Curriculum Overview: *Mathematics*

Key Stage 3 (Years 7, 8 and 9)

Year 7		
Topics studied:		
Term (1)	Term (2)	Term (3)
- Sequences - Functions - Decimals – ordering and rounding - Negative numbers - Multiples, factors and primes - Patterns, squares and roots - Adding and subtracting - Length and perimeter - Area - Order of operations - Using a calculator - Fractions and decimals - Percentages - Working with data - Representing data - Chance and probability - Formulae - Functions and equations	- Angles - Lines, Shapes and coordinates - Surveys and experiments - Experiments and probability - Mental methods - Written methods for multiplying and dividing - Using a calculator (2) - Expressions and equations - Functions and mappings - Measures - Triangles - Nets and solid shapes - Representing 3-D shapes - Fractions and percentages of amounts - Ratio and proportion - Adding and subtracting fractions	- Functions and graphs - Using graphs - Reflection - Rotation - Translation - Comparing data - Using statistics - Fractions and integers - Direct Proportion - Deriving expressions and formulae - Using equations - Graphs of real-life situations - Symmetry and transformations - Solving geometrical problems.

Year 8		
Topics studied:		
Term (1)	Term (2)	Term (3)
• Integers • Powers and roots • Multiples, factors and primes • Generating sequences • Describing sequences • Angles • Lines, shapes and coordinates • Constructions (1) • Chance and probability • Probability • Experimental probability • Fractions and decimals • Calculations with fractions • Percentages • Mental methods (1)	• Simplifying expressions • Using equations • Formulae • Area • Volume • Plans and elevations • Units of measurement • Functions • Functions and mappings • Functions and graphs • Place value, ordering and rounding • Mental methods (2) • Written methods • Using calculator • Congruence • Reflection, rotation and translation • Enlargement	• Surveys • Analysing data (1) • Representing data • Interpreting data • Order of operations • Checking • Ratios • Graphs of real-life situations • Formulae and expressions • Using graphs • Scale drawing • Constructions (2) • Loci • Bearings • Collecting data • Analysing data (2) • Comparing distributions
Year 9		
Topics studied:		
Term (1)	Term (2)	Term (3)
• Powers of 10 • Rounding and estimation • Multiplying and dividing • Using letters • Expressions • Polygons • Circles • 2-D shapes • Collecting data • Working with data • Representing data • Factors, multiples, primes and powers • Adding and subtracting fractions • Multiplying and dividing fractions	• Algebraic fractions • Linear equations • Reflections, rotations and translations • Enlargement • Scale drawing • Trial and improvement • Algebraic methods • Formulae and expressions • Using fractions and percentages • Using ratios • Mental methods • Constructions • Loci • Visualising 3-D shapes	• Statistical investigations • Interpreting and communicating • Written methods • Calculator methods • Sequences • Linear functions • Real-life graphs • Pythagoras' theorem • Measures and units • Prisms and cylinders • Probability • Experiments

Key Stage 4 (Years 10 and 11)

Exam Link
http://qualifications.pearson.com/en/qualifications/edexcel-gcses/mathematics2015.html
Curriculum Information
Topics studied:

Year 10 – **Foundation**

Term (1)	Term (2)	Term (3)
• Integers and place value • Decimals • Indices, powers and roots • Factors, multiples and primes • Algebra: the basics • Expressions and substitution into formulae • Tables, charts and graphs • Pie charts • Scatter graphs • Fractions, decimals and percentages • Percentages	• Equations and inequalities • Sequences • Properties of shapes, parallel lines and angle facts • Interior and exterior angles and polygons • Statistics, sampling and averages • Perimeter, area and volume	• Real life graphs • Straight-line graphs • Transformations • Ratio • Proportion • Right-angles triangles: Pythagoras and trigonometry

Year 10 - **Higher**

Term (1)	Term (2)	Term (3)
• Calculations, checking and rounding • Indices, roots, reciprocals • Factors, multiples, primes, standard form and surds • Algebra: the basics, setting up, rearranging and solving equations • Sequences • Averages and range • Representing and interpreting data and scatter graphs • Fractions and percentages • Ratio and proportion	• Polygons, angles and parallel lines • Pythagoras' Theorem and trigonometry • Graphs: the basics and real-life graphs • Linear graphs and coordinate geometry • Quadratic, cubic and other graphs • Perimeter, area and circles • 3D forms and volume, cylinders, cones and spheres • Accuracy and bounds • Transformations • Constructions, loci and bearings	• Solving quadratic and simultaneous equations • Inequalities • Probability • Multiplicative reasoning • Similarity and congruence in 2D and 3D

Year 11 – **Foundation**		
Term (1)	Term (2)	Term (3)
• Probability • Multiplicative reasoning • Plans and elevations • Constructions, loci and bearings • Quadratic equations: expanding and factorising • Quadratic equations: graphs	• Circles, cylinders, cones and spheres • Fractions and reciprocals • Indices and standard form • Similarity and congruence in 2D • Vectors • Rearranging equations, graphs of cubic and reciprocal functions and simultaneous equations	• Revision / exam preparation
Year 11 - **Higher**		
• Graphs of trigonometric functions • Further trigonometry • Collecting data • Cumulative frequency, box plots and histograms • Quadratics, expanding more than two brackets, sketching graphs, graphs of circles, cubes and quadratics • Circle theorems • Circle geometry	• Changing the subject of formulae (more complex), algebraic fractions, solving equations arising from algebraic fractions, rationalising surds, proof • Vectors and geometric proof • Reciprocal and exponential graphs; gradient and area under graphs • Direct and inverse proportion	• Revision / exam preparation
Additional Information		
Top set students at GCSE also take the AQA Level 2 Certificate in Further Mathematics, an excellent preparation for A Level.		