



Eastbrook School

KS3 Curriculum Summary – Mathematics

The information below gives an overview of the topics that your child will be studying in mathematics during years 7 and 8. It also outlines how you can support your child to enrich and extend their learning outside of school.

Year 7 PI E3/B3/B4		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Analysing and displaying data <ul style="list-style-type: none"> • Tables and pictograms • Bar charts • Grouped data • Mode and modal • Range and median • Mean Calculating <ul style="list-style-type: none"> • Adding • Subtracting • Multiplying • Dividing • Multiplying and dividing by 10, 100 and 1000 • Using the four operations • Positive and negative numbers Expressions, Functions and Formulae Graphs	Factors and multiples Decimals and measures Angles and Lines	Measuring and Shapes Fractions, decimals and percentages Transformations
Year 7 THETA		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Number <ul style="list-style-type: none"> • Calculations • Calculating with negative integers • Powers and roots • Powers, roots and brackets • Substituting into expressions • Multiples and factors Area and volume <ul style="list-style-type: none"> • Area of a triangle • Area of a parallelogram and trapezium • Volume of cubes and cuboids • 3D shapes • Surface area of cubes and cuboids • Problems and measures 		

Year 7 DELTA E1/B1		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Analysing and displaying data <ul style="list-style-type: none"> • Two way tables and bar charts • Averages and ranges • Grouped data • More graphs • Pie charts • Scatter graphs and correlation • Data collection Number Skills <ul style="list-style-type: none"> • Factors, primes and multiples • Negative numbers • Multiplying and dividing • Squares and square roots • More powers and roots • Calculations 	Fractions Probability Decimals and ratio Lines and angles	
Year 8 PI E3/B3/B4		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Number properties and calculations <ul style="list-style-type: none"> • Adding and subtracting with larger numbers • More calculations • Negative numbers • Writing ratios • Using ratios to solve problems • Multiplicative reasoning Shapes and measures in 3D <ul style="list-style-type: none"> • 3D solids • Nets of 3D solids • Surface area • Volume • Working with measures Statistics Expressions and equations	Decimal calculations Angles Number properties	Sequences Fractions and percentages Probability
Year 8 THETA E2/B2		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Number <ul style="list-style-type: none"> • Calculations • Calculating with negative integers • Powers and roots • Powers, roots and brackets • Substituting into expressions • Multiples and factors Area and volume <ul style="list-style-type: none"> • Area of a triangle 		

<ul style="list-style-type: none"> • Area of a parallelogram and trapezium • Volume of cubes and cuboids • 3D shapes • Surface area of cubes and cuboids • Problems and measures 		
Year 8 DELTA E1/B1		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
<p>Factors and powers</p> <ul style="list-style-type: none"> • Prime factor decomposition • Laws of indices • Powers of 10 • Calculating and estimating <p>Working with powers</p> <ul style="list-style-type: none"> • Simplifying expressions • More simplifying • Expanding and simplifying • Substituting and solving 		
Useful websites		
<p>www.mymaths.co.uk https://vle.mathswatch.co.uk/vle/ https://www.bbc.com/bitesize/subjects http://www.bbc.co.uk/skillswise/maths http://www.bbc.co.uk/worldservice/sci_tech/features/figure_it_out</p>		
Other ways to support learning		
<p>Maths is a very important subject. Employers and further education establishments are looking for top GCSE grades which show competency in Maths. It is also a subject which many adults claim to have found difficult as a child. You can still support your child by:</p> <ul style="list-style-type: none"> • Trying to avoid passing on any concerns you had with maths onto your child. • Asking your child to explain to you/teach you what they have been doing. This will often further their understanding • Encouraging them to learn their times tables, if they have not already done so, and practise these with your child • Improving your child's mental Maths by doing quick questions when, for example, shopping, buying petrol, doing DIY, etc • Investing in a revision guide. The Maths department do sell suitable revision guides at a reduced cost of £3.50 and these can be purchased from the Head of Department • Whenever possible use examples and materials that show children the relevant applications of their maths learning in their everyday lives eg. handling and calculating money, weighing and measuring, checking timetables, looking for patterns, sequences and shapes. • The ability to solve maths problems which are presented as written problems is influenced by reading ability and the ability to infer from text so practising reading skills is just as important in maths. • Visual supports for learning about number include written numerals, number squares, times tables, calendars, and the computer. • Sudoku and other number puzzles are a good way to practice math. • There are countless educational math apps on the market today that are visually stimulating enough spark an interest in math for students. These apps help students explore math concepts at their own pace. It does not only challenges students, but engages them as well. 		



