MATHS

How to support your child with their learning in Upper Key Stage 2

According to The Organisation for Economic Co-operation and Development, "Good numeracy is the best protection against unemployment, low wages and poor health."

This may seem a dramatic statement in the context of teaching maths to 9-11 year olds but maths really is that important. A good understanding of maths will help your child with important tasks such as making decisions and understanding information. It will also help them to develop essential lifelong skills such as:

- Working out how much food is needed for a meal
- Converting currency rates when abroad
- Managing personal finances and budgeting
- Working out the best deals in the supermarket and making sure they receive the correct change!

At St. Mary's we believe that every child can develop the skills they will need and, together, we can work to build children's confidence in maths and an all-important positive attitude towards all things numerical.

Read on to find out:

- How we teach Maths in Year 5 and 6 in school
- Some activities you can do at home with your child
- Where else you can go to find help and support in maths

Addition:

Once pupils move into Year 5 and 6, we use column addition to complete written addition calculations. At the end of Year 6, children will need to be able to use this method confidently to complete calculations in a timely and accurate fashion. This is the most efficient method of addition.

Correct place value is important with this method, as is a good understanding of basic number bonds as, each time, the children are finding the total of 2 (or 3 if we have had to 'carry') one-digit numbers.

Addition can be done in a range of real-life contexts however, a trip to the supermarket offers up a wealth of opportunities to practice adding and finding totals.

Why not…

- Challenge your child to estimate the total of your weekly shop when you get to the check out. Round up items to the nearest pound and mentally find the total. Maybe the person with the closest estimate can put their feet up when you get home whilst the losers unpack the groceries!
- How much weight are we adding to our cupboards? When adding tins of beans and chopped tomatoes to the supermarket trolley, ask your child to try to keep track of the running total.
- For organised shoppers out there, let your child see your shopping list before you go to the shops and use the store's website to try to calculate an accurate total for the weekly shop. Compare this total to the receipt once you finish shopping.

Subtraction

Subtraction Vocabulary

count back decrease minus less subtract fewer count on take away difference between
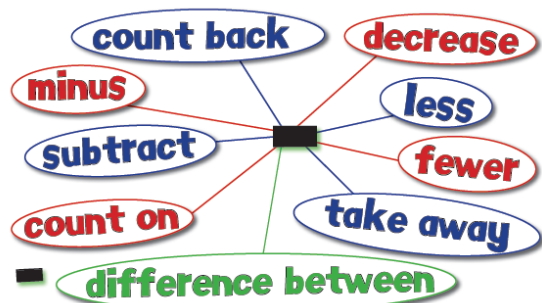
Column Subtraction

```
     100   10    1
      6    11    1
      7    2     3
  -   3    5     6
  _____
      3    6     7
```

In Year 5 and 6, we use column subtraction to complete written subtraction calculations. At the end of Year 6, children will need to be able to use this method confidently to complete calculations in a timely and accurate fashion. This is the most efficient method of subtraction.

Subtraction is completed by subtracting the 'top' number from the number below it. Subtraction needs to be done in this order – we cannot 'switch' the digits if the bottom number has a higher value than the top. In instances where the top number is not large enough to take away the bottom number (eg. 3 – 7), we 'regroup' by 'borrowing' 1 from the digit 'next door'.

The kitchen can be a great place to practice some subtraction.

Why not...

- Do some baking? Weigh the bag of flour. How much will be left in the bag once you have poured out what you need?
- Run out of eggs? Here's £5. If 6 eggs cost 85p, how much change will you receive at the shop?
- If you need 125g of sugar and you only have 72g left in the packet, how much more do you need?

