

KS4 Curriculum overview: Subject Maths Year 10 & 11

All students in Belmont Park study a variety of maths topics

	Year 10		Year 11
Autumn 1	<p>Whole Numbers and Decimals:</p> <ul style="list-style-type: none"> - Integers - Understanding of BIDMAS - Factors and multiples - Powers and Roots - Ratio <p>Students to be able to use all 4 operations and methods to a confident degree to be able to delve into multiple stage questions.</p> <p>To revise via doddle e-learning tasks and use of Maths Watch programme.</p> <p>SMSC- Bidmas uses a system of order, why is order important in real life? What would be the problems of not having order?</p>		<p>Whole Numbers and Decimals:</p> <ul style="list-style-type: none"> - HCF and LCM - Power and Roots - Problem solving - Ratio and proportion - Standard form <p>Students to break down 2-3 stage questions and find the sums asked of them and solve appropriately using column or bus stop method without remainders.</p> <p>To revise via doddle e-learning tasks and use of Maths Watch programme.</p> <p>SMSC- Ratio involves sharing. Why do some businesses not share their money out evenly? Why is it important that others get more or do you disagree?</p>
Autumn 2	<p>Measures, Perimeter and Area:</p> <ul style="list-style-type: none"> - Use area formulae for rectangle, triangle, parallelogram and trapezium - Work surface area of 3-D shapes - Calculate volume using $V = l \times w \times h$ - Calculate volume using cross-section x length - Metric, imperial units 		<p>Measures, Perimeter and Area:</p> <ul style="list-style-type: none"> - Circle and cylinders - 3-D shapes (Draw using isometric grid) - Quadrilaterals and other Polygons - Surface area of 3-D shapes - Compound units

	<p>Students to be able to convert between different measurements and to be able to calculate the area and perimeter.</p> <p>To revise via doddle e-learning tasks and use of Maths Watch programme.</p> <p>SMSC- Surface area is an important calculation in day to day living. Using maths why is it important? Prove by calculating area, perimeter or volume of an edible product.</p>		<p>Students to be able to work out perimeter and area to solve problems with 3-D shapes. To work out the area of a circle following formulas.</p> <p>To revise via doddle e-learning tasks and use of Maths Watch programme.</p> <p>SMSC- There is many 3D shapes in sport why is it important that maths is applied when it comes to the design of sports equipment?</p>
	Year 10		Year 11
Spring 1	<p>Number and Algebra:</p> <ul style="list-style-type: none"> - Introduction to algebra - Linear graphs - Algebra manipulation - Solving linear equations and inequalities - Patterns and sequences <p>Students to be able to solve basic algebra vis collecting like terms. To be able to add/ subtract/multiply and divide fractions.</p> <p>To revise via doddle e-learning / GCSE Bitesize and Maths Watch programme.</p> <p>SMSC- Why is it important that people understand patterns and sequences how can it help you in real world situations?</p>		<p>Number and Algebra:</p> <ul style="list-style-type: none"> - Formulae- expressions- equations - Coordinates and linear graphs - Equations and inequalities - Quadratic equations and graphs - Simultaneous equations <p>Students to solve algebraic equations and to be able to plot an algebraic expression on a graph.</p> <p>To revise via doddle e-learning / GCSE Bitesize and Maths Watch programme.</p> <p>SMSC- Using a computer for research why is algebra important? Where is it applied in real life? What professions require you to learn algebra?</p>

Spring 2	<p>Geometry and Measure –Angles</p> <ul style="list-style-type: none"> - 3-D shapes, symmetry and similarity - Shapes, lines and angles - Quadrilaterals and polygons - Circles and cylinders - Constructions, loci, similarity and congruency <p>Students to be able to solve interior and exterior angles of a shape and to accurately construct a desired shape.</p> <p>To revise via doddle e-learning tasks and use of Maths Watch programme.</p> <p>SMSC- If you had a big room all to yourself what kind of things would you want in your room? Draw a plan of your desired room using the appropriate maths equipment.</p>		<p>Geometry - Angles and trigonometry</p> <ul style="list-style-type: none"> - Pythagoras’s theorem - Trigonometry - Constructions, loci - Circle theorem - Transformations <p>Students to be able to solve interior and exterior angles of a shape including shapes with unknown variables. To be able to plot on the graph where Y intercepts.</p> <p>To revise via doddle e-learning tasks and use of Maths Watch programme.</p> <p>SMSC- What is Pythagoras used for, why is it important? Using a computer research reasons as to why trigonometry and Pythagoras are used in real life.</p>
	Year 10		Year 11
Summer 1	<p>Statistics- Probability- transformations</p> <ul style="list-style-type: none"> - Bar charts/ pie charts - Calculating averages - Averages from grouped data - Probability - transformations <p>Students to be able to use a protractor to draw a pie chart and to be able to calculate various averages including mean mode and median.</p>		<p>Statistics- Probability</p> <ul style="list-style-type: none"> - Averages of grouped data - Maps and scale drawings - Bearings - Venn diagram - Probability 1 and 2 <p>Students to be able to calculate averages. To draw a basic map to scale and follow instructions to draw a plan for a garden.</p>

	<p>To revise via doddle e-learning tasks and use of Maths Watch programme.</p> <p>SMSC- Complete a survey of favourite pastimes and draw a graph/ pie chart to show what is the most popular in the class or school.</p>		<p>To revise via doddle e-learning tasks and use of Maths Watch programme.</p> <p>SMSC- Why is bearing used can you draw a map of the school and give instructions for a classmate to find the hidden object?</p>
Summer 2	<p>Numbers and geometry</p> <ul style="list-style-type: none"> - Best buys - 3-D shapes, nets, plans - Pythagoras's Theorem - Trigonometry - Vectors <p>To revise via doddle e-learning tasks and use of Maths Watch programme.</p> <p>Students to be able use the unitary method to solve ratio and to be introduced to advance maths topics to further their understanding and progress.</p> <p>SMSC- Best buy indicates that you get value for money why is this an important life skill?</p>		<p>Revisions</p> <p>To revise via doddle e-learning tasks, GCSE Bitesize and use of Maths Watch programme.</p> <p>Students to revise on topics they feel they need assistance on most.</p> <p>Past papers Exam technique</p> <p>Maths club and self study opportunities as well as guided in class.</p>