Eastbrook School

KS 4 Curriculum Summary – Mathematics

The information below gives an overview of the topics that your child will be studying in mathematics during years 9, 10 and 11. It also outlines how you can support your child to enrich and extend their learning outside of school.

Year 9 FOUNDATION		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Numbers <ul style="list-style-type: none"> Integers and place value Decimals Indices, powers and roots Factors, multiples and primes Algebra <ul style="list-style-type: none"> Algebra: the basics Expanding and factorising single brackets Expression and substitution into formulae 	Data <ul style="list-style-type: none"> Tables Charts and graphs Pie charts Scatter graphs Numbers <ul style="list-style-type: none"> Fractions Fractions, decimals and percentages Percentages 	Data <ul style="list-style-type: none"> Statistics and questionnaires The averages Angles <ul style="list-style-type: none"> Angles, lines and symmetry Polygons and parallel lines Interior and exterior angles of polygons Algebra <ul style="list-style-type: none"> Equations Inequalities Sequences

Year 9 HIGHER		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Numbers <ul style="list-style-type: none"> Calculations, checking and rounding Indices, roots, reciprocals and hierarchy of operations Factors, multiples and primes Standard form and surds Algebra <ul style="list-style-type: none"> Algebra: the basics Sequences Setting up, rearranging and solving equations 	Data Handling <ul style="list-style-type: none"> Averages and ranges Representing and interpreting data Scatter graphs Numbers <ul style="list-style-type: none"> Fractions Percentages Ratio and proportion 	Shapes <ul style="list-style-type: none"> Polygons, angles and parallel lines Pythagoras' Theorem and trigonometry Graphs <ul style="list-style-type: none"> Graphs: the basics and real life graphs Linear graphs and coordinate geometry Quadratic, cubic and other graphs

Year 10 FOUNDATION		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Algebra <ul style="list-style-type: none"> Equations Inequalities Sequences Shapes <ul style="list-style-type: none"> Perimeter and area 3D forms and volume 	Graphs <ul style="list-style-type: none"> Real-life graphs Straight-line graphs Shapes <ul style="list-style-type: none"> Transformations I: rotations and translations Transformations II: reflections and enlargements 	Ratio <ul style="list-style-type: none"> Ratio Proportion Shapes <ul style="list-style-type: none"> Right-angled triangles: Pythagoras and trigonometry Probability <ul style="list-style-type: none"> Probability I Probability II

Year 10 HIGHER		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Shapes and Accuracy <ul style="list-style-type: none"> Perimeter, area and 3D forms Circles, cylinders, cones and spheres Accuracy and bounds Shapes <ul style="list-style-type: none"> Transformations Constructions, loci and bearings 	Algebra <ul style="list-style-type: none"> Solving quadratic and simultaneous equations Inequalities Probability <ul style="list-style-type: none"> Probability Numbers <ul style="list-style-type: none"> Multiplicative reasoning 	Shapes <ul style="list-style-type: none"> Similarity and congruence in 2D and 3D Trigonometry <ul style="list-style-type: none"> Graphs of trigonometric functions Further trigonometric Data Handling <ul style="list-style-type: none"> Collecting data Cumulative frequency, box plots and histograms

Year 11 FOUNDATION		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Measures <ul style="list-style-type: none"> Multiplicative Shapes <ul style="list-style-type: none"> Plans, elevations and nets Constructions, loci and bearings Circles, cylinders, cones and spheres Algebra <ul style="list-style-type: none"> Quadratic equations: expanding and factorising Quadratic equations: graphs Numbers <ul style="list-style-type: none"> Fractions and reciprocals Indices and standard form 	Shapes <ul style="list-style-type: none"> Similarity and congruence in 2D Vectors Algebra <ul style="list-style-type: none"> Rearranging equations, graphs of cubic and reciprocal functions and simultaneous equations 	REVISION FOR GCSE EXAM

