Subject: Maths

Year 9: Foundation Year Overview

Unit of Learning	1	2	3	4	5	6
Topic	• Four operations • Angles • Place value and decimals • Directed numbers • Algebraic manipulation	• Area and perimeter • Properties of number • Rounding and estimation • Expanding and factorising	• Expanding and factorising • Fractions • Transformations	• Averages • Solving equations • FDP	• Percentages • Ratio and proportion • Scatter graphs	• Sequences and functions • Conversions and exchange rates • Rules of indices • Two way tables
To develop the following skills	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible.	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible. • Apply knowledge to both routine	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible. • Apply knowledge to both routine and	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible. • Apply knowledge to both routine and	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible.	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible. • Apply knowledge to both routine

	• Apply knowledge to both routine and non-routine problems. • Fluent application of arithmetic. • The ability to work alone or to collaborate with others. • Written and oral communication skills.	and non-routine problems. • Fluent application of arithmetic. • The ability to work alone or to collaborate with others. • Written and oral communication skills.	non-routine problems. • Fluent application of arithmetic. • The ability to work alone or to collaborate with others. • Written and oral communication skills.	non-routine problems. • Fluent application of arithmetic. • The ability to work alone or to collaborate with others. • Written and oral communication skills.	• Apply knowledge to both routine and non-routine problems. • Fluent application of arithmetic. • The ability to work alone or to collaborate with others. • Written and oral communication skills.	and non-routine problems. • Fluent application of arithmetic. • The ability to work alone or to collaborate with others. • Written and oral communication skills.
Knowledge	• Use all four operations with integers and decimals • Use BIDMAS • Angle facts including; angles on a line, round a point, vertically opposite, triangles • Angles made by parallel lines • Order decimals • Calculate with decimals • Solve problems with decimals • Use negative numbers in context • Equivalent fractions • Order fractions • Four operations with negative numbers	• Expand and factorise single and double brackets • Work out the area and perimeter of quadrilaterals and triangles • Find factors, primes and multiples • HCF and LCM • Product of prime factors • Round to decimal places and significant figures • Estimate calculations. • Convert between recurring decimals and fractions.	• Expand and factorise single and double brackets • Add, subtract, multiply and divide fractions and mixed numbers • Reflect, rotate, translate and enlarge	• Find the mean, median, mode and range including grouped data • Know expression, equation, identity and inequality • Write an expression and equation • Solve linear equations including unknowns on both sides and brackets • Four operations with fractions and decimals	• Find a percentage of a quantity • Increase and decrease by a percentage, including compound interest • Simplify ratio • Share in a ratio • Increase using ratio • Draw and understand scatter graphs, including lines of best fit and correlation.	• Plot co-ordinates in all 4 quadrants • Plot and recognise functions parallel to the axes • Recognise graphs in the form $y=mx+c$ • Currency conversions • Conversion graphs • Use basic laws of indices • 2 way tables.

Assessment	AP1, starters, AfL, progress checkers, self and peer feedback, home works, questioning, live marking	AP2, starters, AfL, progress checkers, self and peer feedback, home works, questioning, live marking	Starters, AfL, progress checkers, self and peer feedback, home works, questioning, live marking	AP3, starters, AfL, progress checkers, self and peer feedback, home works, questioning, live marking	QLA, starters, AfL, self-assessment, home works, questioning	QLA, starters, AfL, self-assessment, home works, questioning
Ecco Values / SMSC / Cultural Capital Links	• Develop team working and leadership skills • Identify and access appropriate advice and support • Empathy • Resilience	• Develop team working and leadership skills • Identify and access appropriate advice and support • Empathy • Resilience	• Develop team working and leadership skills • Identify and access appropriate advice and support • Empathy • Resilience	• Develop team working and leadership skills • Identify and access appropriate advice and support • Empathy • Resilience	• Develop team working and leadership skills • Identify and access appropriate advice and support • Empathy • Resilience	• Develop team working and leadership skills • Identify and access appropriate advice and support • Empathy • Resilience
Literacy / Numeracy Links	• To develop a rich and accurate mathematical vocabulary. • Reading questions for understanding • High-lighting key words • Written and oral communication skills	• To develop a rich and accurate mathematical vocabulary. • Reading questions for understanding • High-lighting key words • Written and oral communication skills	• To develop a rich and accurate mathematical vocabulary. • Reading questions for understanding • High-lighting key words • Written and oral communication skills	• To develop a rich and accurate mathematical vocabulary. • Reading questions for understanding • High-lighting key words • Written and oral communication skills	• To develop a rich and accurate mathematical vocabulary. • Reading questions for understanding • High-lighting key words • Written and oral communication skills	• To develop a rich and accurate mathematical vocabulary. • Reading questions for understanding • High-lighting key words • Written and oral communication skills

