

# How can I help my child?

Look for opportunities around you to help your child:

- ◆ Times table practice and games.
- ◆ Mental addition and subtraction at home.
- ◆ Using fractions at home, splitting items into fractions.
- ◆ Reading time tables and calculating differences between times.
- ◆ Converting measurements at home.
- ◆ Use money to pay for items and calculating percentages of these amounts.
- ◆ Talking about where you experience maths in real life scenarios.

## Where can I find more information?

There is lots of information available on the internet. Here are just some websites you might find helpful:

[www.mathletics.co.uk](http://www.mathletics.co.uk) (all children have subscriptions to this website)

[www.mathsformumsanddads.co.uk](http://www.mathsformumsanddads.co.uk)

[www.mathszone.co.uk](http://www.mathszone.co.uk)

[www.mathsisfun.com](http://www.mathsisfun.com)

[www.topmarks.co.uk/maths-games](http://www.topmarks.co.uk/maths-games)

[www.bbc.co.uk/schools/websites/4\\_11/site/numeracy.shtml](http://www.bbc.co.uk/schools/websites/4_11/site/numeracy.shtml)

[www.transum.org/Software/Tablesmaster/](http://www.transum.org/Software/Tablesmaster/)

[www.crickweb.co.uk/ks2numeracy-multiplication.html](http://www.crickweb.co.uk/ks2numeracy-multiplication.html)

DB platform in the learning library

Our full maths calculation policy is available on our school's website.

# Maths for Parents

## Upper Key Stage 2



What topics we cover in Upper Key Stage 2.			
Number			
Number and place value	Addition and Subtraction + and -	Multiplication and division X and ÷	Fractions $\frac{1}{2}$
Measures	Geometry	Ratio and proportion	Statistics

## Mastery of maths—depth of their understanding

How do you know this? What do you need to do to solve this? How can you prove it? Explain your answer.

<b>Reasoning</b> Explaining their thinking about which aspect of maths they can use to solve a problem .	<b>Problem solving</b> Ability to solve everyday problems and puzzle.
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## Key maths vocabulary and calculation methods for years 5 and 6

### Number, Place Value

- read, write, order and compare numbers up to 10 000 000
- use negative numbers in context e.g.  $-7^{\circ}\text{C}$
- read Roman numerals to 1000 (M) and recognise years written in Roman numerals.

### Addition

$$\begin{array}{r} 358 \\ + 73 \\ \hline 431 \\ 11 \end{array}$$

### Subtraction

$$\begin{array}{r} 3.70 \\ - 2.19 \\ \hline 1.51 \end{array}$$

$$\begin{array}{r} 124.90 \text{ (add a zero as a place holder)} \\ + 117.25 \\ \hline 242.15 \\ 11 \end{array}$$

### Multiplication

THHTU  
X TU

### Not grid method

$$\begin{array}{r} 125 \\ \times 17 \\ \hline 875 \\ 1250 \\ \hline 2125 \end{array}$$

### Division

Cross out numbers over the line once you have added them on.

THHTU ÷ U

$$6 \overline{) 0761r1}$$

Interpret remainders appropriately for the context.  
e.g. rounding up/down, decimals.

$$432 \div 15 = 28.8$$

$$\begin{array}{r} 28.8 \\ 15 \overline{) 432.0} \\ \underline{30} \phantom{0} \\ 132 \phantom{0} \\ \underline{120} \phantom{0} \\ 120 \\ \underline{120} \\ 0 \end{array}$$

(2 x 15=30)  
(8 x 15=120)

### Measures

- convert between different units of metric measure (e.g. kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre)
- understand and use equivalences between metric units and common imperial units such as inches, pounds and pints
- convert between miles and kilometres
- recognise that shapes with the same areas can have different perimeters and vice versa
- recognise when it is possible to use formulae for area and volume of shapes
- use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to three decimal places.

### Statistics

To solve comparison, sum and difference questions about line diagrams and pie charts.

To be able to calculate the mean, mode, median and range.

Mean – The mean is the average of the numbers, so to calculate: Add up all the numbers, then divide by how many numbers there are.

Mode -The number which appears most often in a set of numbers.

Example: in {6, 3, 9, 6, 6, 5, 9, 3} the Mode is 6 (it occurs most often).