Year 11 HIGHER		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Algebra <ul style="list-style-type: none"> Quadratics, expanding more than two brackets, sketching graphs, graphs of circles, cubes and quadratics Changing the subject of formulae (more complex), algebraic fractions, solving equations arising from algebraic fractions, rationalising surds, proof Circle <ul style="list-style-type: none"> Circle theorems Circle geometry Shapes <ul style="list-style-type: none"> Vectors and geometric proof 	Graphs and Proportionality <ul style="list-style-type: none"> Reciprocal and exponential graphs; gradient and area under graphs Direct and inverse proportion 	REVIEW AND REVISION FOR GCSE EXAM

Useful websites

www.mymaths.co.uk

<https://vle.mathswatch.co.uk/vle/>

<https://www.bbc.com/bitesize/subjects/>

<http://www.bbc.co.uk/skillswise/math>

http://www.bbc.co.uk/worldservice/sci_tech/features/figure_it_out

Other ways to support learning

Maths is a very important subject. Employers and further education establishments are looking for top GCSE grades which show competency in Maths. It is also a subject which many adults claim to have found difficult as a child. You can still support your child by:

- Trying to avoid passing on any concerns you had with maths onto your child.
- Asking your child to explain to you/teach you what they have been doing. This will often further their understanding
- Encouraging them to learn their times tables, if they have not already done so, and practise these with your child
- Improving your child's mental Maths by doing quick questions when, for example, shopping, buying petrol, doing DIY, etc
- Investing in a revision guide. The Maths department do sell suitable revision guides at a reduced cost of £3.50 and these can be purchased from the Head of Department
- Whenever possible use examples and materials that show children the relevant applications of their maths learning in their everyday lives eg. handling and calculating money, weighing and measuring, checking timetables, looking for patterns, sequences and shapes.
- The ability to solve maths problems which are presented as written problems is influenced by reading ability and the ability to infer from text so practising reading skills is just as important in maths.
- Visual supports for learning about number include written numerals, number squares, times tables, calendars, and the computer.
- Sudoku and other number puzzles are a good way to practice math.
- There are countless educational math apps on the market today that are visually stimulating enough spark an interest in math for students. These apps help students explore math concepts at their own pace. It does not only challenges students, but engages them as well.



KS 5 Curriculum Summary – Mathematics

The information below gives an overview of the topics that your child will be studying in mathematics during years 12 and 13. It also outlines how you can support your child to enrich and extend their learning outside of school.

Year 12		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Pure content <ul style="list-style-type: none"> Algebra and functions Coordinate geometry Further algebra Trigonometry Vectors Integration Exponential and Logarithms 	Statistics content <ul style="list-style-type: none"> Statistical sampling Data presentation and interpretation Probability Statistical distribution Statistical hypothesis Mechanics content <ul style="list-style-type: none"> Quantities and SI units Kinematics (constant acceleration) Forces & Newton's Laws Kinematics 2 (variable acceleration) 	Pure content <ul style="list-style-type: none"> Proof Algebraic and partial fractions Functions and modelling Series and sequences The binomial expansion Trigonometry Parametric equations Differentiation Numerical methods Integration 1 & 2 Vectors 3D
Year 13		
Autumn term	Spring term	Summer term
Topics and themes	Topics and themes	Topics and themes
Mechanics content <ul style="list-style-type: none"> Moments Forces at any angle Application of kinematics Application of forces Further kinematics Statistics Content <ul style="list-style-type: none"> Regression and correlation Probability The Normal Distribution 	REVIEW AND REVISION FOR A-LEVEL EXAM	
Useful websites		
www.pearsonactivelearn.com https://vle.mathswatch.co.uk/vle/ www.mymaths.co.uk		
Other ways to support learning		
<ul style="list-style-type: none"> Invest in a revision guide. The Maths department do sell suitable revision guides at less than retail price and these can be purchased from the Head of Department. Ensure that your child is revising regularly and effectively. Assist with research into future topics Ask them to explain to you what they have learnt in class and to talk you through how to answer an exam question in order to gain maximum marks 		