The Mathematics Curriculum

The Redhill Academy mathematics curriculum is mapped across five years and developed across the Redhill Academy Trust. We deliver schemes of work that are differentiated at a detailed level to ensure that we tailor all learning to pupil ability. There is an expectation that students will use mathematical language routinely in lessons to develop fluency in terminology and the "language of mathematics". In addition, students will build on prior mathematical knowledge whilst regularly revisiting key numeracy strands and applying critical skills to new contexts to ensure learning is secure in the spirit of a 'spiral' curriculum. We aim to provide a selection of contexts in which student learning is engaging and relevant to young people whilst also setting mathematical understanding in real-life situations. We also ensure that all students receive opportunities to participate in curriculum enrichment activities at appropriate points, enhancing their mathematics learning experience. The more adept students can participate in national mathematical competitions, develop their understanding of mathematics, and celebrate their successes.

Curriculum +

The mathematics department offers various extra-curricular offerings, including regular mathematics club sessions, allowing students of all ages in all year groups to attend a session that supports skills improvement. We also run engaging puzzle and chess clubs throughout the academic year. We have a maths ambassadors scheme for KS5 students who support in the engagement of KS3/4 students in their mathematics.

Curriculum Intent

The intent of our mathematics curriculum is to develop learners who:

- Become passionate mathematicians;
- Develop into resilient, independent learners;
- Have a strong awareness of the way mathematics fits into everyday life and can apply it to real-life situations;
- Have a sound understanding of mathematical techniques and terminology, which includes the ability to apply them in new contexts;
- Are inquisitive mathematicians, having developed an understanding of how mathematical processes are interlinked;
- Possess the ability to progress readily to the next stage of their mathematical learning;
- Enjoy pride in their mathematical achievements.

Curriculum Implementation

We implement the intent of our curriculum through:

- Awareness of students' KS2 mathematics experience and the inclusion of learning objectives in Year 7 for those identified as already working at a high level;
- Schemes of work which are differentiated at a detailed level to ensure that all learning targets ability;
- The expectation that students will use mathematical language routinely in lessons;
- Building on prior mathematical knowledge whilst regularly revisiting key numeracy strands and applying critical skills to new contexts to ensure knowledge is secure;
- A routine expectation that students will show resilience in every lesson, and we support this through independent learning resources;
- A selection of contexts that are engaging and relevant to young people, whilst also setting mathematical learning in real-life situations;
- Ensuring that the opportunity to take part in curriculum enrichment activities at appropriate points is available to all students, which enhances their mathematics learning experience;
- Providing the more adept students access to participate in national mathematical competitions, developing their understanding of mathematics and celebrating their successes.
- A reflective approach to the continuing professional development of mathematics teachers (an 'open classroom' policy, collaborative planning, a teaching and learning focus to all faculty CPD)

Subject	Mathemati	cs (Y7 – 9)	Key Stage 3	Tiers: Foundat	ion/Intermediat	e/Higher
Unit/Topic	Number	Algebra	Ratio and	Geometry and Measures	Probability	Data and Statistics
			Proportion			
Foundation	Calculations	Function Machines	Write Ratios	Measure and Draw Angles	Calculate	Frequency Tables
	Negative Numbers	Simplify Expressions	Use Ratios	Properties of Shapes	probability	Pictograms
	Factors/Multiples/Primes	Coordinates	Proportion	Perimeter and Area	Experimental	Bar Charts
	LCM and HCF	Solve Equations	Unitary Method	Transformations	probability	Pie Charts
	Squares, Cubes and Roots	Sequences		3D shapes	Sample Space	Scatter Graphs
	Fractions	Substitution		Surface Area and Volume	diagrams	Averages and Range
	Decimals	Graphs		Angle Facts	Two-way Tables	
	Percentages				Tree Diagrams	
Intermediate	Calculations	Functions	Write Ratios	Lines and Angles	Language of	Averages and Range
	Negative Numbers	Simplify Expressions	Use ratios	Triangles and Quadrilaterals	Probability	Frequency Tables
	Factors/Multiples/Primes	Substitution	Measures	Congruency	Calculating	Line Graphs
	Units	Sequences	Scales	Transformations	Probability	Bar Charts
	Scales	Coordinates	Proportion	Area and Perimeter	Experimental	Pie Charts
	Decimals	Straight line graphs	Rates of Change	Volume and Surface Area	probability	Stem and Leaf
	Fractions	Expand	Percentage Change	Parallel line Angles	Independent Events	Comparing Data
	Percentages	Factorise	Scale factors	Angles in Polygons	Expected Outcomes	Surveying
	Squares, Cubes and Roots	Solve Equations		Circles		
	Laws of Indices	Real-life graphs		Bounds		
	Standard Form	Simultaneous Equations		Trigonometry		
Higher	Factors/Multiples/Primes	Algebraic Expressions	Units of Measure	Angles and Parallel Lines	Comparing	Frequency Tables
	Negative Numbers	Expand and Factorise	Ratios	Triangles and Quadrilaterals	Probabilities	Averages and Range
	Calculations	Solving Equations	Proportion	Polygons		Two-Way Tables
	Powers and Roots	Sequences	Unitary Method	Perimeter and Area	Mutually Exclusive	Bar Charts
	Decimals	Substitute	Non-Linear	Surface Area	Events	Pie Charts
	HCF/LCM	Coordinates	Proportion	Volume		Scatter Graphs
	Laws of Indices	Real-life Graphs		Plans and Elevations	Experimental	More Graphs
	FDP	Straight line graphs		Circles	Probability	
	Recurring decimals	Quadratics		Pythagoras' Theorem		Estimating Statistics
	Percentage Change	Inequalities		Transformations	Probability	Cumulative
	Standard Form	Changing the Subject		Constructions	Diagrams	Frequency Curves
	Surds	Non-linear graphs		Loci		Box Plots
	Compound Measures	Simultaneous Equations		Bearings	Tree Diagrams	Histograms
	Bounds	Proof		Congruency and Similarity		
				Trigonometry		

