



Related
Junior
Resources



Using
Proportional
Reasoning

- Mathies Drop Ball Game Demonstration
- Connecting Fractions and Decimals

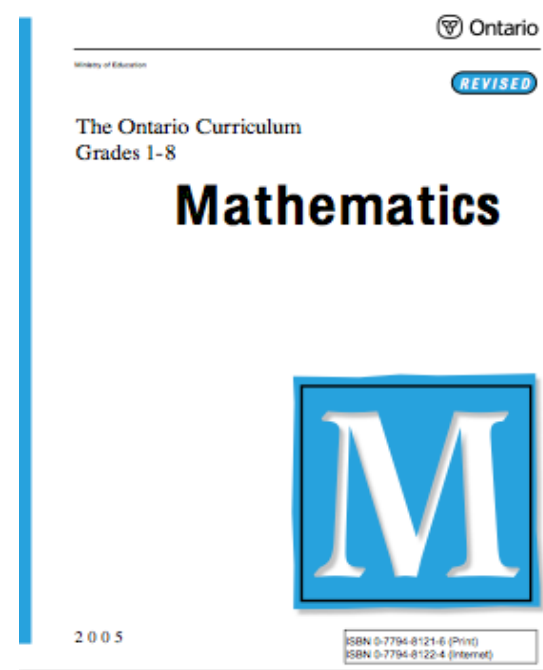
Curriculum Expectations for Drop Ball Game

Represent, compare, and order
fractional amounts with

- **Grade 5:** like denominators
- **Grade 6:** unlike denominators

including proper and improper fractions and mixed
numbers,

using a variety of tools (e.g., fraction circles,
Cuisenaire rods, number lines)



Proportional Reasoning at Work: Fractions and Decimals

In order to understand both fractions and decimals, students need to be able to think in proportional terms:

- Fractions represent a relationship between the numerator and denominator
- Decimal numbers are part of our place value system based on increases by a factor of ten or decreases by a factor of $1/10$

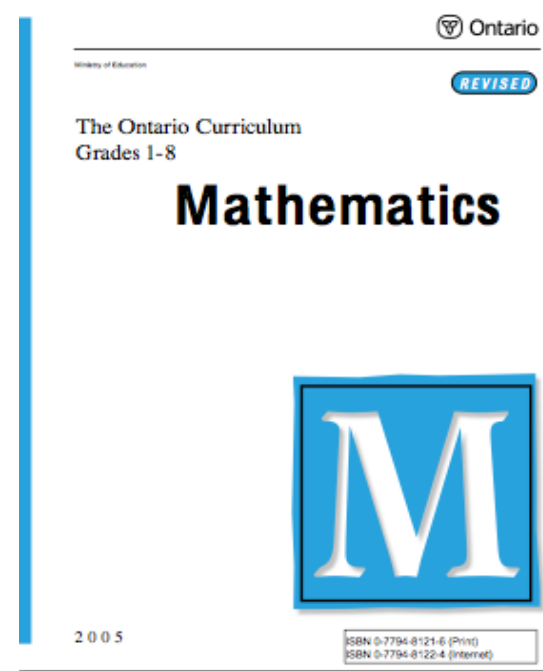
Spatial Reasoning at Work

- Decimal numbers are another way of expressing fractions
- Students need to make the connection between the two number systems
- Concrete representations are effective for making a conceptual connection that both systems express the same ideas

