

Supporting your child with maths

6 TIPS ON HOW TO ANSWER MATHS WORD PROBLEMS

IT'S nearly GCSE time and I'm sure that many students have already started their revision. There's quite a lot of really good advice available:

- Start now!
- Create a plan!
- Don't panic!

So, I thought I'd get a little creative in this article and look at a particular area that can cause a few worrying moments. If a maths GCSE was all about adding numbers, perhaps even getting to divide a few, it'd be fairly straightforward. Unfortunately now they have a thing called 'functional maths,' which really means the dreaded 'word problems.'

The hardest thing about how to answer maths word problems is reading the English and translating it into mathematics. It's also more difficult when the words start to swim and anything, even an hour's extra maths lesson, is preferable..

Practical maths word problems are essentially written as a 'real life' situation. Some are hilarious: my favourite being an actual GCSE question relating to pregnant llamas:

"A farmer has 48 llamas. 30 of the llamas are female. Work out 30 out of 48 as a percentage.

60% of the female llamas are pregnant. Write the number of pregnant female llamas as a fraction of the 48 llamas.

Give your answer in it's simplest form."

They all seem to involve slightly odd families buying theatre tickets or baking sixteen cakes when the recipe calls for twelve. I'm sure there are many more – it could be a great idea for the next article.

Either way, maths word problems are here to stay and here's some top tips for solving them.

Take a breath

I know it seems obvious, but taking a few moments to orientate yourself can work wonders. Despite the strange families and ridiculous bus routes, there is a serious purpose behind the question. Try to look past the rest of the paper, don't panic, and take one step at a time.

Read the question twice and underline the bits that matter

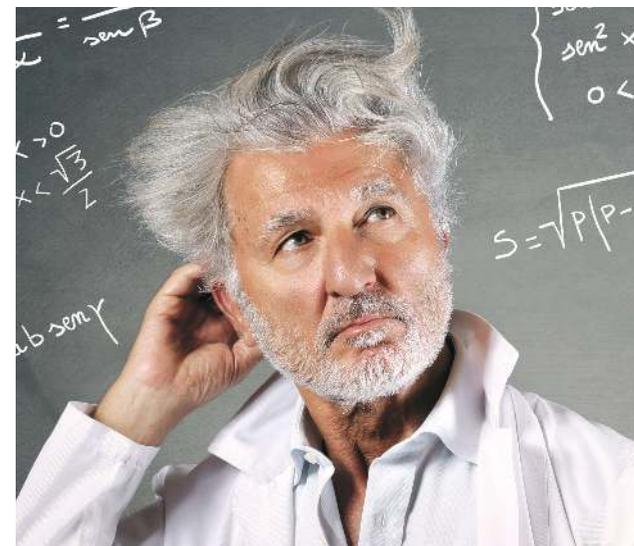
Actually reading three times is better, and it's certainly helpful to highlight any useful information. In particular be careful of mismatched measurements. A favourite examiners trick is to deliberately put in the odd kg when everything else is in grammes. Before you start work make sure you convert all the measurements to the same unit – it'll make the problem much easier to read and calculate. You can always convert back at the end.

Remember to also underline the question asked. It's amazing how many times the word 'left' is 'left out.' While the calculations can be brilliantly done you need to answer the actual question. So don't forget to work out how much money is left, or the total area of carpet required.

Look for the keywords

Certain words can give you clues to the question. Most should be fairly obvious as the examiner is wanting to test your maths knowledge, and they do spend time in getting the questions to read well. However it might be useful to glance through the list to become familiar with the common terms used.

WHAT THEY MEAN	WHAT THEY SAY
Add something	added to total of sum (or summation) combined together increase by more than
Subtract or takeaway something	less than fewer than minus difference between decrease by
Multiply something	of (used often) multiplied by times product of increase or decrease by a factor of
Divide something	ratio share percent (out of 100) per out of quotient of



already worked out the answer without even trying. A clear, reasoned presentation is much more worthy than scribbles. You are more likely to get a correct calculation and be able to breath again!

Google 'Simon Deacon maths' for a great range of maths videos to help with all your GCSE revision.



What's wrong with us sheep?

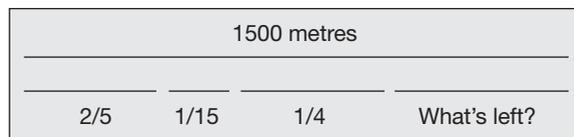
Draw a picture

You will not lose any marks for putting the problem differently. For instance fraction / percentage questions usually involve quantities (cake recipes, distance, height or other measurements). Why not draw a diagram to help? Without getting involved in solving this question try to picture the scene:

"Mr S encourages* his 5 children to run 1500m. The first child ran 2/5 of the distance, the second child ran 1/15, the third child ran 1/4, the fourth child had a sprained ankle and could not run. How far did the fifth child need to run to complete the distance"

*I know I shouldn't laugh but don't you think this is all a little odd?

Anyway, back to drawing a picture ... does this make the question a little easier to understand?



Be careful of the curve balls

Examiners are placing much greater emphasis on 'functional maths.' Unfortunately, this might also mean that you might need to calculate an answer before moving on to the next part of the question. These are called 'two step' or 'three step' questions and they are generally much more true to life.

A good example would be:

A machine makes nails. Between 9am and 10am it makes 1230 nails. Between 10am and 11am it makes 1267 nails. What is the total number of nails it makes between 9am and 11am? Each nail costs 0.01p to make. What is the total manufacturing cost for the two hours? You would need to add and multiply in this question.

Work methodically

Finally..... try to work logically. I love the mad professor image of chalkboards and bits of paper crammed with formulas. But maths isn't really like that. In fact the more methodical you're working, the greater the chance of marks being awarded.

Aim for a clear progression through the answer and don't hesitate to use phrases like 'this means' or 'so.' It's also much more impressive if you can keep your calculations on one half of the paper and your answers on the other. This might help you not to 'overcalculate.' Some questions naturally lead on to others – you might have

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