Subject	Mather	natics	Year Group: 7	Tiers: Founda	tion/Intermed	iate/Higher	
Unit/Topic	Number	Algebra	Ratio and Proportion	Geometry and Measures	Probability	Data and Statistics	
Skills	Calculate	Express	Simplify	Calculate	Calculate	Draw	
	Identify	Simplify		Identify	Compare	Interpret	
	Compare	Solve		Describe Explain		Compare	
Knowledge	Number Calculations	Function Machines	Int. and H only	Angle Properties	Int. only Calculating	Representing Data: Frequency tables,	
	Four Operations Negative Numbers	Simplify	Writing Patios	Properties of Shapes Area and Perimeter	Probability		
	Factors, Multiples	Expressions Write Formulae	Writing Ratios Using Ratios	Congruency	Probability	pictograms, bar charts, line graphs,	
	and Primes	Substitute	Proportion – unitary	Transformations	Experimental vs.	pie charts	
	Fractions	Solve	method	Transformations	Theoretical	pic charts	
	Decimals	Sequences	method		Probability	Comparing data:	
	Percentages	Co-ordinates			, , , , , , , , , , , , , , , , , , , ,	Averages	
Recall/review from	Interleaving Starters Homework						
previous learning							
Assessment	AfL e.g. use of mini-whi	teboards (every lessor	n) Low-Stake Topic (Quizzes (end of units)	DC assessments		
Cultural Capital,	_			to participate in a wide rang			
Equality, Diversity	· ·	•	'	projects, investigations and t	<u>-</u>	•	
Inclusion		· · · · · · · · · · · · · · · · · · ·		npetitions to encourage more			
		_		them for their future succes		-	
			· · · · · · · · · · · · · · · · · · ·	our aim is to give children the	•	· · · · ·	
				verages, percentages, rates of			
				ation and the opportunity to		· · · · · · · · · · · · · · · · · · ·	
Literacy/Numeracy	· ·	, ,	•	l in every lesson. Additional o	pportunities to prom	ote literacy come	
		•	ge with in maths, including	•		d waaru la who tia	
			that is done in mathemati	cs and therefore features hea	avily in all lessons and	regularly in	
	homework and interlea	ving starters.					

Subject	Mathe	matics	Year Group: 7	Tiers: Fou	ndation B				
Unit/Topic	Number	Algebra	Ratio and Proportion	Geometry and Measures	Data and Statistics				
Skills	Calculate Identify Evaluate	Express Simplify Solve	Simplify Calculate Compare	Calculate Identify Describe Plot	Draw Interpret Compare				
Knowledge	Calculations Number Properties Place Value Decimal Place Value	Function Machines -inputs -outputs -rule finding Writing Expressions Sequences	Investigating fractions Comparing fractions Fractions of amounts	2D shapes 3D shapes Measuring Perimeter Area Angles Units of Measure Exploring position and shape	Carroll and Venn diagrams Pictograms Bar Charts Line Graphs Tally Charts Frequency Tables				
Recall/review from previous learning	Interleaving Starters Homework Numeracy Lessons								
Assessment	AfL e.g. use of mini-whitek	ooards (every lesson)	Low-Stake Topic Quizzes (e	end of units) DC assessm	nents				
Cultural Capital, Equality, Diversity Inclusion	Knowledge is transferable, therefore, pupils are given every opportunity to participate in a wide range of learning experiences both in and beyond their classroom. These experiences include real-life enrichment projects, investigations and the access to Chess/Games clubs. They are also given regular opportunities to participate in school and national competitions to encourage more positive attitudes towards Mathematics. Cultural Capital is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships forged throughout life and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to prepare them for what comes next in their lives and to enable them to understand how averages, percentages, rates of conversion and so on are used in everyday								
Literacy/Numeracy	The use of maths-specific through whole school initi Numeracy is a core foundation	life. This includes the relevant vocabulary needed throughout their education and the opportunity to link maths to real-world problem solving! The use of maths-specific vocabulary and good oracy skills are promoted in every lesson. Additional opportunities to promote literacy come through whole school initiatives that we engage with in maths, including DEAR time and Big Write. Numeracy is a core foundation for all learning that is done in mathematics and therefore features heavily in all lessons and regularly in homework and interleaving starters.							

Subject	Mather	natics	Year Group: 7	Tiers: Foundation C					
Unit/Topic	Number	Geometry and Measures	Probability	Data and Statistics					
Skills	Calculate	Calculate	Predict	Draw					
	Identify	Identify	Compare	Interpret					
	Evaluate	Classify		Compare					
				Classify					
Knowledge	Place Value	Properties of 2D shapes		Carroll Diagram					
	Rounding	Exploring Time		Venn Diagram					
	Counting	Properties of 3D shapes	Language of Probability						
	Decimal Place Value	Measuring Length		Frequency Table					
	Addition and Subtraction	Perimeter	Probability Scale	Bar Chart					
	Fractions	Area		Dual bar chart					
	Decimals	Position	Experimental Probability	/ Line Graph					
	Multiples and Factors	Angles							
	Primes and Squares	Measuring							
	Multiplication	Units							
	Division	Coordinates							
	Money Calculations								
Recall/review from	Interleaving S	tarters	Homework	Numeracy Lessons					
previous learning									
Assessment	AfL e.g. use of mini-whiteboards (ev	ery lesson) Low-Stake Top	ic Quizzes (end of units)	DC assessments					
Cultural Capital,	Knowledge is transferable, therefore	e, pupils are given every opportun	ity to participate in a wide rang	ge of learning experiences both in and					
Equality, Diversity	beyond their classroom. These expe	riences include real-life enrichme	nt projects, investigations and	the access to Chess/Games clubs. They are					
Inclusion	also given regular opportunities to p	articipate in school and national o	competitions to encourage mor	re positive attitudes towards Mathematics.					
	Cultural Capital is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships								
	forged throughout life and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to prepare them for								
	what comes next in their lives and to enable them to understand how averages, percentages, rates of conversion and so on are used in everyday								
	life. This includes the relevant vocabulary needed throughout their education and the opportunity to link maths to real-world problem solving!								
Literacy/Numeracy	The use of maths-specific vocabulary and good oracy skills are promoted in every lesson. Additional opportunities to promote literacy come								
	through whole school initiatives tha	through whole school initiatives that we engage with in maths, including DEAR time and Big Write.							
	Numeracy is a core foundation for a	ll learning that is done in mathem	atics and therefore features he	eavily in all lessons and regularly in					
	homework and interleaving starters. Additional numeracy support available via maths intervention programmes.								

