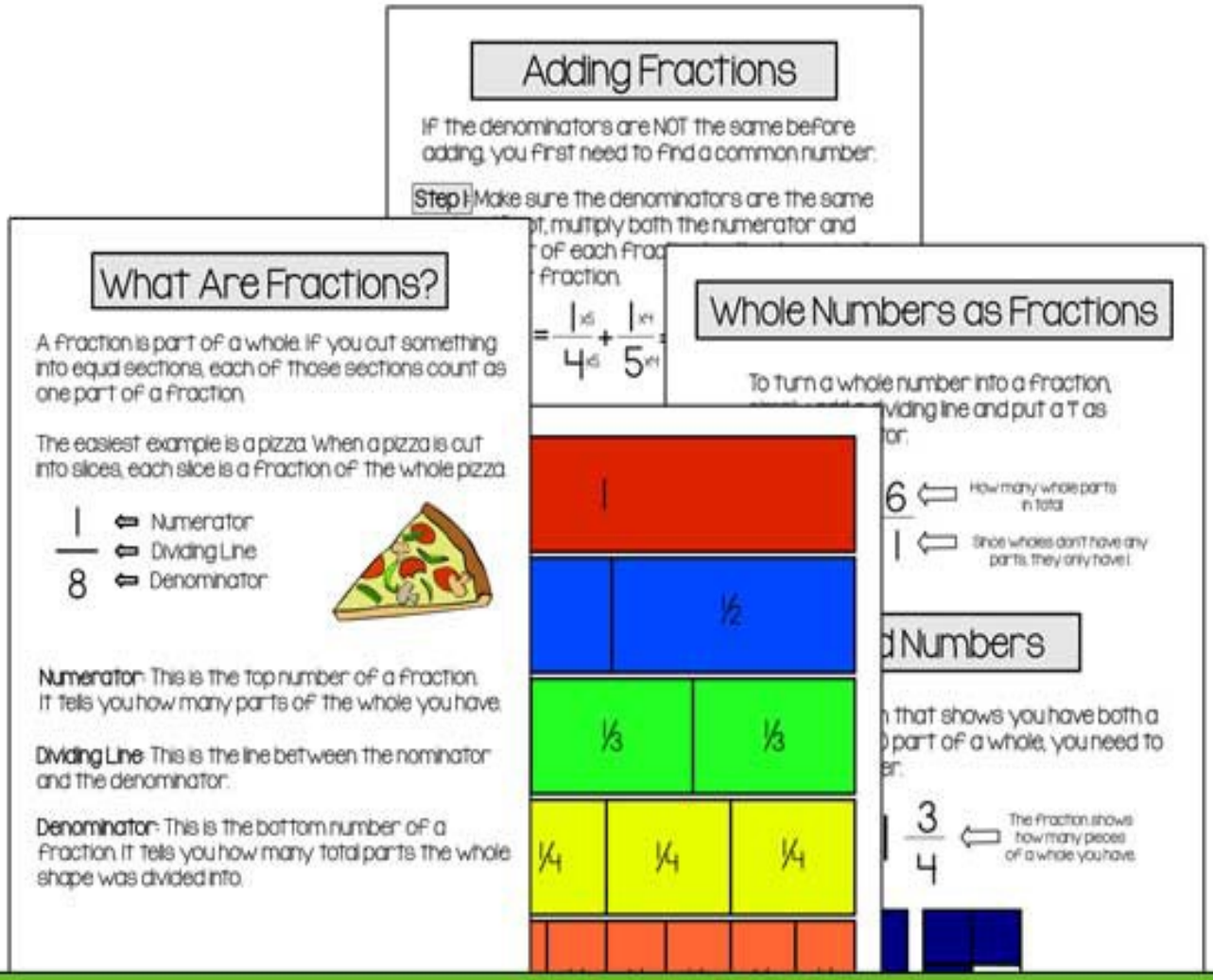

Fractions Reference Pack

thecanadianhomeschooler.com

What are fractions? Adding, Subtracting, Multiplying & Dividing Fractions. Mixed Numbers. Fraction Bars. Whole Numbers as Fractions.

These resources were created by Lisa Marie Fletcher at The Canadian Homeschooler. They were designed to help parents and teachers in their lessons. They are free for you to use. I just ask that you send people to my site if you would like to share it with friends.

The font used is KG Lego House by Kimberly Geswein Fonts, which I have bought a licence for.

All the best on your learning journey.

