

Maths

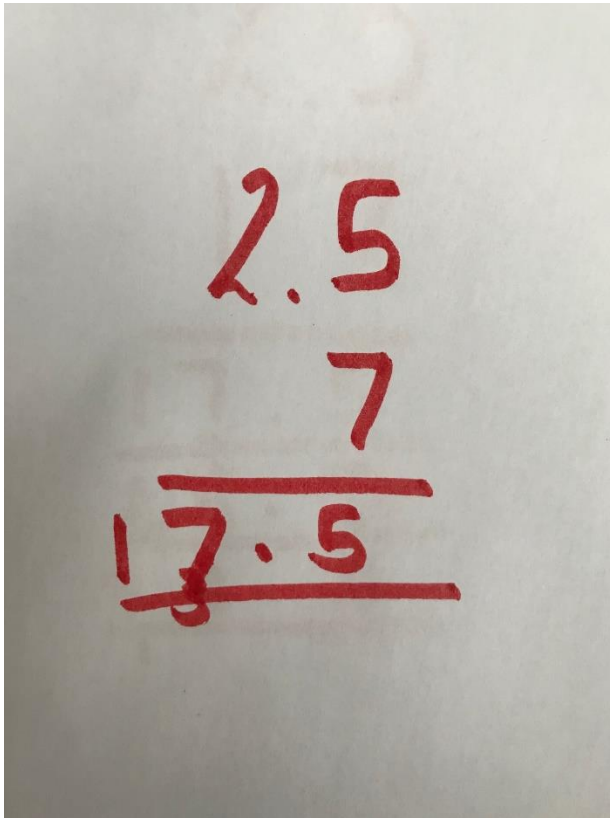
Multiplying decimals by whole numbers and decimals by decimals - Children have been set mathematics tasks on this topic to be completed for Lesson 4. This includes work on multiples and factors. Topics we have covered before.

Lesson 1

Now that the children have used long multiplication they have the fundamentals for multiplying decimals by whole numbers. The lay out is the same and they just need to remember a few rules:

1. It is important to line your calculation up correctly – place value matters and slight errors in laying your sum out can give drastically different answers.
2. Place your whole number on the bottom, no matter how many digits it is the calculation will be easier to complete with the whole number on the bottom

For example:

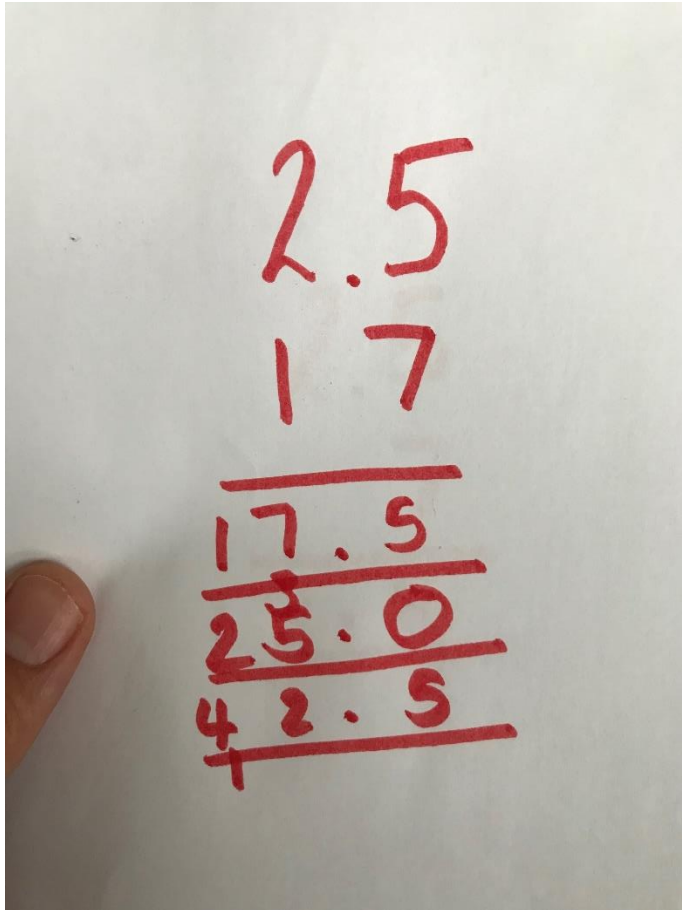


A photograph of a handwritten long multiplication problem on a white surface. The numbers are written in red ink. The problem is $2.5 \times 7 = 17.5$. The number 2.5 is written above 7. A horizontal line is drawn under the 7. Below the line, the product 17.5 is written. A second horizontal line is drawn under the 17.5. The decimal point in the answer is aligned with the decimal point in the multiplicand.