Subject	Mather	natics	Year Group: 8	Tiers: Founda	tion/Intermed	iate/Higher	
Unit/Topic	Number	Algebra	Ratio and Proportion	Geometry and Measures	Probability	Data and Statistics	
Skills	Calculate Identify Compare	Express Simplify Solve	Simplify	Calculate Identify Describe Explain	Calculate Compare Estimate	Draw Interpret Compare	
Knowledge	Number Properties Factors, Multiples Factors, Multiples And Primes Powers and Indices Fractions Decimals Percentages Figaphs (I/H) Number Properties Simplify Expressions Expressions Writing Ratios Using Ratios Using Ratios Using Ratios Using Ratios Using Ratios Fractions Using Ratios Using Ratios Using Ratios Fractions Obecimals and Ratios (I)						
Recall/review from previous learning	Interleaving Starters Homework						
Assessment	AfL e.g. use of mini-whi	teboards (every lesso	n) Low-Stake Topic C	Quizzes (end of units)	DC assessments		
Cultural Capital, Equality, Diversity Inclusion	Knowledge is transferable, therefore, pupils are given every opportunity to participate in a wide range of learning experiences both in and beyond their classroom. These experiences real-life enrichment projects, investigations and the access to Chess and Games clubs. They are also given regular opportunities to participate in school and national competitions to encourage more positive attitudes towards Mathematics. Cultural Capital is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships forged throughout life and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to prepare them for what comes next in their lives and to enable them to understand how averages, percentages, rates of conversion and so on are used in everyday life. This includes the relevant vocabulary needed throughout their education and the opportunity to link maths to real-world problem solving!						
Literacy/Numeracy	The use of maths-specific through whole school in	fic vocabulary and goon nitiatives that we engindation for all learning	od oracy skills are promoted age with in maths, including	l in every lesson. Additional c	opportunities to pron	note literacy come	

Subject	Ma	athematics		Year Group: 8	Tiers: Foundation B		
Unit/Topic	Number	Algebra	Ratio and Proportion	Geometry and Measures	Data and Statistics		
Skills	Calculate Identify Evaluate	Express Simplify Solve		Calculate Identify Describe Plot	Draw Interpret Compare		
Knowledge	Negative Numbers Addition and Subtraction Fractions Decimals Percentages Multiplication Division Squaring, Cubing and Rooting Function Wachines Expressions Writing Expressions Writing Equations		Bar Model Writing Ratio Using Ratio	2D Shapes Symmetry 3D Shapes and Nets Angles Coordinates	Tally Charts Frequency Tables Pictograms Bar Charts Line Graphs Comparing Data Averages Range		
	Order of Operations Calculations in Context	Simplifying Expressions Substitution		Transformations			
Recall/review from previous learning	Interle	aving Starters		Homework	Numeracy Lessons		
Assessment	AfL e.g. use of mini-whiteb	oards (every lesson) Low-Stake 1	Topic Quizzes (end of units)	DC assessments		
Cultural Capital,				<u> </u>			
Equality, Diversity Inclusion	Knowledge is transferable, therefore, pupils are given every opportunity to participate in a wide range of learning experiences both in and beyond their classroom. These experiences include real-life enrichment projects, investigations and the access to Chess/Games clubs. They are also given regular opportunities to participate in school and national competitions to encourage more positive attitudes towards Mathematics. Cultural Capital is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships forged throughout life and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to prepare them for what comes next in their lives and to enable them to understand how averages, percentages, rates of conversion and so on are used in everyday life. This includes the relevant vocabulary needed throughout their education and the opportunity to link maths to real-world problem solving!						
Literacy/Numeracy	through whole school initia	ntives that we engag tion for all learning	ge with in maths, inc	moted in every lesson. Additional of Eluding DEAR time and Big Write. Dematics and therefore features he	opportunities to promote literacy come avily in all lessons and regularly in		

Subject	Mati	hematics	Year Group: 9	Tiers: Fou	ndation/Intermediat	te/Higher		
Unit/Topic	Number	Algebra	Ratio and Proportion	Geometry and	Probability	Data and		
				Measures		Statistics		
Skills	Calculate	Express	Simplify	Calculate	Calculate	Draw		
	Compare	Simplify	Convert	Identify	Compare	Interpret		
	Estimate	Solve	Compare	Describe	Estimate	Compare		
	Convert	Plot	Identify	Explain				
	Evaluate	Rearrange						
Knowledge	F only	Sequences (n th term)	F	Pythagoras	F and Int.	Averages from		
		Substitution Straight Line	Using Ratios			Tables		
	Number	Graphs	Direct Proportion	F	Sample Space			
	Calculations		Measures	Angles		F and Int.		
	(Negative Numbers	Int. and H	Conversion Rates	3D Shapes	Two-Way Tables	Frequency Tables		
	and Indices)			Transformations		Pie Charts		
	Fractions, Decimals,	Expand and Factorise	Int.		Tree Diagrams	Scatter Graphs		
	Percentages	Expressions	Rates of Change	F and Int.		Surveys		
		Solving Equations	Enlargement	Constructions	Experimental Probability			
	Int. and H	Simultaneous Equations	Percentage Change			Н		
		Inequalities		Int. and H		Cumulative		
	Indices		Н	Trigonometry		Frequency		
	Standard Form	Non-linear graphs (H)	Proportion Problems			Box Plots		
	Surds intro (H)	Changing the Subject (H)	Non-linear proportion					
Recall/review from previous learning		Interleav	ing Starters	Hom	ework			
Assessment	AfL e.g. use of mini-w	hiteboards (every lesson)	Low-Stake Topic Quiz	zes (end of units)	DC assessments			
Cultural Capital,	-	able, therefore, pupils are given	ven every opportunity to p	participate in a wide r	ange of learning experiences	both in and		
Equality, Diversity	_	m. These experiences include		· -				
Inclusion	-	•				•		
	also given regular opportunities to participate in school and national competitions to encourage more positive attitudes towards Mathematics. Cultural Capital is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships							
	forged throughout life and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to prepare them for							
	what comes next in their lives and to enable them to understand how averages, percentages, rates of conversion and so on are used in everyday							
		relevant vocabulary needed						
Literacy/Numeracy		cific vocabulary and good ora						
	·	initiatives that we engage w	•	•	, ,	,		
		undation for all learning that	•		heavily in all lessons and reg	gularly in		
	homework and interle	_			,	,		

