

KEY INSTANT RECALL FACTS

YEAR 6 – SUMMER 1

I KNOW HOW TO MULTIPLY FRACTIONS BY INTEGERS AND FRACTIONS BY FRACTIONS

Year 6 children have completed their maths programme now but, through our assessments, we feel they would benefit from further practise at multiplying fractions by other fraction or by whole numbers (integers). This is especially important for their forthcoming SATs (see below for examples).

Please note, where we have provided links to online activities we expect children to seek parent/carer permission to do this first.

Multiplying fractions by integers

When first introduced to multiplying a fraction by an integer (a whole number), children are shown how to do it with a bar model and through repeated addition:



$$\frac{1}{5} + \frac{1}{5} + \frac{1}{5} = \square$$

$$3 \times \frac{1}{5} = \square$$

This visualisation helps children see the answer:



$$\text{So, } 3 \times \frac{1}{5} = \frac{3}{5}.$$

Top Tip: Once you understand what happens when you multiply fractions, you don't need to use a bar model. You simply multiply the numerator (top number) by the integer (whole number).

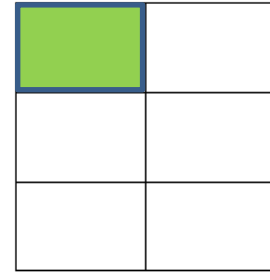
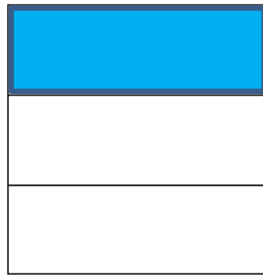
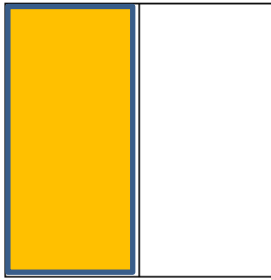
So, for $3 \times \frac{1}{5} =$, you simply do 3×1 .

This can also be done with mixed numbers (a whole number and a fraction). So, for $3 \frac{1}{4} \times 3 =$, you can partition the $3 \frac{1}{4}$ into 3 and $\frac{1}{4}$. Then simply do $3 \times 3 = 9$ and $\frac{1}{4} \times 3 = \frac{3}{4}$ and add the answers together.

Multiplying 2 fractions

Once again, visual representations are the starting point when multiplying two fractions.

If we wanted to calculate $\frac{1}{2} \times \frac{1}{3} =$, we could do this:



These 3 rectangles show you the process. The first shows a $\frac{1}{2}$, the second shows $\frac{1}{3}$ and the final puts the two together. As you can see, it is only where the $\frac{1}{2}$ and the $\frac{1}{3}$ overlap on the last rectangle that we get the answer to the question, which is $\frac{1}{6}$.

So, $\frac{1}{2} \times \frac{1}{3} = \frac{1}{6}$.

Top tip: Once you understand what is happening when you multiply fractions, you won't need to use the visual representations. It is useful, as a checking tool, to remember that when you multiply two fractions the answer is always less than you started with.

Multiplying fractions is easy. Simply multiply the numerators (top number) and then multiply the denominators (bottom number).

So, $\frac{1}{5} \times \frac{3}{6} =$ can be done by doing $1 \times 3 = 3$ and $5 \times 6 = 30$. This gives you $\frac{3}{30}$ which you can simplify to $\frac{1}{10}$.

BBC Bitesize

Still not sure, watch the BBC Bitesize clip as a reminder:

<https://www.bbc.co.uk/bitesize/topics/zhdwxnb/articles/z8fyv4j#zq47p9g>

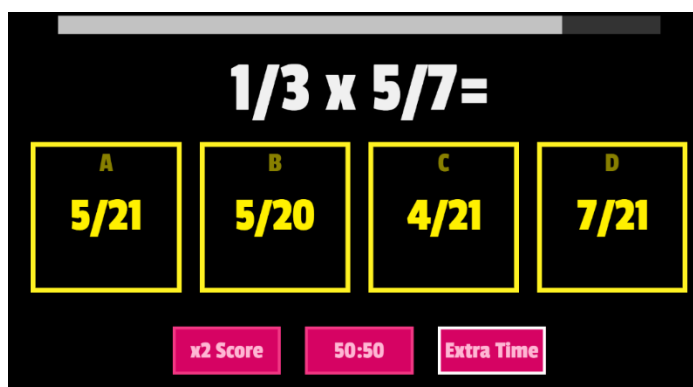


Feeling confident? Have a go at the activities below.