Lisa Marie - The Canadian Homeschooler

Lisa Marie Fletcher
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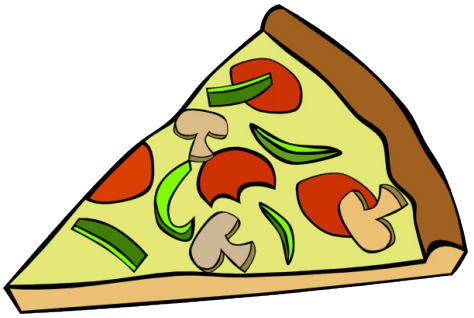
What Are Fractions?

A fraction is part of a whole. If you cut something into equal sections, each of those sections count as one part of a fraction.

The easiest example is a pizza. When a pizza is cut into slices, each slice is a fraction of the whole pizza.

$$\frac{1}{8}$$

⇦ Numerator
⇦ Dividing Line
⇦ Denominator



Numerator: This is the top number of a fraction. It tells you how many parts of the whole you have.

Dividing Line: This is the line between the nominator and the denominator.

Denominator: This is the bottom number of a fraction. It tells you how many total parts the whole shape was divided into.

Adding Fractions

If you need to add fractions and the denominators are the same number, follow these steps:

Step 1: Make sure the denominators are the same number.

Step 2: Do not add the denominators. Just move that number to the answer. Add the numerators together.

Step 3: Simplify the final answer. This means to make the numerator and denominator as small a number as you can.

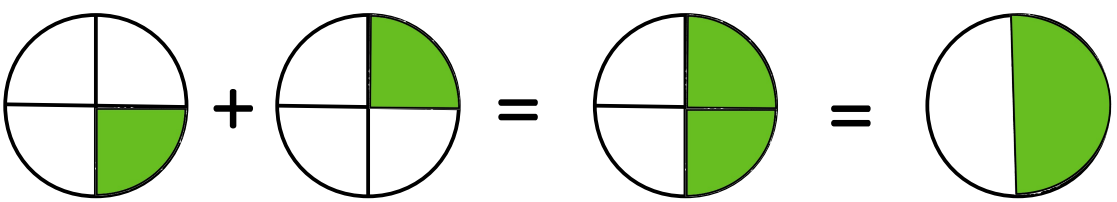
Example: $\frac{1}{4} + \frac{1}{4} = \frac{1+1}{4} = \frac{2}{4} \overset{\div 2}{=} \frac{1}{2}$

Add numerators together.

Move denominator.

Denominators are the same.

Can make smaller. Both numbers can be divided by 2.

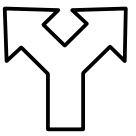


Adding Fractions

If the denominators are NOT the same before adding, you first need to find a common number.

Step 1: Make sure the denominators are the same number. If not, multiply both the numerator and denominator of each fraction by the denominator of the other fraction.

$$\frac{1}{4}+\frac{1}{5}=\frac{1}{4}\overset{\times 5}{}+\frac{1}{5}\overset{\times 4}{}=\frac{5}{20}+\frac{4}{20}=\ ?$$



Denominators need to be the same.

Step 2: Do not add the denominators. Just move that number to the answer. Add the numerators together.

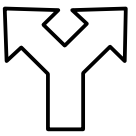
$$\frac{5}{20}+\frac{4}{20}=\frac{5+4}{20}=\frac{9}{20}$$

Step 3: Whenever possible, simplify the answer to the smallest numbers.

Subtracting Fractions

Step 1: Make sure the denominators are the same number. If not, multiply both the numerator and denominator of each fraction by the denominator of the other fraction.

$$\frac{1}{3} - \frac{1}{5} = \frac{1 \times 5}{4 \times 5} - \frac{1 \times 3}{5 \times 3} = \frac{5}{15} - \frac{3}{15} = \ ?$$



Denominators need to be the same.

Step 2: Move the denominator to the answer. Find the difference between the numerators.

$$\frac{5}{15} - \frac{3}{15} = \frac{5-3}{15} = \frac{2}{15}$$

Step 3: Whenever possible, simplify the answer to the smallest numbers.

