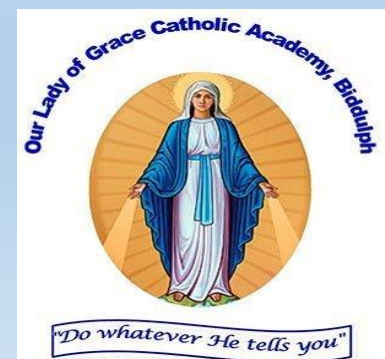




# LBQ Support Pack

Welcome to your maths help pack for the week. In this pack you will find a page or two that will help you with the days task on LBQ.

If you are still unsure of something from your LBQ task, just email Mr Spencer!



29.06.20

## Add and Subtract Fractions with Related Denominators (Proper, Improper and Mixed Numbers)

Today you are going to be adding and subtracting fractions with related denominators.

**Related denominators** happen when one **denominator** is a multiple of the other; for example, the fractions  $1/3$  and  $3/9$  have **related denominators** because 9 is a multiple of 3.

Let's have a go at the question below together.

For this calculation the question is asking you to work out  $1/12 + 5/6$ . These fractions have related denominators and therefore we can convert one to be the same as the other.

We know that for this to happen, the denominator for  $5/6$  has been changed to  $?/12$ . Therefore we know that the number 6 has been doubled, therefore the missing number must be double 5, which is 10. The calculation then becomes  $1/12 + 10/12$  which we can work out easily as  $11/12$ .

The diagram shows two circular fraction models at the top. The first model is divided into 12 equal segments, with 1 segment shaded orange, representing  $1/12$ . The second model is divided into 6 equal segments, with 5 segments shaded orange, representing  $5/6$ . Below these models, a blue rectangular box contains the mathematical equation:  $\frac{1}{12} + \frac{5}{6} = \frac{?}{?}$ . The fraction  $\frac{5}{6}$  is shown with a blue square in the numerator position, and the denominator is 12. The result is shown as a fraction with question marks in both the numerator and denominator positions.

29.06.20

Add and Subtract Fractions with Related Denominators (Proper, Improper and Mixed Numbers)

Lets Practice!

Have a go at the question below to get yourself ready.

$$\frac{1}{3} - \frac{1}{9} = \frac{?}{?}$$

30.06.20

# Add Fractions with Related Denominators

Today you are going to focus purely on adding fractions with related denominators so you don't have to worry about subtracting them!

For the calculation  $\frac{2}{3} + \frac{1}{6}$  we will need to convert  $\frac{2}{3}$  into sixths as  $\frac{1}{6}$  cannot be simplified or converted into thirds.

If we multiply both the numerator and the denominator of  $\frac{2}{3}$  by 2, we end up with  $\frac{4}{6}$ . This can now be added to  $\frac{1}{6}$  easily.

$$\frac{4}{6} + \frac{1}{6} = \frac{5}{6}$$

The diagram illustrates the addition of fractions with related denominators. At the top, two hexagons are shown. The first hexagon is divided into three equal parts, with two parts shaded green, representing the fraction  $\frac{2}{3}$ . The second hexagon is divided into six equal parts, with one part shaded green, representing the fraction  $\frac{1}{6}$ . Below the hexagons, a mathematical equation is presented in a blue box. The equation is  $\frac{2}{3} + \frac{1}{6} = \frac{?}{?}$ . The numerators and denominators of the fractions are shown in separate boxes, with the result also shown in a box with a question mark.

30.06.20

# Add Fractions with Related Denominators

Lets practice!

Have a go at the example to help!

$\frac{7}{5} + \frac{13}{10} = \frac{?}{?}$

# Add Improper Fractions with Related Denominators

Today you are going to be exploring adding improper fractions with related denominators.

An **improper fraction** is one where the numerator is larger than the denominator, for example,  $5/4$  would be an **improper fraction**. The result is that **improper fractions** are always greater than 1.

Look at the problem below to help you.

$$7/5 + 2/15$$

For this calculation, we need to multiply the numerator denominator of  $7/5$  by three so we can calculate in fifteenths. We will then have  $21/15 + 2/15$ .

We can then calculate the answer easily as  $23/15$ . The numerator is greater than the denominator so the fraction is improper.

The diagram shows a visual representation of the fraction addition. At the top, there are three grid models: two 3x3 grids (one fully yellow, one with 7 yellow squares) and one 3x5 grid (with 2 yellow squares). Below this, a blue box contains the mathematical equation:  $\frac{7}{5} + \frac{2}{15} = \frac{?}{?}$ .

