

Year 10 Autumn Term Maths Curriculum

Students in Year 10 study different content dependent upon their class. The classes will spend approximately two weeks studying each topic.

Mr Hammond, Mr McClusky, Miss Robinson		Mr Storey Scott		Mr Bullock, Mrs Joseph	
Algebraic expressions and equations	Students continue to build fluency with manipulating and simplifying algebraic expressions. They then are taught methods for solving two step algebraic equations.	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.	Rational and irrational numbers	After being introduced to the definition of irrational numbers students are taught what a surd is and how to solve problems involving simplify, adding, subtracting and multiplying them.
Fractions, decimals and percentages	After looking at different representations of fractions, students continue to build fluency with converting between fractions, decimals and percentages and look at finding percentages of amounts.	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.	Completing the square	After reviewing previous work on quadratics, students are shown how a quadratic can be written in 'completed square form' and how this equation links to its graph
Angles	After revisiting and consolidating angle rules involving straight lines, around a point and in a triangle, students are taught to solve angle problems involving any sided polygons.	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.	Circle theorems	Using an investigational style approach, students look at how the angles created by drawing chords, tangents, diameters and radii onto circles are linked.
Negatives and rounding	Making use of number lines students build fluency in performing calculations with negative numbers. They then look at how to round to decimal places and significant figures.	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.	Kinematics	Building on understanding of motion graphs students derive constant acceleration formulae which they are then shown how to use to solve kinematic problems.
Fractions	Students look at how improper fractions and mixed numbers can be used to represent numbers greater than a whole. They then look at how to add, subtract, multiply and divide these numbers.	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.	Probability diagrams and conditional probability	Students spend time looking at the different diagrams which can used to solve probability questions before going on to solve problems involving conditional probability.
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.	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.	Algebraic fractions	Firstly students are taught how to simplify algebraic fractions before looking at problems involving operations and algebraic fractions.

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.