Towers and Line Ups

Planning Your Time

Intro & Set-up	Assess	Correct
15 min	20 min	20 min

Objective

Compare fractions.

Materials

- Fraction Tower Cubes
- Overhead Fraction Tower Cubes
- Prepare transparency of Fraction Master 7: Fraction Number Lines

Grouping

Whole class, then small groups

Open It Up

Distribute a set of Fraction Towers to each small group and a copy of Fraction Master 7 to each student. Display the number line transparency on the overhead. Review how to represent a fraction on a number line using Fraction Tower Cubes.

Ask: How can you show $\frac{3}{5}$ on a number line using the Fraction Tower Cubes? [First place the whole tower of fifths along the number line. Mark small dots for each fifth and label the dots with $\frac{1}{5}$, $\frac{2}{5}$, $\frac{3}{5}$, and $\frac{4}{5}$. Mark an X at $\frac{3}{5}$.]

What fraction could you write at 0 on the number line? Why? [$\frac{0}{5}$; The number line starts with no fifths.]

What fraction could you write at 1 on the number line? Why? [$\frac{5}{5}$; 5 fifths makes a whole tower, or 1 whole.]

Demonstrate & Discuss

Write $\frac{2}{5}$ O $\frac{3}{4}$ at the top of the number line transparency on the overhead.

Say: Use the whole tower of fifths to mark and label fifths on the number line. Find $\frac{2}{5}$ and mark that location with an X. Use the same technique to label fourths and to find $\frac{3}{4}$ on the same number line.

Ask: Which fraction is closer to 0? [$\frac{2}{5}$] Which fraction is closer to 1? [$\frac{3}{4}$] Which fraction is greater, $\frac{2}{5}$ or $\frac{3}{4}$? [$\frac{3}{4}$] Model the fractions with the tower cubes to verify that $\frac{2}{5}$ is less than $\frac{3}{4}$.

Student Activity

Plan ahead: Each small group will need a set of Fraction Tower Cubes.

In this activity, students are showing fractions and relationships among fractions. It is important for them to see how fractions and fraction relationships can be shown using manipulatives and related graphics. Having students transfer from hands-on displays to written displays will enhance their mental images of fractions.

Informal Assessment

Observe the students as they record the fractions on the number lines.

Ask: How is a number line similar to the Fraction Tower Cubes? [If you lay down a whole tower of cubes, the edge looks like a line with equally spaced parts just like a number line.] /COMPARE AND CONTRAST/

Sum It Up

Say: Today we learned how to compare and order fractions using Fraction Tower Cubes and number lines.

Ask: Which is greater, $\frac{3}{5}$ or $\frac{3}{4}$? Can you give a rule for comparing fractions with the same numerator? [$\frac{3}{4}$; When fractions have the same numerator, the fraction with the greater denominator is less because the fraction parts are smaller.] /GENERALIZE/

Extension

This is a partner activity. Prepare a set of index cards with fractions $\frac{0}{3}, \frac{1}{3}, \frac{2}{3}, \frac{3}{3}, \frac{0}{4}, \frac{1}{4}, \frac{2}{4}, \frac{3}{4}, \frac{4}{4}, \frac{0}{5}, \frac{1}{5}, \frac{2}{5}, \frac{3}{5}, \frac{4}{5}$, and $\frac{5}{5}$. Shuffle the cards and place them face down in a pile. Each student draws a card. Encourage students to indicate whether one fraction in less than, greater than, or equal to the other before using towers or numbers lines to compare the fractions. Remind students to use $\frac{1}{2}$ as a benchmark to compare pairs of fractions.