InsightMath

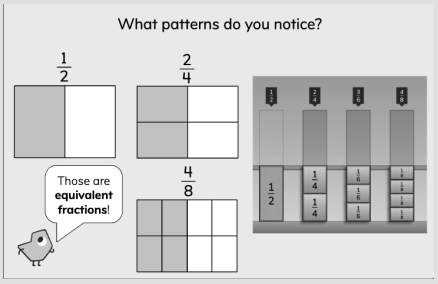
Exploring Fractional Thinking

Family Guide | Grade 3 | Unit 8

Your student is exploring how any number can be represented in an infinite number of different, but equivalent, ways.

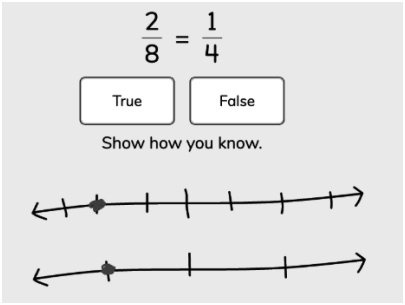
Key Math Ideas

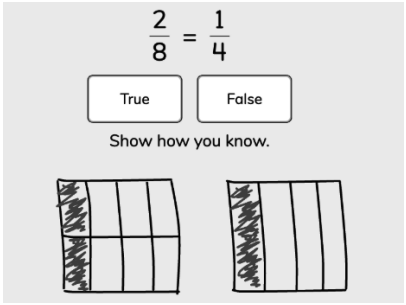
In this unit, your student will expand their understanding of fractions by exploring how numbers can be represented in multiple equivalent ways. They will discover that different fractions can actually have the same value. For example, they will see that $\frac{2}{4}$ is the same as $\frac{1}{2}$ and that some fractions equal whole numbers or mixed numbers (like $\frac{4}{4} = 1$ or $\frac{5}{3} = 1\frac{2}{3}$). Your student will also learn that fractions, just like whole numbers, have specific values that can be compared and ordered on a number line.

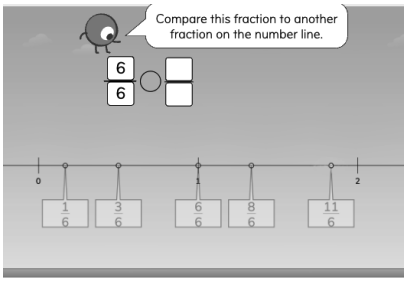


→ In the first half of the unit, your student will learn to

- write a whole number as a fraction and recognize when a given fraction is equivalent to a whole number, such as writing 3 as $\frac{3}{1}$ and recognizing that $\frac{8}{2}$ is equivalent to 2;
- explain that equivalent fractions are fractions that show the same amount when the whole is the same;
- show that two fractions are equivalent on a number line;
- show that two fractions are equivalent using two same-sized shapes;
- write a fraction greater than 1 as a mixed number (for example, $\frac{5}{3}$ as a mixed number is $1\frac{2}{3}$).

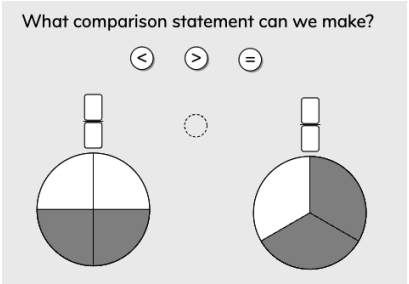






→ By the second half of the unit, your student will learn to

- compare fractions with the same numerator or the same denominator by describing the size of each fraction and using the symbols >, =, and <;
- order fractions with the same numerator or the same denominator;
- explain that comparing and ordering fractions requires that the whole be the same size;
- explain the relationship between the number of parts and the size of the parts, such as when a piece of paper is partitioned into fourths, those pieces will be smaller than the parts of the same piece of paper partitioned into halves.



Helpful Hint

Remind your student to consider the size of the whole when comparing fractions. Emphasize that fractions can only be compared directly when they refer to the same-sized whole. An example to give is that $\frac{1}{2}$ of a small pizza is not the same as $\frac{1}{2}$ of a large pizza because they are each $\frac{1}{2}$ of different-sized wholes.

Tips for Supporting Your Student at Home

Questions to Ask Your Student

→ In the first half of the unit:

- How do you know when a fraction is equivalent to a whole number?
- What patterns do you notice in fractions that are equivalent to whole numbers?
- How can you show two fractions are equivalent? Can you show another way?
- What is an example of a mixed number? What is another way to write the fraction?

→ In the second half of the unit:

- What model can you draw to figure out which fraction is greater? (try this question when your student is given two fractions)
- How can you compare fractions with the same numerators but different denominators?
- How can you compare fractions with the same denominators but different numerators?

If...	Try...
your student says that $\frac{1}{8}$ is greater than $\frac{1}{4}$ because 8 is greater than 4 . . .	to provide opportunities for your student to create fraction models or number lines to show the size of fractions and to highlight how the size of each part decreases when the denominator increases because the whole is divided into more equal parts.

Student Strengths Spotlight

I learn from my mistakes.	Exploring new ideas can lead to mistakes, and students take this opportunity to recognize that every mistake is an opportunity to learn.
I listen to other people's ideas and explain if I agree or disagree.	Listening and respectfully critiquing others' ideas about how to solve problems helps students understand concepts more fully.
I choose representations to help me solve problems and show my thinking.	Students learn to use appropriate models and equations to represent and communicate their thinking.

Try This Together!

- **Play a Game!** Use index cards to make your own set of cards with fractions that have the same numerator or denominator. For example, one deck could have $\frac{1}{3}, \frac{2}{3}, \frac{3}{3}, \frac{4}{3}$, etc. Another deck could have $\frac{2}{1}, \frac{2}{2}, \frac{2}{3}, \frac{2}{4}, \frac{2}{5}$, etc. Shuffle the card deck and then place the cards face down. Have your student draw a card and then you can draw a card. Turn the cards over and have your student find which fraction is greater. The player with the greatest fraction gets to keep both cards. Play until all the cards are gone. Whoever has more cards wins the game.

- **Take a Walk!** Take a walk with your student and count the total number of trees you see on your walk. Notice the types of trees you see such as fruit trees or pine trees. Then have your student make equivalent fractions using your observations. For example, if you see 10 trees and 5 of them are fruit trees, then your student can say $\frac{5}{10}$ of the trees are fruit trees, which is equivalent to $\frac{1}{2}$. You can do the same activity with the color of houses or other things you see on your walk.