Chris Zarski
Central Alberta Regional Consortium
Working Together: Making a Difference

Land Acknowledgment

We respectfully acknowledges that we are situated on Traditional lands across the province of Alberta home to many First Nations, including the Cree, Blackfoot, Métis, Nakota Sioux, Saulteaux, Inuit, and many others whose histories, languages, and cultures continue to influence our vibrant community.

Are any of our students stalled?

Where on the trajectory do we students who have not yet reached their outcomes?

Place Value: Representing Whole Numbers, Compose and Decompose, Compare, Order and Relate & Subitize.

Subitize	2/3: **Subitizing 1 and 2** Identifies familiar collections of 1 or 2 without counting	4/5: **Matching Small Collections 1–5** Makes matching collections when shown 1 to 5 objects, without saying how many	4/5: **Subitizing 1–3** Tells how many without counting when shown 1 to 3 objects briefly	4/5: **Subitizing 1–5** Tells how many without counting when shown 1 to 5 objects briefly		
Represent Whole Numbers Concretely, Pictorially, Symbolically	2/3: **Representing Concretely and Pictorially 1 and 2** Associates pictures or objects with a quantity and says a number word	2/3: **Recognizing Numerals** Recognizes numerals in the environment without meaning and writes some numerals	3/4: **Recognizing Numerals 0–10** Recognizes numerals 0 to 10 and knows the numeral name stands for a number	4/5: **Representing Concretely and Pictorially 1–5** Shows numbers 1 to 5 using concrete materials and/or pictures	4/5: **Representing Concretely and Pictorially 1–10** Shows numbers 1 to 10 using concrete materials and/or pictures	
Compose and Decompose Numbers	3: **Composing by Recognizing Parts and Whole** Understands that the parts make up the whole	3/4: **Knowing the Whole Is Greater Than the Parts** Understands that the whole is greater than each of its parts	3/4: **Decomposing by Recognizing Parts and Whole** Understands that a whole can be separated into parts	3/4: **Knowing the Parts Are Less Than the Whole** Understands that each part is less than the whole	4/5: **Composing and Decomposing to 5** Makes multiple representations of quantities to 5	4/5: **Composing and Decomposing to 10** Makes multiple representations of quantities to 10
Compare, Order, Relate Whole Numbers	2/3: **Recognizing More, Fewer, and the Same** Recognizes when a set has more, fewer, or the same as another set	2/3: **Comparing Quantities** Recognizes when a quantity is more or fewer than another quantity without counting	2/3: **Identifying Position** Identifies first, second, and last	3/4: **Matching Sets** Identifies sets as having more, fewer, or the same by matching 2 sets using 1-to-1 correspondence	4/5: **Comparing Similar Objects by Counting** Counts sets of same-size objects to identify more, fewer, or the same	4/5: **Comparing Dissimilar Objects by Counting** Counts sets of different-size objects to identify more, fewer, or the same

STRAND: NUMBER *continued*

Conceptually - addition is not recognized prior to age 3. Students understand "More" or "less" but the process of grouping together to make a larger value does not happen before age 3.

ADDITION	**Meaning of Addition**	3/4: **Joining to Determine Sums of Objects 1–3** Joins 2 sets and counts the total number of objects	4/5: **Joining to Determine Sums of Objects 1–5** Joins 2 sets and counts the total number of objects	4/5: **Counting On to Determine Sums of Objects 1–5** Counts on from the first set to determine the total number of objects	4/5: **Joining to Determine Sums of Objects 1–10** Joins 2 sets and counts the total number of objects	4/5: **Counting On to Determine Sums of Objects 1–10** Counts on from the first set to determine the total number of objects
SUBTRACTION	**Meaning of Subtraction**	3/4: **Separating to Determine Differences of Objects 1–3** Moves objects away and counts to determine how many are left	3/4: **Separating to Determine Differences of Objects 1–5** Moves objects away and counts to determine how many are left	4/5: **Separating to Determine Differences of Objects 1–10** Moves objects away and counts to determine how many are left	4/5: **Comparing to Determine Differences of Objects 1–10** Compares quantities and counts to determine how many more or fewer are in each set	
FINANCIAL LITERACY	**Role Play Financial Situations**	2/3: **Role Playing Financial Transactions** Role plays buying, selling, and trading in a variety of settings	2/3: **Objects Have Value** Understands that objects have value and makes exchanges	3/4: **Wants and Needs** Distinguishes between wants and needs	4/5: **Characteristics of Coins** Identifies the similarities and differences of coins	4/5: **Relative Value of Coins** Understands that coins have different values