Multiplication

Multiplication Vocabulary

groups of · product · times · multiple · double · lots of · multiply · repeated addition · x
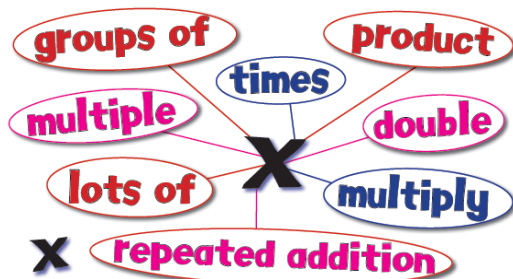
St Mary's Catholic Primary School

When it comes to multiplication, the importance of times tables knowledge cannot be underestimated. In Year 5 and 6, we use the column written method to multiply which simplifies the calculation so that we are focusing on a one-digit x one-digit calculation at all times.

Column Multiplication

```
    100   10   1
      1    4   7
  X      1  2 4
      5    8   8
```

We use the column method of multiplication to multiply by one-digit numbers. In Year 6, students are expected to be able to use this method to multiply any 4-digit number (both whole and decimal) by any one-digit number:

Eg. 4682 x 4;   23.49 x 6

In this example to the left, the first step is to multiply 7 x 4. The product is 28. 8 ones are recorded and the 2 tens are carried to the next column to be added to the product of the numbers there.

): Long Multiplication Column

```
        4 3
  x     6 5
      2 1 5     (5 x 43)
  + 2 5 8 0     (60 x 43)
    2 7 9 5
```

When we are multiplying by a two-digit number (eg. 346 x 24; 6389 x 63), we use the column method of long multiplication.

The first stage is the same as the regular method of column multiplication (In this case, 5 x 43).

Next, we multiply by the tens of the multiplier (In this case, 60 x 43). Because we know that anything multiplied by a multiple of 10 ends in 0, we automatically place a zero in the ones column. Now we can use our times tables facts again to multiply each digit of the multiplicand by the tens of the multiplier (In this case, 6 x 3, then 6 x 4).

To find the final answer, we simply find the total of both products.

Multiplication comes in handy in many real-life contexts. One example is the planning of a birthday party. Why not get your child involved when planning your next big event?

For example:

- If a buffet will cost £3.65 per head, how much will it cost to cater for 75 guests at the party?
- If we offer each guest a 220ml glass of something fizzy when they arrive, how many millilitres of lemonade will be needed to provide 90 guests with a drink?
- There are 7 balloons in each centre piece. If we want to make 16 centre pieces, how many balloons will be needed?

TTRockstars is a fun way to get your child practising their times tables.
This program can be accessed online at www.TTRockstars.com or on a tablet or phone by downloading the TTRockstars app.

Children answer quick-fire multiplication and associated division questions. By doing this, they earn coins which they can then 'spend' on the latest rock star outfits and accessories for their avatars. What is most desired though, is not coins but bragging rights – who can complete the most questions in 60 seconds to become a Rock Hero?

In Years 5 and 6, children should aim to answer any times tables question correctly in less than 3 seconds.

Ask your children to show you what it's all about – but be careful not to get hooked yourselves! (Family subscriptions are available on the TTRockstars website)

Division

Division Vocabulary

remainder · group · share · ÷ · halve · divisor · factor · quotient · equal groups of · divide
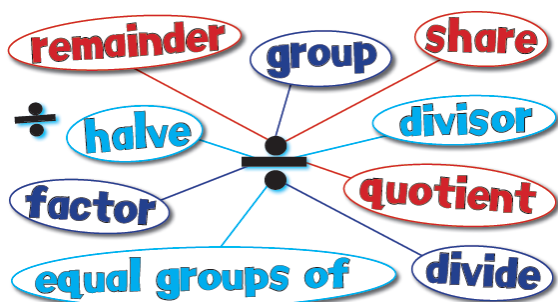
Just like multiplication, understanding of division goes hand-in-hand with knowledge of (and confidence in) times tables facts.

