



Related  
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Resources

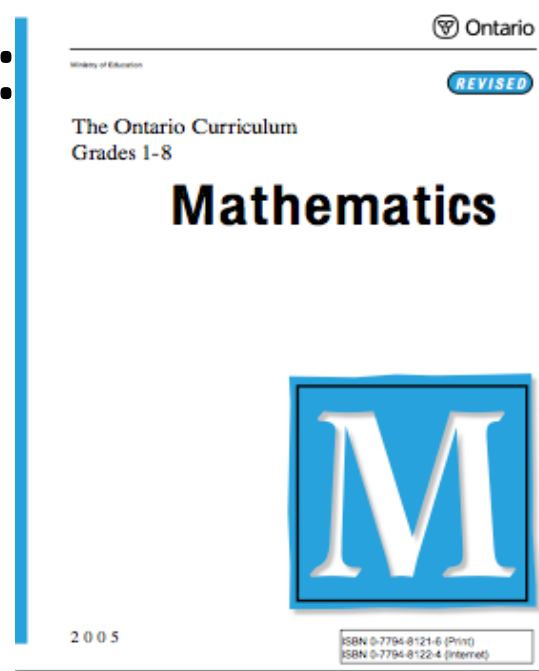


Visualizing

- Mathies Tool Demonstration: Comparing Fractions Using Fraction Strips
- Matching Activities to Create Mental Images
  - Fractions: Visual and Numeric Representations
  - Multiplication: Visual and Numeric Representations

# Mathies Tools Demonstrations: Curriculum Expectations

**Grade 6:** Represent, compare and order fractional amounts with unlike denominators, including proper fractions, using a variety of tools (e.g., fraction circles, Cuisenaire rods, drawings, number lines, calculators) and using standard fractional notation



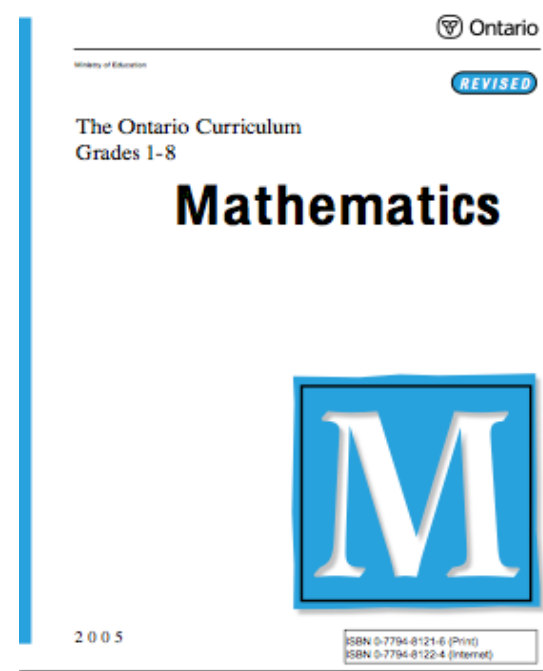
# Developing Visualization

- If we want students to be able to visualize in math class, it is important that they have hands-on experiences with concrete materials to create mental images that they can later retrieve and manipulate
- Connecting visual to numeric representations is critical so they can flexibly move between the two forms








# Curriculum Expectations for Fraction Matching Activity

## Grade 5 and 6:

Represent fractional amounts, including proper and improper fractions and mixed numbers using a variety of tools (e.g., fraction circles, Cuisenaire rods, drawings, number lines) and using standard fractional notation



# Fraction Matching Activity used in Resource

	$\frac{2}{5}$
	$\frac{1}{3}$
	$1\frac{2}{8}$
	$\frac{3}{2}$
	$\frac{8}{12}$
	$\frac{6}{7}$
	$\frac{7}{12}$

# Instructions for Fraction Matching Activity

- Cut up the numeric and visual representations of the fractions
- Give each participant either a numeric or a visual representation
- Ask participants to find their partner (e.g., if they have a visual representation, they are looking for the matching numeric representation)
- Have partners discuss why they belong together
- Have a full-group discussion about participants' strategies, their thinking, and their rationale
- Name the mathematical thinking and concepts that arise during the discussion