Take the Fraction Quiz

See how big you can make your score by using the bonuses:

<https://wordwall.net/resource/43352385/math/multiplying-fractions>

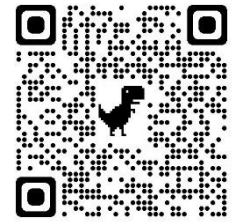


Multiplying fractions by whole numbers Word Wall game. Use your laptop or tablet to access the following link or to scan the QR code:

https://www.mathplayground.com/mathsurpass_percent.html

| | | | | |
|------------------|----------------|----------------|-----------------|----------------|
| $1/10 \times 10$ | $2/5 \times 2$ | $2/7 \times 5$ | $1/3 \times 3$ | $2/9 \times 2$ |
| $1/9 \times 9$ | $1/4 \times 5$ | $4/4 \times 1$ | $2/12 \times 4$ | $5/6 \times 2$ |
| $1/2 \times 5$ | $2/4 \times 6$ | $3/8 \times 2$ | $3/5 \times 5$ | $3/6 \times 2$ |

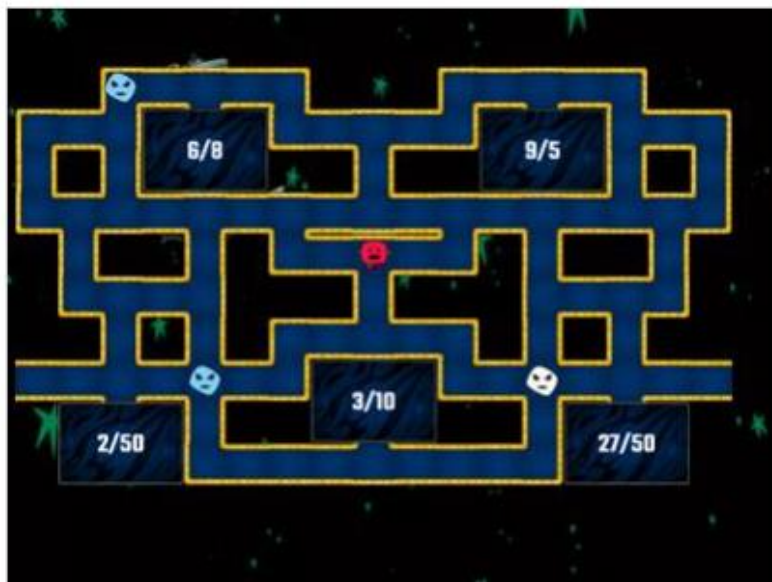
| | | | | | |
|----------------------|------------------------|----------------------|-------------|----------------------|------------------------|
| <input type="text"/> | $4/4 = 1$ | <input type="text"/> | $15/5 = 5$ | <input type="text"/> | $5/4 = 1 \frac{1}{4}$ |
| <input type="text"/> | $5/2 = 2 \frac{1}{2}$ | <input type="text"/> | $9/9 = 1$ | <input type="text"/> | $4/9$ |
| <input type="text"/> | $10/7 = 1 \frac{3}{7}$ | <input type="text"/> | $12/4 = 3$ | <input type="text"/> | $6/6 = 1$ |
| <input type="text"/> | $3/3 = 1$ | <input type="text"/> | $6/8$ | <input type="text"/> | $10/6 = 1 \frac{4}{6}$ |
| <input type="text"/> | $8/12$ | <input type="text"/> | $10/10 = 1$ | <input type="text"/> | $4/5$ |



Multiply fractions through Maze Chase

Simply use the arrow keys to get to the correct answer:

<https://wordwall.net/resource/9808134/math/multiplying-fractions>



What to expect in Year 6 SATs

Year 6 children will be tested on their ability to multiply fractions in their SATs tests during the week of the 13th May. Here are some examples from the paper last year:

$$\frac{2}{7} \times \frac{5}{9} =$$

$$\frac{2}{3} \times 900 =$$

Here are some SATs style arithmetic questions for you to test your skills on. The answers are at the end, but don't cheat!:

<https://www.elstonallsaints.notts.sch.uk/documents/%5B726255%5DCA-Multiply-Fractions-Practice-Questions-Year-6.pdf>

<https://www.ruytonschool.org.uk/wp-content/uploads/2021/01/Year-6-Spring-Block-1-Step-17-VF-Multiply-Fractions-by-Fractions.pdf>

If you are stuck on the first one, there is a hints/tips tab to give you a clue:

<https://uk.ixl.com/maths/year-6/multiply-fractions-by-whole-numbers>