 10.

- Quantity can be determined without counting.

KN1.1 Children investigate quantity to 10.

KN1.1 Children investigate quantities to 10.

- Quantity can be the number of objects in a set.

KN1.2 b-e. Children investigate quantities to 10.

- Any quantity of like or unlike objects can be counted as a set (counting principle: abstraction).

KN1.3 Children investigate quantities to 10.

- Quantity can be determined without counting.

Assessment

We have Number, Time, Geometry and Patterns (Nov) 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.

Kindergarten

Guiding Question	How can quantity contribute meaning to daily life?		
Learning Outcome	KN1.1 Children investigate quantities to 10.(to 5)		
	Knowledge	Understanding	Skills & Procedures
	Quantity can be represented using objects pictures words numerals	Quantity can be the number of objects in a set.	Recognize a number of familiar objects as a quantity. Represent a quantity in different ways. Relate a numeral to a specific quantity.

KN1.2a

Learning Outcome	KN1.2 Children investigate quantities to 10. (to 5)		
	Knowledge	Understanding	Skills & Procedures
	Quantity can be determined by counting.	a. A quantity is always counted using the same sequence of words (counting principle: stable order).	Count within 10, forward and backward, starting at any number, according to the counting principles.

b. A quantity remains the same no matter the order in which the objects are counted (counting principle: order irrelevance).

c. A quantity can be determined by counting each object in a set once and only once (counting principle: one-to-one correspondence).

d. The last number used to count represents the quantity (counting principle: cardinality).

e. Any quantity of like or unlike objects can be counted as a set (counting principle:

KN1.4

KN1.4 Children investigate quantity to 10		
Knowledge	Understanding	Skills & Procedures
Comparisons of quantity can be described by using words such as • more • less • same • enough • not enough	A quantity can be described relative to another quantity. A quantity can be described in relation to a purpose or need.	Compare the size of two sets using one-to- one correspondence. Describe quantities relative to each other using comparative language. Describe a quantity in relation to a purpose or need using comparative language. Solve problems in familiar situations by counting.

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KG1

KP1(starting in Nov)

Guiding Question	How can shape bring meaning to the space in an environment?		
Learning Outcome	KG1 Children investigate shape. (2D)		
	Knowledge	Understanding	Skills & Procedures
	A shape can be represented using objects, pictures, or words. Familiar two- and three-dimensional shapes can be found in nature, such as • circles • triangles • cubes • cylinders First Nations, Métis, and Inuit relate specific shapes to those found in nature.	Shape is structured two-dimensional or three-dimensional space.	Relate shapes in nature to various two-dimensional and three- dimensional shapes. Identify familiar two- and three-dimensional shapes. Investigate three-dimensional shapes by rolling, stacking, or sliding. Describe a shape using words such as flat, curved, straight, or round.

Organizing Idea	Patterns: Awareness of patterns supports problem solving in various situation			
Guiding Question	How can patterns be recognized?			Wh
Learning Outcome	KP1 Children identify and create repeating patterns.			1P1
	Knowledge	Understanding	Skills & Procedures	
	Patterns exist everywhere. A pattern can involve elements such as • sounds • objects • pictures • symbols • actions Repeating patterns have one or more elements that repeat.	A pattern is characterized by how the elements change or remain constant.	Recognize repeating patterns encountered in daily routines and play, including songs or dances. Recognize change or constancy between elements in a repeating pattern. Predict the next elements in a repeating pattern. Create a repeating pattern with up to three repeating elements.	A rep ex Cy Th ca wit ele A se mo rep

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.

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

Review May video

Money - Manipulative or Concept?

Money – Manipulative or Concept?

Guiding Question	What is money?		
Learning Outcome	Children explore money.		
	Knowledge	Understanding	Skills & Procedures
They begin as our "counters" Shapes Colour - comparative language Canadian Living Things - animals	Canadian money comes in many forms, such as • coins • bills Canadian coins and bills come in different denominations, such as • loonies • toonies • $5 • $10 Canadian coins and bills have different features, such as • colour • number • images • size	Money has unique features to represent its value. Money APP	Explore the value of Canadian coins and bills. Identify features of Canadian coins and bills.

