Supporting my child in maths

Welcome parents,

After consulting with you at our first maths parents and pupil session of the year, we have had been asked many questions about how you can support your child at home - whether it is to support them if they are struggling or to extending them or enthuse them.

I hope that the following slides will give your some ideas.

Supporting my child in maths in years 3 and 4

My child struggles with maths - how can I help?

If your child struggles to count objects in ones, then this is the first point to really focus on. Then move them into groups of 2.

Practicing their times tables every day (at every moment you have) and encouraging garage on TTRS (please **do not** play this yourself or let a sibling play it as teachers do use TTRS to assess progress and support for times tables). Knowing times tables allows children to focus on more complex mathematical processes. Begin with 2s and 10s, then 5s. If they feel confident with these they can move on to 4s and 8s.

Number bonds to 10, 15, 20, 50, 100. Knowing number bonds allows children to focus on more complex mathematical processes.

Addition and subtraction - knowing how to add and subtract by counting on using fingers or equipment is important. Remembering that subtraction is finding the difference between between two numbers.

Supporting my child in maths in years 3 and 4

My child is confident in maths - how can I help?

Do they know their times tables instantly? Within a second or two (not using fingers or counting on)?

Do they know their number bonds to 10, 100 and 1000 and everything between instantly? Do they know the inverse (subtraction) or how to find missing numbers?

Counting in 20s, 25s, 250s, etc

Can they add and subtract money?

Can they convert mm, cm, mm and km (and understand mass and volume in the same way?) - Multiplying and dividing by 10, 100 and 1000

Supporting my child in maths in years 3 and 4

My child excels in maths - how can I help?

Don't underestimate the need for instant recall of multiplication facts and number bonds

They may know all their times tables, but can they instantly apply them to larger numbers like 15x20 or 17X12 mentally? Can they apply it to division? They need to be able to quickly use what they know to work out what they don't with little effort!

Do they know their number bonds? Yes they may know the basic number bonds to 10, 100 and 1000, but can they instantly recall the facts to 2000 or 20 thousand? Can they apply that to subtraction or missing number calculations (which is a precursor to simple algebra?)

What about time? Higher attainers often struggle with time - it is not just about accurately reading an analogue clock and a digital clock, it is about whether they can add and subtract time (as it works in 60s rather than 100s) quickly and accurately.

Supporting my child in maths in years 5 and 6

My child struggles with maths - how can I help?

Practicing their times tables every day (at every moment you have) and encouraging garage on TTRS (please **do not** play this yourself or let a sibling play it as teachers do use TTRS to assess progress and support for times tables) is absolutely the foundation for everything else, so if they are not confident here, please prioritise this. By now, children should know all their tables up to 12 x 12 quickly and fluently. If they can get these, then it will enable them to access the short and long multiplication methods, plus lots of the fractions skills they will need more effectively.

Knowing number bonds allows children to focus on more complex mathematical processes. This will include, for instance number bonds to 100, so they can find change from £1 etc.

Practising the 4 main written methods is so important - column addition and subtraction, short multiplication and bus-stop division. These are all the methods you grew up doing at school! If they have problems with any part of this (e.g. quick adding and subtracting, including moving across a 10s boundary (e.g. 14 - 8) then really focus on this please.

Any opportunity to practice multiplying and dividing numbers by 10, 100 or 1000 will also be really useful, looking at the patterns they create as you go along.

Supporting my child in maths in years 5 and 6

My child is confident in maths - how can I help?

Double check tables knowledge, especially division tables (e.g. do they know 56 ÷ 7 as quickly as they know 7 x 8 ?)

Being able to convert between measures is hugely important for the children to be able to apply their calculation skills to problem questions. Can they tell you how many millilitres there are in a litre? How many grams in 2 ¾ kilograms? How much is left from 2 litres when 568ml is poured out?

Understanding time, both in 12 and 24 hours, is also really helpful. Can they read the time from an analogue clock and explain it in both words and numbers? (e.g. 8:40pm is also twenty to 9, is also 20:40pm)

Children also need to be able to convert between fractions, decimals and percentages efficiently. Start by making sure key conversions are known (e.g. ½ = 0.5, ¼ = 0.25, ¾ = 0.75, plus that 1/10 = 0/1 and 1/100 is 0.01) then begin to explore finding others by converting a fraction so it has a denominator of 100 (e.g. ⅖ is the same as (equivalent to) 40/100, which is why it is 0.4 as a decimal, or 40% as a percentage.

Supporting my child in maths in years 5 and 6

My child excels in maths - how can I help?

Keep checking on conversions between measures, as these are so important for them and often one of the trickier areas for tackling problem questions successfully. E.g. knowing 2 ¾ metres is 2.75 metres or 275 centimetres or 2750 millimetres.

Begin applying the ability to convert between fractions, decimals and percentages to more complex problems. E.g. can they add ¼ + 0.3 + 15% together, or subtract ¾ from 1 ⅖ ? Can they also explain their methods and thinking in words?

