

Maths

Converting fractions to decimals and decimals to fractions

Lesson 1

It is important to remember that both fractions (proper fractions) and decimals show a value that is less than one. They are the result of a whole being split into smaller pieces.

Some of the equivalents it is good to know by memory. Spend time this week learning the following:

$$1/2 = 0.5$$

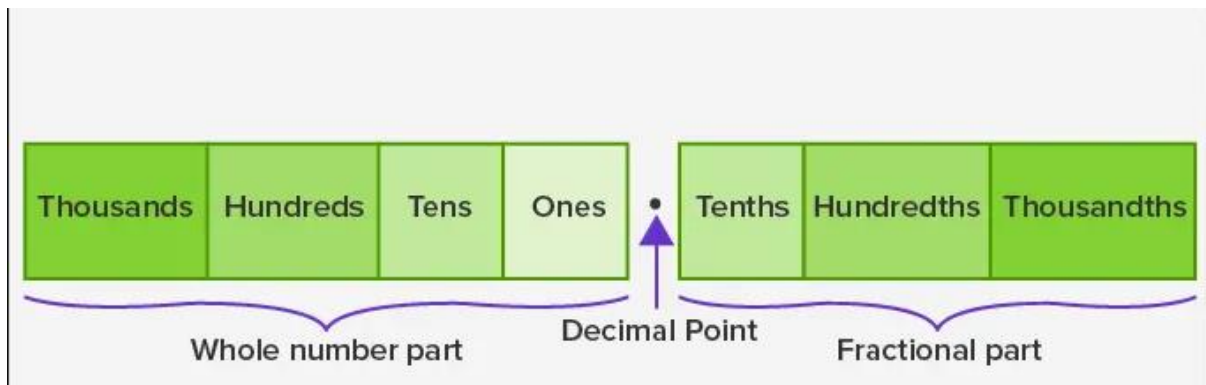
$$1/4 = 0.25$$

$$3/4 = 0.75$$

$$1/10 = 0.1$$

$$1/100 = 0.01$$

With decimals the value of the units are important. Always remember:

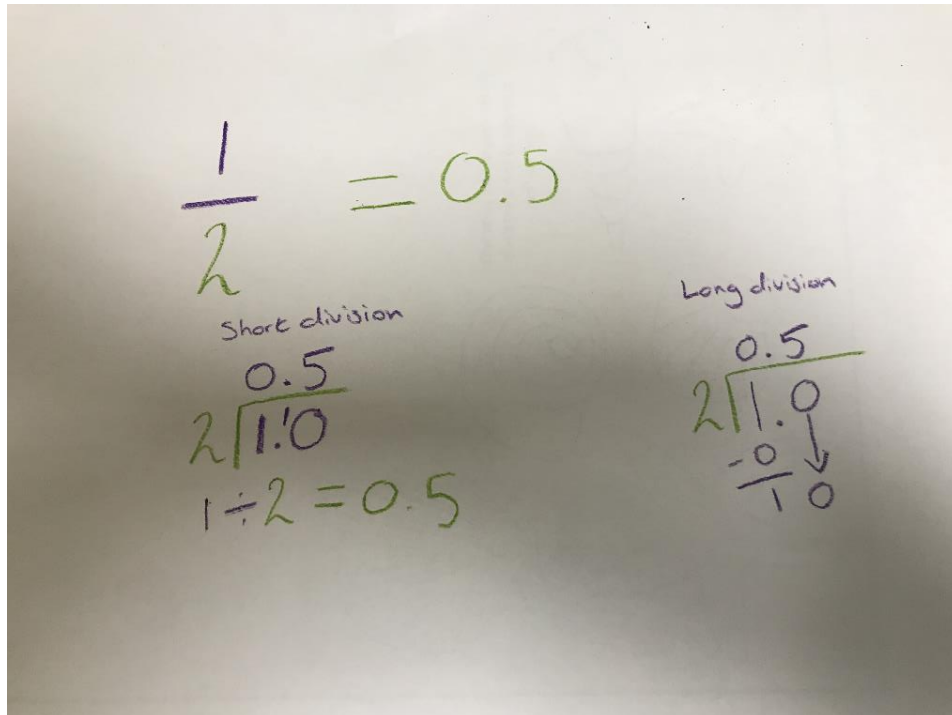


The further **right** of the decimal place you go the smaller the value of the digit.