May	
ounting, labelling, comparing and operating.	
KN1.4 Children acquire an understanding of quantity to 10 • A quantity can be described relative to another quantity. • A quantity can be described in relation to a purpose or need. KN2 Children interpret compositions of quantities within 10. • A quantity remains the same no matter how the objects are grouped or arranged (counting principle: conservation).	
g in various situations.	
KP1. Children identify and create repeating patterns. • Pattern is characterized by how the elements change or remain the same.	

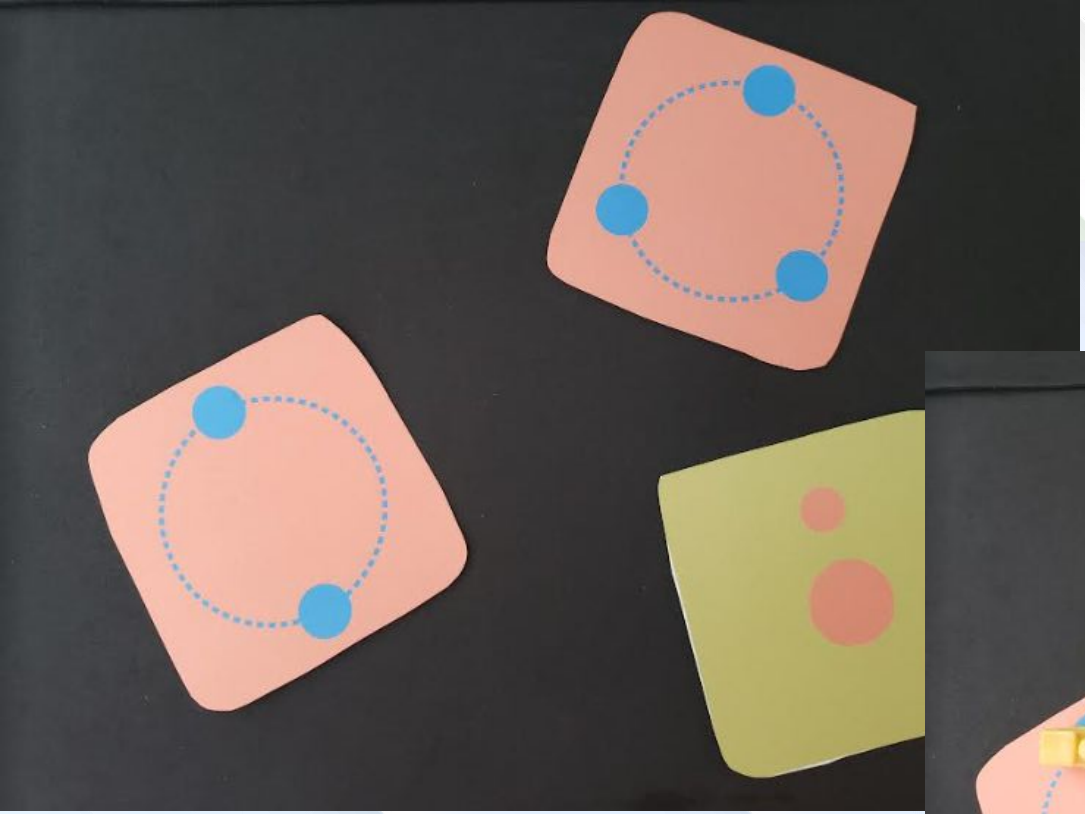
KN1.4 Children investigate quantity to 10		
Knowledge	Understanding	Skills & Procedures
Comparisons of quantity can be described by using words such as • more • less • same • enough • not enough	A quantity can be described relative to another quantity. A quantity can be described in relation to a purpose 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.

