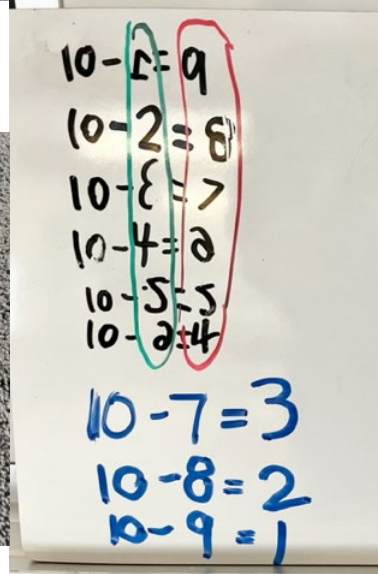
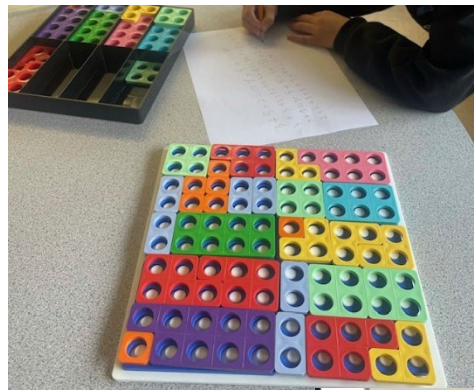
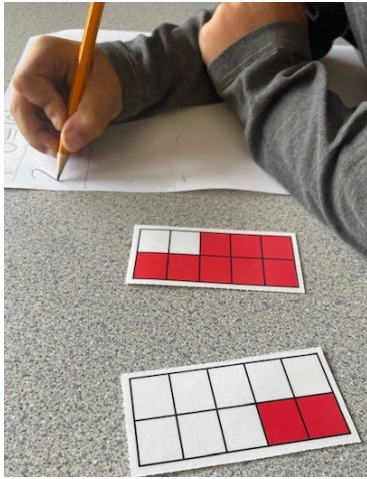


GRADE 1 MATH: MAKING 10

Summary of Learning Opportunity		
<p>The goal for this learning opportunity was to introduce the concept of decomposing 10, while building upon the students' prior knowledge of composing 10. Learners were scaffolded and supported with materials and manipulatives to visualize composing and decomposing 10. The teacher also connected this work to literacy through the Mathology series book <i>That's 10!</i> by Kathleen Corrigan. Students demonstrate composing and decomposing 10 using math sentences comprised of written numbers, + and – and = symbols to represent their thinking. Students were also encouraged to look for patterns in the abstractions.</p>		
Curricular Competencies and Content	Math 1	<ul style="list-style-type: none"> • Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving • Visualize to explore mathematical concepts • Represent mathematical ideas in concrete, pictorial, and symbolic forms • Ways to make 10

Numeracy Connections	Instruction and Assessment	Competencies Developed, Practiced, and/or Assessed
<p>NUMERACY: Applies-- Represents the mathematical problem (visualizes) →</p>	<p>1. Students had been introduced to several manipulatives (Grapat loose parts, <i>Power of 10</i>, Numicon, Penguins on Ice) prior to this learning opportunity; the teacher continued to model and scaffold use of the manipulatives for this activity. Students worked in small groups to visualize composing and decomposing 10. Students translated these representations to equations written on white boards. →</p>	<p>Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving</p> <p>Visualize to explore mathematical concepts</p> <p>Represent mathematical ideas in concrete, pictorial, and symbolic forms</p>
<p>NUMERACY: Solves—Verifies accuracy of the mathematical solution →</p>	<p>2. Students shared their equations with the larger group. The students discussed the accuracy of the equations and shared observations. One unplanned discovery was the discovery of a pattern. The students then predicted the next equations in the pattern. →</p>	<p>Develop, demonstrate, and apply mathematical understanding through play, inquiry, and problem solving</p> <p>Represent mathematical ideas in concrete, pictorial, and symbolic forms</p>
<p>NUMERACY: Communicates— Represents processes and solution →</p>	<p>3. A few days later, the teacher challenged students to recall writing math equations, this time without the use of manipulatives. The students demonstrated their solutions to the challenge.</p>	<p>Represent mathematical ideas in concrete, pictorial, and symbolic forms</p>



Teacher Observations and Assessment

This student was able to orally explain, show with materials, and write down their abstraction of composing and decomposing 10. They were able to create and solve math sentences that composed/decomposed 10. The student was able to share their learning with the larger group and draw connections between their work and the work of classmates. The student was reminded and went back to correct the numerals initially printed backwards.

How many different ways can you make 10?

+	-	x	÷
$2+2+2+2+2=10$ ✓	$4+1+4+1=10$ ✓		
$5+5=10$ ✓	$5+5=10$ ✓		
$4+2+4=10$ ✓			
$0+10=10$ ✓			
$3+3+4=10$ ✓			
$3+3+1=10$ ✓			
$1+2+3+4=10$ ✓			
$7+2+1=10$ ✓			
$7+3=10$ ✓			
$1+2+5+10$ ✓			

I want to learn about how you make equations so I would like you to write as many number sentences or equations as you can that equal 10 if you know a pattern then show me. Once you have given five or six examples of a pattern then please try to show me another pattern. If you need more room turn the page over or ask for another page.

Teacher Reflection

Using the Learning Pathways encouraged me to slow down my teaching. I knew that my students were capable of composition of 10; however, the review with manipulatives allowed them to play and discover some mathematical patterns on their own. This made the learning experience much more meaningful and rich!

Using the Learning Pathways in planning and teaching this task allowed me to take into consideration every student in the class, no matter where they were at in their understanding of composition/decomposition of 10. The play-based nature of the task allowed for an entry point for every learner, which was really exciting to witness in action. When looking through the class' math sentences (see photo above) it was clear to see how the manipulatives scaffolded the learning of many students. It was also clear from the discussions which learners needed more time and support in this area.

I appreciate how the Learning Pathways allow for students to demonstrate their learning in a variety of ways (talking, playing, writing, sharing). This allowed for a wide range of abilities to shine in this class.