

# Curriculum Planning & Assessment Resource

## Mathematics Kindergarten



**Alberta Regional Professional  
Development Consortia**

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# Curriculum Planning & Assessment Resource

## Mathematics

### Kindergarten Number 2

#### About This Document

This Curriculum Planning & Assessment Resource is intended to be a collection of sample activities, assessments, and resources that teachers may wish to use as they develop their unit plans. This document is not intended to be a sequential list of activities. Rather, the intent is that teachers choose from this resource what is appropriate for their context, and sequence it in their planning.

The sample activities, assessments and resources included in this document have undergone an initial review to determine appropriateness and alignment to the curriculum. However, it is expected that teachers use their professional judgment in selecting activities, assessments and resources that are appropriate for their context.

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#### Acknowledgements

**Thank you to all the teachers, numeracy specialists, and technical expertise from Alberta school divisions and ARPDC who collaborated to develop, review, and revise these planning and assessment documents to support curriculum implementation.**

# Kindergarten - Number 2

## Organizing Idea

Quantity is measured with numbers that enable counting, labeling, comparing, and operating.

## Guiding Question

In what ways can quantity be composed?

## Learning Outcome

KN2 Children interpret compositions of quantities within 10.

## Summative Assessment(s) - Transfer *(In Progress)*

*Summative assessments can include the following.*

- *Understanding/making sense of a novel context from the real world using one or more concepts (eg. "How are place value and money related?).*
- *Understanding/making sense of a novel context using one or more understandings (eg. Students use money to model the conversion of base 10 values and relate them to base 10 block').*
- *Being able to describe why (linking concepts) something is true, a result, or what might be an extension using learned concepts and understandings.*
- *Apply learning (create products; undertake projects; taking action such as creating a campaign) in a novel context or taking action using the understanding(s).*
- *Construct arguments by taking a position and verifying/proving it with known understandings.*

## Transfer/Summative Samples

[\[understanding surface vs deep vs transfer\]](#)

[KN2 Summative Assessment](#)



## KUSP KN2

[Literature Connections](#)

# KUSP KN2

### Early Numeracy Concepts (Pre-K)

#### Counting Principles

The research related to how children learn to count identifies principles which children need to acquire to become proficient at counting. They include:

[A Maths Dictionary for Kids by Jenny Eather](#) | [Definitions](#) | [Free Math Posters and Charts](#) | [Maths Examples](#) | [Math Words](#) | [Math Glossary](#) | [Math Terms](#) |

**Order Irrelevance** - The order in which objects are counted does not matter. Counting things in a different order still gives the same count.

**Conservation** - The count for a set of objects stays the same whether the objects are spread out or close together. The only way the count can change is when objects are added to the set or removed from the set.

#### Student Language | Essential vocabulary & concepts

- **Compose:** to put together from smaller parts

#### I Know Statements | Metacognition

- I know a quantity can be arranged in different ways.
- I know a quantity remains the same no matter how the objects are grouped or arranged.


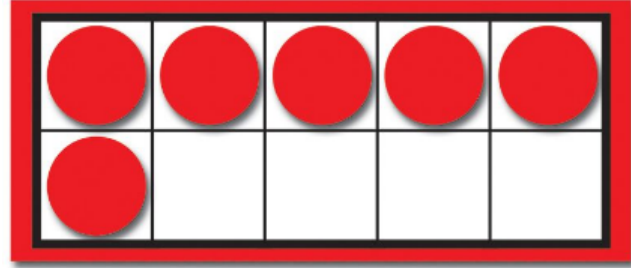


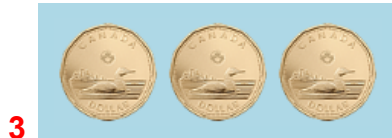

#### Pre-Assessment

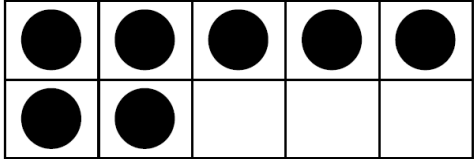
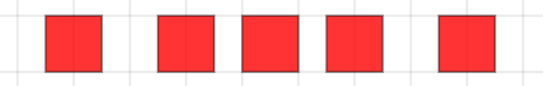

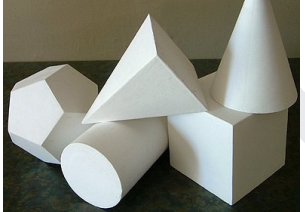
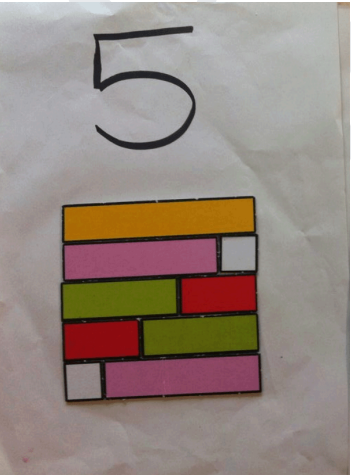


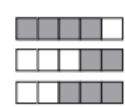
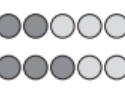




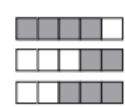
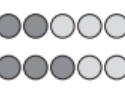





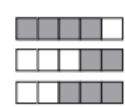
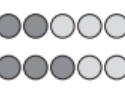


#### I Can Statements | Skills

- I can identify a quantity in various arrangements.
- I can compose sets of quantities up to ten.