Multiplying Fractions

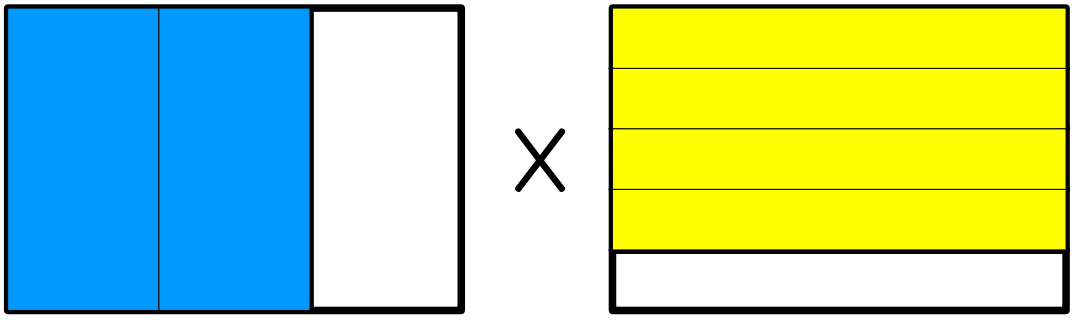
Multiplying fractions is fairly simple.

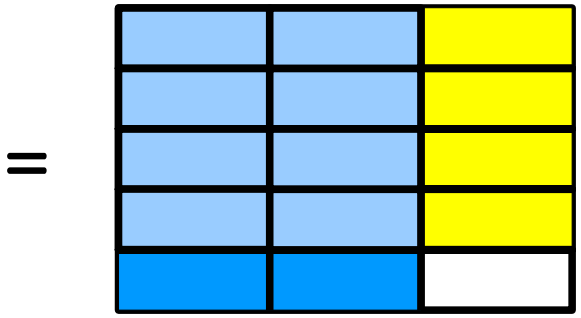
Step 1: Multiply the numerators.

Step 2: Multiply the denominators.

Step 3: Simplify the final answer, if needed.

Example: $\frac{2}{3} \times \frac{4}{5} = \frac{2 \times 4}{3 \times 5} = \frac{8}{15}$





Looking at this from a visual point of view, overlap the two fractions. The sections that are covered by both colours equal the numerator and the total number of sections is the denominator.

Dividing Fractions

Step 1: Flip the second fraction and change the division sign to multiplication.

Step 2: Multiply the numerators together. Multiply the denominators together.

Step 3: Simplify the final answer, if needed.

Example: $\frac{3}{5} \div \frac{2}{3} = \frac{3}{5} \times \frac{3}{2} = \frac{3 \times 3}{5 \times 2} = \frac{9}{10}$

Flip this fraction over.

Change to multiplication.

Flip. Change. Multiply.

Mixed Fractions

To use a mixed fraction in a math problem, you first need to convert it into an improper fraction.

That means you need to take the whole number, change it into a fraction, make sure the denominator is the same, and add it to your extra fraction.

Example:

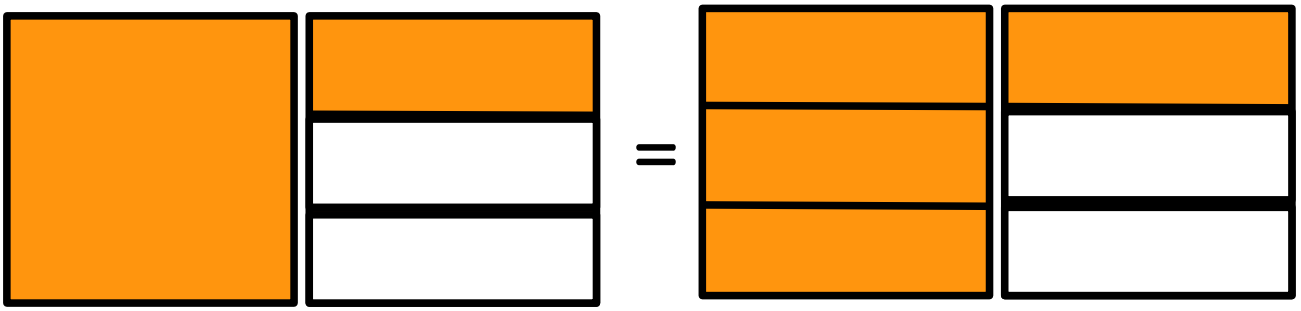
$$1\frac{1}{3} = \frac{1}{1} + \frac{1}{3} = \frac{3}{3} + \frac{1}{3} = \frac{4}{3}$$

Convert to a fraction.

Find a common denominator.

Add together.

This is an improper fraction. That means the numerator is bigger than the denominator.



Once a mixed fraction has been changed into an improper fraction, complete the normal steps for adding, subtracting, multiplying or dividing fractions.