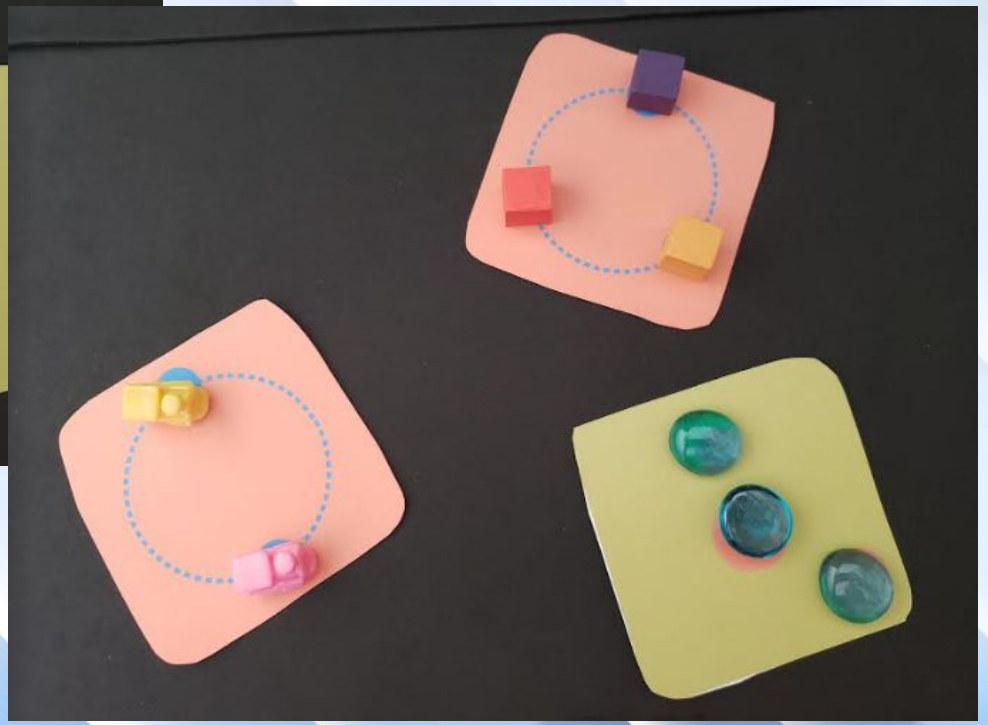
KN2. Children interpret compositions of quantities within 10.		
Knowledge	Understanding	Skills & Procedures
Quantity can be arranged in various ways.	A quantity remains the same no matter how the objects are grouped or arranged (counting principle: conservation).	Identify a quantity in various groups or arrangements. Compose quantities within 10. Recognize various ways to make 5 and 10.

Let's give it a try!

