

All the ways we represent a fraction

Teaching strategies for thinking about fractions

Best for

- Year level: 4
- Fraction constructs: Ratios and part-whole



Overview

Description	This activity is designed to support students to develop understanding of the ratios and part-whole fraction constructs, which are foundational to students' development of thinking about fractions. Through the activity, students can be supported to understand: • the connections between fractions, decimals, percentages and ratios • the relative size of different fractions and their equivalent decimal and percentage representations.
Learning focus	Australian Curriculum: Years 4 and 5 Mathematics Number • find equivalent representations of fractions using related denominators and make connections between fractions and decimal notations (AC9M4N03) • recognise that 100% represents the complete whole and use percentages to describe, represent and compare relative size; connect familiar percentages to their decimal and fraction equivalents (AC9M5N04) General capability: Numeracy learning progression Number sense and algebra: Interpreting fractions • fractions as numbers — uses and explains the equivalence of decimals to benchmark fractions (P6) • comparing fractions — understands the equivalence relationship between a fraction, decimal and percentage as different representations of the same quantity (P7)
Teacher preparation	• Provide every student with sticky notes. • Consider student groupings — this task could work as an individual, paired, small group or whole class activity depending on the focus.

Suggested implementation

1. Instruct students to consider a specific fraction that you have chosen (e.g. $\frac{3}{5}$).
2. Direct students to write a different representation of this fraction, with each representation on a separate sticky note. Offer some prompts to students, such as:
 - a. Does that number have a decimal equivalent?
 - b. Are there any other fractions that mean the same thing?
 - c. If you have three-fifths of something, what percentage does that represent?
3. Have students group their representations and use an additional sticky note to title each group.
4. Conduct a gallery walk and have students compare their representations with others. Students could also build a communal board where they all place and categorise their sticky notes.
5. Conclude with a whole class discussion. Consider the following questions to lead the discussion:
 - a. How can two representations look different but still mean the same thing?
 - b. Were there any representations that did not belong with any others?
 - c. What do all the representations have in common?
 - d. Did you see something in someone else's work that made you rethink your groupings?
 - e. Why is it useful to be able to think about fractions in different ways?
 - f. How might different representations be useful in different contexts?



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