Show Me

1

5

2

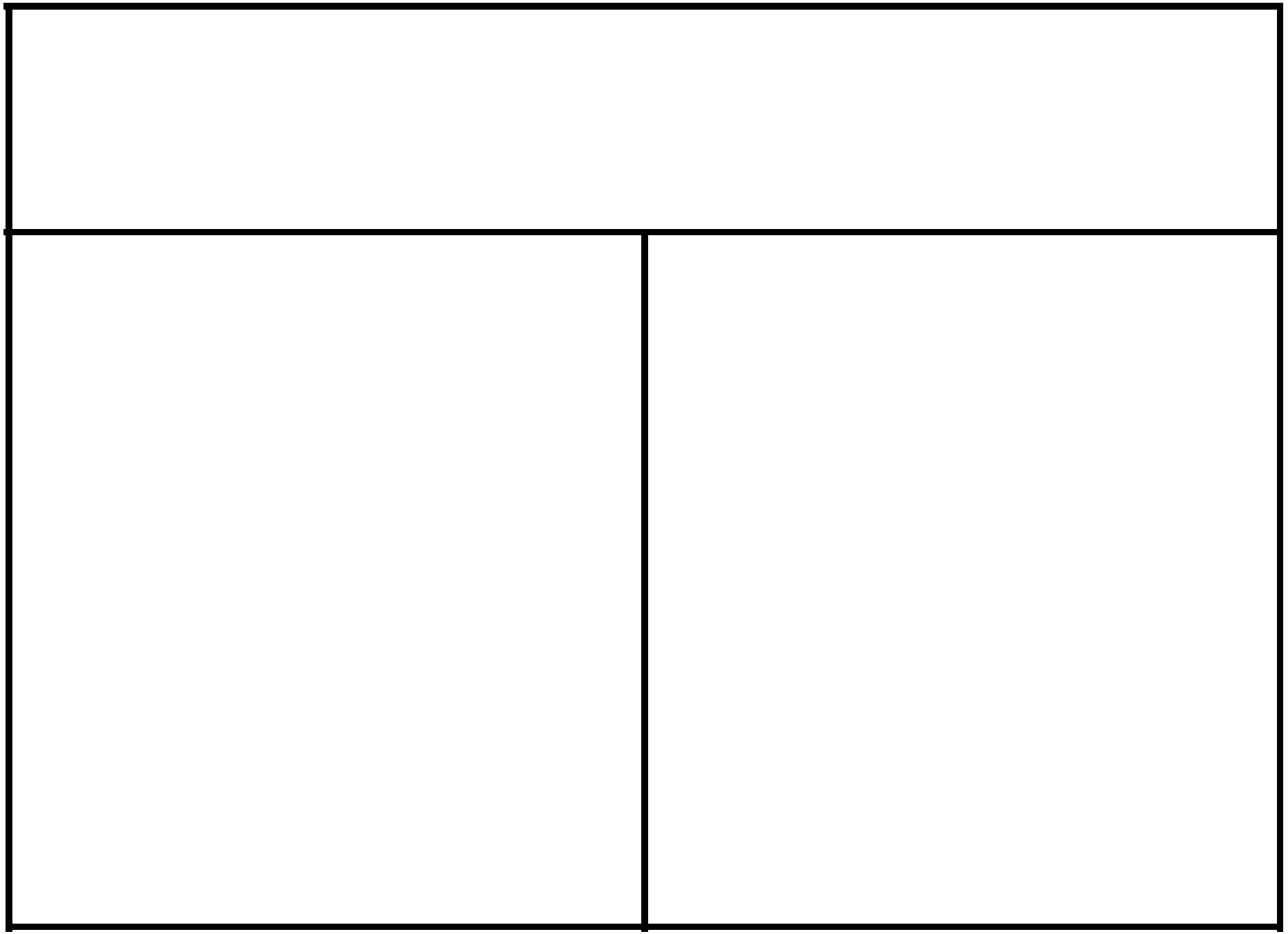
4


1 CENT
2012
CANADA


5 CENTS
CANADA
2010


CANADA
2018
10 CENTS

Show Me



Part-Part-Whole

MONEY BINGO

M	O	N	E	Y
				
				
		FREE SPACE		
				
				

