

# Rainbow Fraction® Tile Activity Master

Name \_\_\_\_\_




For a dealer near you, call:  
 (847) 573-8400 (U.S. & Int'l)  
 (800) 222-3909 (U.S. & Canada)  
 +44 (0)1553 762276 (U.K. & Europe)

[www.learningresources.com](http://www.learningresources.com)

**WARNING:**  
 CHOKING HAZARD - Small parts.  
 Not for children under 3 years.

© Learning Resources, Inc., Vernon Hills, IL (U.S.A.)  
 Learning Resources Ltd., King's Lynn, Norfolk (U.K.)  
 Please retain our address for future reference.  
 Made in China. LPK0615-TG



# RAINBOW FRACTION TILES

by  
Alison Abrohms

Ages  
**7+**

## Activity Guide

### A Note to Parents and Teachers

Teaching children fraction concepts and operations with fractional numbers is often challenging. *Rainbow Fraction® Tiles* help children understand fractions through hands-on experience with fraction models. They visually reinforce children's understanding of fractions, and build the following skills:

- confidence in working with fractions and mixed numbers
- recognizing equivalent fractions
- adding and subtracting fractions to solve problems
- demonstrating a number sense for fractions

In addition to the *Rainbow Fraction Tiles*, this guide includes two sheets of stickers, designed for use in several activities. Each sticker represents a specific fractional part and is color-coded to match the *Rainbow Fraction Tiles*. If possible, each child, pair, or group should have a set of *Rainbow Fraction Tiles* to work with. Otherwise, the Activity Master at the end of this guide may be photocopied; children then can color the fraction parts to match the tiles and cut them into individual pieces for the activities.

Activities are suitable for children in grades 2-6. They can be completed at home or in class with individuals, work pairs, or cooperative groups. *Rainbow Fraction Tiles* also can be included in learning centers. Objectives are listed for each activity, as are suggestions for parents or teachers, to guide children in working with the tiles.

Before beginning the activities in this guide, allow children to freely explore the *Rainbow Fraction Tiles*. Encourage them to combine same-color pieces to create one whole. Define a fraction as a part of one whole. Once children are comfortable with this idea, and with using the tiles, move on to the following activities.

### Fraction Names

**Objective:** *Identify fractional parts of regions.*

Display a set of *Rainbow Fraction Tiles* so the fraction on each tile is not showing. Point out the largest tile and identify it as one whole. Challenge children to find the tiles that represent halves. Ask: *Why are these halves?* (Two equal parts match the whole.) Discuss what each word in the term "one-half" means. Introduce the terms "numerator" (the top number in a fraction that expresses the number of "parts" compared to the whole); "denominator" (the bottom number in a fraction that expresses the amount of "parts" in a whole); "unit fraction" (a fraction that represents one part of a region or set that has been partitioned into equal parts, and has a numerator of 1); and "proper fraction" (a fraction whose numerator is less than the denominator).

Work with children to identify the tiles that represent thirds, fourths, fifths, sixths, eighths, tenths, and twelfths. Children can check their responses by counting the equal parts for each color tile. Also, ask them to line up each set of fraction tiles next to the tile that represents one whole to show they are equal.

Discuss other examples in which a number can be expressed as a fraction. For example: one out of five fingers ( $\frac{1}{5}$ ), 1 out of 10 pizza slices ( $\frac{1}{10}$ ), 4 out of 12 pencils ( $\frac{4}{12}$ ), 7 out of 8 inches on a ruler ( $\frac{7}{8}$ ), and so on.

## Fraction Rummy

**Objective:** Identify different representations for each fraction.

This card game is suitable for two players, or for two teams, each consisting of two to three players. Set up the game by cutting white index cards in half to create a “deck” of 51 white cards. Do the same with yellow index cards. Place the circle-shaped stickers on the white set of cards and the square-shaped stickers on the yellow set. Shuffle the white cards and place them sticker-side down in a pile. Do the same for the yellow cards.

Players must choose to be the yellow team or white team. Each child (or team) begins by drawing five cards from their chosen deck. Players then take turns trying to collect cards from their opponents that match their own. For example, one player might name a fractional part on one of the cards in his or her hand, such as  $\frac{2}{5}$ . If a player on the opposite team has a corresponding fractional part, he or she must hand over that card. Matched cards are placed in a team pile. If a player cannot collect a matching card during his or her turn, the player draws a card from the appropriate deck and play continues. When all matches have been found, the team with the greatest number wins.

## Fraction Concentration

**Objective:** Identify different representations for each fraction.

This game is suitable for two to three players. To begin, ask children to place all the sticker cards from the previous activity face-down on a flat surface. Each player takes a turn flipping one white card and one yellow card. If the cards have matching fractions, the player can keep the pair. Otherwise, he or she must flip the cards back over. The goal is to remember the location of matching fraction cards and flip them both up in one turn to collect them. Once cards are gone, the player with the most pairs wins.

## Fraction Symbols

**Objective:** Read and write fractions.

Introduce fraction symbols after children have had experience naming and identifying fractional parts. Display the pink *Rainbow Fraction Tiles* so the fraction symbol is visible. Ask one child to identify the fraction these tiles represent. (Halves.) Ask: *How many halves are there?* (2.) Indicate one half and two halves with the tiles as you write “ $\frac{1}{2}$ ” and “ $\frac{2}{2}$ .” Ask one child to match the two pink halves to one red whole to demonstrate they are equal. Continue with thirds, fourths, fifths, and so on. Help children write each fraction as you discuss it.