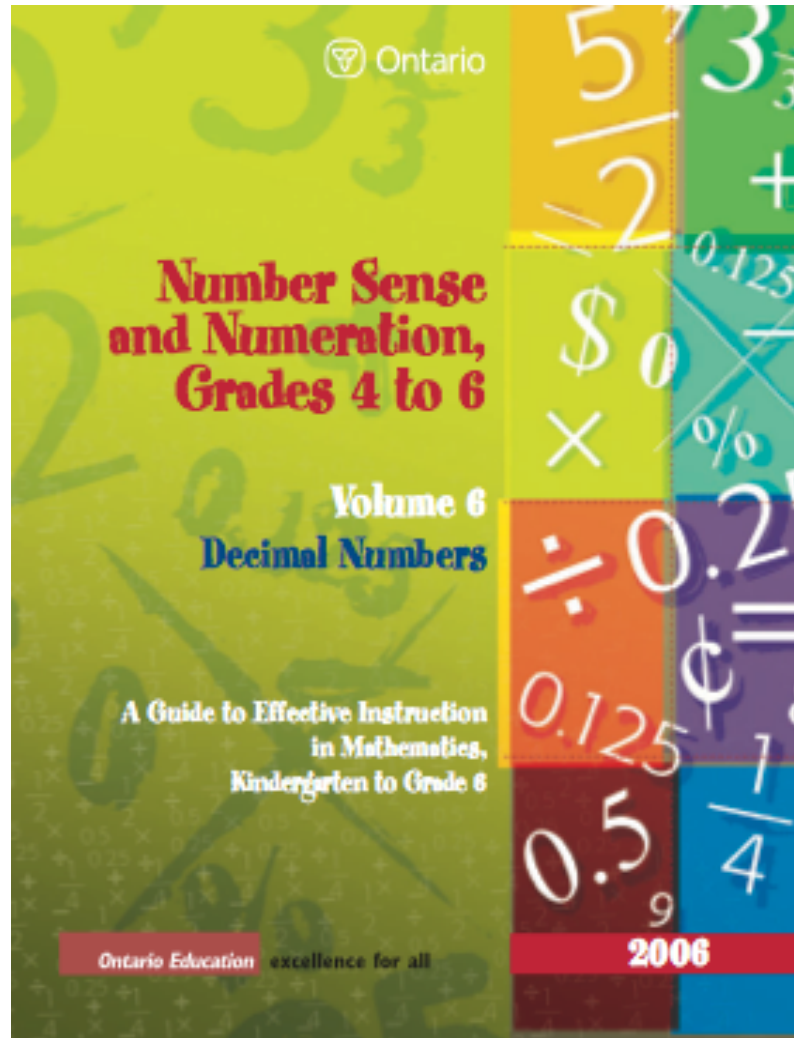
Curriculum Expectations

Determine and explain through investigation, **using concrete materials** and **a variety of tools**, the relationship:

- **Grade 4** – between fractions and decimals to tenths
- **Grade 5** – between fractions and their equivalent decimal forms
- **Grade 6** – among fractions, decimal numbers, and percents

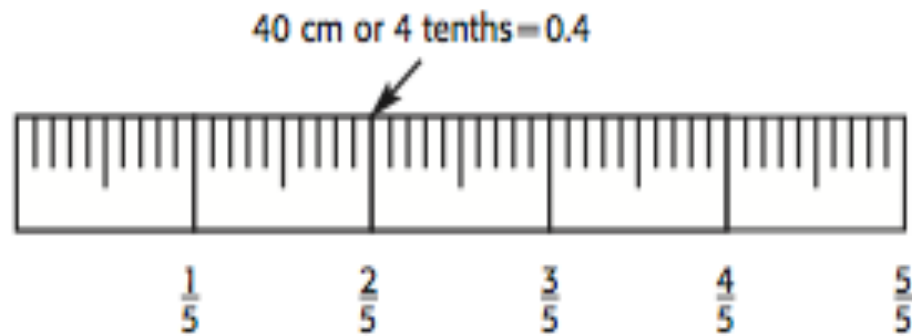


Highlights of Spatial Reasoning in Junior Resource for Decimal Numbers



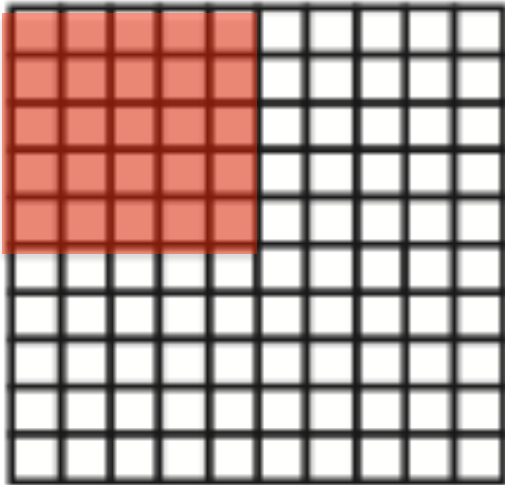
Give students opportunities to use concrete materials to represent decimals as fractions and fractions as decimals.

Represent $\frac{2}{5}$ as a decimal.



