Adding and Subtracting Fractions

At Bailey's birthday party there were 2 pies: one apple and one blueberry. Both pies had 8 slices, $\frac{3}{8}$ of the apple pie was left over, and $\frac{2}{8}$ of the blueberry pie was left over. How much of the total pies were left over?

There are 3 simple steps to adding fractions:

1. Make sure the denominators are the same
2. Add the numerators (keep the same denominator)
3. Simplify the fraction

Since both denominators are the same, we add the two numerators together and make the result the new numerator.

$$\frac{3}{8} + \frac{2}{8} = \frac{5}{8}$$

> Remember: we never add the denominators together!

3 plus 2 equals 5, therefore there are 5 slices of pie left, or $\frac{5}{8}$ of a pie is left.

The exact same rules apply when we are subtracting fractions:

1. Ensure the denominators are the same
2. Subtract the numerators
3. Simplify the fraction

Example 1:

Subtract the following: $\frac{6}{8} - \frac{4}{8}$

The denominators of these two fractions are already the same, so we can subtract the numerators. 6 minus 4 is 2, so our new numerator is 2. We leave the denominator the same, and rewrite our fraction:

$$\frac{6}{8} - \frac{4}{8} = \frac{2}{8}$$

Next, we have to simplify our fraction. Both the numerator and the denominator can be divided by 2:

$$\frac{2 \div 2}{8 \div 2} = \frac{1}{4}$$

Our final answer is one fourth

$$\frac{6}{8} - \frac{4}{8} = \frac{2}{8} = \frac{1}{4}$$

Example 2:

Add the following: $\dfrac{5}{10} + \dfrac{1}{10}$

Since the denominators are the same we can start by adding the numerators: 5 plus 1 is 6.

$$\frac{5}{10} + \frac{1}{10} = \frac{6}{10}$$

Now we simplify our fraction, both the numerator and the denominator can be divided by 2:

$$\frac{6 \div 2}{10 \div 2} = \frac{3}{5}$$

Our final answer is three fifths.

$$\frac{5}{10} + \frac{1}{10} = \frac{6}{10} = \frac{3}{5}$$

Example 3:

Jenny practiced the flute twice today. In the morning she practiced for $\frac{2}{6}$ of an hour, in the afternoon she practiced for $\frac{3}{6}$ of an hour. How long did Jenny practice today?

Since both the denominators are the same we can start adding the numerators: 2 plus 3 makes 5.
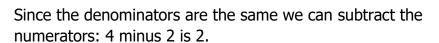
$$\frac{2}{6} + \frac{3}{6} = \frac{5}{6}$$

We can't simplify the fraction any further, therefore our final answer is five-sixths.

Jenny practiced the flute for $\frac{5}{6}$ of an hour today.

Example 4:

Leah's hair was $\frac{4}{5}$ of a metre long, then her mom chopped off $\frac{2}{5}$ of a metre. How long is Leah's hair now?

Since the denominators are the same we can subtract the numerators: 4 minus 2 is 2.

$$\frac{4}{5} - \frac{2}{5} = \frac{2}{5}$$

We can't simplify the fraction any further, therefore our final answer is that Leah's hair is now two fifths of a meter long.