

Lesson 11: Inequality and the $\frac{1}{2}$ Benchmark

Purpose: To compare fractions to the $\frac{1}{2}$ benchmark

Materials: Fraction Bars, paper and pencils

TEACHER MODELING/STUDENT COMMUNICATION

Activity 1 Finding bars whose fractions are equal to $\frac{1}{2}$

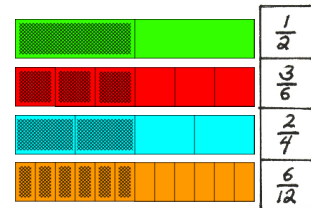
Fraction
Bars

paper and
pencils

1. Each group will need paper and pencils and a deck of bars.

- Find the green bar that is half shaded and the red bar with the same shaded amount.
- Write an equality statement for these two fractions. ($\frac{1}{2} = \frac{3}{6}$)
- What other bars in the deck are half shaded? (The blue bar for $\frac{2}{4}$ and the orange bar for $\frac{6}{12}$) As each of these bars is found, ask students to write equality statements for their fractions and $\frac{1}{2}$:

Ask students to place these four bars on their paper and beside each bar write its fraction, as shown here.



2. Ask the following question:

- What do you notice about the top number and the bottom number for these four fractions? (The top number is half the bottom number.)
- Will this always be true for a fraction if its bar is half shaded? (Yes. The number of shaded parts, the top number, will be half the total number of parts.)

3. Summarize these examples by asking:

- If the top number of a fraction is half of the bottom number, what do you know about the bar for the fraction? (It is half shaded.)

Activity 2 Finding bars whose fractions are less than $\frac{1}{2}$

Fraction
Bars

Ask each student to find a bar that is less than half shaded and hold it up. Ask a few students to describe their bar and say its fraction. For example, "a blue bar with one part shaded and its fraction is 1 over 4."

Write some of their fractions on the overhead: $\frac{1}{4}$ $\frac{5}{12}$ $\frac{1}{6}$ $\frac{3}{12}$ $\frac{1}{3}$ $\frac{0}{6}$ $\frac{2}{12}$ $\frac{2}{6}$

- Are these fractions less than or greater than $\frac{1}{2}$? Explain your reason.