Subject	Mather	natics	Year Group: 9	Tiers: Fou	ndation B				
Unit/Topic	Number	Algebra	Geometry and Measures	Probability	Data and Statistics				
Skills	Calculate	Express	Calculate		Draw				
	Identify	Simplify	Identify		Interpret				
	Evaluate	Solve	Describe		Compare				
			Plot						
Knowledge	Negative Numbers	Function Machines	Measures Calculations	Language of Probability	Averages				
	Money		2D shapes and Symmetry		Range				
	Decimal Calculations	Expressions	Coordinate Patterns	Probability Scale	Tally Chart				
	Fractions		3D Shapes		Frequency Table				
	Percentages	Formulae	Perimeter	Listing Outcomes	Grouped Data				
	Factors/Multiples/Primes		Area		Pictogram				
	HCF and LCM	Substitution	Volume	Calculate Probabilities	Dual Bar Chart				
	Squares, Cubes and Roots		Angles		Line Graphs				
	Types of Numbers		Triangles		Two-Way Tables				
			Constructions		Pie Charts				
Recall/review from	Interlea	aving Starters	Homework	Numerac	cy Lessons				
previous learning									
Assessment	AfL e.g. use of mini-whitebo		Low-Stake Topic Quizzes (en	•					
Cultural Capital,	_			ate in a wide range of learning ex	· ·				
Equality, Diversity	·			ons and the access to Chess /Ga	, -				
Inclusion		•		ge more positive attitudes towar					
	Capital is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships forged								
	throughout life and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to prepare them for what								
	comes next in their lives and to enable them to understand how averages, percentages, rates of conversion and so on are used in everyday life.								
		· · · · · · · · · · · · · · · · · · ·		pportunity to link maths to real-	·				
Literacy/Numeracy	•			sson. Additional opportunities to	promote literacy come				
	_		in maths, including DEAR time						
	-	Numeracy is a core foundation for all learning that is done in mathematics and therefore features heavily in all lessons and regularly in homework							
	and interleaving starters.								

Unit/Topic Foundation	Number	Algebra	Datic and	_		
Foundation			Ratio and	Geometry and Measures	Probability	Data and Statistics
Foundation			Proportion			
	Calculations	Algebraic Expressions	Write Ratios	Measure and Draw Angles	Calculate probability	Frequency Tables
	Negative Numbers	Simplify Expressions	Use Ratios	Angles in Parallel Lines	Experimental	Two-Way tables
_	Decimals	Substitution	Proportion	Angles in Polygons	probability	Bar Charts
Fa	actors/Multiples/Primes	Expand and Factorise	Unitary Method	Properties of Shapes	Two Events	Pie Charts
	LCM and HCF	Formulae	Proportion Graphs	Perimeter and Area	Sample Space	Scatter Graphs
Sq	quares, Cubes and Roots	Solve Equations	Percentages	Units	diagrams	Time Series
	Index Notation	Inequalities	Growth and Decay	3D shapes	Two-way Tables	Stem and leaf
	Fractions	Sequences	Compound	Surface Area and Volume	Tree Diagrams	Averages and Range
	Decimals	Coordinates	Measures	Transformations	Venn Diagrams	5.11
	Percentages	Straight-Line Graphs		Pythagoras' Theorem		Estimating Averages
	Laws of Indices	Quadratics Equations		Trigonometry		Sampling
	Standard Form	Non-linear Graphs		Plans and Elevations		
		Simultaneous Equations		Constructions & Loci		
		Proof		Bearings		
				Circles and Sectors		
				Similarity and Congruence		
I Caban	Niverban Calavilatiana	Alaskasis Faransasiana	Danasatana Chanas	Vectors	Calaulatina Buahahilitu	Day Charta
Higher	Number Calculations	Algebraic Expressions	Percentage Change	Angles	Calculating Probability Combined Events	Bar Charts
	Estimating HCF/LCM	Simplify Expressions Substitution	Growth and Decay	Parallel Line Angles		Line Graphs Pie Charts
	Powers and Roots		Compound Measures	Angles in Polygons	Mutually Exclusive	Time Series
	Laws of Indices	Expand and Factorise Formulae	Ratio	Pythagoras' Theorem Trigonometry	Experimental Probability	Scatter Graphs
	Standard Form	Linear Graphs	Proportion	Area and Perimeter	Independent Events	Frequency Tables
	Surds	Real-life Graphs	Direct and Inverse	Units of Measure	Tree Diagrams	Averages and Range
	Fractions	Non-linear Graphs	Proportion	Circles and Sectors	Conditional Probability	Grouped Frequency
	Decimals	Solving Quadratics	Exponential	Volume	Venn Diagrams	Estimating Averages
	Percentages	Simultaneous Equations	Functions	Surface Area	Set Notation	Sampling
	FDP	Inequalities	Non-linear Graphs	Transformations	Set Notation	Cumulative
	Recurring decimals	Rearranging Formulae	Transformations of	Constructions and Loci		Frequency
	Ratios	Surds	Graphs	Bearings and Scales		Histograms
	Tractios	Functions	Grapiis	Bounds		This to Brunns
		Proof		Trigonometric Graphs		
		30.		Circle Theorems		
				Vectors		