Dominos

Dice

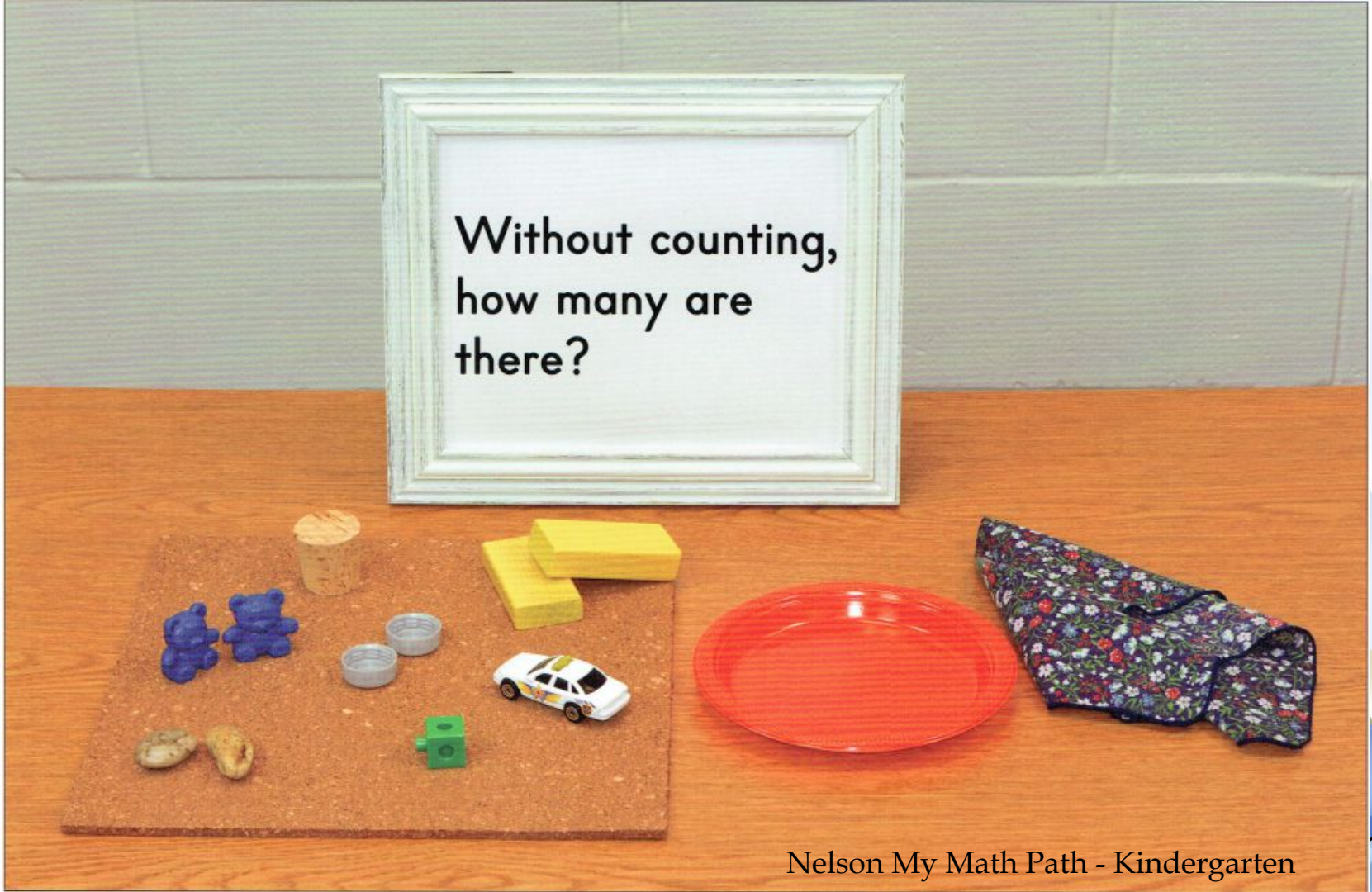




Tiny Polka [A Dot Print and Play]

Dominos and Cuisenaire Rods offer children and opportunity to subitize and play/design at the same time.

PROVOCATIONS


Without counting, how many are there?


KidsWorld
Butterflies
NATIONAL GEOGRAPHIC KIDS
A Beautiful Butterfly
LEVEL 3 READER
BUGS


KidsWorld
Butterflies
Sharpie


Use clay to
show what you
notice about
Butterflies
and caterpillars.


Join the blocks. How many blocks are there?
String the beads. How many beads are there?
Stack the rocks. How many rocks are there?
mutual respect
appreciation
share


How many are there in each group?
How can you count on to find out?

