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## Curriculum overview - Maths

### Introduction:

The study of Mathematics is essential to all facets of life. As well as informing the numeracy skills required for day to day living it also strengthens important problem solving skills which can be applied to all situations. Good Mathematics skills will support a pupil's learning across the curriculum and no matter what a pupil's ability an aspiration in maths will lead to good progress throughout.

At St. Martin's we aim to promote Mathematics as not just a functional tool for working life but also as a subject that can be enjoyed and in which success can lead to immense satisfaction.

In all year groups Mathematics is taught as a series of topics based around the fundamental strands of Number, Algebra, Shape and Data Handling. These strands are often seen as separate disciplines but we encourage pupils to see connections between disparate areas of maths which in turn strengthens their understanding.

### Year 7:

In year 7 we seek to reinforce the Mathematics learned during Key Stage 2, as well as introducing new topics such as forming Algebraic expressions and understanding these expressions as functions. In Number there is a strong emphasis on fractions, percentage and proportional reasoning, in Shape topics we look at angles, area and perimeter as well as basic transformations and Handling Data focusses on the ideas behind Probability as well as basic data representation.

### Year 8:

Year 8 builds upon the mathematics taught in year 7. The topics seek to both consolidate and enrich the mathematics skills learned in the previous year. Algebra topics extend to plotting and interpreting simple functions. Shape topics now include more complicated 2D shape work via Plans, Elevations and Nets which moves into 3D shapes and work on volume. Number work continues the emphasis on proportional reasoning as well as introducing work on Ratio. In Handling Data pupils will begin to compare distributions through work on Averages and Spread.

### Year 9:

Year 9 continues to consolidate and build on previous years whilst again introducing new topics across the strands. In Algebra we begin to generate Quadratic expressions, in Shape we learn about ruler and compass constructions as well as introducing Pythagoras and Trigonometry, Number topics seek to encourage proficiency in non-calculator methods and Handling Data extends to larger data sets and how working methods need to be adapted for various ways of collecting data. In the last half term of year 9 all pupils begin their GCSE course.

### GCSE:

The curriculum for GCSE takes all the work of year's 7,8 and 9 as a starting point. There is a large body of consolidation work to ensure these prior topics are firmly embedded before we head further into fascinating topics such as advanced trigonometry, advanced mensuration, graphing of quadratic



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functions, cumulative frequency and vectors. All pupils will sit the new 9-1 qualification under Edexcel.

#### Support:

Your support in your child's mathematical development is vital to success in the subject. Ensuring they have a confident knowledge of their times tables is crucial and we would encourage using real life situations to enhance their number skills at every opportunity. For example when you're in a shop pose a money problem based on what is around you, or when organising supplies for a get together ask your child to do the relevant multiplications for you. Simple numeracy problems occur throughout daily life and asking your child to help calculate will reinforce their ability in lessons.

Having the correct tools for the job is always an essential part of life and none more so in maths lessons. We ask that you ensure your child is properly equipped with a pen, pencil, ruler, protractor and compass. Not every lesson will require specialist maths equipment but every child should be prepared for any mathematical eventuality.

Calculators are becoming more complex and advanced year on year, it is therefore vital that your child familiarises themselves with one calculator across the five years. There are many calculators on the market that are adequate for study however we recommend the Casio fx-83GT plus ([http://www.staples.co.uk/fx-83gtplus-scientific-calculator/cbs/307868.html?promoCode=300300666&Effort\\_Code=WW&Find\\_Number=307868](http://www.staples.co.uk/fx-83gtplus-scientific-calculator/cbs/307868.html?promoCode=300300666&Effort_Code=WW&Find_Number=307868)) due to its intuitive input and display. Using a mobile phone as a calculator is never a good substitute, primarily because they will not be allowed into any final examinations!

Use of the internet to study is becoming prevalent in Maths and there are a number of websites used to support your child's maths learning. In KS4 we use vle.mathswatch.com - all pupils will have their own login and work is regularly set to reinforce topics. This can be used to revise for upcoming assessments and for catch up work post assessment. In KS3 we will be trialling Mangahigh.com, an exciting website that seeks to reinforce Maths learning through games and tasks.