Subje	ect	Math	ematics	Year Group: 10	Tiers:	Foundation/Hi	gher		
Unit/Topic		Number	Algebra	Ratio and Proportion	Geometry and Measures	Probability	Data and Statistics		
Skills		Calculate	Express	Simplify	Calculate	Calculate	Draw		
		Compare	Simplify	Convert	Identify	Compare	Interpret		
		Estimate	Solve	Compare	Describe	Estimate	Compare		
		Convert	Plot	Identify	Explain				
		Evaluate	Rearrange						
Knowledge		Decimals	Simplifying Expressions		Angles		Frequency Tables		
		Factors, Multiples and	Substitution	Using Ratios	Parallel Line Angles		Two-Way Tables		
	_	Primes	Expand and Factorise	Measures	Perimeter	N/A	Pie Charts		
	Foundation	Powers and Roots	Solving Equations	Direct Proportion	Area		Scatter Graphs		
	dat		Inequalities	Proportion Graphs	Volume of 3D shapes				
	<u> </u>	Fractions &	Sequences		Surface Area		Averages		
	<u> </u>	Percentages	Straight line Graphs	Problem solving with	Transformations		Estimate the mean		
		Calculations	Real-life Graphs	ratio and proportion	Pythagoras		Sampling		
					Trigonometry				
			Simplifying Expressions		Angles	Mutually Exclusive	Frequency Polygons		
		Estimation	Substitution	Ratio and Proportion	Pythagoras	Events	Two-Way Tables		
		HCF and LCM	Expand and Factorise		Trigonometry	Experimental	Time Series		
	_	Laws of Indices	Straight Line Graphs	Problem solving with	Area and Perimeter	Probability	Pie Charts		
	Higher	Standard Form	Graphs of Polynomials	ratio and proportion	Volume	Tree Diagrams	Scatter Graphs		
	H iš	Surds	Real-life Graphs		Surface Area	Conditional			
		Fractions	Solving Quadratic		Circles and Sectors	Probability	Averages		
		Percentages	Equations		Transformations		Grouped Frequency		
		FDP equivalence	Inequalities		Constructions	Venn Diagrams	Tables		
			Simultaneous Equations		Loci				
Recall/revie	w from		Interleavi	ng Starters	Homewo	ork			
previous lea	rning								
Assessment		AfL e.g. use of mini-whit	eboards (every lesson)	Low-Stake Topic Quizz	es (end of units)	DC assessments			
Cultural Capital,		Knowledge is transferab	le, therefore, pupils are give	en every opportunity to pa	articipate in a wide range	of learning experience	es. Cultural Capital is		
Equality, Diversity		the essential knowledge	that children need to prepa	are them for their future s	success – in the world of	work, in relationships	forged throughout life		
Inclusion		and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to prepare them for what comes next in their							
		lives and to enable them to understand how averages, percentages, rates of conversion and so on are used in everyday life. This includes the							
		relevant vocabulary nee	ded throughout their educa	tion and the opportunity	to link maths to real-wor	ld problem solving!			
Literacy/Nur	meracy	The use of maths-specif	ic vocabulary and good orac	cy skills are promoted in e	very lesson. Numeracy is	a core foundation for	all learning that is		
		done in mathematics an	d therefore features heavily	in all lessons and regular	ly in homework and inte	rleaving starters.			