Whole Numbers as Fractions

To turn a whole number into a fraction, simply add a dividing line and put a "1" as the denominator.

$$6 = \frac{6}{1}$$

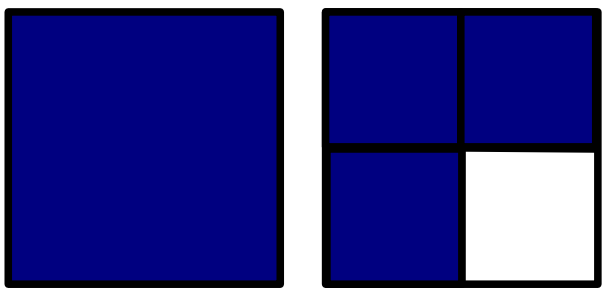
⇐ How many whole parts in total.

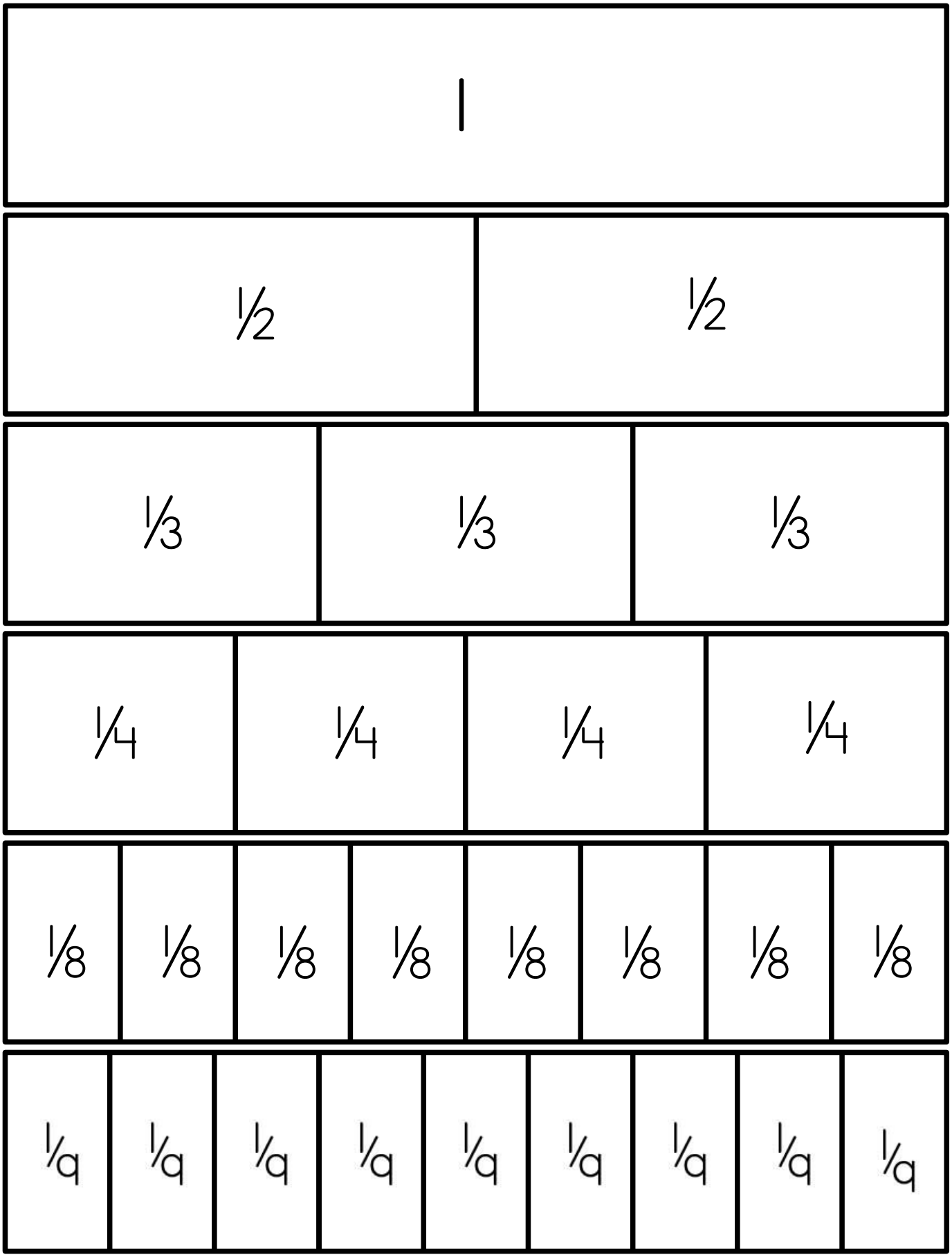
⇐ Since wholes don't have any parts, they only have 1.