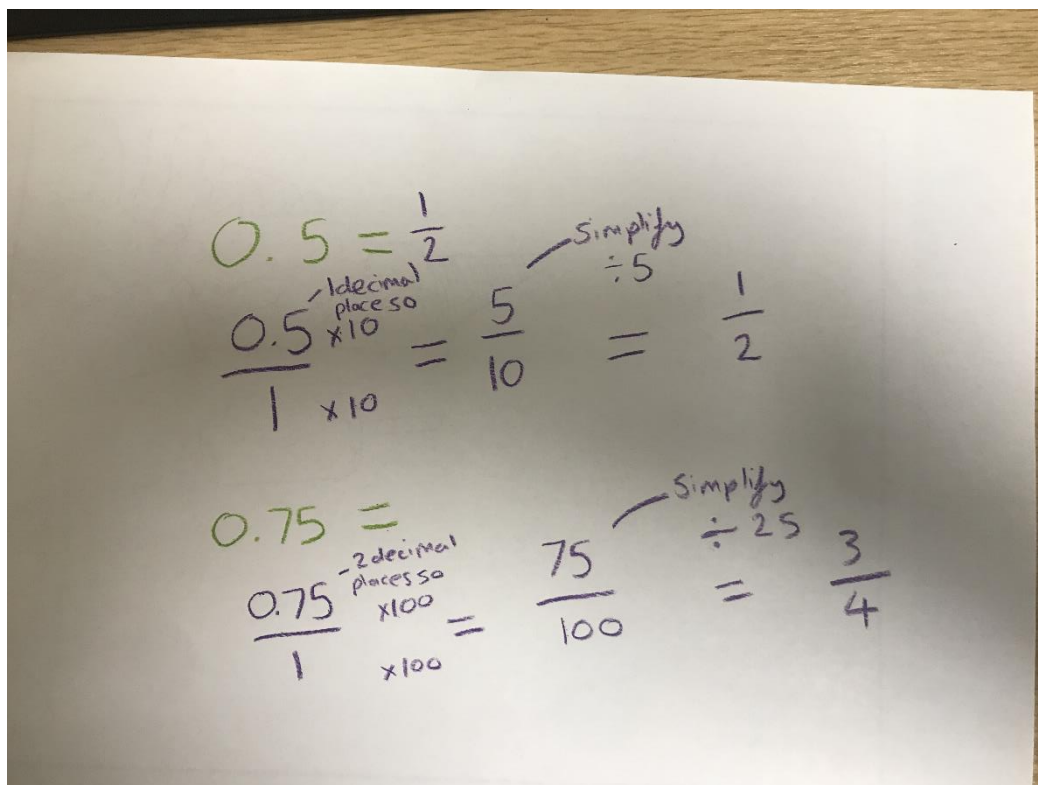
When you need to work out a the decimal equivalent of a fraction you don't remember you must:

Divide the numerator (top number) by the denominator (bottom number). Remember that as the numerator is smaller the answer will be less than one – it will be a decimal. That is what we want.

For example:



When we are converting a decimal into a fraction we put the decimal over 1 (creating a fraction) and multiply by 10, 100 or 1000 depending on how many decimal places there are. For example:



Mathematics tasks have been assigned to children for this and this should constitute one hour of their maths learning.

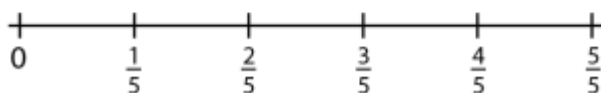
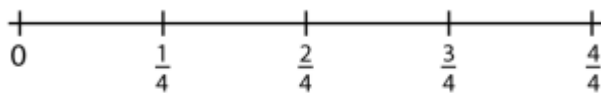
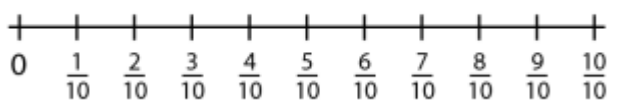
Lesson 2

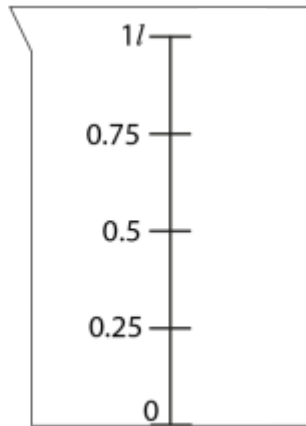
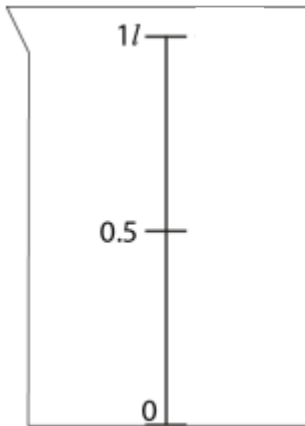
Continuing on from yesterday's work we will look to convert some fractions to decimals. Remember divide the numerator (top number) by the denominator (bottom number).

