



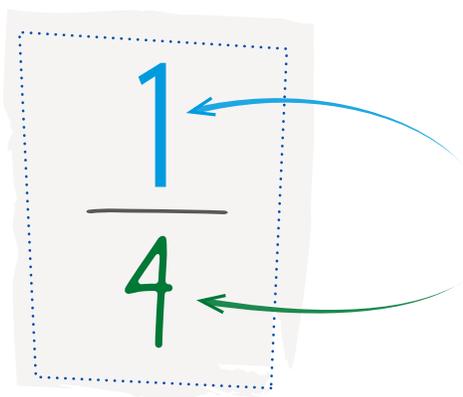
HOW TO USE FRACTIONS WHEN ALTERING RECIPES

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EXPLORATORY QUESTION: How do I double a recipe? How do I work with fractions in recipes?

PROJECT GOAL: Using fractions in cooking –doubling or halving a recipe– is an essential real life skill. We will increase understanding of multiplication and addition when fractions are involved in recipes.

SUPPLIES NEEDED: ✓ Recipe including fractions
✓ Pencil and paper



STEP 1: LET'S REFRESH ON FRACTIONS

Fraction

A fraction is a number that expresses part of a whole.

Numerator

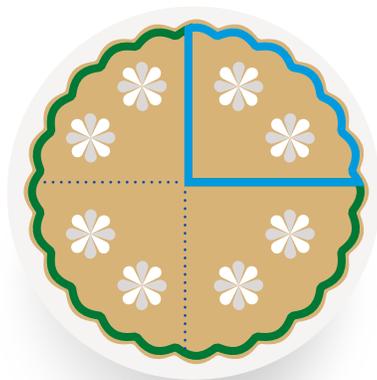
The top number in your fraction (the part of the whole) that you will be adding or multiplying – in $\frac{1}{4}$, your numerator is **1**.

Denominator

The bottom number in your fraction and indicates the number of equal parts the whole has been divided into – $\frac{1}{4}$ Your denominator is **4**.

STEP 2

Using the above example of $\frac{1}{4}$, draw a pie with four pieces. What is $\frac{1}{4}$ of the pie? Shade in one of the pieces. See how this illustrates your fraction, it is one piece of your whole pie.



STEP 3

Staying with our example of $\frac{1}{4}$ let's say you want to double $\frac{1}{4}$. There are two roads to get you to your answer.

You can:

a) Multiply your numerator by 2: $\frac{1}{4} \times 2 = \frac{2}{4}$. We can simplify this even more to $\frac{1}{2}$, since 2 is half of 4. Pull out your measuring cups. If you were using this for a recipe, let's say you're adding flour, you could add two scoops from your $\frac{1}{4}$ cup or simply add 1 scoop of your $\frac{1}{2}$ cup.

b) Add your numerators: $\frac{1}{4} + \frac{1}{4} = \frac{2}{4}$ or $\frac{1}{2}$



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Let's work on this a little:

My recipe says it serves 2 people and calls for a $\frac{1}{2}$ cup of grated cheese, but I'm cooking for a party of 6 people. What do I need to do to get the correct amount?

I need to triple the recipe ($2 \times 3 = 6$, which is why you are tripling it).

I can either use multiplication to get there or addition:

$\frac{1}{2} \times 3 = \frac{3}{2}$ cups. To simplify $\frac{3}{2}$, first, figure out what is your whole? In this case, it is 2 (the denominator). So, I look at my numerator and see it is 1 more than 2, leaving me with 1 whole ($\frac{2}{2}$) and the $\frac{1}{2}$ leftover, or 1 and $\frac{1}{2}$ (1.5).

OR, you can add it up:

$\frac{1}{2} + \frac{1}{2} + \frac{1}{2} = \frac{3}{2}$ cups or 1.5 cups ($\frac{1}{2} + \frac{1}{2} = 1 + \frac{1}{2} = 1\frac{1}{2}$ or 1.5)

STEP 5

Let's practice adjusting the Ranch Mac 'N Cheese recipe. Write out how much of each ingredient you'd need if you:

Needed to **double the recipe** (multiply by 2)

Needed to **cut the recipe in half** (multiply by $\frac{1}{2}$ or divide by 2)

TIP: If you're stuck draw out pies and think of the recipe visually.

STEP 6

Now that you have a basic understanding of using fractions in recipes and have done some practice go through your parents recipe books or online recipes and find one with lots of fractions. Once you pick your recipe see how many people it serves.

Double the recipe (multiply by 2)

Triple the recipe (multiply by 3)

Cut the recipe in half (multiply by $\frac{1}{2}$ or divide by 2)

STEP 7

Look at what you have at home right now and pick a recipe to cook with a parent. Show them how you can adjust it to feed however many people are in your family.