Mixed Numbers

To create a fraction that shows you have both a complete whole AND part of a whole, you need to make a mixed number.

The large number shows how many whole items you have. ⇒ $1\frac{3}{4}$ ⇐ The fraction shows how many pieces of a whole you have.

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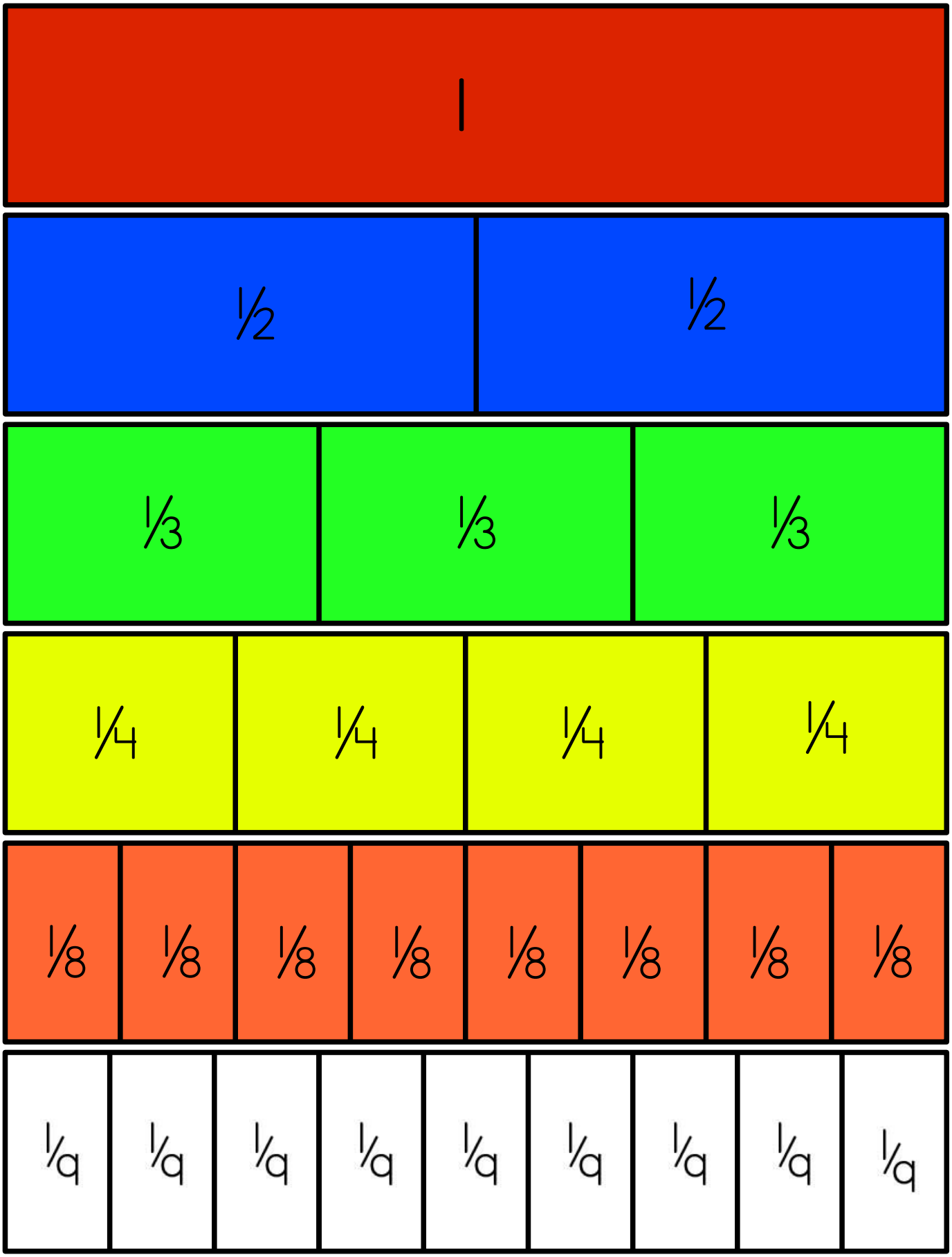
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