With this in mind complete this table (some you should be able to remember). Don't go past 2 decimal places:

$\frac{1}{2}$	
$\frac{1}{3}$	
$\frac{1}{4}$	
$\frac{1}{5}$	
$\frac{1}{6}$	
$\frac{1}{7}$	
$\frac{1}{8}$	
$\frac{1}{9}$	

Don't get confused when this information is presented differently. Complete the following with the decimal equivalents on top:





Lesson 3

Now we will focus on converting decimals to fractions. Remember we put the decimal over 1 (creating a fraction) and multiply by 10, 100 or 1000 depending on how many decimal places there are.

Try these:

^{1.} $0.5 =$

^{2.} $0.4 =$

^{3.} $0.25 =$

^{4.} $0.75 =$

^{5.} $0.5 =$

^{6.} $0.333 =$

^{7.} $0.625 =$

^{8.} $0.833 =$

^{9.} $0.125 =$

^{10.} $0.375 =$

To simplify a fraction we find a common factor (a number both can be divided by) and divide the numerator and denominator by it. For instance $5/10$ – both numbers can be divided by 5 and when we do this we are left with $1/2$. A fraction is at its simplest when this can no longer be done.

Now simplify your answers from above (when you can).

Lesson 3

Comparing fractions – to do this we need all of the fractions to have the same denominator. This is what we call a common denominator. To find this we find a common multiple – a number which is in all of the numbers times table – and multiply all of the denominators so they reach this number. We **must remember** what we do to the top was also do to the bottom.

For example if you wanted to order Using both of these skills it is possible to compare fractions and $1/2$, $3/4$ and $4/6$ we would first have to find a common denominator. We do this by writing out the denominator numbers times tables and finding a number which appears in all three.

2	4	6
4	8	12
6	12	24
8	16	
10	20	
12	24	
14		
16		
18		
20		
22		
24		

In this case 24 is the common multiple. We have multiplied 2 by 12, 4 by 6 and 6 by 4 to reach these numbers. This means we have to times each denominators numerator by the same number – so 1×12 , 3×6 and 4×4 .

This leaves us with the fractions $12/24$, $18/24$ and $16/24$. To order them we look at the numerators and put this in the order required. From smallest to largest these would be ordered $12/24$, $16/24$ and $18/24$. We list our answers as the original fractions so the answer would be $1/2$, $4/6$ and $3/4$ from smallest to largest.

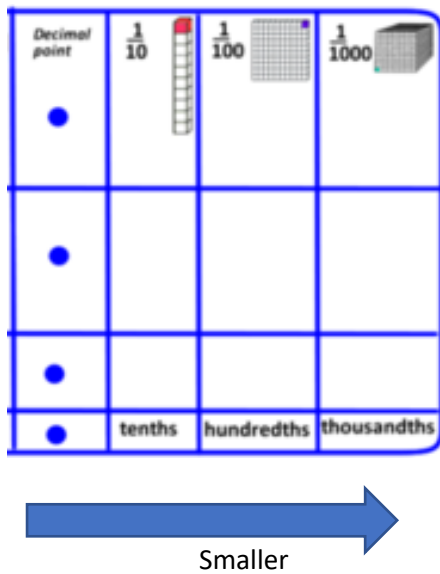
Now try these – ordering the numbers from smallest to largest:

$1/5$ $2/30$ $1/10$

$3/4$ $5/9$ $10/18$

$2/7$ $1/3$ $5/7$

When comparing and ordering decimals we must remember that the further from the decimal point you get the lower the value of the digit.



This means 0.1 is bigger than 0.01 and so on.

The biggest mistake when comparing decimals is to say 0.1 is bigger than 0.12 as 0.12 has hundredths which we are taught are smaller. You **must** remember that 0.12 has tenths **and** hundredths whereas 0.1 only has tenths. The tenths are the same and the hundredth in 0.12 makes it **bigger** than 0.1. The easiest way to remember this is the place place holders where necessary – so 0.1 becomes 0.10.

Order these decimals from biggest to smallest – read that carefully.

0.6 0.15 0.23 0.2 0.08

0.38 0.28 0.4 0.7 0.74

0.45 0.54 0.5 0.4 0.452

Using what we have learnt it is possible to compare fractions and decimals. When doing this you can convert all of the numbers into fractions or convert them all into decimals – whichever you find easiest and are more accurate at. You **must** convert all of the numbers into the same thing before you can compare them. Order these values from smallest to largest.

0.2 $\frac{3}{10}$ $\frac{1}{10}$ 0.25 $\frac{11}{100}$

0.3 $\frac{3}{5}$ $\frac{4}{5}$ 0.7 $\frac{16}{20}$

$\frac{2}{4}$ $\frac{3}{8}$ 0.77 0.61 $\frac{8}{12}$

Throughout the week

Children should look at learning their seven times tables. They can do this through Mathletics and Hit the Button and they should look to spend one hour on this across the week.