Explore how secure your child is on properties of shapes. Can they identify the number of faces, edges and vertices in a 3D shape, or how many acute or obtuse angles or parallel or perpendicular lines a 2D shape has?

Check understanding and recall of key number types too - can they find prime numbers, factors, multiples, square numbers and cube numbers to fit given criteria? E.g. Find a prime number that is both a factor of 20 and 30, or a multiple of 8 that is both a square number and a cube number.

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Fun things we could do together

Simple old fashioned things like playing card games (21s or change the number) or playing darts (I'm not suggesting real darts - ones with suckers are just as good) - but the mental subtraction is a great skill to use and the doubles and trebles are great mathematical skills to practice. Monopoly (we will not take responsibility for family arguments or board flipping). Scrabble - helps with English and maths.

Do you want to watch a film? What is the time now? How long is the film? When will it finish? What if we pause it for a 10 minute toilet and snack break?

You have 10 minutes to bedtime, if you go to bed exactly on time by reading the clock you can have extra time to read a book before sleep.

Going around the supermarket - who can estimate the cost of the shopping the closest?

Looking and discussing road signs and numbers that are all around you as you go about your daily life.

Seeing patterns in paving stones, brick or shapes of different things as you walk around. Discussion is key!

Cooking together - measuring amounts in millilitres and grams and reading the scales, plus converting between units.

Supporting my child in maths

Websites:

https://ttrockstars.com/ You child will have a login from school for this.

https://uk.splashlearn.com/ (parents, you can sign your child up for free)

https://mathsframe.co.uk/ Lots of free games that cover all the maths operations

Ocean Academy Poole
an Aspirations Academy

Can my child tell the time?

Even if your child is confident is confident with maths, telling the time using an an analogue clock can be a barrier that parents can be the greatest support with!

Just having and analogue clock in the house and asking what the time is.

Telling them they have 10 mins to do something and what time will it be?

Cooking - when will it be ready to eat?

How long will it take you to to do......
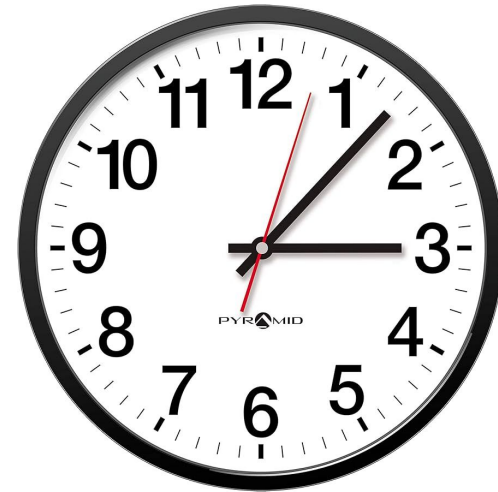
Supporting my child in maths

How can I support my child to learn time:

- Start by securing the key starting points - O'Clock, half past, quarter past and quarter to, plus knowing the longer hand is minutes and the short one is hours.
- Move on to finding time to 5 minutes. Practice counting in multiples of 5 clockwise from 12 to half past (past) and anticlockwise from 12 to half past (to) to find the first part of the time, then noticing which two numbers the hour hand is between and working out whether to use the lower number (for 'past') or the higher number (for 'to').
- Explore how these times turn into a digital time, and where things differ to analogue time. For example how twenty past 3 will make 3:20 but how twenty to 4 will make 3:40.
- Give children the opportunity to draw times on a blank clock face too (plenty available online), noting how the hour hand will often need to be drawn between two numbers.

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Key Measures Conversions:

Length		Mass	
1 kilometre	= 1000 metres	1 kilogram	= 1000 grams
1000 metres	= 1 kilometre	1000 grams	= 1 kilogram
1 metre	= 100 centimetres		

		Capacity	
100 centimetres	= 1 metres		
1 centimetre	= 10 millimetres	1 litre	= 1000 millilitres
10 millimetres	= 1 centimetre	1000 millilitres	= 1 litre

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Key Measures Conversions:

It is also helpful to know about converting fractions of measures:

1km = 1000m	1m = 100cm	1cm = 10mm	1kg = 1000g	1l = 1000ml
½ km = 500m	½ m = 50cm	½ cm = 5mm	½ kg = 500g	½ l = 500ml
¼ km = 250m	¼ m = 25cm	¼ cm = 2.5mm	¼ kg = 250g	¼ l = 250ml
¾ km = 750m	¾ m = 75cm	¾ cm = 7.5mm	¾ kg = 750g	¾ l = 750ml

Spending time noticing the patterns between these will really help (including how fractions convert to decimals)

The main calculations

On the following slides are the main written calculations that we teach. However, there are many stages leading up to this.

Please click on the link below to see the school's calculation policy, that shows all the stages that the children work through:

https://docs.google.com/document/d/16xQKX-Vf87oi-FJ7jCSSjWB1weR3G9j-T5MDjo3sD2w/edit

The parents support booklet:

https://docs.google.com/document/d/1bwgsJrEJkQyDxuJOX7vMDCfFcg7T-fiD/edit#heading=h.gjdgxs

Addition written method

Short method

This method requires the children to set the calculation out in a column (being careful to ensure correct place value).