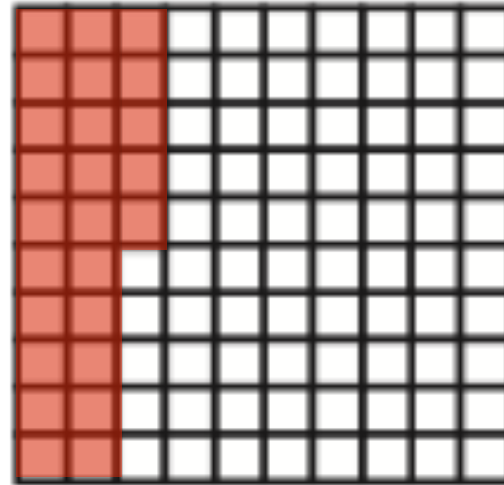
I used the metre stick as one whole, or 1. To figure out where $\frac{2}{5}$ was, I divided the stick into 5 equal parts. $100 \text{ cm} \div 5 = 20 \text{ cm}$, so $\frac{2}{5}$ is at the 40 cm mark. 40 cm is 4 tenths of the metre stick, or 0.4. So $\frac{2}{5}$ can be written as 0.4.

Connecting Friendly Decimals and Fractions with Visuals



$\frac{1}{4}$ or $\frac{25}{100}$
or 0.25

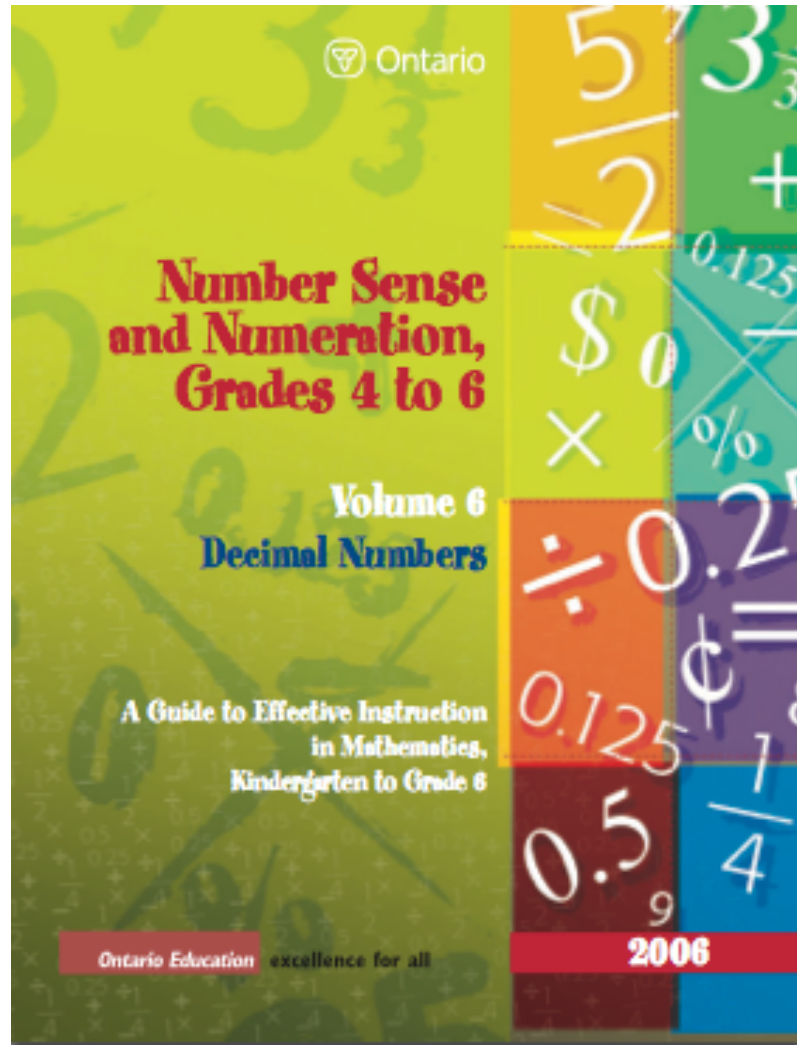
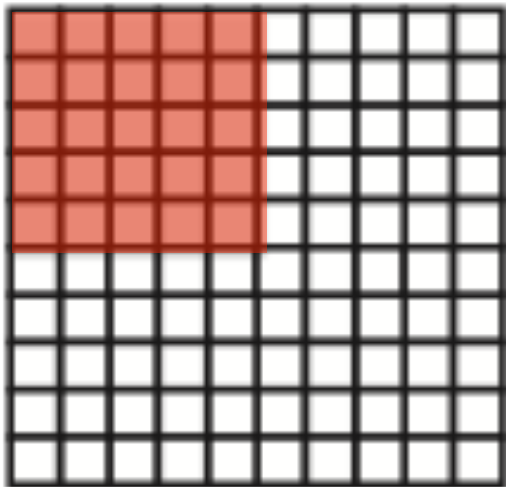
$\frac{1}{4}$ or $\frac{25}{100}$ or 0.25



Grade 5 Learning Activity

Number Books

For a related activity, check out ...



