InsightMath

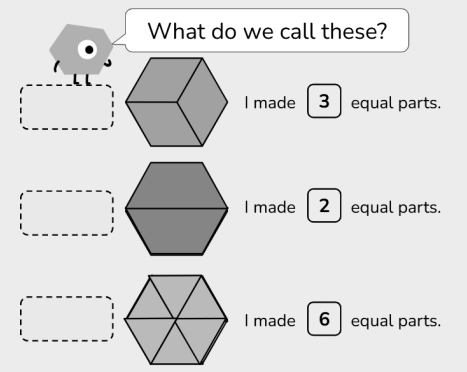
Discovering Fractions

Family Guide | Grade 3 | Unit 7

Your student is exploring how fractions extend the number system to include numbers that represent equal parts of a whole.

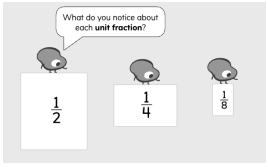
Key Math Ideas

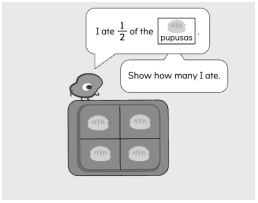
In previous grades, your student identified, created, and described halves, fourths, and thirds as equal-sized parts of a whole. Those experiences have provided a foundation for learning about fractions in this unit. Your student will connect visual fraction representations to fraction notation ($\frac{1}{2}$, $\frac{3}{4}$, etc.). They will learn that the denominator tells the number of equal-sized parts in one whole, while the numerator tells the number of equal-sized parts in the fraction. For example, $\frac{3}{5}$ means there are five equal-sized pieces in the whole and three equal-sized parts in the fraction. Your student will partition (split a whole into parts) shapes, number lines, and sets of objects into equal parts and name each part using a fraction. They will also explore making copies of a fraction to create new fractions, including fractions greater than 1.



→ In the first half of the unit, your student will learn to

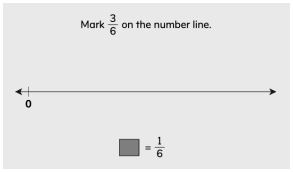
- partition 2-D shapes into equal parts and name each part with a unit fraction;
- use fraction notation to label unit fractions such as $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, etc.;
- describe that the smaller the part, the more it takes to fill one whole and vice versa;
- describe that the denominator (bottom number) tells the number of equal-size parts needed to make one whole and that the numerator (top number) tells the number of equal-sized parts in the fraction;
- identify fractions less than or equal to 1 represented with sets of objects.

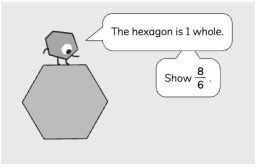




→ By the second half of the unit, your student will learn to

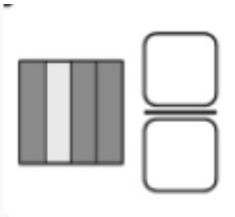
- copy or repeat unit fractions to create a new fraction using shapes and number lines;
- compare the same fraction represented using shapes and on a number line;
- use estimation to locate fractions on a number line;
- partition a whole into unit fractions and use those to create a new fraction;
- explain why it is important to define one whole when exploring fractions.





Helpful Hint

It is helpful to use visual images and precise language when communicating with your student about fractions so they understand what the numbers in a fraction represent. For example, when talking about the fraction $\frac{3}{4}$, say and encourage your student to say "three-fourths" instead of "3 over 4". It will also be helpful to draw a picture of $\frac{3}{4}$ when having the discussion and pointing out how there are 3 one-fourths shaded in.

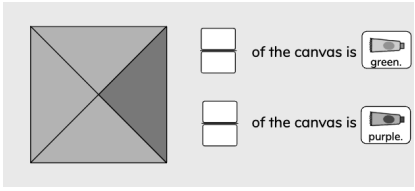


Tips for Supporting Your Student at Home

Questions to Ask Your Student

→ Throughout the unit:

- What does the fraction $\frac{2}{6}$ mean? Can you draw $\frac{2}{6}$?
- What does the denominator tell us about a fraction?
- What does the numerator tell us about a fraction?
- How can you create the fraction from unit fractions?
- What are two different ways to show $\frac{3}{4}$? What about $\frac{5}{2}$?
  - How can you show it with a rectangle?
  - How can you show it with a circle?
  - How can you show it with a number line?



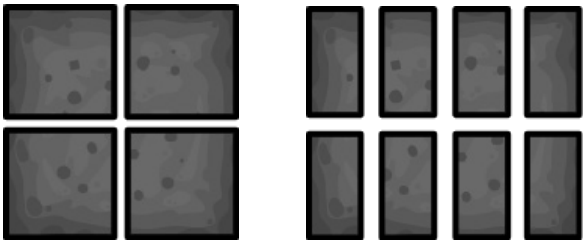
If...	Try...
your student has difficulty showing fractions greater than one . . .	providing opportunities for them to explore two wholes, such as two whole cookies or sandwiches, and considering what it would mean to have $\frac{3}{2}$ of them.

Student Strengths Spotlight

I keep trying, even when a problem is hard.	When students persevere and do not give up when solving difficult problems, they gain and build confidence.
I explain my thinking.	Students justify, explain, and communicate their thinking and reasoning to others to comprehend ideas.
I notice patterns and try to understand them.	Recognizing patterns and using them to explore new problems supports students to think flexibly and in new ways.

Try This Together!

- **Sharing food.** While cutting a sandwich, brownies, or slice of watermelon, discuss the fractions you see. For example, cut the item in half down the middle and ask your student how many equal-sized pieces there are and to name the fraction $\frac{1}{2}$. Then cut it again to show $\frac{1}{4}$ and discuss how the pieces look different.



- **Make a Number Line.** Use tape or sidewalk chalk to make a line on the ground. Have your student mark the line with the numbers 0 and 1. Then ask them to go stand on different fractions as you name them. For example, say "Stand on $\frac{3}{6}$," "Now stand on $\frac{5}{6}$," etc.