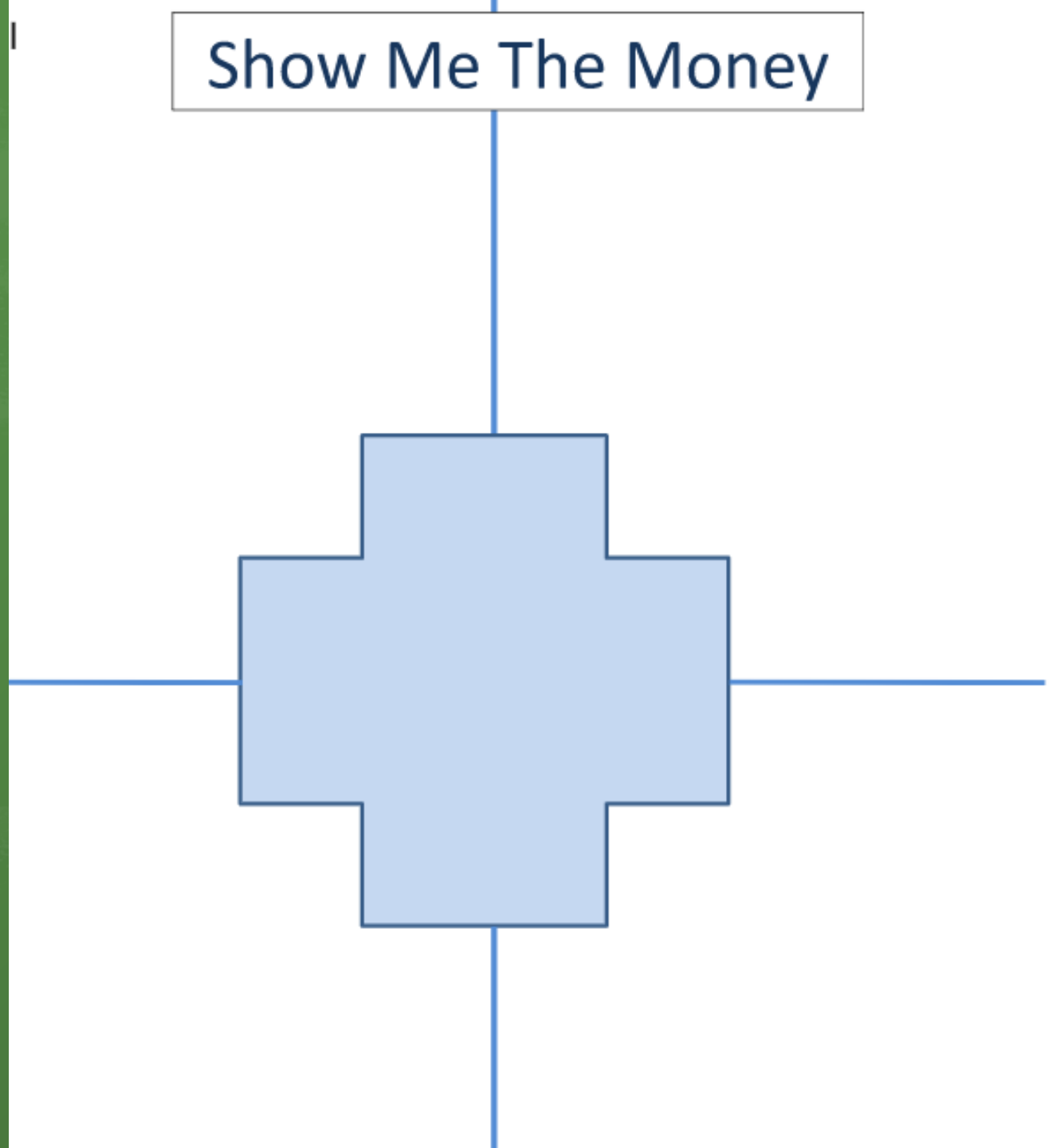
BINGO

Go Fish

money mentors
A better path. A brighter future.

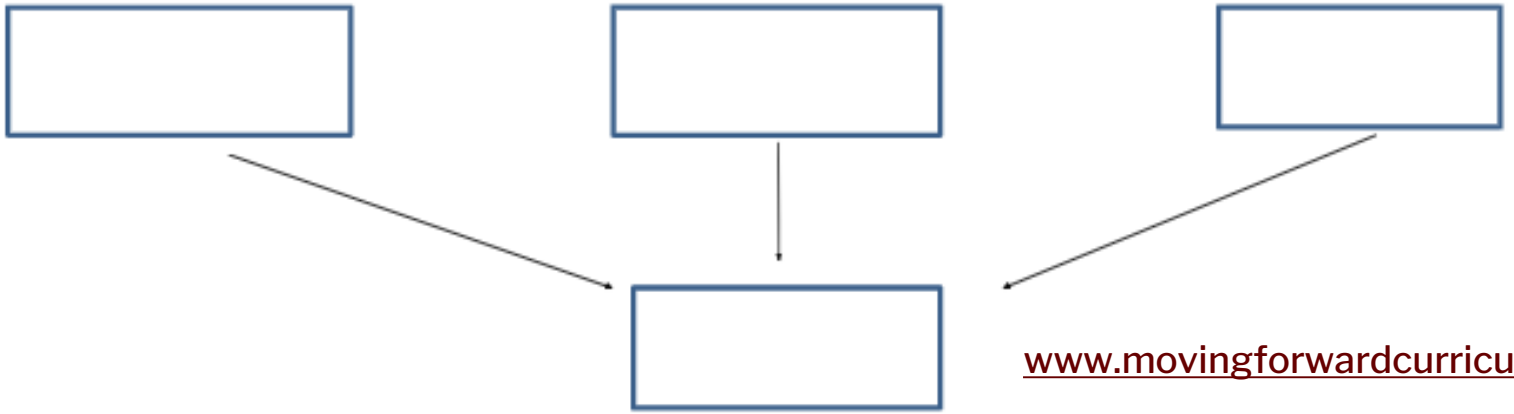
	
	
	
