Learning to believe. Learning to succeed

Subject:- Mathematics
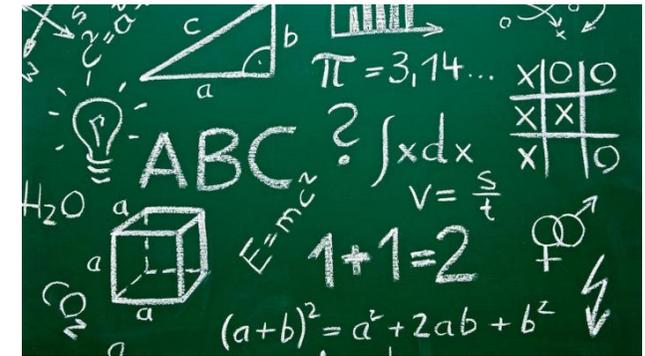
Head of Department:- Mrs C Roche

Teachers in this department:- Miss A Lo-Pon, Mr R Standen, Mr P Hubble, Ms J Wang, Mr D Harding

Year 7 overview

In terms 1 and 2 students work on their number skills; these are the core skills needed to access the curriculum. Once students have mastered these skills, they will transfer them to problems involving shapes and angles. During terms 4 and 5 students will tackle algebra topics where number and will be built upon. Term 6 introduces data and interpretation of different types of data as well as a revisit to number to prepare students for the year 8 curriculum.

Terms 1, 2 and 3	Term 4, 5 & 6
Students focus on number and the basic 4 operations including prime numbers and negative numbers. Students use the 4 operations with fractions and then move on to percentages and converting between FDP. Students investigate shape including perimeter and area of 2D shapes followed by perpendicular and parallel lines.	Students begin by moving to algebra, including substitution, solving equations, and expanding brackets. Ratio and proportion including dividing into a simple ratio with 2 or more parts subsequently investigating ratio problems. Students explore data and interpret data including bar charts, pie charts and line charts including finding averages of different data sets.

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Year 8 overview

Building on the knowledge and skills mastered in year 7 students further develop their numeracy skills and understanding of number in terms 1 and 2. During term 3 and 4 students apply their number skills to angle and shape. Then moving to more challenging algebra problems. Term 5 sees a focus on proportional reasoning and solving problems using compound units. Term 6 focuses back on number to prepare students for the year 9 curriculum.

Term 1 and 2	Term 3 & 4	Term 4 and 5
Students heavily focus on negative numbers and the 4 operations with negative numbers, and explore HCF and LCM. Students study fractions, decimals and percentages and build upon last year by converting between them using more complex numbers.	Students examine angle facts and 2D shapes including compound shapes and circles. Students move to algebra and solve linear equations as well as simplifying and collecting terms then apply algebra to similar shapes and congruence.	Students begin with dividing ratios and then apply this to real life content, often involving money and recipes, students incorporate compound units and problem solving involving proportion. Students revisit number topics and incorporate estimation and more complex calculating with negative numbers as well as prime numbers and prime factorisation.

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Year 9 overview

In year 9 students consolidate their knowledge from year 7 and 8 and begin to further their understanding in preparation for GCSE in year 10. Term 1 sees a focus on fractions decimals and percentages in addition to negative numbers. Term 2 extends number work and investigates ratio as well as direct and inverse proportion problems. Term 3 and 4 students consolidate extend their understanding of algebra and are introduced to problem solving in algebra, algebraic graphs and sequences. Term 5 and 6 investigate the more complex topic of circles and space moving on to GCSE number topic 1 in term 6.

Term 1-2	Term 3-4	Term 5-6
Students recap the four operations with fractions and well as converting between FDP before investigating standard form and indices. Compound interest and depreciation is investigated as well as reverse percentages and writing ratios as fractions.	Students form and solve equation prior to changing the subject to formulas. Some students will solve simultaneous equations and move to algebraic proof. Sequences and graphs follows algebra including finding the equation of a line and drawing quadratic and cubic functions.	Students are introduced to circles including; key terminology of circles, finding the area of circles and arc lengths and sector areas. Students will finally move onto their first GCSE topic of number; this includes a range of number topics including some work with surds.

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Year 10-11 overview

Year 10 will begin with the first topics of GCSE covering; number, algebra, graphs tables and charts and angles and trigonometry. Students continue to work through the GCSE mathematics curriculum through to year 11 where the final two terms will be dedicated to revising topics specific to each classes needs. Students sit GCSE assessments at the end of each unit which exposes them to GCSE questions and allows them to prepare for GCSE examination conditions, these assessments are used to form a list of revision topics given to each student.

Year 10	Year 11
• Number • Algebra • Graphs, tables and charts • Fractions and percentages • Equations, inequalities and sequences, • Angles • Averages and range • Transformations • Ratio and proportion • Triangles and similarity • Trigonometry • Perimeter area and volume	• Further statistics • Circle theorems • Quadratic equations and graphs • Vectors and geometric proof • Proportion and graphs