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

4	1	2	3	4	5	6

Car Park

7	8	9	10	5	3

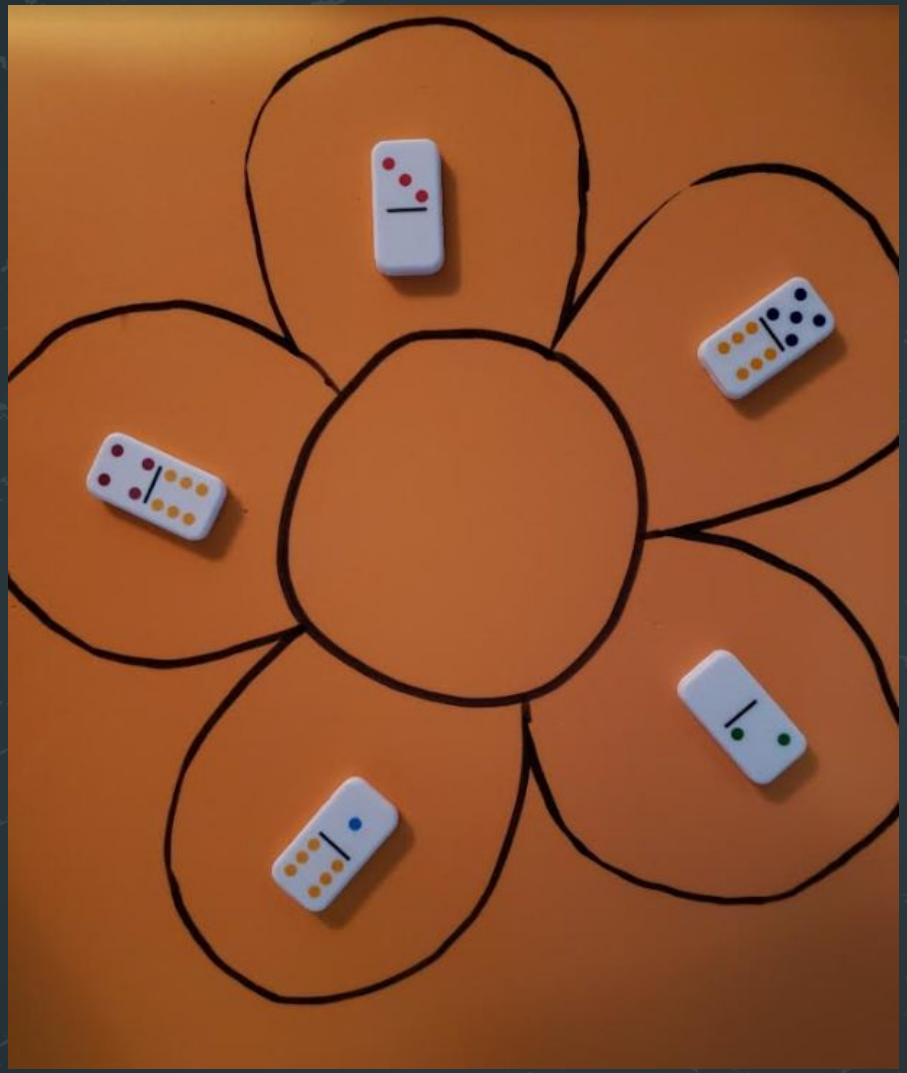
KN2. Children interpret compositions of quantities within 10.		
Knowledge	Understanding	Skills & Procedures
Quantity can be arranged in various ways.	A quantity remains the same no matter how the objects are grouped or arranged (counting principle: conservation).	Identify a quantity in various groups or arrangements. Compose quantities within 10. Recognize various ways to make 5 and 10.

Brainingcamp.com

TEACHER23

Mathigon

Money APP



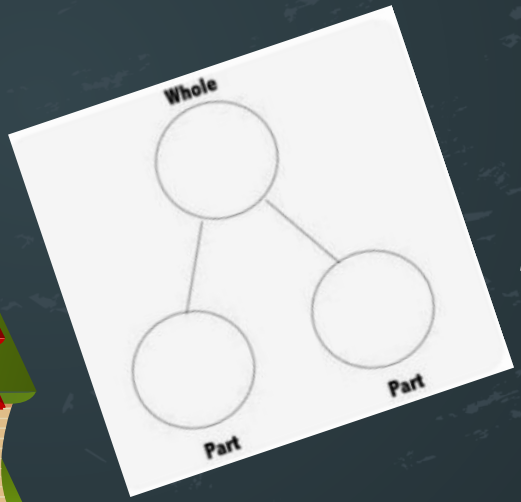
Scavenger Hunt

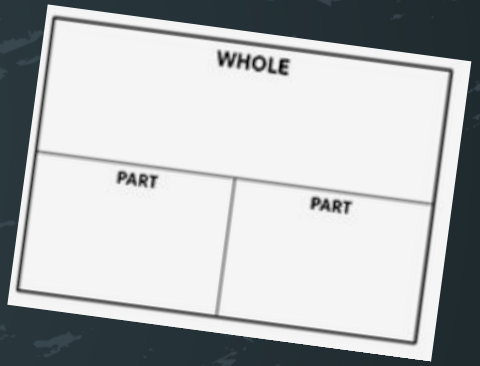
Where do you see numerals?

Mathigon

Look at Music

How do our students encounter Composing & Decomposing of numbers?





Compose and Decompose Numbers

Compose: to put together.