#### Learning Recovery

#### Enhancement

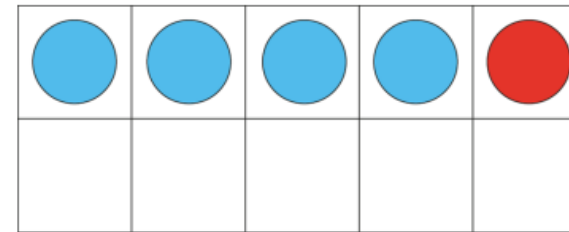
Learning Outcome		KN2 Children interpret compositions of quantities within 10.			
Knowledge	Understanding	Skills & Procedures	Achievement Indicators	Illustrative Examples	Assessments ( <a href="#">Explainer</a> )
Quantity can be arranged in various ways.	A quantity remains the same no matter how the objects are grouped or arranged (counting principle: conservation).	Identify a quantity in various groups or arrangements.  Recognize various ways to make 5 and 10.	Look briefly at a given quantity, and identify the number represented.	<p><b>How many are there?</b></p>    	<a href="#">KN2 Construct a Set of Objects - Deep</a> <a href="#">KN2 Making 5 and 10 Conservation - Deep</a>
			Construct a set of objects corresponding to a given numeral.	<p><b>Use objects to make the following number/numeral:</b></p>  	

		Compose quantities within 10.	Construct quantities up to ten with two or more parts, using fingers, counters, or other objects, and name the total number as well as the number of objects in each part.	 <p>7</p>							
				<p><b>How many ways can you make 5?</b></p>     <p>Examples of part-part-whole representations for the number 5:</p> <table border="1"> <tr> <td data-bbox="1504 1427 1665 1618"> <p><b>Toothpicks</b></p>  </td> <td data-bbox="1706 1427 1867 1618"> <p><b>Pattern Blocks</b></p>  </td> <td data-bbox="1908 1427 2069 1618"> <p><b>Unifix Cubes</b></p>  </td> </tr> <tr> <td data-bbox="1504 1649 1665 1840"> <p><b>Two-coloured Counters</b></p>  </td> <td data-bbox="1706 1649 1867 1840"> <p><b>Lima Beans</b></p>  </td> <td data-bbox="1908 1649 2069 1840"> <p><b>Fingers</b></p>  </td> </tr> </table>	<p><b>Toothpicks</b></p> 	<p><b>Pattern Blocks</b></p> 	<p><b>Unifix Cubes</b></p> 	<p><b>Two-coloured Counters</b></p> 	<p><b>Lima Beans</b></p> 	<p><b>Fingers</b></p> 	<p><b>Story Mats:</b> Use story mats to provide meaningful contexts for problem solving (e.g., use a 'fishbowl' story mat and fish counters or crackers with the following problem).</p> <p>The twins, Mary and Paul, got 9 fish on their birthday. They both want fish in their bedrooms. How many different ways can they share the fish?</p>  <p><b>Compose/Decompose - all surface</b>  <a href="#">To 5</a> - K5 Learning  <a href="#">To 6</a> - K5 Learning  <a href="#">To 7</a> - K5 Learning  <a href="#">To 8</a> - K5 Learning  <a href="#">To 9</a> - K5 Learning  <a href="#">To 10</a> - K5 Learning</p> <p><a href="#">KN2 Composing Quantities Within 10 - Deep</a></p>
<p><b>Toothpicks</b></p> 	<p><b>Pattern Blocks</b></p> 	<p><b>Unifix Cubes</b></p> 									
<p><b>Two-coloured Counters</b></p> 	<p><b>Lima Beans</b></p> 	<p><b>Fingers</b></p> 									

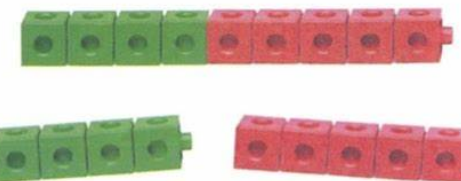
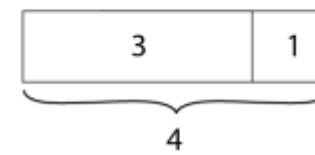
Use rekenreks, beaded number lines, five frames, ten frames, unifix cubes, cuisenaire rods, decitracks etc. to compose quantities (more than one part) within 10.



