Year 9 Autumn Term Maths Curriculum

Students in Year 9 study different content dependent upon their class. The classes will spend approximately two weeks studying each topic.

Mr Bees, Mr Storey Scott		Mr Ahluwalia/Mr Hammond, Miss Robinson/Mr Hammond		Mrs Joseph, Mr McClusky	
Mental methods for calculations	Students are given opportunity to develop their number sense and develop mental strategies for problems involving addition, subtraction, multiplication, division, decimals and fractions.	Rounding and approximation	After revisiting the skill of rounding, students are introduced to how to round both small and large numbers to significant figures and how this skill can be used to approximate calculations.	Quadratic expressions	Quadratic expressions are introduced using algebra tiles, before students use these to develop an understanding of factorising. Finally, students look at how graphs of quadratics link to equations.
Powers and order of operation	Understanding of squares and cubes is built upon with students looking at other powers. Then after revisiting written methods for multiplication and division, order of operations is then considered.	Formulae	Students write und use a variety of formulae in context before looking at the technique of changing the subject of a formula. The formal method of trial and improvement is also introduced.	Simultaneous equations	After revisiting the process of drawing a linear graph from its equation students use these to solve simultaneous equations graphically. They then look at the algebraic approach of elimination.
Directed numbers	Building upon previous work on negative numbers, students look at using number lines to solve problems and how to perform operations with combinations of positive and negative numbers.	Ratio and proportion	Understanding of ratio is built upon with students linking this to proportion problems. Direct proportion problems are then studied with 'best value' problems being a focus.	Indices and standard form	Students are introduced to the indices laws which they use to simplify expressions and develop an understanding of negative powers. This is followed by looking at standard form.
Fractions, decimals and percentages	Students continue to build fluency with converting between fractions, decimals and percentages before looking at problems involving percentages and fractions of amounts.	Percentage change	Students look at how multipliers can be used to increase/decrease a quantity by a percentage. This skill is then used to solve compound percentage problems and calculate percentage change.	Linear inequalities	Students look t how inequalities can be represented on number lines before looking at the technique of solving inequalities including those with multiple parts.
Place value	Students look at at where decimals are positioned on number lines, how to round to decimal places and how to solve multiplication and division problems involving large numbers.	Straight line graphs	Using an investigational approach, students look at how linear graphs are linked to equations in the form of $y = mx + c$. They also look at how to calculate gradients of line segments.	Quadratic equations	Building upon earlier work on quadratics students are taught the techniques of solving quadratic equations by factorising, using the quadratic formula and graphically.
Maths and money	Scenarios involving bills, bank statements, VAT, simple interest, wages and unit prices are looked at by students making use of various computational skills.	Maps, bearings, constructions and loci	Students look at how to interpret scales on maps and use bearings. They then look at the various construction techniques, before using these to solve loci problems.	Direct and inverse proportion	After developing an understanding of inverse proportion students are shown the method for expressing proportional relationships algebraically and solve associated problems.

After completing each topic students complete an assessed homework task which is recorded in the front of their yellow assessment books.

Students will also sit short two short tests this term. These are provisionally planned in the weeks beginning 18th October and 13th December. These tests feature 15 marks of questions on each topic they have studied in the half term. Students record their results of all tests in the back of their yellow assessment books.