## Add Mixed Number Fractions With Related Denominators

Today you are going to be adding mixed numbers to fractions with related denominators.

**Mixed numbers** are the ending result of a solved improper fraction. An improper fraction is when the numerator is higher than the denominator.

For example:  $12/8$ . This fraction is an improper fraction because 12 is higher than 8, meaning that the value of this fraction is more than just one whole.

Have a go at the example below to help.

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

$\frac{3}{4}$  add  $\frac{3}{4}$  is equal to  $1 \frac{2}{4}$ . If we add the other whole 1 we have  $2 \frac{2}{4}$ . We can simplify  $2/4$  as this is equivalent to  $\frac{1}{2}$ . Therefore  $2 \frac{1}{2}$ .



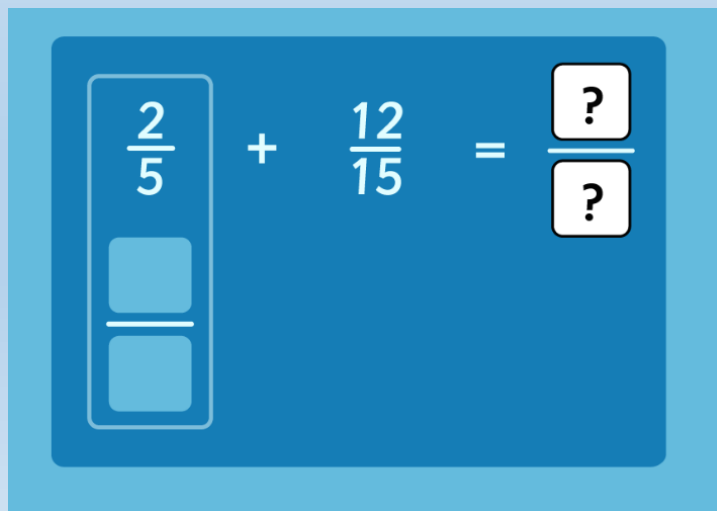
$$1 + \frac{3}{4} + \frac{3}{4} = \boxed{?} \frac{\boxed{?}}{\boxed{?}}$$

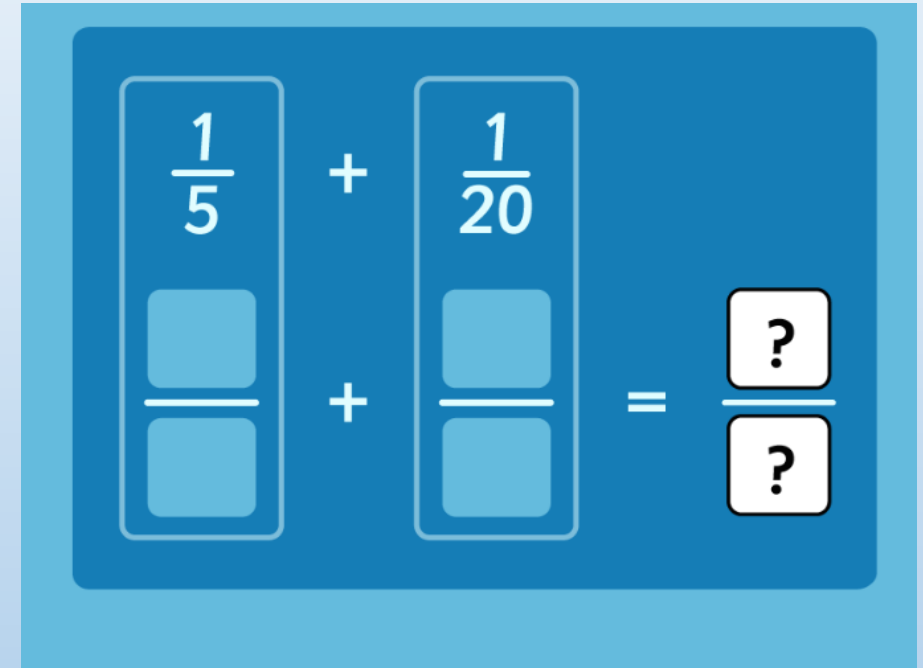
2.07.20

## Add Proper Fractions With Related Denominators

Today you are exploring adding proper fractions with related denominators. After all the skills you have practiced this week, this should be easy peasy!

Have a go at the examples to help you out!


$$\frac{2}{5} + \frac{12}{15} = \frac{?}{?}$$


$$\frac{1}{5} + \frac{1}{20} = \frac{?}{?}$$