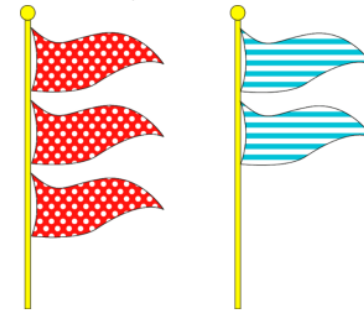
Counters and tens frames:



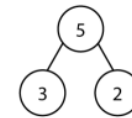
part: \_\_\_ part: \_\_\_ whole: \_\_\_



Partitioning into two parts:  
'What numbers can you see?'

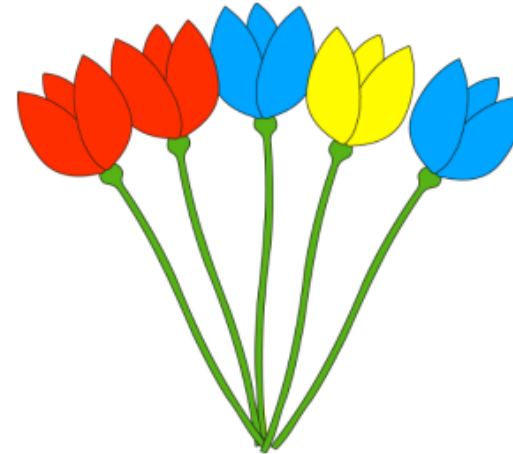


'I can see five flags. Three are spotty and two are stripy.'

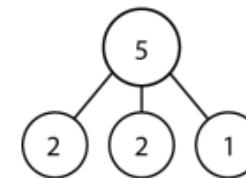


- 'The 5 represents the total number of flags; the 3 represents the number of flags with stripes; the 2 represents the number of flags with dots.'
- 'Five is the whole; three is a part and two is a part.'

Partitioning into three parts:



'There are five flowers. Two are red, two are blue and one is yellow.'



'Five is the whole; two is a part, two is a part and one is a part.'

# Resources

## Mathology

[ARPDG Math Little Books for Alberta Curriculum](#)  
[Mathology Free Resources on New Learn Alberta](#)

Mathology Little Book: [Lots of Dots!](#)

## Math UP

Kindergarten: **AB\_Composing and Decomposing Numbers**  
 Kindergarten: **AB\_Adding and Subtracting**

## Existing Textbooks

### Nelson My MathPath Kindergarten Provocations

**Counting** Cards #7-10, #13

**Composing and Decomposing** Cards #10-12

**Compare, Order, Relate Whole Numbers** Cards #13-18

**Meaning of Addition** Cards #1-5

**Meaning of Subtraction** Cards #1-4

## NCETM (teacher guides and resources)

<https://www.ncetm.org.uk/in-the-classroom/early-years/>

Early Math Learning

[NCETM: Composition of numbers: 0-5](#)

Spine 1; Year 1; 1.3

[NCETM: Composition of numbers: 6-10](#)

Spine 1; Year 1; 1.4

## Websites/Other

Everyday activities that can be adjusted to classroom needs to support/teach the concept of quantities within 10 suggested from ["Kindergarten Mathematics Support Document for Teachers: Manitoba Curriculum"](#)

[Kentucky Intervention Guide KNP](#) - provides great lessons and activities (outcomes based) for Teachers K-3

[Mathematics Developmental Continuum](#) - Indicators of Progress Tasks/Activities (Australia)

## Gizmos (Teacher Login Required)

New Learn Alberta: **no match for Kindergarten**

For access to additional resources, request a Gizmos account [alberta@explorellearning.com](mailto:alberta@explorellearning.com)

## Indigenous Lesson Plans and Resources

## Problem Solving

Coming Soon



Click to jump!

**KUSP KN2**

[Literature Connections](#)

## Literature Connections

Title	Author	Format (Picture Book, Novel, Non-fiction, other)	Publisher	ISBN	Notes
Ten Black Dots	Donald Crews	Picture Book	Greenwillow Books; Illustrated edition (Sept. 21 1995)	0688135749, 978-0688135744	Composing quantities of ten
Anno's Counting Book	Mitsumasa Anno	Picture Book	HarperCollins; Reprint edition (Sept. 25 1986)	0064431231, 978-0064431231	Quantity
Quack and Count	Keith Baker	Picture Book	Clarion Books; First Edition (Sept. 1 2003)	0152047514, 978-0152047511	Arranging quantities of seven
Ten Apples Up On Top!	Dr. Seuss	Picture Book	Random House Books for Young Readers; Illustrated edition (Sept. 8 1998)	0679892478, 978-0679892472	Counting to 10

IN PROGRESS