17. Fractions

For our class (for now), we will define fraction as a part of a whole. It is denoted by a numerator and a denominator. The denominator indicates how many EQUAL parts the whole is cut into. The numerator indicates how many of those parts you are describing.

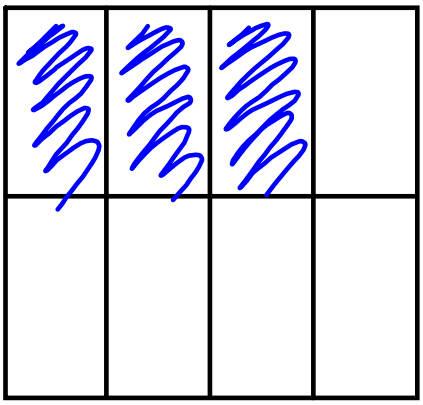
numerator

(How many of the parts we are describing)

$$\frac{3}{8}$$

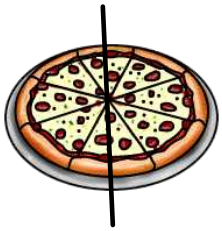
denominator

(How many equal parts our whole is cut into)



Your unit whole could be many different things. You could describe a fraction of a pizza, a fraction of time, a fraction of a group of people, or almost anything.

$\frac{1}{2}$ of a pizza



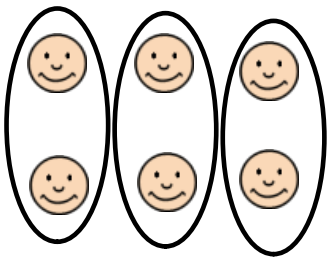
$\frac{1}{4}$ of an hour

one hour = 60 mins, so

1/4 of an hour = 15 mins

$\frac{2}{3}$ of a group of people

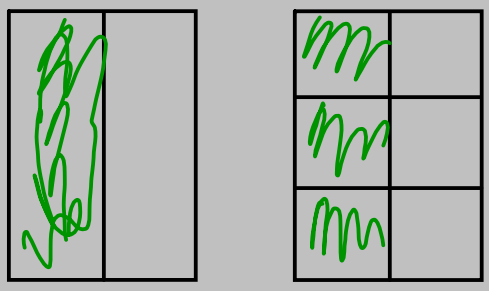
six people split into 3 equal groups means 2 people per group. Two of those groups would be 4 people.



18. Equivalent Fractions

Equivalent Fractions are fractions that have the same value. They may be split into different sized parts, but their values are the same.

For example, 1/2 and 3/6 are equivalent fractions.



So how can we find equivalent fractions?

We could draw a lot of pictures and cut up things in different ways, or use fraction bars to find equivalent fractions.

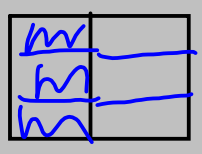
OR, we could use what we know about the multiplicative identity property.....

This property states that there is a number that I can multiply any number by, and still have it retain its identity, or value. That number is.....<u>ONE!!!!!</u>

To find equivalent fractions, I can multiply by a form of one.

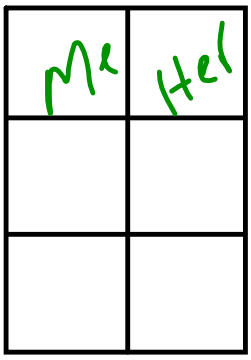
$\frac{1}{2} \times \frac{3}{3} = \frac{3}{6}$

$\frac{3}{8} \times \frac{3}{3} = \frac{9}{24}$



19. Adding Fractions

Let's say I have those brownies again...



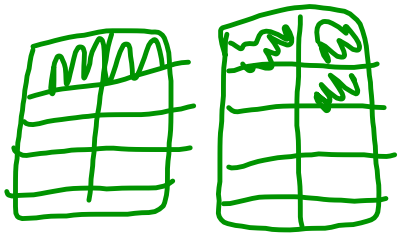
I eat 1/6 of the brownies, and my daughter eats 1/6 of the brownies. What fraction of the total brownies have been eaten? $\frac{1}{6} + \frac{1}{6} = \frac{2}{6}$

When the parts are of equal sizes (equal denominators) then adding the fractions simply becomes adding the numerators.

BUT, WHAT IF THE PIECES (DENOMINATORS) ARE DIFFERENT?!?!?!?

Then, we want to make the pieces of equal size. We would like to find EQUIVALENT fractions, so that our denominators are the same.

$\frac{1}{5} + \frac{3}{10} =$ $\frac{1}{5} \times \frac{2}{2} + \frac{3}{10} = \frac{2}{10} + \frac{3}{10} = \frac{5}{10}$



$\frac{5}{10} \div \frac{5}{5} = \frac{1}{2}$