Probability Problem in Resource – Grade 6

Justin has a bag of 40 coloured tiles. Without looking, he reaches in and pulls one tile out. Complete the table below to determine the probability of choosing a red, green, blue, or yellow tile.

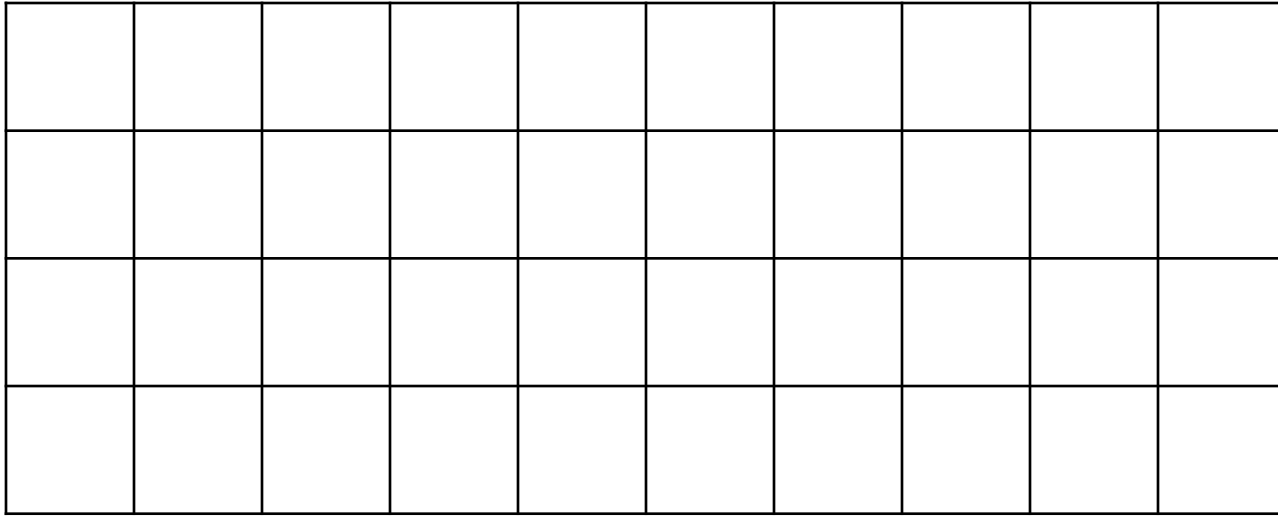
| Colour | Number in Bag | Probability of choosing a tile of this colour |
|--------|---------------|---|
| Red | 6 | |
| Green | 10 | |
| Blue | | |
| Yellow | | 0.2 |

Probability Problem Adapted
(to link decimals and fractions)

Justin has a bag of 40 coloured tiles. Without looking, he reaches in and pulls one tile out. Complete the table below to determine the probability of choosing a red, green, blue, or yellow tile.

| Colour | Number in Bag | Probability of choosing a tile of this colour |
|--------|---------------|---|
| Red | 6 | |
| Green | | $\frac{1}{4}$ |
| Blue | | |
| Yellow | | 0.2 |

Grade 5 – determine and explain the relationship between fractions and their equivalent decimal forms



Place tiles on the big rectangle or colour it so:

- 0.25 of the rectangle is red,
- $\frac{1}{5}$ of the rectangle is blue,
- 0.2 of the rectangle is green,
- 4 tiles are yellow.

What fraction of the rectangle is uncovered? How can you express this as a decimal number?

Write fractions and decimals for the four colours.

Grade 4 – determine and explain the relationship between fractions and decimals to tenths, using a variety of tools

Sharing Cake

A family shared a birthday cake. The dad ate one-fifth of the cake, the son ate 0.2 of the cake, the daughter ate $\frac{1}{10}$ of the cake and the mom ate one piece. What fraction of the cake was left over? Show your thinking.