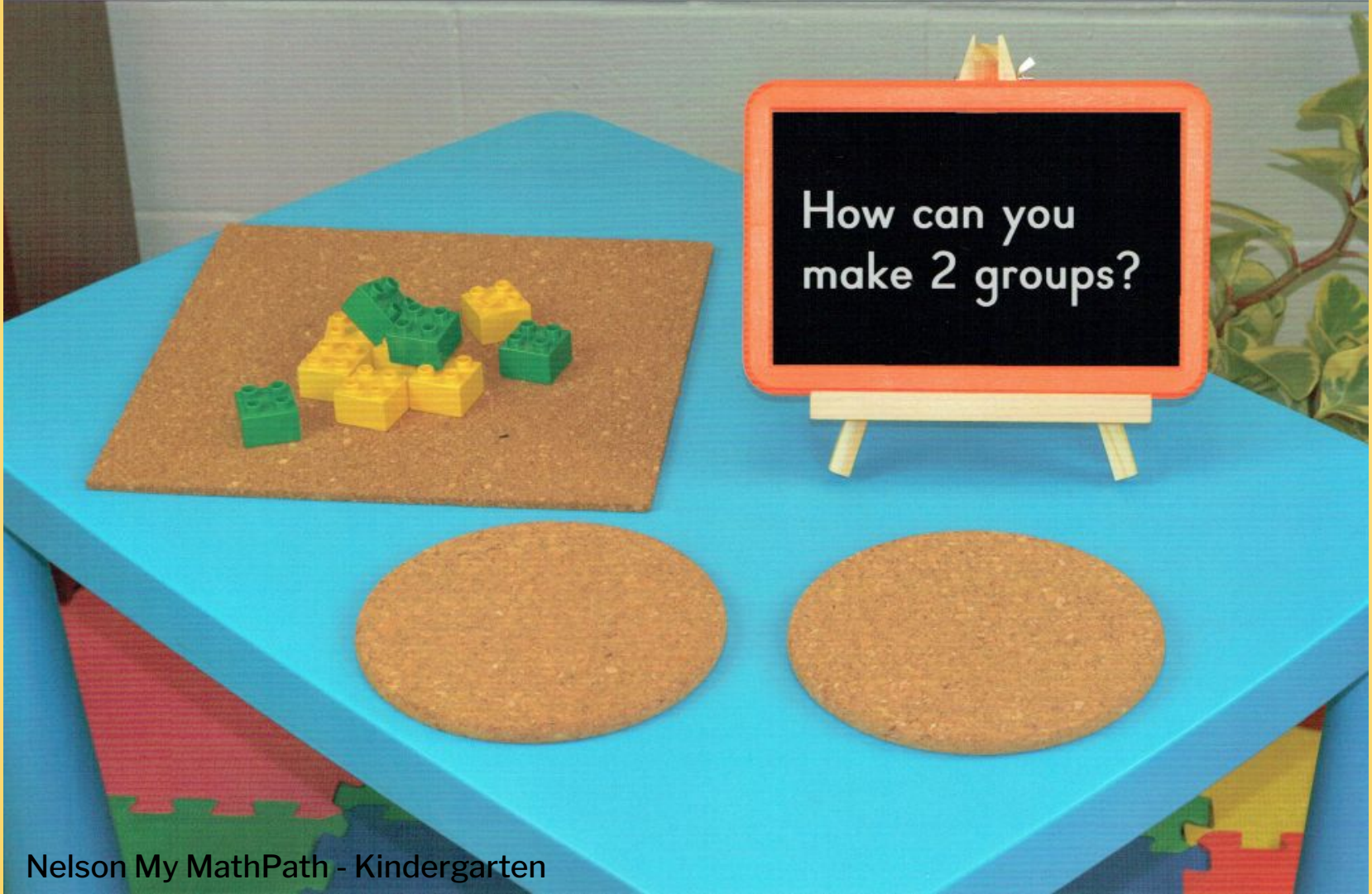
Decompose: to pull apart.

Start with
objects first!

