St. Andrew's C E Primary and Nursery School
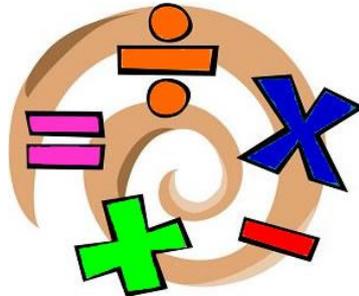
Supporting your child's progression in Maths
A Guide for Parents

Evidence has shown that, as with reading and writing, the more involved parents/ carers are in supporting their child's learning in this area, the more rapid progress they make. However, you do not need extensive mathematical knowledge to support your child/ren's learning and the support need not be repetitive sheets and booklets. It can and should be fun.

The following guide explains what your child is expected to know and understand at the end of Year 6, alongside some suggested activities which you could do to help your child towards these expectations.

The Year 6 Learner

Working mathematically

By the end of year 6, children will structure their own investigations and solve a wide variety of increasingly complex problems. They will independently develop their own lines of enquiry and be expected to prove their solutions in a variety of ways including algebra, negative proof (use a counter example to prove the rule) and be able to communicate their results using accurate mathematical language. Children will demonstrate secure knowledge and confidence to talk in depth about mathematical concepts and explain their solutions, decisions and reasoning.

Ideas to help your child achieve these expectations by the end of the school year.
- Please see the ideas in the sections below which will provide a range of opportunities to work mathematically. These are additional activities that will be beneficial alongside weekly maths homework.

Number

- **Counting and understanding numbers**

Children extend and apply their knowledge of place value for numbers up to and beyond one million (including decimals and negative numbers) in a variety of situations. Special numbers are extended to include common factors, common multiples and a deeper understanding of prime numbers. Children will be able to round numbers and identify what degree of accuracy is appropriate.

Ideas to help your child achieve these expectations by the end of the school year.
- https://www.topmarks.co.uk
- Take opportunities to read large numbers aloud in context, such as house prices and stadium capacities.
- Discussion on positive and negative numbers by reading thermometers and watching the weather report.

- **Calculating**

Children will be fluent in a wide range of mental and formal written calculation strategies for all operations, extending to long division (four digit numbers by two digit numbers) by the end of the year. They will apply estimation in a range of ways. Through investigations, they explore the effect of the order of operations including the use of brackets.

Ideas to help your child achieve these expectations by the end of the school year.

- Ensure that your child has opportunities to practice addition, subtraction, multiplication and division by regularly practising mental strategies which will feed into their written methods

- Times Tables Rockstars

- Opportunities to use money in context so that the children are able to link this to decimals

- BBC Sports Super Movers website has songs to support consolidation of your child's times tables

- **Fractions including decimals and percentages**

Children recall and using equivalences between simple fractions, decimals and percentages. Additionally, they are able to express fractions in their simplest form and calculate the decimal equivalent, for example $\frac{3}{8} = 3 \div 8 = 0.375$.

Applying this understanding of equivalent fractions, children will order, add and subtract fractions (including mixed numbers and those with different denominators) by the end of the year e.g. $\frac{1}{3} + \frac{1}{4} + \square = 1$. Using hands-on resources and images, they will multiply and divide proper fractions and mixed numbers by whole numbers e.g. $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$ and $\frac{1}{3} \div 2 = \frac{1}{6}$. Children will solve problems involving the calculation of percentages linked to real life situations.

Ideas to help your child achieve these expectations by the end of the school year.

- Encourage your child to be secure and fluent in their times tables up to 12 x 12 as this will help with many areas of fractions e.g. common denominators etc. Use of online games and resources such as Times Tables Rockstars can support this.

- Discuss fractions when real life opportunities arise such as cutting up pizzas, cakes and bars of chocolate. Discuss how these may also be expressed as a decimal and a percentage.

- When in shops look for sales and prices which have a percentage discount or offer asking your child to calculate the saving or additional amount.

Ratio and proportion

Pupils explore ratio and proportion through real life experiences such as changing the quantities in recipes (scaling), scale drawings and maps.

Ideas to help your child achieve these expectations by the end of the school year.
- Explore opportunities to discuss with your child scaling the quantities in a recipe to make larger or smaller amounts.
- Look at the scale in an atlas and on maps
- When cooking a joint of meat discuss with your child the length of time it takes to cook taking into account the weight.

Algebra

Throughout their primary experience children will have encountered algebra in a number of different situations which is drawn together and formalised in year 6. By the end of the year, they will confidently use symbols and letters to represent variables and unknowns in mathematical situations that they already understand, for example, simple formula and equivalent expressions a+b = b+a. Children will describe number sequences and missing number calculations.

Ideas to help your child achieve these expectations by the end of the school year.
- Encourage your child to identify a rule when giving them a sequence of numbers when some of them are missing.

Measurement

Through investigation and problem solving, children convert between a range of measurement units (including both imperial and metric). Calculation of perimeter and area is extended to include parallelograms and triangles. Additionally, they will explore the relationship between area and perimeter. They will know how to calculate, estimate and compare volume of cubes and cuboids identifying when it is appropriate to use formula.

Ideas to help your child achieve these expectations by the end of the school year.

- Look at road signs and discuss how road signs can be in miles or kilometres in other countries.

- Discuss the duration of programmes on television.

- Convert hours into minutes and seconds and find opportunities to read analogue and digital clocks. When cooking, calculate the length of time it takes to cook a piece of meat based on its weight.

- Look for real life examples of perimeter and area e.g. the perimeter of the fence around a garden.

- Encourage your child to be involved in reading scales e.g. when baking. Discussions can be had about imperial and metric measurements and how to convert the scale.

- Give children opportunities to calculate and handle coins when spending money.

- Consider opportunities to calculate percentage discounts in shops.

Geometry

Children will draw 2-D and build 3-D shapes with accuracy using given dimensions and angles. They will create nets of common 3-D shapes. They will consolidate their knowledge of angles within shapes and extend it to find missing angles in triangles, quadrilaterals and regular polygons. Children name parts of circles, including radius, diameter and circumference, and explore the relationships between these elements. Children will use four quadrant co-ordinate grids to describe positions, draw and translate simple shapes. Using their knowledge of the properties of shape, they will be able to predict missing co-ordinates and express these algebraically.

Ideas to help your child achieve these expectations by the end of the school year.

- Discuss shapes of 3D packaging and items around the home.

- Look at bicycle wheels and discuss the names of the parts of a circle.

- Discuss angles that can be found on clocks, wheels dartboards etc.

- Compare the number of faces, edges and vertices on household objects such as a shoebox.

- Compare number of degrees and angles on a clock face.

Statistics

Children will increase their knowledge of different data representations to include interpreting and constructing pie charts (using their knowledge of angles, fractions and percentages) and line graphs (e.g. miles to km conversion). They will know when it is appropriate to use the mean as an average and how to calculate it.

Ideas to help your child achieve these expectations by the end of the school year.

- Discuss temperatures and weather around the world if you are going on holiday.
- Look at food packaging and take the information on the nutrients from the labels and construct pie chart.