In Year 5 and 6, we use short division as a written method – otherwise known as the 'bus stop method'. Again, just like the column method of multiplication, it allows us to focus on one step at a time (linking to our times tables facts wherever possible)

Short Division

$136 ÷ 4 = 34$

$$4 \overline{)1^13^16}$$

$$34$$

We use the short method of division to divide numbers with up to 4 digits by one-digit numbers. In Year 6, students are expected to be able to use this method to divide any 4-digit number (both whole and decimal) by any one-digit number:

Eg. $6784 ÷ 6$; $432.5 ÷ 5$

In this example to the left, the first step is to see how many groups of 4 can be made from 1 The answer is 0 so the 1 from the hundreds column is moved over to the tens.

Now we look to see how many groups of 4 can be made out of 13. We know three lots of 4 are 12. This gives us 3 and one left over, which we carry to the ones column. Finally, four 4s are 16 with none remaining. Overall, we have found out that there are 34 groups of 4 in 136.

Long Division
Short Division Method

$$37 \overline{)9^98^{24}3}$$

$$26 r21$$

When our divisor has two digits, we use long division. The process is similar to short division however, since we do not usually know multiples of 2-digit numbers by heart, we first find the first 10 multiples of the divisor by using repeated addition Eg. The first multiples of 37 are: 37, 74, 111, 148, 185, 222, 259

So, in this example, we cannot make any groups of 37 from 9 so the 9 is carried over, making the next dividend 98. 2 groups of 37 are 74 (we cannot make 3 as that would require 111) After making groups of 7 from 98, we have 24 left over. This 24 is carried over to the next digit; making 243. 6 groups of 37 (222) can be taken from 243, leaving 21 as the remainder.

Remainders

When solving problems with division, it is important to pay close attention to the question to see what should be done with any remainders. Options include rounding up or down, only stating the remainder or expressing the remainder as a decimal fraction.

Eg.

a) Pencils are grouped into bundles of 6 to be sold. If there are 247 pencils, how many full bundles can be made?

$$\begin{array}{r} 0\ 4\ 1\ r1 \\ 6\overline{|\ 2^24\ 7} \end{array}$$

= 41 bundles (Rounded down)

b) 36 chickens on a farm lay 247 eggs in total. If the eggs are packaged into boxes of 6 to be sold at the market, how many eggs will be left over for the farmer's breakfast?

$$\begin{array}{r} 0\ 4\ 1\ r1 \\ 6\overline{|\ 2^24\ 7} \end{array}$$

= 1 egg left over

c) £247 is raised at our school bake sale. If we share this money equally between 6 charities, how much will each charity receive?

$$\begin{array}{r} 0\ 4\ 1\ .\ 1\ 6 \\ 6\overline{|\ 2\ 4\ 7\ .\ ^10\ ^40} \end{array}$$

= £41.16 (Calculation continued on to find a decimal remainder)

Division can be applied to a range of contexts. Food always works well as it can be done practically (and, let's be honest, who doesn't like the idea of sharing out sweets so you can eat them afterwards?!)

Activities to try at home (or when out for dinner!):

- Dad's ordered pizza for a sleepover. If there are 48 slices in total, and 6 kids attending the party, how many slices can each of the children take?
- If the cooked pasta weighs 650g, how much will each person get if it is shared equally?
- Mum's bought a 500g jar of peanut butter. If one serving of peanut butter weights 12g, how many full servings can be made from that one jar?

How else can I support my child with maths at home?

Whenever and wherever possible, give maths a real-life context: Get out the dry pasta shells to physically work out a division calculation, cut up a swiss roll to demonstrate fractions, let your child help out with the shopping.

Try to maintain a positive attitude towards maths – this will help your child to be positive and confident about maths too.

For more ideas and support, why not check out the following websites and resources:

- http://www.familymathstoolkit.org.uk
- http://www.bbc.co.uk/schools/parents/primary_support/
- http://www.first4families.co.uk/download/education/parents-guide-to-primary-maths.pdf
- www.mathseveryday.com
- http://www.bbc.co.uk/schools/teachers/ks2_activities/maths/

...and, remember, there will always be someone at school to talk to if you need any further help on how to best support your child in maths at home.