

Multiplying Fractions

What is multiplication?

Timesing #s together. Opposite of division.
 Adding #s together multiple times.
Repeated addition.

What are some words that we use to mean multiply?

Doubling Times
 Timesing X

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If we want to find a fraction of something, what are we doing?

Splitting the whole
 Dividing it into equal pieces
 "of" is another word for multiply.

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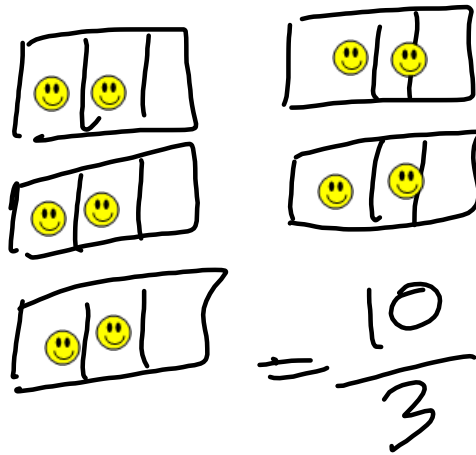
Let's look at multiplying a whole number by a fraction...

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

We could write this as ...

$$5 \times 2 \div 3$$

or $\frac{2}{3} \times 5$
 ↑
 of



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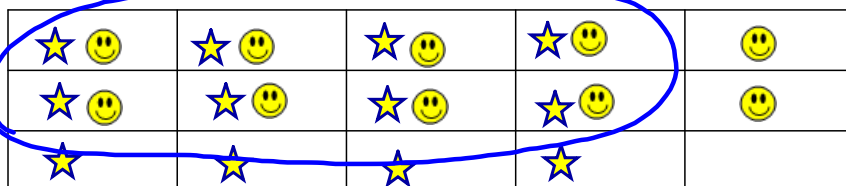
Let's look at multiplying a proper fraction by a proper fraction...

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

Draw a 3×5 rectangle

Shade in the 2 fractions

The answer is the OVERLAP



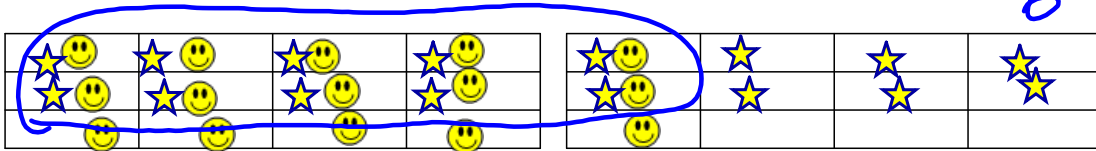
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Let's look at multiplying a improper fraction by a proper fraction...

$$1\frac{1}{4} \times \frac{2}{3} = \frac{10}{12}$$



Look for the overlap = $\frac{10}{12}$
 $= \frac{5}{6}$



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Can we make a generalisation about the multiplication process for fractions...?

Turn mixed numbers to improper fractions

Then....
 multiply the numerators
 multiply the denominators

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Sometimes we will be able to simplify our answer. But there is an easier way to deal with these types before we do any multiplying!

Look to see if you can simplify BEFORE multiplying.

$$1\frac{1}{4} \times \frac{2}{3} = \frac{5}{\cancel{4}^2} \times \frac{\cancel{2}^1}{3} \Rightarrow \frac{5 \times 1}{2 \times 3} = \frac{5}{6}$$

Sep 19-19:52

In summary:

1. Convert any mixed numbers into improper fractions.
2. Check to see if you can simplify the question by reducing any number from the top with any number from the bottom.
3. Multiply the tops, multiply the bottoms.

Practice Questions

Section A - #s 4, 5 & 6 Section B - #s 6 - 10

Section C - #s 11 - 15 & 36 - 40

Remember: - A whole number can be written as a fraction over 1
 Eg $3 = \frac{3}{1}$, $7 = \frac{7}{1}$, $43 = \frac{43}{1}$

Sep 19-20:08