

Simplifying Fractions

Cross-Curricular Focus: Mathematics



Any fraction that has the same number as its numerator (top number) and denominator (bottom number) is equal to one whole. The denominator tells how many equal parts the whole has been divided into, and the numerator tells how many of those parts you have. You could cut something into a million parts. As long as you keep all of those parts, you still have a whole.

Because we can have fractions that are equal to 1, we can use them to help use create equivalent fractions. We find common denominators when we add or subtract fractions. We then simplify fractions when we write our final answer. When you multiply or divide by a fraction that is equal to 1, the value does not change. You are simply changing the number of pieces that the whole is cut into. When you use a fraction that is equal to 1 in this way, you can think of the whole fraction as a Big Giant One.

To simplify a fraction, divide by a Big Giant One. For example, if your fraction is $12/18$ you can divide the top and the bottom both by the same number. This, too, can be frustrating and confusing. You might think, "What number?" Here's how you can think about it: look at the numerator and the denominator. In this sample fraction, there is a 12 and an 18. Twelve is smaller than 18, so ask yourself if 12 divides evenly into 18. No, it doesn't. Ask yourself what numbers you can multiply to get 12 as an answer. You want to choose the largest one you can think of, except for 12 itself. Maybe you thought of 6×2 . Ask yourself if 6 will divide evenly into 12. Yes, it will. Will it divide evenly into 18? Yes, it will. So 6 is the number you want to use. When you divide 12 by 6 your new numerator is 2. Divide 18 by 6, and your new denominator is 3. Your simplified fraction is $2/3$. You have divided $12/18$ by $6/6$. The $6/6$ is the Big Giant One for this fraction.

Try this process the next time you need to simplify a fraction on your homework or on a test. The more you practice simplifying fractions, the easier it becomes. You'll master fractions in no time!

Name: _____

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

1) What is a denominator?

2) What is a Big Giant One?

3) Use what you have learned to simplify $16/24$.

4) How do you know if a fraction is equal to one?

5) If you simplified $3/9$ to $1/3$, what would be the Big Giant One you should use?

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Name: Key

Answer the following questions based on the reading passage. Don't forget to go back to the passage whenever necessary to find or confirm your answers.

Actual wording of answers may vary.

1) What is a denominator?

the bottom number of a fraction

2) What is a Big Giant One?

A fraction that represents 1

3) Use what you have learned to simplify $16/24$.

$2/3$

4) How do you know if a fraction is equal to one?

The numerator and the denominator are the same number.

5) If you simplified $3/9$ to $1/3$, what would be the Big Giant One you should use?

$3/3$