Key Stage: 3 – Year 7 Sets 1, Year 8 Sets 1, 2

Subject: Mathematics

RIPLEY ST THOMAS
A CHURCH OF ENGLAND ACADEMY

Aims of the subject:

We aim to develop the full potential of every pupil in Mathematics. We aim to ensure that every pupil experiences success and enjoyment in the subject whether it be equipping them with sufficient Mathematics skills for their day to day life or providing them with a firm foundation for those wishing to pursue Mathematics beyond GCSE. In addition, we hope that we can open our young people's eyes to the creative, imaginative and inspiring world of Mathematics.

The Mathematics scheme of learning is divided into units of study consisting of interlinking skills and topics. For each unit of study, pupils will complete a 'common homework', a spelling test and a mini assessment. The 'common homework' will be completed by all the students following this scheme of learning and may take the form of a written task or an online task using vlemathswatch or ActiveLearn. In addition to the common homework, pupils will receive homework set by their class teacher. The mini assessment will provide an opportunity for pupils to demonstrate their ability to recall basic information or perform simple procedures, apply their mathematical understanding to problem solving and contextual problems and to recall information studied in previous units of work.

Year 7

		What will I learn?	What will I do?
Term 1	Unit 1	• identify square numbers, cube numbers and their associated roots • calculate higher powers (2, 3, 4 and 5) of a number • write a number as a product of prime factors • calculate the LCM and HCF of two numbers • use BIDMAS to work out calculations involving more than one operation • add, subtract, multiply and divide decimals • round numbers to a given number of decimal places or significant figures • estimate calculations	Common Homework Multiple Choice Quiz

	Unit 2	• substitute positive and negative values into a formula • draw a linear graph by completing a table of values • interpret and plot a linear graph from a real life problem • write an algebraic formula for a rule given in words • generate a sequence or specific terms using the nth term • find the nth term of an arithmetic sequence • describe how a sequence continues • recognise different types of sequences e.g. triangular, square, cube, Fibonacci-type sequences, geometric sequences	Common Homework Multiple Choice Quiz
Term 2	Unit 3	• calculate the sum of interior angles in a polygon and use to find missing angles • use the sum of exterior angles of a polygon and use to find missing angles or the number of sides • calculate the area and perimeter of composite shapes • calculate the area of a trapezium • calculate the volume and surface area of a prism • convert between metric and imperial units • describe the number of faces, edges and vertices of 3D shapes	Common Homework Multiple Choice Quiz
	Unit 4	• describe types of data • design a questionnaire and data collection tables • construct a dual bar chart and composite bar chart • construct a frequency polygon • interpret and construct a stem and lead diagram • calculate the mean, median, mode and range from a set of data • compare two sets of data • recognise and name different types of correlation • draw a scatter graph and draw a line of best fit to estimate values	Common Homework Multiple Choice Quiz

Term 3	Unit 5	• add and subtract fractions • multiply fractions • divide fractions • convert between equivalent fractions, decimals and percentages • calculate the percentage of an amount with and without a calculator • work out a percentage increase/decrease • calculate the percentage change between two values • work out the original value of an item following a percentage increase/decrease	Common Homework Multiple Choice Quiz
	Unit 6	• write a ratio in the form 1:n or n:1 • interpret a ratio using fractions • divide a given quantity into two or more parts • solve real life ratio problems • work out values that vary in direct proportion • work out values that vary inversely • solve best buy problems • use maps and scale drawings • construct a scale drawing	Common Homework Multiple Choice Quiz
	Unit 7	• identify expressions, terms, equations and formulae • simplify an algebraic expression by using the multiplication and division laws of indices • expand and simplify a linear bracket • factorise an algebraic expressions • solve linear equations (including equations involving brackets)	Common Homework Multiple Choice Quiz

Note on Assessment: Pupils will sit an end of term assessment at the end of each term. This will assess the topics that have been covered within the term.

Year 8

		What will I learn?	What will I do?
Term 1	Unit 1	• find the equation of a line from a graph including finding the gradient and y-intercept • find the equation of a line through two given points or through one point with a given gradient • draw graphs of any linear function • algebraically show whether two lines are parallel or not • plot a graph representing a real-life problem from information given in words, a table or as a formula • interpret linear graphs representing real-life problems • plot and interpret distance-time and other piece-wise linear graphs	Common Homework Multiple Choice Quiz
	Unit 2	• solve problems involving direct and inverse proportion using graphical and algebraic methods • complete a table of values for a quadratic function and plot the graph of a quadratic function • estimate values of y for a given value of x (and vice versa) using a quadratic graph • draw and interpret non-linear graphs which represent real-life situations • form and solve linear equations (with 'x' on both sides) • understand the words; expression, term, equation, factor, and formulae	Common Homework Multiple Choice Quiz
	Unit 3	• convert between ordinary numbers and standard form • solve simple equations involving numbers written in standard form • solve problems involving standard form both with and without a calculator • calculate using index numbers including negative index numbers • use compound units such as speed, density and pressure to solve problems • change between related units (e.g. km/h to m/s)	Common Homework Multiple Choice Quiz

Term 2	Unit 4	• calculate probabilities of single events • list the outcomes for two events in a systematic way (lists or sample space diagrams) and use this to calculate probabilities • construct, understand and use Venn diagrams • use Venn diagrams and set notation to solve problems involving probability • design, use and complete two-way tables • understand the differences between theoretical probability and relative frequency • use relative frequency to estimate probabilities • complete and use a frequency tree	Common Homework Multiple Choice Quiz
	Unit 5	• describe and transform shapes using rotations, reflections, translation and enlargements • identify the scale factor of enlargement as the ratio of the lengths of two corresponding sides • using a ruler and compasses construct; an equilateral triangle, a perpendicular bisector, perpendicular at a point or from a point, and an angle bisector • draw circles or part circles when given radius or diameter • use constructions to solve loci problems • use, measure and draw bearings	Common Homework Multiple Choice Quiz
Term 3	Unit 6	• apply Pythagoras' Theorem to solve problems • understand the vocabulary; radius, diameter, circumference, chord, sector, segment, tangent, and arc • recall and use the formula for the circumference of a circle • recall and use the formula for the area of a circle • calculate the area and perimeter of semi-circles, quarter circles or other fractions of a circle • recall and use the formula for volume and surface area of a cylinder	Common Homework Multiple Choice Quiz
	Unit 7	• interpret and construct frequency tables and bar charts • interpret and construct pie charts • describe, interpret and compare data using mean, median, mode and range • calculate the mean, median, mode and range from an ungrouped frequency table • plot and interpret time-series graphs	Common Homework Multiple Choice Quiz

Note on Assessment: Pupils will sit an end of term assessment at the end of each term. This will assess the topics that have been covered within the term.

Extra-curricular opportunities

- UKMT Junior Maths Challenge

How you can support your child's progress

- Practise mental maths skills i.e. addition, subtraction, multiplication and division
- Encourage your child to use NRich.co.uk to access 'rich tasks'
- Encourage students to check their homework/classwork and do correction in green pen