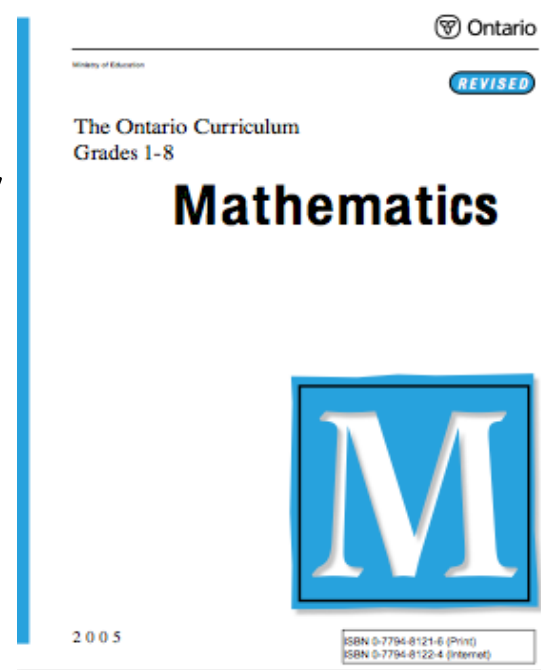
# Rekenrek Matching Activity

- Included in this resource, is a matching activity, which supports matching numerical representations of multiplication to their visual representations as created on the rekenrek
- This activity also supports students' ability to compose and decompose numbers when developing multiplication strategies

# Curriculum Expectations for Rekenrek Matching Activity

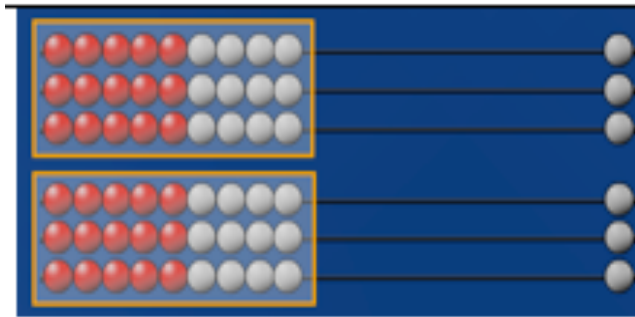
**Grade 5:** Solve problems involving the multiplication of whole numbers using a variety of mental strategies

**Grade 6:** Use a variety of mental strategies to solve multiplication problems involving whole numbers

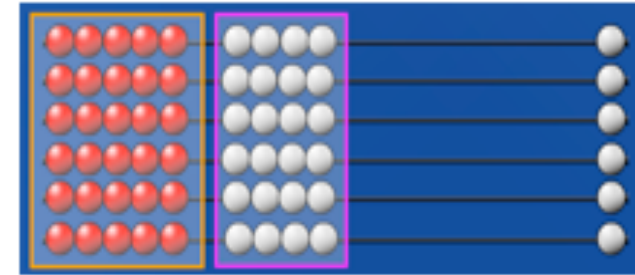




# Rekenrek Matching Activity



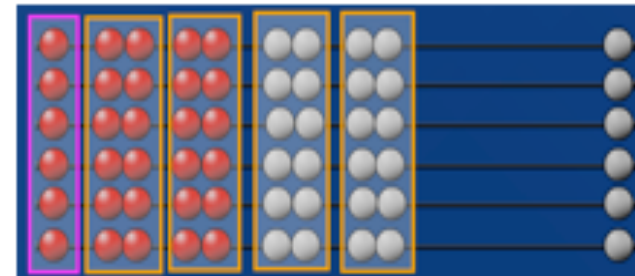
$$\begin{aligned}
 &3 \times 9 + 3 \times 9 \\
 &= 27 + 27 \\
 &= 54
 \end{aligned}$$



$$\begin{aligned}
 &6 \times 5 + 6 \times 4 \\
 &= 30 + 24 \\
 &= 54
 \end{aligned}$$



$$\begin{aligned}
 &2 \times 9 + 2 \times 9 + 2 \times 9 \\
 &= 18 + 18 + 18 \\
 &= 54
 \end{aligned}$$



$$\begin{aligned}
 &6 \times 2 + 6 \times 2 + 6 \times 2 + 6 \times 2 + 6 \times 1 \\
 &= 12 + 12 + 12 + 12 + 6 \\
 &= 54
 \end{aligned}$$

# Instructions for Rekenrek Matching Activity

- Cut up the numeric and visual representations of operations
- Give each participant either a numeric or a visual representation
- Ask participants to find their partner (e.g., if they have a visual representation, they are looking for the matching numeric representation)
- Have partners discuss why they belong together
- Have a full-group discussion about participants' strategies, their thinking, and their rationale
- Name the mathematical thinking and concepts that arise during the discussion