	
	

Show Me The Money

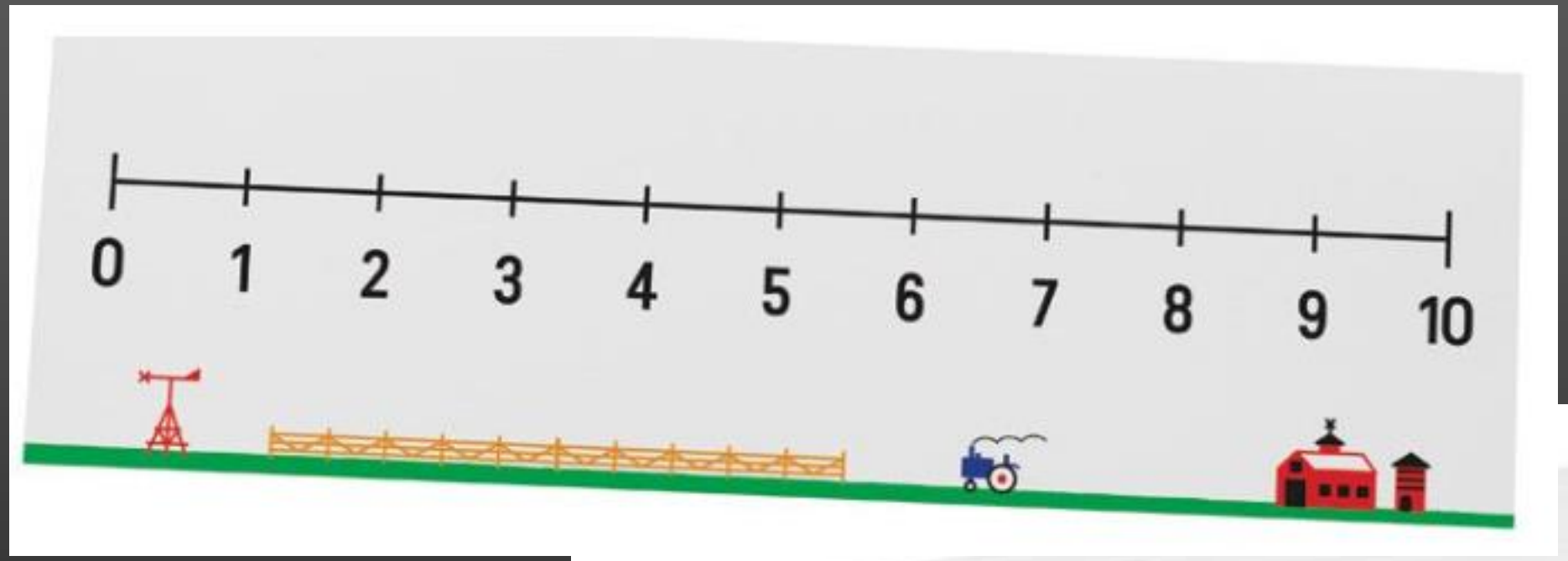


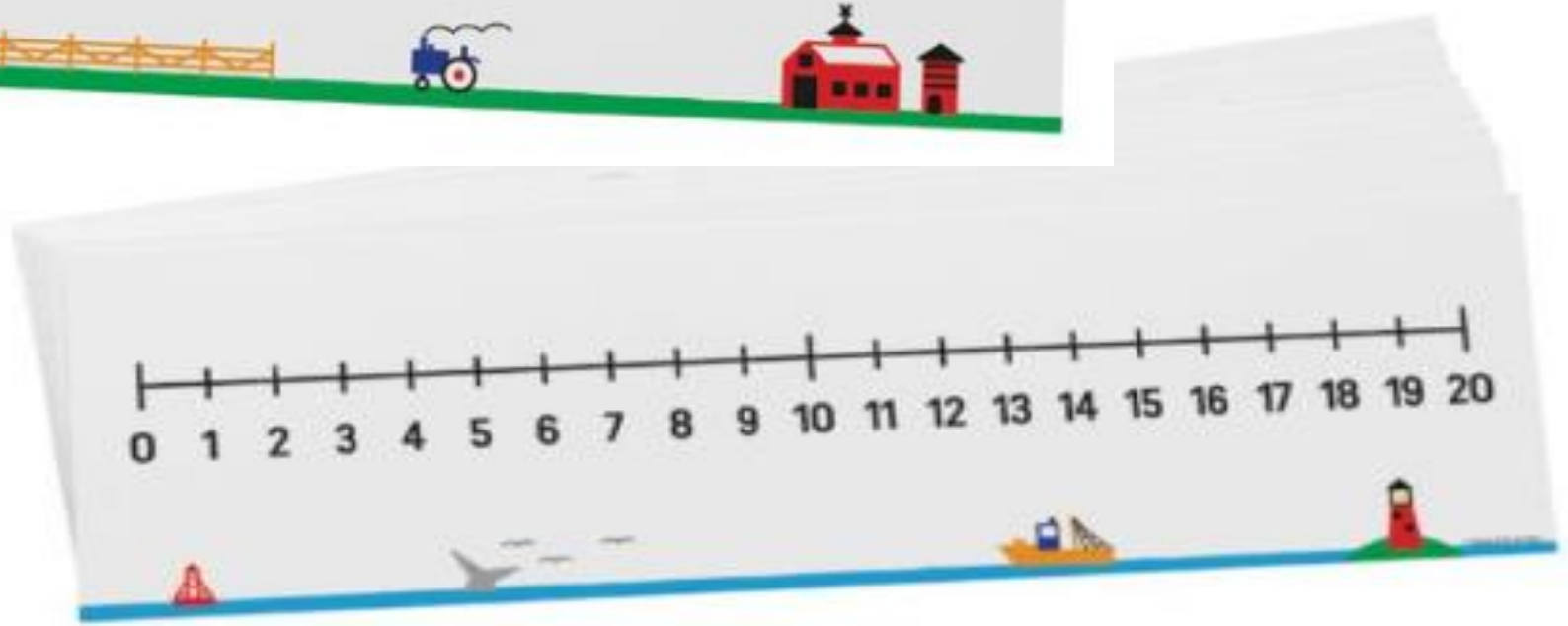
Place Value Chart Beginning with Money (Penny, Nickel, Dime)

