

Subject – Maths (KS3/GCSE Mathematics)

As identified in our recent OFSTED inspection, Mathematics is a key strength of the Campus. Much of this comes from our partnership with SPARX, an external company designing online mathematical learning software. We use the SPARX system at CEC for 60-70% of our mathematics lessons in Years 7 -10 and all pupils use it for their mathematics homework each week.

We are determined (both at Cranbrook and across the TWMAT) that all pupils will gain not only an excellent GCSE grade but a working knowledge of the real-world applications of basic numeracy. Together with SPARX we are continually designing and implementing a mathematics curriculum that deepens understanding and also fosters core logic and problem-solving skills.

All pupils will have four hours of mathematics lessons per week, and these will be delivered on a 12 week cycle model, with each cycle (term) focusing on several different topics from across the five streams of mathematics (Number, Algebra, Shape & Space, Data Handling and Rates of Change). Each cycle includes a knowledge pre-test, which is repeated at the end of the cycle as a measure of pupil progress and each cycle is summarized for pupils in the form of a knowledge organizer for use with their revision.

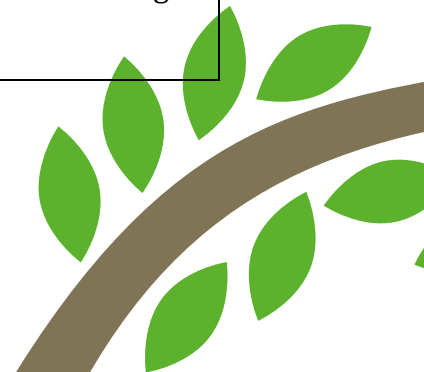
The **Key Stage 3** curriculum (Years 7 and 8) allows pupils to build on the core mathematical skills they will have been introduced to at Key Stages 1 and 2 for each of the five streams and also provide an opportunity for them to explore each stream in more detail. We place a great deal of emphasis on showing written method and learning the multiplication tables in Key Stage 3 as this creates the best foundation for GCSE level mathematics.

The **Key Stage 4** curriculum (years 9, 10 and 11) is designed to create opportunities for pupils to apply the basic skills they learned at Key Stage 3 in real life applications to solve mathematical problems. All pupils follow the GCSE Mathematics course and there is also an element of revisiting the areas covered at KS3 to consolidate their understanding of these topics. There is a strong pathway towards the GCSE exams, with lessons tailored towards exam questions and teaching pupils how best to revise for exams in the future.

Throughout both Key Stages, the SPARX software is used in place of a textbook or worksheet to provide each pupil with an individualized set of questions targeted at their specific ability. Teachers are able to see breakdowns of each pupil's areas of strength and areas they can improve and we use this data to ensure that all our pupils are working to the best of their ability and make excellent progress overall.



KS3 Maths	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 7	Number and Place Value Area and Perimeter Probability	Rounding Order of Operations Expressions and Equations Time and Timetables Metric Unit Conversions	Decimal Numbers Fractions, Decimals and Percentages Angles Constructions Averages and Diagrams	Factors Multiples and Primes Fractions Expressions, Equations and Formulae Graphs and Coordinates	Area and Perimeter Surface Area and Volume Fractions, Decimals and Percentages Ratio Probability	Polygons Constructions Sequences Questionnaires, Averages and Diagrams Graphs Transformations Scale Drawings
Year 8	Operations with Numbers Measurement with metric units Area, Perimeter, Surface Area and Volume	Expressions and Equations Sequences Questionnaires, Averages and Diagrams	Factors and Multiples Fractions, Decimals and Percentages Probability	Expressions, Equations and Formulae Straight Line Graphs Angles and Constructions	Fractions, Decimals and Percentages Ratio and Proportion Shape Properties and Pythagoras	Time and Timetables Real-Life Graphs Transformations Scale Drawings



KS4 Maths	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 9	Rounding, Estimating & Calculating Roots, Indices and Standard Form	Expressions and Equations 2D and 3D Shapes Fractions	Decimals and Percentages Probability	Sequences Straight Line Graphs Angle and Shape Properties	Constructions and Loci Collecting and Presenting Data	Indices, Surds and Prime Factors Right Angled Triangles
Year 10	Equations, Inequalities and Formulae Ratio, Proportion and Scale Drawings	Venn and Tree Diagrams Measures and Real-Life Graphs Vectors, Transformations and Congruence	Quadratics and Simultaneous Equations Circles, Cylinders, Cones and Spheres	Averages and Statistical Diagrams Triangles and Construction	Circle Geometry Proportion	Growth and Decay Non-Linear Graphs
Year 11	Teacher-led bespoke Scheme of Learning designed to target either Grade 3, 5 or 7 at GCSE.			Pupil-led Revision Scheme of Learning, Past paper Practise and Exams.		