Median - The middle number (in a sorted list of numbers).

To find the Median, place the numbers you are given in value order and find the middle number. Example: Put them in order: {10, 11, 13, 15, 16, 23, 26}

The middle number is 15, so the median is 15.

(If there are two middle numbers, you average them.)

Range -The difference between the lowest and highest values.

In {4, 6, 9, 3, 7} the lowest value is 3, and the highest is 9, so the range is  $9-3 = 6$ .

## Fractions

### Year 5

- recognise mixed numbers and improper fractions and convert from one form to the other  $2/5 + 4/5 = 6/5 = 1 \frac{1}{5}$

Mixed number =  $1 \frac{1}{2}$  (a whole number and a fraction)

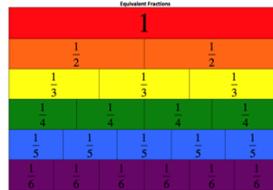
Improper fraction =  $3/2$  (a fraction with a bigger numerator)

- read, write, order and compare numbers with up to 3 decimal places for example order these numbers;

4.567 5.987 3.456 4.765 3.876

- recognise the per cent symbol (%) and understand that per cent relates to "number of parts per hundred", and write percentages as a fraction with denominator hundred, and as a decimal fraction

$75\% = \frac{75}{100} = 0.75$      $30\% = \frac{30}{100} = 0.30$



### Year 6

-add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

$1/2 + 1/8 = 5/8$

- multiply simple pairs of proper fractions, writing the answer in its simplest form

$1/4 \times 1/2 = 1/8$

- divide proper fractions by whole numbers

$1/3 \div 2 = 1/6$

- recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

For example John got 76% of the test correct, Melissa got  $4/5$  of it correct and Samah got 0.69 correct. Who had got the highest mark?

## Geometry

### Angles

To know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles. To draw and measure angles.

**Acute** angles between  $0^\circ$  and  $89^\circ$

**Obtuse** angles between  $91^\circ$  and  $179^\circ$

**Reflex** angles between  $181^\circ$  and  $360^\circ$

Angles in a triangle =  $180^\circ$

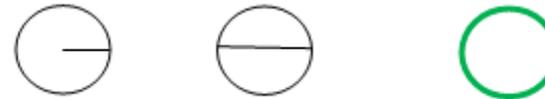
Angles in other shapes =  $360^\circ$

### Shape

**Polygons** are 2-dimensional shapes. They are made of straight lines, and the shape is "closed" (all the lines connect up). If all angles are equal and all sides are equal, then it is **regular**, otherwise it is **irregular**.

To illustrate and name parts of circles, including the radius, diameter and circumference and know that the diameter is twice the radius

Radius                  Diameter                  Circumference



## Ratio and proportion

### Year 6

To solve problems involving the calculation of percentages such as 15% of 360 and the use of percentages for comparison. Would you rather have 15% of £360 or 12% of £390?

To solve problems involving unequal sharing and grouping using knowledge of fractions and multiples.

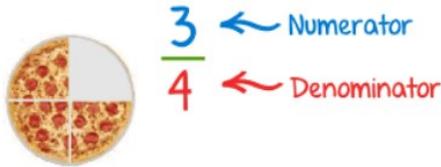
## Glossary

Difference—The result of subtracting one number from another. How much one number differs from another.

Equivalent—Having the same value.

Equivalent fractions—Fractions which have the same value, even though they may look different. Example  $1/2$  and  $2/4$  are equivalent, because they are both "half"

Fraction—Part of a whole which is made up of a numerator and a denominator.



Numerator—The top number in a fraction. It shows how many parts we have.

Denominator—The bottom number in a fraction. It shows how many equal parts the item is divided into.

Proportion—Proportion says that two ratios (or fractions) are equal.

Example:  $1/3 = 2/6$

Ratio—A ratio shows the relative sizes of two or more values.

Example: if there is 1 boy and 3 girls you could write the ratio as:

1:3 (for every one boy there are 3 girls)

$1/4$  are boys and  $3/4$  are girls

0.25 are boys (by dividing 1 by 4)

25% are boys (0.25 as a percentage)

Sum— adding two or more numbers.