Dime 	Nickel 	Penny 

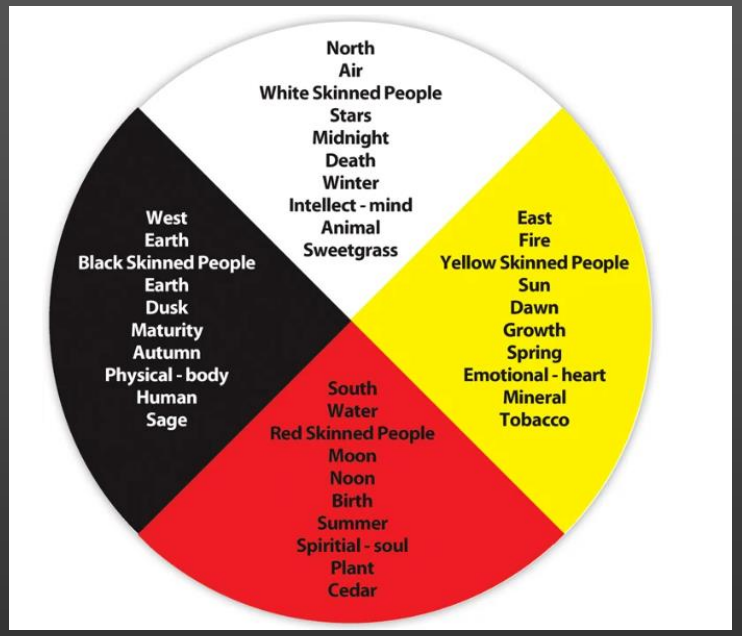


Didax Numberline



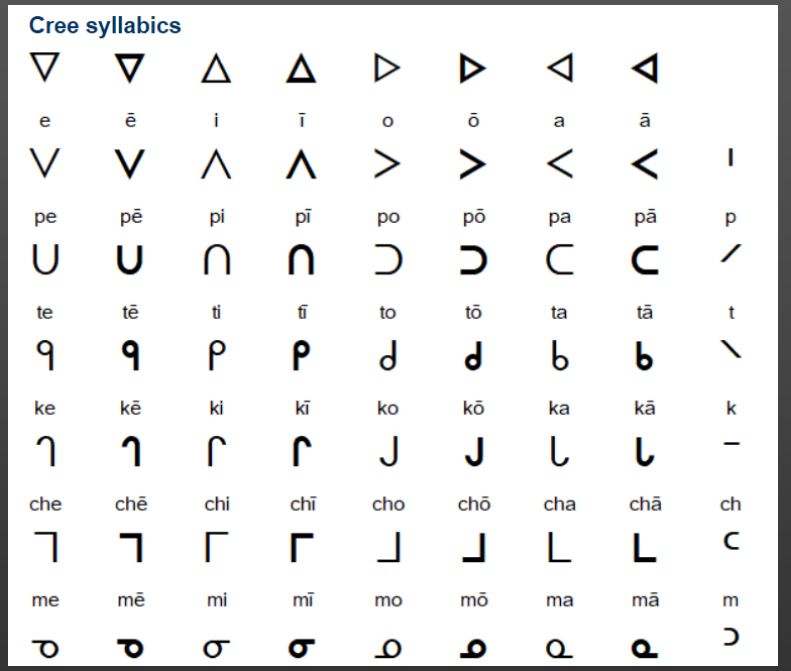


Shapes of Meaning to First Nations, Metis and Inuit



Circle, Medicine Wheel and the Number 4

