Comparing A

Generate and recognize equivalent fractions using models and symbols

Equivalency Comparisons

Description

This is a set of prompts consisting of purposely paired fractions to elicit the use of various strategies. The prompts may be used on different occasions for either Minds-On activities or for Action tasks depending on student readiness. Repeated practice and exploration in making comparisons between fractions will deepen student understanding. These prompts are presented symbolically and without context. Encourage students to build models/representations and create contexts to support visualization of fractions, which in turn supports meaning-making.

Mathematics

Research shows that it is beneficial to spread fraction learning throughout the year and embed it in other strands. These prompts progress in complexity from comparisons of equivalent fractions, to examples that include same denominators, to comparisons of very close fractions with different numerators and denominators. Students are encouraged to develop a range of different strategies and to use them strategically, based on the situation.

Curriculum Connections

Students will:

- represent, compare and order fractional amounts using a variety of tools.

Instructional Sequence

1. Partner students and introduce the task. Post the selected prompt (select from options to the right) on the black/whiteboard or interactive whiteboard, or distribute on a handout.
2. Provide students time to complete the task. Encourage them to use graph paper, rulers and manipulatives (concrete or virtual, such as the tools at mathies.ca).
3. Have students describe their thinking. Highlight different strategies by purposely choosing students that solved the task in different ways. Have students identify the similarities and differences between the strategies.

Prompt 1

Are $\frac{2}{6}$ and $\frac{4}{12}$ equal? Show your thinking.

Prompt 2

Show that $\frac{3}{4}$ is the same as $\frac{15}{20}$.

Prompt 3

Is $\frac{2}{6}$ equal to $\frac{3}{9}$? Show your thinking.

Highlights of Student Thinking

Students may:

- construct accurate models to compare two or more fractions;
- rely on the algorithm for determining equivalent fractions;
- consider only the numerators or only the denominators;
- use benchmarks to make estimates for comparison;
- consider the size of the unit fractions (as indicated by the denominators);
- consider the proximity of the fraction to 1 by identifying the 'missing piece' (complement); and
- be purposeful about the strategy for comparison based on the fractions given.

Key Questions

1. Did you think of contexts to help you visualize the fractions? How did this help you?
2. Share how you visualized the fractions.
3. How did your representation help you to compare the fractions?
4. What strategy did you find most helpful? Why?
5. What manipulatives could you use to help you?

Materials

Make tools available such as paper and markers, grid paper, paper strips for folding, and/or manipulatives such as relational rods.