Skills Calculate Estimate Solve Convert (Lepting Plot) Estimate Solve Convert (Lepting Quadratics Proportion Graphs Compound Measures Similarity and Congruence Vectors N/A Simultaneous Equations Area of any triangle Graphing Inequalities Graphing Inequalities Graphing Inequalities Graphing Inequalities Functions Fructions Fructions Solving Reations Froportion From Simultaneous Equations N/A Simultaneous Equations N/A Graphically Graphs of Quadratics Algebraic Fractions Graphing Inequalities Functions Fructions Fruc	Sub	ject	N	/lathematics	Year Group: 11	Tiers	s: Foundation/Highe	r		
Calculate Estimate Convert Solve Convert Identify Describe Estimate Compare Estimate Conditional Probability Constructions Experimental Probability Constructions Experimental Probability N/A Estimate Compare Congruence Compare Compare Compare Compare Estimate Compare Estimate Compare Estimate Compare Estimate Conditional Probability N/A Estimate Compare Estimate Compare Estimate Compare Estimate Compare Estimate Conditional Probability N/A Estimate Conditional Probability Estimate Con	Unit/Topic		Number	Algebra	Ratio and Proportion	•	Probability			
Estimate Convert Plot Compare Describe Estimate Compare Estimate Compare Describe Estimate Compare Constructions Constructions Direct and Inverse Proportion Similarity and Congruence Geometric Proof Direct and Inverse Graphing Inequalities Proportion Similarity and Congruence Geometric Proof Direct and Inverse Proportion Similarity and Congruence Geometric Proof Direct and Inverse Proportion Trig Graphs Area of any triangle Area of any triangle Conditional Probability Sampling Prunctions Proof Direct Proportion Surds Transforming Circle Theorems Proof Direct Proportion Surds Proportion								Statistics		
Convert Evaluate Rearrange Identify Explain	Skills		Calculate	Simplify	Simplify	Calculate	Calculate	Draw		
Evaluate Rearrange Identify Explain			Estimate	Solve	Convert	Identify	Compare	Interpret		
Second Compound Measures Compound Measur			Convert	Plot	Compare	Describe	Estimate	Compare		
Operating on Fractorising Quadratics Plotting Quadratics Solving Quadratics Solving Quadratics Proportion Graphs Laws of Indices Changing the Subject Simultaneous Equations Standard Form Non-linear graphs Non-linear graphs Proportion Graphs Proportion Standard Form Non-linear graphs Non-linear graphs Proportion Standard Form Non-linear graphs Non-linear graphs Proportion Similarity and Congruence Vectors Similarity and Congruence Vectors Geometric Proof Graphing Inequalities Proportion Surds Functions Surds Functions Proof Non-linear graphs Proportion Surds Functions Proof States Homework Recall/review from previous learning Assessment AfL e.g. use of mini-whiteboards (every lesson) Low-Stake Topic Quizzes (end of units) DC assessments Calculating Probability Constructions Constructions Constructions Constructions Constructions Constructions Direct and Inverse Proportion Similarity and Congruence Geometric Proof Similarity and Congruence Similarity and Congruence Similarity a			Evaluate		Identify	Explain				
Fractions Solving Quadratics Compound Measures Solving Standard Form Standard Form Standard Form Standard Form Solving Standard Standard Form Solving Standard Standard Form Solving Standard Standard Solving Solving Standard Solving Solving Standard Solving Standar	Knowledge			Expanding Double Brackets	Using Ratios	Pythagoras				
Laws of Indices Changing the Subject Simultaneous Equations Standard Form Non-linear graphs Non-linear graphs Proportion Simultaneous Equations Standard Form Non-linear graphs Proportion Similarity and Congruence Vectors Similarity and Congruence Vectors Similarity and Congruence Vectors Similarity and Congruence Vectors Similarity and Congruence Geometric Proof Graphing Inequalities Proportion Sine and Cosine Rule Trig Graphs Area of any triangle Algebraic Fractions Surds Functions Proof Interleaving Starters Homework Recall/review from previous learning Assessment			Operating on	Factorising Quadratics	Ratio and Measures	Trigonometry	Calculating Probability			
Standard Form Non-linear graphs Proportion Similarity and Congruence Vectors N/A Simultaneous Equations Graphically Graphs of Quadratics and Cubics Graphing Inequalities Proportion Sine and Cosine Rule Trig Graphs Tree Diagrams Compound Measures Geometric Proof Cubics Graphing Inequalities Proportion Sine and Cosine Rule Trig Graphs Tree Diagrams Changing the Subject Algebraic Fractions Surds Transforming Functions Proof Surds Transforming Circle Theorems Proof Sampling Conditional Probability Sampling Starters Homework			Fractions	Plotting Quadratics	Direct Proportions	Constructions				
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Standard Form Non-linear graphs Proportion Similarity and Congruence Vectors N/A Simultaneous Equations Graphically Graphs of Quadratics and Cubics Graphing Inequalities Proportion Sine and Cosine Rule Trig Graphs Tree Diagrams Compound Measures Geometric Proof Cubics Graphing Inequalities Proportion Sine and Cosine Rule Trig Graphs Tree Diagrams Changing the Subject Algebraic Fractions Surds Transforming Functions Proof Surds Transforming Circle Theorems Proof Sampling Conditional Probability Sampling Starters Homework		lati	Laws of		Compound Measures	Bearings				
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Form Simultaneous Equations Compound Measures Similarity and Congruence Combined Events Cumulative Frequency		For		Simultaneous Equations	Direct and Inverse	Volume of 3D shapes				
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N/A Graphically Graphs of Quadratics and Cubics Graphing Inequalities Algebraic Fractions Functions Proof Interleaving Starters AfL e.g. use of mini-whiteboards (every lesson) AfL e.g. use of mini-whiteboards (every lesson) Cubics Graphing Inequalities Application of Quadratics and Cubics Proportion Direct and Inverse Proportion Sine and Cosine Rule Trig Graphs Area of any triangle Circle Theorems Vector Geometry Vector Geometry AfL e.g. use of mini-whiteboards (every lesson) Cumulative Frequency Mutually Exclusive Events Box Plots Area of any triangle Circle Theorems Venn Diagrams and Sets Vector Geometry Venn Diagrams and Sets Homework Transforming Functions Vector Geometry AfL e.g. use of mini-whiteboards (every lesson) Low-Stake Topic Quizzes (end of units) DC assessments Knowledge is transferable, therefore, pupils are given every opportunity to participate in a wide range of learning experiences. Cultural Capital is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships forged						Vectors				
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Cubics Graphing Inequalities Proportion Sine and Cosine Rule Trig Graphs Tree Diagrams Changing the Subject Algebraic Fractions Functions Functions Proof Recall/review from previous learning Assessment AfL e.g. use of mini-whiteboards (every lesson) Cubics Graphing Inequalities Proportion Cubics Graphing Inequalities Proportion Sine and Cosine Rule Trig Graphs Area of any triangle Circle Theorems Venn Diagrams and Sets Venn Diagrams and Sets Venn Diagrams and Sets Functions Venn Diagrams and Sets Venn Diagrams and Sets Cubics Box Plots Tree Diagrams Conditional Probability Sampling Venn Diagrams and Sets Venn Diagrams and Sets Venn Diagrams and Sets Functions Venn Diagrams and Sets Venn Diagrams and Sets Venn Diagrams and Sets Functions Venn Diagrams and Sets Venn Diagrams and Sets Functions Venn Diagrams and Sets Venn Diagrams and Sets Functions Ve			N/A	Graphically	Ratio and Proportion	Congruence	Combined Events	Cumulative		
Graphing Inequalities Changing the Subject Algebraic Fractions Surds Functions Functions Proof Circle Theorems Proof Circle Theorems Functions				Graphs of Quadratics and	·	Geometric Proof		Frequency		
Trig Graphs Area of any triangle Changing the Subject Algebraic Fractions Algebraic Fractions Surds Functions Proof Conditional Probability Sampling Functions Proof Conditional Probability Sampling Venn Diagrams and Sets				Cubics	Direct and Inverse		Mutually Exclusive Events			
Algebraic Fractions Surds Functions Proof Recall/review from previous learning Assessment Cultural Capital, Equality, Diversity Algebraic Fractions Algebraic Fractions Surds Functions Function		<u>.</u>		Graphing Inequalities	Proportion	Sine and Cosine Rule		Box Plots		
Algebraic Fractions Surds Functions Proof Recall/review from previous learning Assessment Cultural Capital, Equality, Diversity Algebraic Fractions Algebraic Fractions Surds Functions Function		ghe				Trig Graphs	Tree Diagrams			
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Cultural Capital, Knowledge is transferable, therefore, pupils are given every opportunity to participate in a wide range of learning experiences. Cultural Capital is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships forged	previous lea	rning								
Equality, Diversity is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships forged	Assessment		AfL e.g. use of	mini-whiteboards (every lesson) Low-Stake Topic	Quizzes (end of units)	DC assessments			
Equality, Diversity is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships forged	Cultural Cap	Cultural Capital,		ransferable, therefore, pupils a	e given every opportunity	to participate in a wide	range of learning experience	s. Cultural Capital		
	•		_	The state of the s				•		
Inclusion throughout life and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to prepare them for what	Inclusion			_			•	-		
comes next in their lives and to enable them to understand how averages, percentages, rates of conversion and so on are used in everyday										
life. This includes the relevant vocabulary needed throughout their education and the opportunity to link maths to real-world problem solving!					_	· •		• •		
Literacy/Numeracy The use of maths-specific vocabulary and good oracy skills are promoted in every lesson. Numeracy is a core foundation for all learning that is	Literacy/Nui	meracy								
done in mathematics and therefore features heavily in all lessons and regularly in homework and interleaving starters.	•						•	3		