Nelson MY MathPath - Kindergarten

COMPOSE

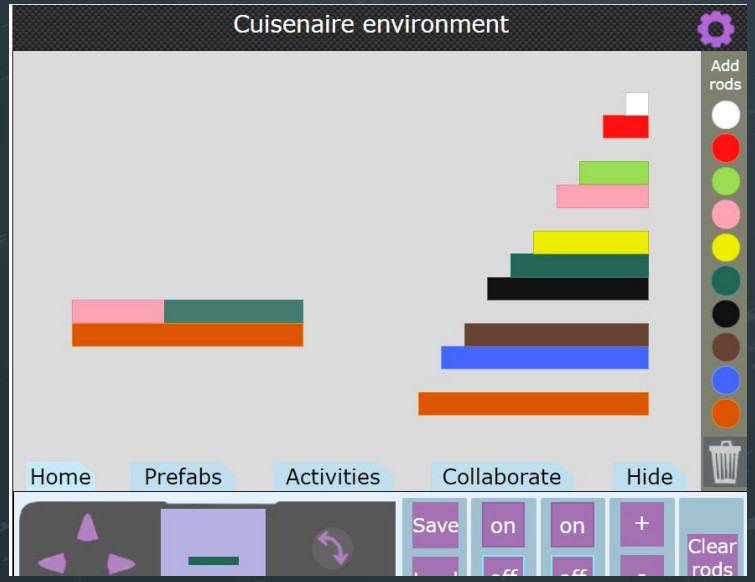
DECOMPOSE



Nelson My MathPath - Kindergarten

Interactively

Cuisenaire Rods are perfect for Composing and Decomposing.



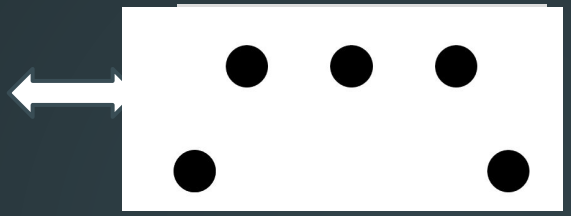
Virtual Manipulatives

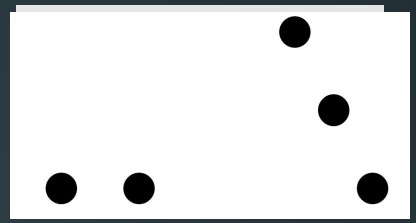
-

Cuisenaire Rods

Subitizing:

Helps to see parts of a whole





Allows students to grasp numbers and advance to addition, subtraction, multiplication and division.

Numbers are made up of a collection of items.

Look around the room where we store toys!

Clean-up time!

Subitizing

Steve Wyborney: Subitizing Slide Decks to Download

Mastery of 5 is required but 10 should be our goal!

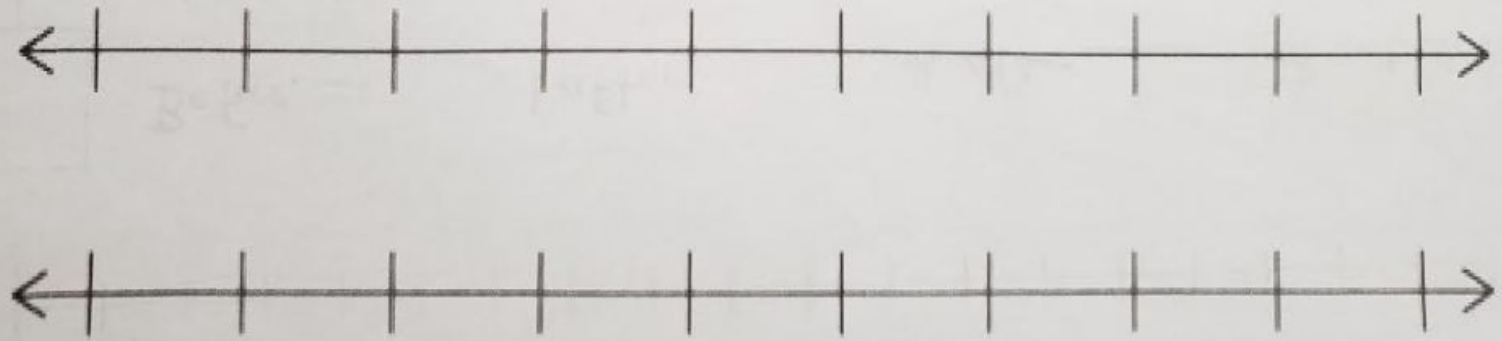
Nelson My Math Path - Kindergarten

Quickly call out the values.


1 2 3 4 5 6 7 8 9 10
1 2 3 4 5 6 7 8 9 10
1 2 3 4
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

Use with numbers for addition, before and after, comparative language ; money, groups of objects


5
3
2
1
4
8
1
9
9
10



Resources

Math Toolbox - interactive manipulatives K-8

NZ Maths

Thinking 101

Ontario Math

LT Squared

Crickweb

Brainingcamp.com

TEACHER23

Thank You!

Please feel free to reach out!

Chris Zarski
czarski@carcpd.ab.ca

Central Alberta Regional Consortium