

Fractions on a Number Line Write Again™ Mats

Many Names for Fractions

Review with students that there are many smaller numbers between the whole numbers that can be represented as fractions. Remind students that the name of the fraction is based on the number of equal parts that it takes to make one whole and that the same location on the number line can have more than one name. Focus on the halves, quarters, and eighths on the fraction bars. While you model finding an equivalent fraction on the fraction bars, say, “ $\frac{1}{4} = \frac{2}{8}$, so they are in the same location on the number line.” Have students identify other equivalent fractions using the fraction bars, and then locate and label them on the **Fractions on a Number Line Write Again® Mats**.

Variation: Extend to fractions that are not included in the sample of fraction bars, such as sevenths and sixteenths.

Landmarks on the Number Line

Referring to Side 1 of the **Fractions on a Number Line Write Again® Mats**, note, “ $\frac{1}{2}$ is marked because it is an important fraction that helps us find other fractions. We can use $\frac{1}{2}$ as a landmark, just like we use landmarks, such as statues and buildings to find places.” Say, “Think about other fractions that are equivalent to $\frac{1}{2}$ by looking at the fraction bars. I see $\frac{3}{6} = \frac{1}{2}$, so I can write $\frac{3}{6}$ at the $\frac{1}{2}$ mark. That means there are three sixths between 0 and $\frac{1}{2}$, so I need to divide this space (pointing to the space between 0 and $\frac{1}{2}$) into three equal parts. There are also three sixths between $\frac{1}{2}$ and 1 to make a total of six sixths between 0 and 1.” Draw and label $\frac{1}{6}$, $\frac{2}{6}$, $\frac{4}{6}$, and $\frac{5}{6}$.

Extension: Ask what other fractions are equivalent to $\frac{1}{2}$ and what else students notice about the numerator and denominator of all of the fractions that are equivalent to $\frac{1}{2}$. (Possible answers: *The denominators are all even. We can multiply the numerator by 2 to get the denominator. We can divide the denominator by 2 to find the numerator.*)

Drawing Conclusions about Unit Fractions

Have students find $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, $\frac{1}{5}$. Ask, “What do you notice about the size of the fraction as the denominator gets larger? Why do you think fractions with a larger denominator are smaller?” (Possible answer: *The denominator tells you how many pieces to divide the space between 0 and 1 into. If you divide it into more pieces, each piece will be smaller.*)

Finding the Greatest Fraction

Prepare index cards with fractions, such as $\frac{1}{2}$, $\frac{2}{3}$, $\frac{5}{6}$, $\frac{4}{8}$, and $\frac{7}{8}$. Have students work with a partner, and place the cards in a pile facedown. Tell each student to choose a card and to find and label the fraction on his or her **Fractions on a Number Line Write Again® Mat**. Have students determine which fraction is greater and to share number sentences orally with an explanation, such as, *$\frac{7}{8}$ is greater than $\frac{1}{2}$ because it is closest to 1.*)

Variation: Have students create number sentences that compare two given fractions using *greater than*, *less than*, and *equal to*, such as $\frac{1}{4} < \frac{3}{8}$ and $\frac{3}{8} > \frac{1}{4}$.

Exploring Fractions Greater than 1

Display Side 2 of the **Fractions on a Number Line Write Again® Mats**. Review with students that they can also find fractions on the number line that are greater than 1. Label 1 and 2 on the open number line. Model finding $\frac{3}{8}$ and $1\frac{1}{2}$. Remind students that the number is read one-and-a-half, so the fraction is between 1 and 2. Have students practice with $\frac{1}{4}$, $1\frac{1}{3}$, $1\frac{2}{4}$, $\frac{3}{8}$, and $\frac{1}{2}$.

Prepare some of the Mats using a dry erase marker: Divide the lines on Side 2 up into fourths, thirds, and sixths. Ask students to help you label your marks. Utilizing the students’ labels (some may suggest “four thirds” while others say “one and one third”) lead a discussion that makes the equivalence of mixed fractions and improper fractions apparent.



Fractions on a Number Line Write Again® Mats

This Really Good Stuff® product includes:

- 6 Two-sided Fractions on a Number Line Write Again® Mats, Write Again® wipe-off laminate
- This Really Good Stuff® Activity Guide

Congratulations on your purchase of these Really Good Stuff® Fractions on a Number Line Write Again® Mats—interactive and versatile tools that help students to visualize fractions.

Meeting Common Core State Standards

The Really Good Stuff® Fractions on a Number Line Write Again® Mats are aligned with the following Common Core State Standards for Mathematics:

Numbers and Operations—Fractions

- 3.NF.A.2** Understand a fraction as a number on the number line; represent fractions on a number line diagram.
- 3.NF.A.2a** Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.
- 3.NF.A.2b** Represent a fraction a/b on a number line diagram by marking off a lengths $1/b$ from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.
- 3.NF.A.3** Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.
- 3.NF.A.3a** Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.
- Grade 4 Overview**
- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
 - Understand decimal notations for fractions, and compare decimal fractions.
- 4.NF.A.1** Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.

Introducing the Fractions on a Number Line Write Again® Mats

Before introducing the Fractions on a Number Line Write Again® Mats, make copies of this Really Good Stuff® Activity Guide, and file the pages for future use. Or, download another copy of it from our Web site at www.reallygoodstuff.com. Always use a dry erase marker on the Mats in order to preserve their Write Again® wipe-off laminate surface.

Tell students that they are going to review fractions on a number line. Remind students that fractions represent a part of a whole. Examine several examples of visual models, such as $3/4$ (circle with three of four parts shaded) or $1/3$ (rectangle, with one of three parts shaded).

On the board, draw a number line with the numbers 1, 2, 3, and 4. Remind students that the number line goes on forever in both directions, can be used to show whole numbers, and can also show fractions between whole numbers. Display the Fractions on a Number Line Write Again® Mats, and explain how these Mats can be used to show fractions on the number line. Describe how you can use Side 1 to show fractions between 0 and 1 and use Side 2 to show fractions greater than 1. Tell students to use the fraction bars in the corner as a reference.

As you model using the number line, think aloud, and say: “This number line has the points 0 and 1 already labeled. This line in the middle is halfway between 0 and 1, and it divides the space between 0 and 1 into two equal parts, so that mark must be $1/2$.” Label $1/2$ on the number line. Draw a mark between 0 and $1/2$, and another mark between $1/2$ and 1. Tell students, “These marks divide the space between 0 and 1 into four equal parts, so these marks show $1/4$, $2/4$, and $3/4$. Label $1/4$, $2/4$, and $3/4$.” Indicate, “By thinking about dividing the number line into equal parts, we can figure out where any fraction is located on a number line.”

Find My Fraction

Model finding $1/3$ on the number line by dividing the number line into three equal parts or thirds: Remind students that they are finding approximate locations on the number line. Label the first segment with $1/3$. Extend to $2/3$ and $3/3$. Remind students that $3/3$ is equivalent to 1. Refer to the fraction bars to compare work. Show students how $1/3$ should be between $1/4$ and $1/2$ and how $2/3$ should be between $1/2$ and $3/4$. Have students practice with $3/4$, $2/5$, $1/5$, $5/6$, $3/6$, and $7/10$.

If students struggle to see thirds with the $1/2$ already marked on the number line, flip over the Fractions on a Number Line Write Again® Mats, and work using Side 2. Instruct students to mark the end of the number line with a 1, divide it into thirds, and proceed from there.

All activity guides can be found online.