Subject	Mather	natics	Year Gr	oup: 10/11	Tiers: Fou	ndation B			
Unit/Topic	Number	Algebra	Ratio and Proportion	Geometry and Measures	Probability	Data and Statistics			
Skills	Calculate	Express	Simplify	Calculate	Calculate	Draw			
	Identify	Simplify	Calculate	Identify	Compare	Interpret			
	Evaluate	Solve	Compare	Describe Plot	Estimate	Compare			
Knowledge	Negative Numbers	Algebraic Notation	Writing Ratios	Properties of Shapes	Equally Likely	Frequency			
	Order of Operations	Simplify Expressions	Simplify Ratio	Angles	Events	Tables			
	Place Value and Rounding	Substitution	Sharing in a Ratio	Parallel Line Angles	Calculating	Two-Way			
	Decimal Calculations	Expanding Brackets	Proportion	Angles in Polygons	Probability	Tables			
	Factors, Multiples, Primes	Function Machines	Unitary Method	Perimeter	Two-Way Tables	Time and			
	Squares, Cubes and Roots	Solving Equations		Area	Experimental	Distance Tables			
	Fractions	Inequalities	Percentage	Surface Area	Probability	Pictograms			
	Fractions, Decimals,	Sequences	Change	Volume	Venn Diagrams	Bar Charts			
	Percentages	Coordinates		Transformations	Tree Diagrams	Line Graphs			
	Calculating Percentages	Straight Line Graphs	Compound	Pythagoras' Theorem		Stem and Leaf			
	Laws of Indices	Midpoints	Measures	Properties of 3D		Pie Charts			
	Standard Form	Distance-Time Graphs		shapes		Scatter Graphs			
		Double Brackets		Constructions		Averages			
		Quadratic Graphs		Loci		Range			
				Circles		Grouped Data			
				Bounds		Sampling			
				Similarity and					
				Congruence					
Recall/review from		Interleaving Starte	rs	Homework					
previous learning									
Assessment	AfL e.g. use of mini-whiteboard		Stake Topic Quizzes (•	assessments				
Cultural Capital,	Knowledge is transferable, then					·			
Equality, Diversity	is the essential knowledge that				•	•			
Inclusion		fe and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to prepare them for what comes next in							
		their lives and to enable them to understand how averages, percentages, rates of conversion and so on are used in everyday life. This includes							
	the relevant vocabulary needed								
Literacy/Numeracy	The use of maths-specific vocal					learning that is			
	done in mathematics and there	fore features heavily in all le	ssons and regularly in	homework and interleav	ing starters.				

Subject	Mathematics				Year Group: 12			Core Maths				
Unit/Topic	Social Distancing	Society	Sport	Clothing	Finance	Creative Arts	Health	Economy	Travel	Environment	Disasters	Engineering
Skills		ı		l	Calculat	e Compare	Draw	Describe	•			1
Knowledge	Frequency Tables Averages	Product Moment Correlation Coefficient	Cumulative Frequency Box Plots	Linear Equations Simultaneous	Exchange Rates Iterative	Plot Graphs Ratios and	Percentage Change Tree	Tangents APR	Tangents Gradients	Straight Line Graphs	Logs and Equations Scatter	Histograms Inequalities
	Cumulative Frequency Scatter Graphs Variance Standard Deviation	Time Series Moving Averages Inequalities	Quartiles Scatter Graphs Regression Lines Probability Tree Diagrams Venn	Equations Inequalities Straight Line Graphs	Formulae Compound Interest Percentage Change Cumulative Frequency	nth term Geometric Sequence	Diagrams Averages Compare Data	Probability Histograms Time Series Geometric Series	Moving Averages PMCC Box Plots	Compound Interest Quadratic Sequence Time Series Scatter Graphs	Graphs PMCC Box Plots Mean Variance Standard Deviation	Reciprocals Velocity Probability Tree Diagrams
			Diagrams									
Previous learning	Builds upon and extends some topics covered in GCSE mathematics.											
Assessment	AfL e.g. use of mini-whiteboards (every lesson) Homework DC assessments/mocks											
Cultural Capital, Equality, Diversity Inclusion	Social Networking in different countries	Life Expectancy Risk Housing Population	Golf Athletics Football Tennis	Manufacturing clothes	Income Tax Life Insurance Car Loans Mortgages	Ratio in Art Music Software	Vaccines Medicine	Payday Loans Imports Exports	Stopping Distances Tourism	Deforestation Climate Weather	Earthquakes Hurricanes Fires	Spectrums Project management
Literacy/Numeracy	The use of maths-specific vocabulary and good oracy skills are promoted in every lesson. Numeracy is a core foundation for all learning that is done in mathematics and therefore features heavily in all lessons.											

Subject	Mathematics	Year Group: 12	A-Level Mathematics Mechanics Sketch			
Unit/Topic	Pure	Statistics				
Skills	Evaluate Calculate	Understand				
	Simplify Solve	Interpret	Interpret			
	Sketch Recognise	Compare	Apply			
	Interpret Manipulate	Calculate	Calculate			
Knowledge	Algebra and Functions	Data Collection				
	Quadratics		Modelling			
	Equations and Inequalities	Measures of Location and Spread				
	Graphs and Transformations					
	Straight Line Graphs	Representation of Data	Kinematics			
	Circles					
	Algebraic Methods	Correlation				
	Binomial Expansion		Forces			
	Trigonometry	Probability				
	Trigonometric Identities					
	Vectors	Binomial Distribution	Variable Acceleration			
	Differentiation					
	Integration	Hypothesis Testing				
	Exponentials and Logs					
Recall/review from	Interleaving Starters	Homework	Homework			
previous learning						
Assessment	AfL e.g. use of mini-whiteboards (every lesson) End of Unit Tests DC assessments/mocks					
Cultural Capital,	Knowledge is transferable, therefore, pupils are given every opportunity to participate in a wide range of learning experiences both in and					
Equality, Diversity	beyond their classroom. These experiences may include becoming maths ambassadors to help celebrate and support mathematics events in					
Inclusion	KS3/4. Cultural Capital is the essential knowledge that children need to prepare them for their future success – in the world of work, in					
	relationships forged throughout life and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to					
	prepare them for what comes next in their lives and to enable them to understand how probability/statistics, calculus, mechanics and much					
	more, are used in everyday life. Furthermore, the course provides ample opportunity to link maths to real-world problem solving!					
Literacy/Numeracy	The use of maths-specific vocabulary and good oracy skills are promoted in every lesson. Additional opportunities to promote literacy come					
	through whole school initiatives that we engage with in maths.					
	Numeracy is a core foundation for all learning that is done in mathematics and therefore features heavily in all lessons.					