Drumming: The Heartbeat of Mother Earth



Cree Syllabics

Healing Circle

Sharing Circles and the Talking Stick

Teacher information and Lesson on the Talking Circle

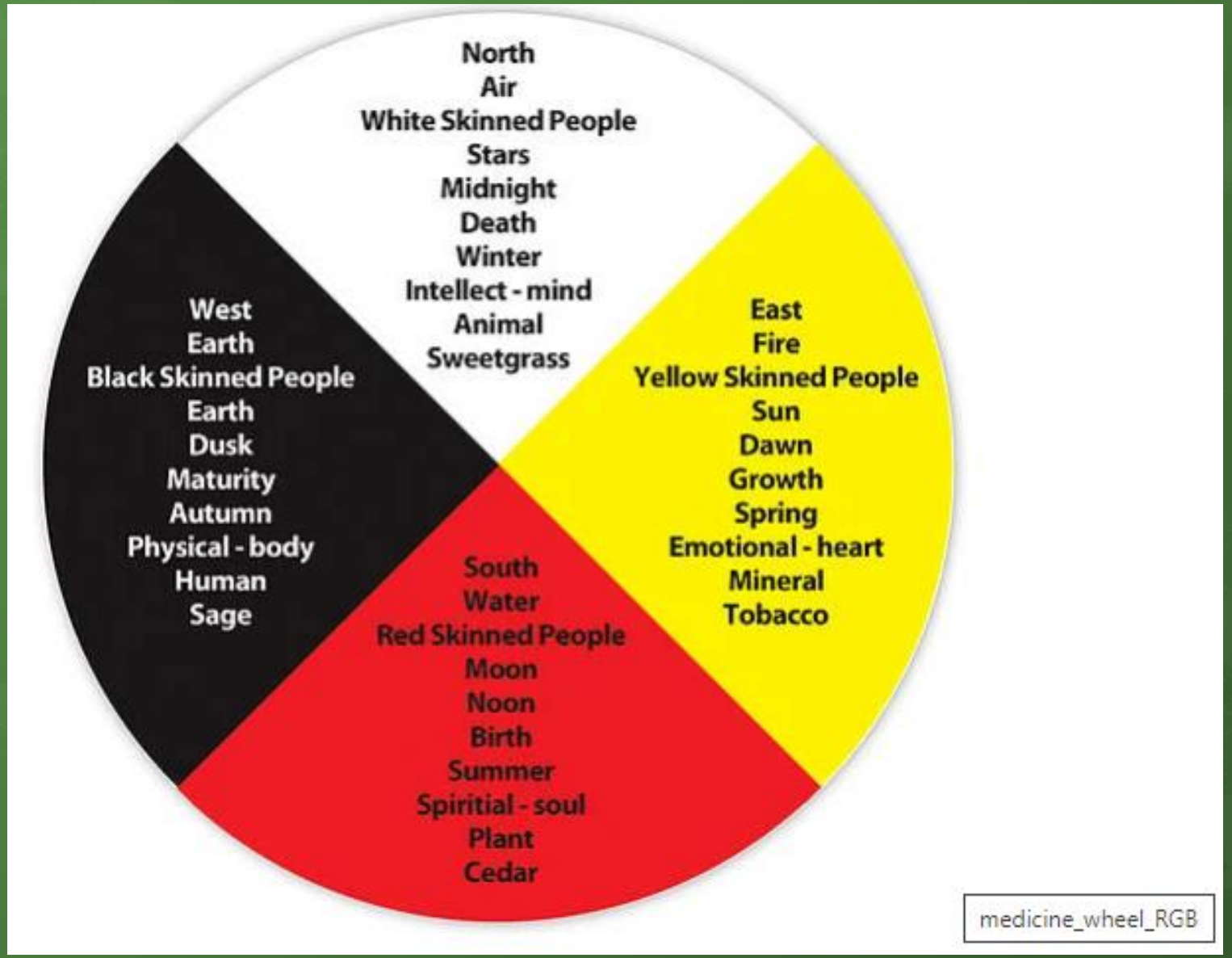
Christine Massan - Nature and Indigenous Patterns