Next, ask children to gather the sticker cards they used in the previous activity. Ask them to write the symbol on each card for each fraction represented. Then, ask children to line up the cards to create sequential “fraction rows,” e.g., three cards showing  $\frac{1}{3}$ ,  $\frac{2}{3}$ , and  $\frac{3}{3}$ ; five cards showing  $\frac{1}{5}$ ,  $\frac{2}{5}$ ,  $\frac{3}{5}$ ,  $\frac{4}{5}$ , and  $\frac{5}{5}$ ; and so on. They should do this with both decks of sticker cards.

## Comparing Fractions

**Objective:** Identify larger and smaller fractional parts.

Display the *Rainbow Fraction Tiles* so the fraction symbol is showing. Ask: *Which is the largest part?* (1 whole.) *Which is the smallest part?* (One twelfth.) *Which is larger, one fourth or one sixth?* (One fourth.) *How can you tell?* (Compare the two tiles.) Children can check their responses using the *Rainbow Fraction Tiles*. Continue with other comparisons using the unit fractions. After children have had the opportunity to compare, say: *Without looking at the fraction parts, tell which is larger, one eighth or one tenth.* (One eighth.) Children can check their fraction tiles to see if they are correct. Ask: *Is there a rule you can use to help you decide which fraction part is larger when you cannot see them side by side?* (The more parts that make one whole, the smaller each part will be.)

Name fractions other than unit fractions for children to compare, such as  $\frac{3}{8}$  and  $\frac{2}{3}$ . Ask them to show the fractions with their *Rainbow Fraction Tiles*.

## Finding Equivalent Fractions

**Objective:** Use Rainbow Fraction Tiles to identify equivalent fractions.

Display the *Rainbow Fraction Tiles*. Ask children to use their own tiles to find the part that shows  $\frac{1}{2}$ . Ask: *Can you find other parts that are the same size as  $\frac{1}{2}$ ?* Children can measure using their fraction tiles to find fractions equivalent to  $\frac{1}{2}$ . ( $\frac{2}{4}, \frac{3}{6}, \frac{4}{8}, \frac{5}{10}, \frac{6}{12}$ .) If children have difficulty, show them how to align the pink one-half piece with other fraction tiles to find equivalencies. Continue, having children find equivalencies for other fractions such as  $\frac{1}{3}$  ( $\frac{2}{6}, \frac{4}{12}$ ),  $\frac{3}{4}$  ( $\frac{6}{8}, \frac{9}{12}$ ), and so on. Work with children to create a list of equivalent fractions they find.

## Closer to $\frac{1}{2}$ or 1 Whole?

**Objective:** Determine if a fraction is closer to one half or one whole.

Indicate  $\frac{7}{8}$  on the set of *Rainbow Fraction Tiles*. Ask children to show you a different, but equal, fraction tile. (1 whole, for example.) Direct children to line up their one-eighth tiles to model  $\frac{7}{8}$ . Ask them to take away a single one-eighth tile. Ask: *How much do you have now?* ( $\frac{7}{8}$ .) Explain: *Now you have a little less than 1 whole. Is this amount closer to 1 whole or  $\frac{1}{2}$ ? What could you do to find out?* (Compare  $\frac{7}{8}$  to one whole and  $\frac{1}{2}$  to discover  $\frac{7}{8}$  is closer to 1 whole.)

Tell children to remove two more fraction tiles. Ask: *How many parts are left?* ( $\frac{5}{8}$ .) Ask: *Is  $\frac{5}{8}$  closer to  $\frac{1}{2}$  or 1 whole? How can you tell?* (Compare  $\frac{5}{8}$  to 1 whole and  $\frac{1}{2}$  to discover  $\frac{5}{8}$  is closer to  $\frac{1}{2}$ .) Continue with other examples such as  $\frac{1}{12}$  and  $\frac{5}{12}, \frac{9}{10}, \frac{9}{10}$ , and  $\frac{1}{10}$ . Children can check their responses using the *Rainbow Fraction Tiles*.

## Mixed Numbers

**Objective:** Understand, read, and write mixed numbers.

Display a set of *Rainbow Fraction Tiles* so the fraction symbol is showing. Ask children to show one whole and one half, and count the tiles together. Show  $1\frac{1}{2}$  with the *Rainbow Fraction Tiles*, and count the parts along with students to verify their responses. Write the mixed number, explaining what each part of the written symbol means as you do so. Define the term “mixed number.” Challenge children to show other mixed numbers, such as  $1\frac{2}{3}, 2\frac{1}{4}, 1\frac{4}{10}$ , and so on. Encourage them to record each mixed number they explore. Children can check each response using the *Rainbow Fraction Tiles*.

## Adding and Subtracting Fractions

**Objective:** Add and subtract fractions using models.

Display a set of *Rainbow Fraction Tiles* with the fraction side up. Read the following statement out loud: *Rico has  $\frac{2}{4}$  of a granola bar. Tara has  $\frac{1}{4}$  of a granola bar. If they add their pieces together, how much do they have?* ( $\frac{3}{4}$ .)

Encourage children to show the solution using their fraction tiles. Next, read this statement out loud: *Katie has  $\frac{5}{6}$  of her cracker. She eats  $\frac{2}{6}$  of the cracker. How much does she have now?* ( $\frac{3}{6}$ .) Ask children to show this solution using their tiles.

Create your own examples. Once children are comfortable adding and subtracting fractions with common denominators, move on to unlike denominators. For example: *Tara has  $\frac{2}{3}$  of a candy bar. Jared has  $\frac{1}{4}$  of a candy bar. How much do the children have altogether?* ( $\frac{5}{6}$ .)

Tell children that in order to add these fractions, they must use parts that are the same size. Ask: *What could we trade so the parts are the same size?* ( $\frac{1}{4}$  for  $\frac{2}{8}$ .) Demonstrate the trade using *Rainbow Fraction Tiles* as children trade using their own tiles. Then talk about the solution. Continue with other examples.