Subject	Mathematics	Year Group: 13	A-Level Mathematics			
Unit/Topic	Pure	Statistics	Mechanics			
Skills	Evaluate Calculate	Understand	Sketch			
	Simplify Solve	Interpret	Interpret			
	Sketch Recognise	Compare	Apply			
	Interpret Manipulate	Calculate	Calculate			
Knowledge	Algebraic Methods	Regression	Moments			
	Function and Graphs					
	Sequences and Series		Forces and Friction			
	Binomial Expansion	Conditional Probability				
	Radians		Projectiles			
	Trigonometric Functions					
	Trigonometry and Modelling	Normal Distribution	Application Of Forces			
	Parametric Equations					
	Differentiation		Further Kinematics			
	Numerical Methods					
	Integration					
	Vectors					
Recall/review from	Interleaving Starters	Homework				
previous learning	miterieuving starters					
Assessment	AfL e.g. use of mini-whiteboards (every lesson)	End of Unit Tests DC as	sessments/mocks			
Cultural Capital,	Knowledge is transferable, therefore, pupils are given every opportunity to participate in a wide range of learning experiences both in and					
Equality, Diversity	beyond their classroom. These experiences may include becoming maths ambassadors to help celebrate and support mathematics events in					
Inclusion	KS3/4. Cultural Capital is the essential knowledge that children ne	ed to prepare them for their future succe	ss – in the world of work, in			
	relationships forged throughout life and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to					
	prepare them for what comes next in their lives and to enable them to understand how probability/statistics, calculus, mechanics and much					
	more, are used in everyday life. Furthermore, the course provides	• • • • • • • • • • • • • • • • • • • •				
Literacy/Numeracy	The use of maths-specific vocabulary and good oracy skills are promoted in every lesson. Additional opportunities to promote literacy come					
,,	through whole school initiatives that we engage with in maths.					
	Numeracy is a core foundation for all learning that is done in mathematics and therefore features heavily in all lessons.					
		in the state of th				

Subject	Mathematics	Year Group: 12	Further Mathematics		
Unit/Topic	Core Pure	Further Statistics	Decision		
Skills	Simplify Calculate Recognise Solve Sketch Apply Manipulate Prove	Recognise Calculate Understand Compare	Identify Describe Apply Understand		
			Represent Formulate Interpret		
Knowledge	Complex Numbers Argand Diagrams Series Roots and Polynomials	Discrete Random Variables Poisson Distribution	Algorithms Graphs and Networks		
	Volumes of Revolution Matrices Transformations	Hypothesis Testing	Algorithms and Graphs Route Inspection		
	Proof by Induction Vectors	Chi-Squared Tests	Linear Programming		
			Critical Path Analysis		
Recall/review from previous learning	Interleaving Starters Homework				
Assessment	AfL e.g. use of mini-whiteboards (every lesson) End of Unit Tests DC assessments/mocks				
Cultural Capital, Equality, Diversity Inclusion	Knowledge is transferable, therefore, pupils are given every opportunity to participate in a wide range of learning experiences both in and beyond their classroom. These experiences may include becoming maths ambassadors to help celebrate and support mathematics events in KS3/4. Cultural Capital is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships forged throughout life and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to prepare them for what comes next in their lives and to enable them to understand how averages/statistics, functions, probability, programming and much more, are used in everyday life. Furthermore, the course provides ample opportunity to link maths to real-world problem solving!				
Literacy/Numeracy	The use of maths-specific vocabulary and good oracy skills are promoted in every lesson. Additional opportunities to promote literacy come through whole school initiatives that we engage with in maths. Numeracy is a core foundation for all learning that is done in mathematics and therefore features heavily in all lessons.				

Subject	Mathematics	Year Group: 13	Further Mathematics Decision		
Unit/Topic	Core Pure	Further Statistics			
Skills	Simplify Calculate Recognise Solve Sketch Apply Manipulate Prove Represent Convert	Recognise Calculate Understand Compare Apply	Identify Describe Apply Construct Formulate Interpret		
Knowledge	Complex Numbers Series Methods in Calculus Volumes of Revolution Polar Coordinates Hyperbolic Functions Methods in Differential Equations Modelling with Differential Equations	Geometric and Negative Binomial Hypothesis Testing Central Limit Theorem Chi-Squared Tests Probability Generating Functions Quality of Tests	Graphs and Networks Route Inspection Travelling Salesperson Simplex Algorithm Critical Path Analysis		
Recall/review from	Interleaving	g Starters Homework			
previous learning					
Assessment	AfL e.g. use of mini-whiteboards (every lesson) End of Unit Tests DC assessments/mocks				
Cultural Capital, Equality, Diversity Inclusion	Knowledge is transferable, therefore, pupils are given every opportunity to participate in a wide range of learning experiences both in and beyond their classroom. These experiences may include becoming maths ambassadors to help celebrate and support mathematics events in KS3/4. Cultural Capital is the essential knowledge that children need to prepare them for their future success – in the world of work, in relationships forged throughout life and as a valued contributor to society. In maths, our aim is to give children the knowledge and skills to prepare them for what comes next in their lives and to enable them to understand how averages/statistics, functions, probability, programming				
Literacy/Numeracy	and much more, are used in everyday life. Furthermore, the course provides ample opportunity to link maths to real-world problem solving! The use of maths-specific vocabulary and good oracy skills are promoted in every lesson. Additional opportunities to promote literacy come through whole school initiatives that we engage with in maths. Numeracy is a core foundation for all learning that is done in mathematics and therefore features heavily in all lessons.				