Leah Dorion

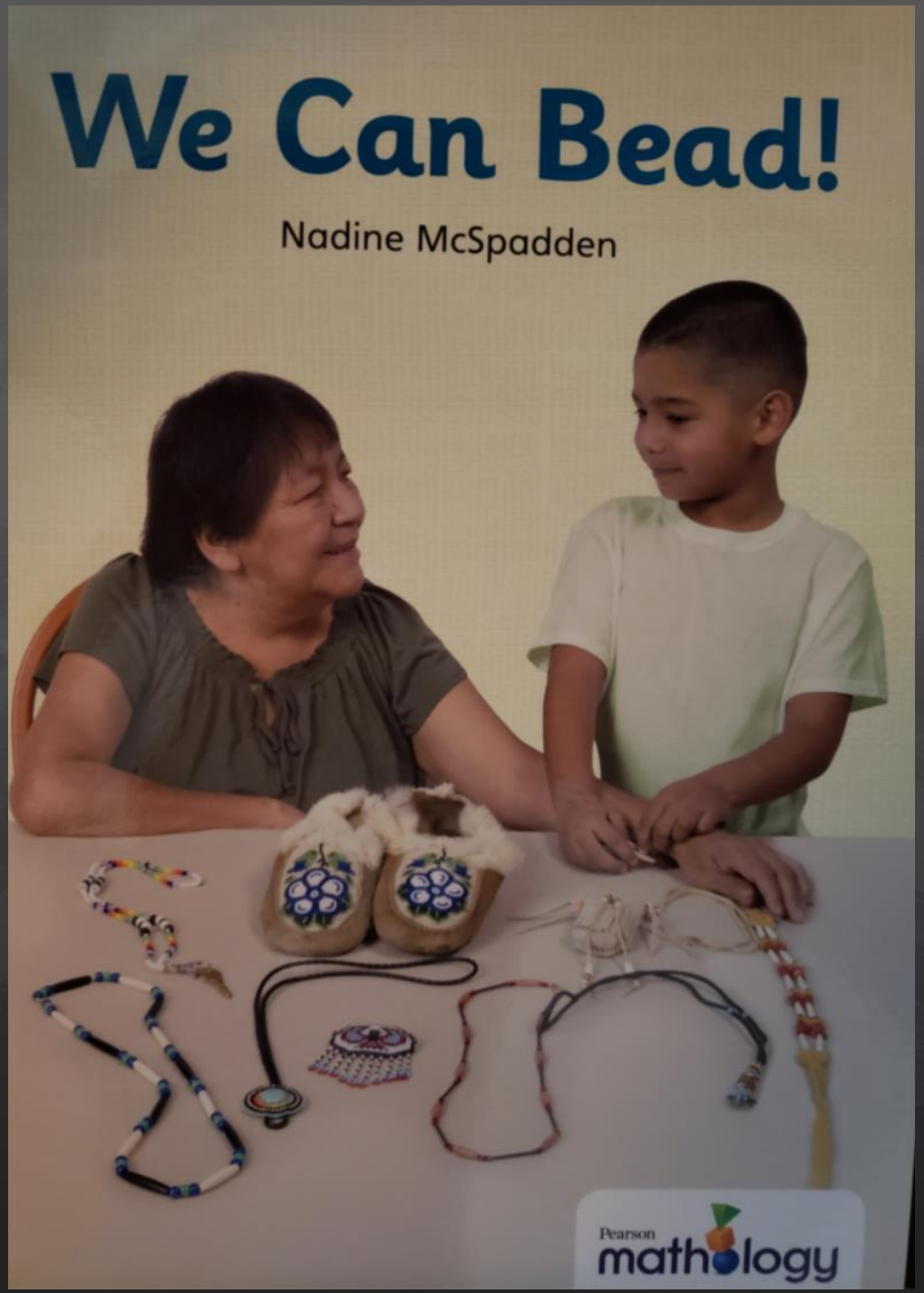

North
Air
White Skinned People
Stars
Midnight
Death
Winter
Intellect - mind
Animal
Sweetgrass
East
Fire
Yellow Skinned People
Sun
Dawn
Growth
Spring
Emotional - heart
Mineral
Tobacco
South
Water
Red Skinned People
Moon
Noon
Birth
Summer
Spiritial - soul
Plant
Cedar
West
Earth
Black Skinned People
Earth
Dusk
Maturity
Autumn
Physical - body
Human
Sage
medicine_wheel_RGB

Mother Earth

Mother Earth - Burst of Butterflies
burstofbutterflies.com

Honoring Mother Earth (honoringmother...

