



TEACHING GUIDE

Rainbow Fraction™ Tiles (LER 2347) can be used to help students visualize fractional relationships. The set of tiles in nine colors is proportionally cut to represent a whole, halves, thirds, fourths, fifths, sixths, eighths, tenths, twelfths.

The activities that follow provide suggestions for demonstrating fractional concepts using the *Rainbow Fraction™ Tiles*. The following activities will be most meaningful if students have their own sets of tiles for hands on explorations.

FRACTIONAL PARTS

Use the *Rainbow Fraction™ Tiles* for demonstration. Help students identify the tiles and talk about the relationships between them. Count each of the half tiles using fraction names. Encourage students to count along with you.

Continue with thirds, fourths and so on in a similar manner. Count the fraction tiles aloud with students. Students will then become familiar with the fraction tiles and their relative sizes.

FRACTION SYMBOLS

Show students the unit tile with the two halves. Ask students to name the tiles, then

count the halves. As they count, write the corresponding fractions on the chalkboard. ($\frac{1}{2}$ and $\frac{2}{2}$).

Introduce the symbols for other fractional parts. Display them on the overhead, count them, and ask students to write the symbols for each one.

COMPARING

The easiest comparisons to make are with equal size pieces. Direct students to do the following: “Show $\frac{3}{10}$ with your fraction pieces. Show $\frac{5}{10}$. Compare these amounts. Which is more? ($\frac{5}{10}$) Which is less? ($\frac{3}{10}$)” Make other comparisons using fractions with equal denominators.

COMPARING FRACTION TILES OF DIFFERENT SIZES

Comparisons should include tiles of different sizes with different denominators. This type of visual comparison helps students develop an awareness of fraction tile sizes. Provide small groups with sets to *Rainbow Fraction™ Tiles*. Arrange tiles in front of you and ask students to do the same. Ask the following: “*How many halves are in a whole?*” (2) *Look at my one-half and one-fourth tile. Which is longer? (half) Can you tell why? (The whole tile is cut into two parts for halves and four parts for fourths.)*”

Students can compare other fractional amounts. Encourage them to model fractions with their tiles. Make comparisons greater than unit fractions such as $\frac{2}{3}$, $\frac{3}{4}$, $\frac{3}{5}$, and $\frac{4}{6}$.

EQUIVALENT FRACTIONS

Have the students place a half tile on one side of their desks and tiles along the other side. Combine fractional parts to make one-half.

As each equivalent fraction is found, write the combinations on the chalkboard. This will illustrate that they are equivalent to one-half. Students may suggest that combinations of different tiles such as $\frac{1}{4}$ and $\frac{2}{8}$ are equivalent to one-half. Accept these responses as well.

Ask students to work together not find tiles equivalent to one-third ($\frac{2}{6}$, $\frac{4}{12}$), one-quarter ($\frac{2}{8}$, $\frac{3}{12}$), and one-fifth ($\frac{2}{10}$). Provide students with inch-grid paper to record their findings.

GREATEST FRACTION GAME

Prepare a set of eight fraction cards with fractions $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{6}$, $\frac{3}{4}$, $\frac{2}{3}$, $\frac{7}{8}$, and $\frac{4}{12}$ written on them. Display all fraction tiles on a table and choose two teams. Label two large sheets of white paper with the team names. Place all fraction cards face down in a pile.

Team members choose a fraction card, take a corresponding fraction tile, then compare. The team that chooses the largest fraction part wins both fraction tiles. The first team to make one whole with their fraction tiles scores a point. All fractional parts are then returned and play begins again. Continue the game until one team scores five points.

ESTIMATING FRACTIONS

Provide small groups of students with *Rainbow Fraction™ Tiles* and paper. Ask students to fold the paper into three parts with parts labeled “*about 0*”, “*about $\frac{1}{2}$* ”, and “*about 1*”. Using 0, $\frac{1}{2}$, and 1 as benchmarks, give students opportunities to compare fractional amounts by estimating and then measuring to see which amount is closest to the fraction.

Instruct students to estimate whether $\frac{7}{8}$ is closest in size to 0, $\frac{1}{2}$, or 1. Record their estimates on paper. Discuss which tile is

closest to $\frac{7}{8}$. (One whole) Continue with other comparisons, including fractions such as $\frac{1}{12}$, $\frac{2}{4}$, and $\frac{8}{10}$.

After students are familiar with the activity, ask them to display one-half and one whole at their desks. Encourage them to use their tiles to show the fractions $\frac{3}{8}$, $\frac{7}{8}$, and $\frac{2}{10}$. Make comparisons to the benchmarks.

MIXED NUMBERS

Provide students with Rainbow Fraction Tiles. Instruct students to show $1\frac{1}{2}$ with their pieces. Write the mixed number on the chalkboard while reading it along with students. Continue as students model other mixed numbers such as $1\frac{2}{3}$, $1\frac{3}{4}$, and $2\frac{1}{2}$. Record each mixed number.

ADDITION AND SUBTRACTION FRACTION STORIES

Give pairs of students *Rainbow Fraction Tiles™*. Tell students stories they can model and solve with their fraction tiles. After students model the stories at their seats, volunteers can model the stories at the chalkboard. Here are three story suggestions:

- There is $\frac{1}{4}$ loaf of banana bread in one pan and $\frac{2}{4}$ of a loaf in another pan. How much banana bread is in both pans? ($\frac{3}{4}$)
- Alyssa has $\frac{3}{4}$ of a granola bar. She gives $\frac{1}{4}$ of it to a friend. How much of the granola bar does Alyssa have now? ($\frac{1}{2}$)
- A pizza has 8 slices. Tim and his friends eat five slices. What fraction of the pizza is left? ($\frac{3}{8}$)

If students are ready, they can use their fraction tiles to model and solve problems with

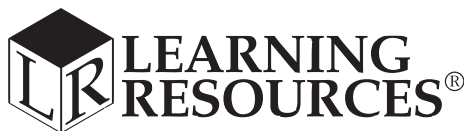
unlike denominators. For example:

- Ryan has $\frac{1}{2}$ of a granola bar in his lunch. His friend has $\frac{1}{4}$ of a granola bar. How much do both children have together? ($\frac{3}{4}$)

To add these fractions, students need to use the same size parts. Place $\frac{1}{2}$ and $\frac{1}{4}$ on the overhead. Ask: “*What could we trade so the parts are the same size? ($\frac{1}{2}$ for $\frac{2}{4}$)*”

Demonstrate the trade with your tiles as children trade using their fraction parts. Talk about the solution, and then continue with other stories.

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