

FRACTION BENCHMARKS

Lesson 1: Closest to...

Australian Curriculum: Mathematics (Year 6)

ACMNA125: Compare fractions with related denominators and locate and represent them on a number line.

Lesson abstract

Students are presented with a collection of fractions on cards. Students work with a partner to sort the fractions according to whether they are closer to 0, $\frac{1}{2}$, or 1. They justify the reasons for their decisions.

Mathematical purpose (for students)

We will sort fractions to decide if they are closest to 0, $\frac{1}{2}$, or 1.

Mathematical purpose (for teachers)

Students build their understanding of fractions as numbers and the magnitude of fractions. Students use benchmarks (0, $\frac{1}{2}$, 1) to estimate the magnitude of fractions.

Suggested presentation One lesson of one hour

Vocabulary encountered

- benchmark numbers
- equivalent fractions

Lesson materials

- *1a Fraction Cards* (1 copy per 2 students)

We value your feedback after this lesson via our website.

Introduction

Provide students with copies of *1a Fraction Cards*. Explain that students will determine the size (magnitude) of fractions using common benchmark numbers.

Pose the problem: *Sort the fractions into three groups according to whether they are closer to 0, $\frac{1}{2}$, or 1.*

Exploration

Have students work in pairs to sort the fractions. As they are sorting have them explain the reasons for their decisions.

Enabling Prompt

- Provide students with a fraction wall as a visual image to help sort the fractions.

Students may notice:

- There are a few equivalent fractions included. For example, $\frac{1}{3} = \frac{4}{12} = \frac{2}{6}$. Ask students to explain how they know that these fractions are equivalent (i.e. the ratio between the fractional parts and the number of parts is constant).
- $\frac{1}{4}$ is exactly halfway between 0 and $\frac{1}{2}$, and $\frac{6}{8}$ is exactly halfway between $\frac{1}{2}$ and 1.
- $\frac{1}{3}$ and $\frac{2}{3}$ are both closest to $\frac{1}{2}$. Both are $\frac{1}{6}$ away from $\frac{1}{2}$.

Questions to prompt deeper thinking

- *Which of your fractions is closest to 0? Closest to $\frac{1}{2}$? Closest to 1? How do you know?*
- *Look at the group of fractions closest to $\frac{1}{2}$. Which of these fractions are more than $\frac{1}{2}$ and which are less than $\frac{1}{2}$?*

Extending Prompt

- *Add some of your own fractions to each group. Justify why they are in each group.*

Class discussion

Ask selected students to share their strategies for sorting the fractions. Look at the connections between students' strategies.