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Subject: Maths

Year 9: Higher Year Overview

Unit of Learning	1	2	3	4	5	6
Topic	• Product of primes • Rounding • Limits of accuracy • Ratio and proportion • Tables and charts	• Laws of indices • 2 way tables • Scatter graphs • Expanding brackets • Factorising • Fractions	• Algebraic notation • Substitution • Conversions • Rearranging formulae • FDP • Standard form	• Pythagoras' Theorem • Percentages • 2D and 3D shapes	• Area and perimeter • Ratio and proportion 2 • Angles • Volume and surface area	• Coordinates • Linear graphs • Averages • Bearings
To develop the following skills	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible. • Apply knowledge to both routine	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible. • Apply knowledge to both routine	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible. • Apply knowledge to both routine	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible. • Apply knowledge to both routine	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible. • Apply knowledge to both routine	• To break down problems into a series of simpler steps. • To develop a rich and accurate mathematical vocabulary. • Present a mathematical justification, argument or proof, making their thinking clear to themselves and others. • To develop connections between knowledge from different topics. • Check their answers are sensible. • Apply knowledge to both routine

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Knowledge	• Factor, multiples and primes • Factor trees • HCF and LCM • Round to d.p, sig fig, truncate • Upper and lower bounds • Error intervals • Simplify ratio • Share in a ratio • Solve ratio problems • Best buys • Currency conversions • Scale recipes • Recognise direct proportion graphically • Frequency polygons • Cumulative frequency • Time series • Comparing data • Draw and interpret frequency trees	• Understand and recognise index notation • Know numbers have positive and negative square roots • Use basic laws of indices • Understand reciprocals • Solve problems involving index laws • 2 way tables • Probability from 2 way tables • Draw and understand scatter graphs, including lines of best fit and correlation • Expand and factorise single and double brackets • Difference of two squares	• Know expression, equation, identity and inequality • Write an expression and equation • Solve linear equations • Solve an inequality • Currency conversions • Conversion graphs • Change the subject of a formula involving more than one step • Multiply and divide decimals • Recognise recurring decimals • Change recurring decimals to fractions • Write numbers in standard form • Calculate using standard form	• Use Pythagoras' Theorem to find the hypotenuse or a short side • Solve Pythagoras problems in 3d • Increase and decrease by a percentage • Compound and simple interest • 2D and 3D shapes	• Find area and perimeter of quadrilaterals • Area and circumference of circle • Angle facts, on a line, round a point, vertically opposite and parallel line angle facts • Find volume and surface area of cuboids and prisms	• Plot co-ordinates in all 4 quadrants • Plot and recognise functions parallel to the axes • Recognise graphs in the form $y=mx+c$ • Find graphs parallel and perpendicular to given functions • Find gradient and intercept • Draw and recognise bearings • Reverse bearings • Use parallel line angle facts to solve bearing problems • Use map scales • Find mean, median, mode and range, including grouped data.

		• Four operations on fractions and mixed numbers • Problem solving using fractions	• Use a calculator for standard form			
Assessment	AP1, starters, AfL, progress checkers, self and peer feedback, home works, questioning, live marking	AP2, starters, AfL, progress checkers, self and peer feedback, home works, questioning, live marking	Starters, AfL, progress checkers, self and peer feedback, home works, questioning, live marking	AP3, starters, AfL, progress checkers, self and peer feedback, home works, questioning, live marking	QLA, starters, AfL, self-assessment, home works, questioning	QLA, starters, AfL, self-assessment, home works, questioning
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