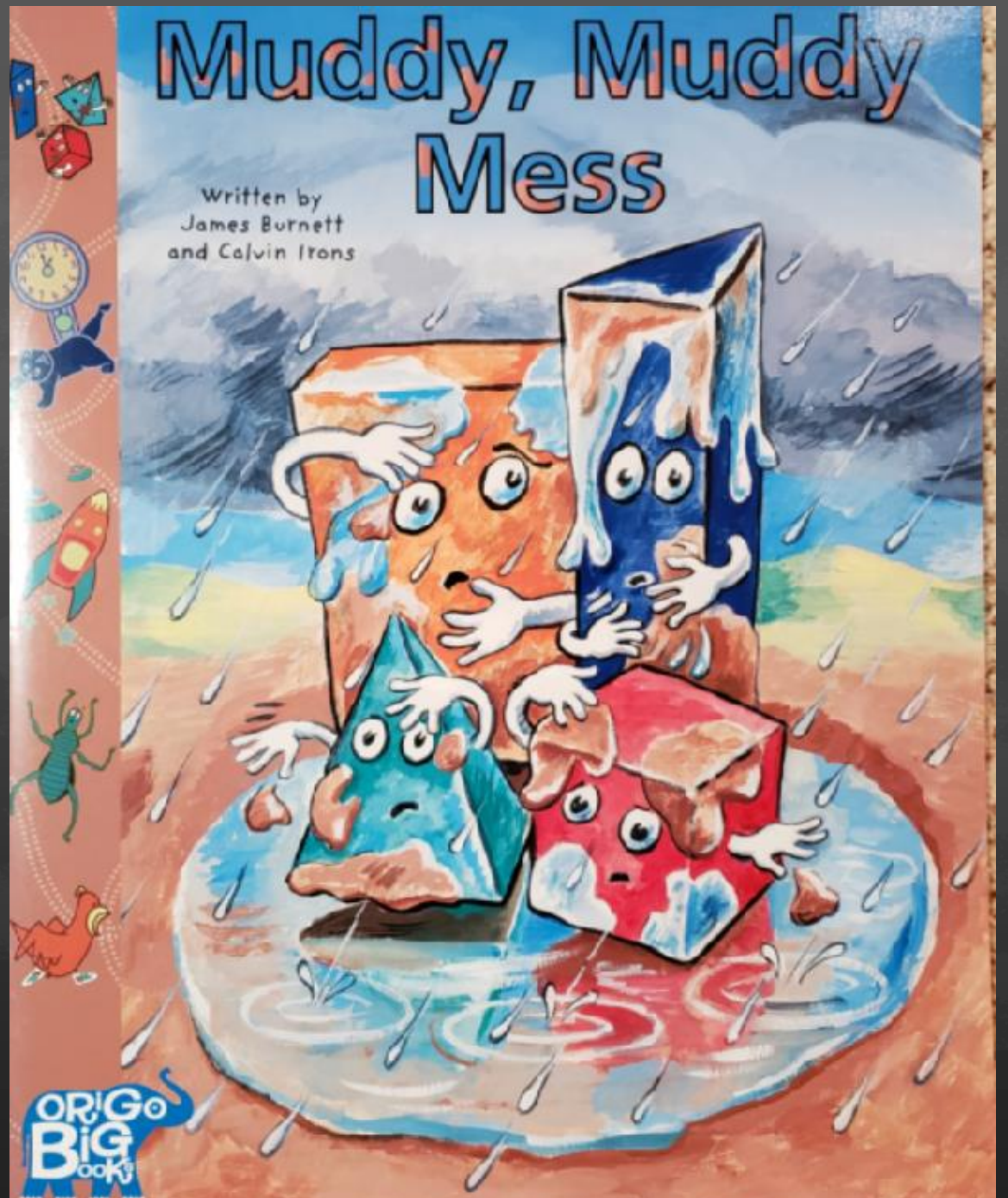
Cree and Blackfoot Tipi's


We Can Bead!
Nadine McSpadden
Pearson
mathology


At the Pond
Comparing Numbers
Jane Gould
In the Garden
Comparing Numbers
Jane Gould
MATHEMATICS READERS
At The Pond
Lesson Plan
At the Pond
Comparing Numbers
nelson.com/mathematicsreaders
NELSON
In the Garde
Comparing Numbers

Muddy, Muddy Mess

Written by
James Burnett
and Calvin Irons



A book about 3D Objects and 2D Shapes

ORIGO BIG Books
MATHEMATICS

Helping students to count by representing, describing, relating and comparing using Cuisenaire Rods

Activities to engage the learner

Central Alberta Regional Consortium

Thank You

Do not hesitate to reach out for anything you might need.

Chris Zarski
czarski@carcpd.ab.ca
780 817 1686

Central Alberta Regional Consortium