When adding, the children are required to **begin with the units**, and carry using correct language such as 'carry ten' or 'carry one hundred'. The number carried should be recorded **below** the line.

This method should be extended to addition of 3, 4 and 5 digit numbers as well as decimals, and can be extended to adding more than two numbers.

Use of straws, Base 10 or Place Value counters can continue to be used to reinforce the value of each digit. Placed onto a grid clearly marked as appropriate.

Problem solving should continue to include the use of **bar modelling** to aid visualisation as in previous steps.

For example:

```
  367
 +185
  552
  1 1
```

```
 3587
 + 675
 4262
 1 1 1
```

```
  72.8
 +54.6
 127.4
  1  1
```

```
 13.86
 + 9.481
 23.341
 1 1 1
```

Subtraction written method

Short method (decomposition)

This step requires the children to set the calculation out in a column (being careful to ensure correct place value).

They should subtract the right hand column **(units) first** and carry from the left hand side column if needed.

Use of straws, Base 10 or Place Value counters should be used to reinforce the value of each digit as before.

This method can be used for any number of digits as well as decimals.

Problem solving should continue to include the use of **bar modelling** to aid visualisation as in previous steps.

For example:

$537 - 214 = 323$

$$\begin{array}{r} 537 \\ -\ 214 \\ \hline 323 \end{array}$$

$728 - 51 = 677$

$$\begin{array}{r} ^6\!\!\not{7}28 \\ -\ 51 \\ \hline 677 \end{array}$$

Use of place value counters when carrying:
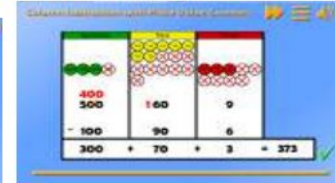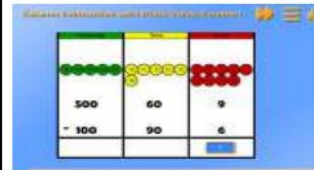
Written method:

$352 - 168 =$

Stages of working shown
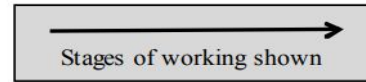
Multiplication written method

Short Method for x TU

This method requires the children to multiply the larger number by the units and then the larger number by the tens, and so on, before adding the two numbers together.

Carried numbers should once again be placed underneath the appropriate column..

For example:

```
Q.        9 5 8
        ×   7 3
        2 8 7 4
    +  6 7 0 6 0
        6 9 9 3 4
```

Multiply the units first and carry any tens across:
$3 \times 8 = 24$ (carry the 2 tens)
Then multiply the units by the tens, add the carried digit, then carry again:
$3 \times 5 = 15 + 2 = 17$ (carry the 1)
Multiply the units by the hundreds, add the carried digit:
$3 \times 9 = 27 + 1 = 28$
Repeat for the tens digit:
70×8
70×50
70×900

Division written method

Short method for ÷ U ('Bus stop method')

This step requires the children to **carry** remainders within the calculation to make it more efficient. It should be used to divide TU, HTU, ThHTU as well as decimals.

The method should initially be taught **alongside step 5** so the children understand what they are carrying and why.

Decimal places should be added to show remainders as decimals.

When problem solving, remainders should be rounded up or down if appropriate. Children can also be taught how to express remainders as fractions.

For example:

$964 \div 7 = 137 \text{ r} 5$ or 137 5/7

$$7 \overline{) 9\,^2 6\,^5 4} = 1\,3\,7\text{ r}\,5$$

$847 \div 5 = 169 \text{r} 2$ or 169 2/5

$$5 \overline{) 8\,^3 4\,^4 7} = 169\text{r}\,2$$

$79 \div 5 = 15.8$

$$5 \overline{) 7\,^2 9.\,^4 0} = 1\,5.\,8$$
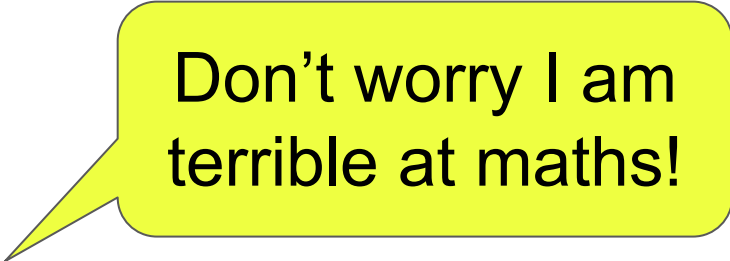
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Maths anxiety

Have you ever said...

Don't worry I am terrible at maths!

Unfortunately, this can lead to maths anxiety or a self-fulfilling prophecy (where a child will struggle because they believe they will due to what they are told by others)

https://docs.google.com/presentation/d/1MyW10wcnlbRgFQ71w-4q8zVT-PIN63fZ0W0cZZlM7Jc/edit?usp=sharing

Supporting my child in maths

Maths anxiety - how can you help?