This is laid out just like a normal column multiplication would be and you follow the same process – 7×5 (remembering to carry) and then 7×2 . Giving the answer of 17.5.

Notice that the decimal from the question is in line with the decimal in the answer.

The same rules apply when multiplying a two digit number by a decimal – you follow the rules you do whenever you multiply by a two digit number; but notice:



The numbers in this calculation are not lined up correctly when you consider place value. That is ok in this instance – it doesn't happen often so be sure to remember.

We then follow the long multiplication rules (remembering to carry) – 7×5 , 7×2 , 1×5 and 1×2 before finally adding your two answers together.

Note that the place value has been added in line with where it is in the question for all of the answer spaces.

Now try these:

$8 \times 4.2 =$

$7 \times 8.9 =$

$4.3 \times 9 =$

$28 \times 4.2 =$

$73 \times 8.9 =$

$4.3 \times 93 =$

Lesson 2

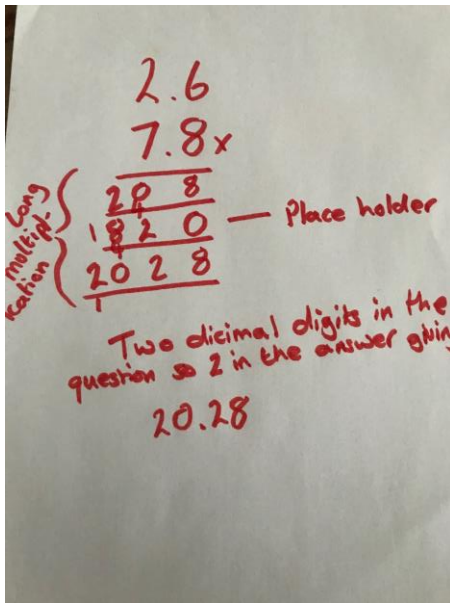
Now I am going to say something which may shock you, take a seat and prepare yourself...

When multiplying two numbers with decimals you have to ... wait for it ... don't tell Mrs Dubben I said this ... ignore the decimal point.

There I said it – I will give you a minute to organise your thoughts.

Ok, recovered? It's true though, write out your calculation with the decimals – you need to remember they are needed, and then ignore that are there can carry on as you would for whole numbers.

Once you have completed the calculation as normal you need to remember to put it back in. This is easy too.



1. Count how many digits after the decimal point are in your question – so for 2.6×7.8 there are two digits after the decimal point – the 6 and the 8.
2. This means there will be two digits after the decimal point in the answer – 2028 – so the second 2 and 8 will be after the decimal point, giving an answer of 20.28

Now try these calculations – remember – it is easier to have the number with less digits at the bottoms:

$17.3 \times 4.5 =$

$2.6 \times 9.7 =$

$4.5 \times 14.6 =$

$15.9 \times 2.4 =$

$173.2 \times 4.5 =$

$2.653 \times 9.7 =$

$4.5 \times 146.25 =$

$15.982 \times 2.4 =$

Lesson 3

Now you have got the calculations correct and know the process it is time to consider some word problems. Read each question carefully.

1. Sarah travels 19.31km every day. How far does she travel over two weeks?
2. Tickets for a show cost £23.67. How much do thirteen tickets cost?
3. The booking fee for each ticket is £2.75. What is the total price for all thirteen tickets including the booking fee?
4. Steven manages to save £543.53 every month. How much does Steven manage to save over three years?
5. Johnny creates 12.34m of string every day. How much string does he create over three weeks?
6. Neil's regular wage is £11 per hour. He gets £15.50 per hour for overtime. He was paid for 160 regular hours and 55 hours of overtime. How much was his total paycheck?
7. If Neil worked eighteen eight-hour days, and 22 hours of overtime, how much would he earn?
8. Frank travels 45.32km every day. How far does he travel during January?

9. Johnny puts away £3.53 a day. How much does he save over a year?
10. Dave lives 13.75 miles away from work. How many miles does he travel to and from work during February?

Throughout the week

Children should look at revising their three 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.