

SUBJECT: MATHEMATICS – Higher Pathway (1 Higher Pathway only in Y7)

Year Group	Year 7								
Rationale	To build on skills developed at KS2 and consolidate through extension and problem solving. To be introduced to the ability to model and generalise through algebraic techniques. To begin to use a scientific calculator								
	confidently.								
Tonic/Unit	Autumn Term 1	Autumn Term 2	Spring Term	Spring Term 2	Summer Term	Summer Term			
			1	opg	1	2			
Knowledge	 Calculations Checking & 	 Perimeter & Area 	 Factors, Multiples & 	 Forming & Solving 	• Linear Graphs $(y - mx + c) &$	 Decimals & Place Value 			
	Rounding	 Brackets, 	Primes	Equations	Co-ordinate	 Product Rule 			
	 Expressions 	Factorising &	 Percentages 	 Sequences 	Geometry	for Counting			
	Formulas &	Algebraic	Factor		Fractions	 Averages & 			
SKIIIS	Calculations, Checking &	Area	<u>Factors,</u> Multiples &	Solving and	<u>Linear Graphs</u> & Co-ordinate	<u>Decimais &</u> Place Value			
	Rounding	Use formulae	Primes	Equations	Geometry	Multiply and			
	Apply the four	efficiently to find	Define and	Understand and	Identify and plot	divide decimals			
	rules of	the perimeter	identify	use the \neq and \equiv	co-ordinates in	by decimals.			
	positive.	range of 2D	multiples and	Solve a range of	Find the co-	and the			
	negative and	shapes,	prime	linear equations,	ordinates of the	properties of			
	decimal	including	numbers.	including the	midpoint of lines	multiplying and			
	numbers. Round	estimating areas	Write a	use of brackets,	or missing co-	dividing			
	different levels	composite	prime factor	negative	shapes on a	one calculation			
	of accuracy and	shapes.	form and use	numbers and	grid.	to find the			
	use rounded		this and/or	when the	Identify and/or	answer for			
	values in estimation	Erackets, Factorising &	to problem	unknown appears on	and vertical	another.			
	coundion.	Algebraic	solve.	either one or	graphs.	Product Rule for			
	Expressions,	Fractions	Find common	both sides of the	Use a table of	Counting			
	Formulas &	Expand and	factors and	equation. Form	values to	Use the product			
	Define types of	brackets and	including the	formulae from	on a linear	in simple			
	algebra.	multiple single	LCM and HCF	given	graph.	situations.			
	Write	brackets.	and including	information or	Plot and draw a				
	expressions and formulas from a	Expand and simplify double	the use of Venn	diagrams and	range of linear	Averages & Range			
	range of	brackets.	diagrams.	in order to solve	Find the	Find the mean,			
	situations.	Factorise linear	Solve	a problem.	gradient and	mode, median			
	Substitute	and quadratic	problems	Coguerees	intercept from a	and range from			
	expressions and	single or double	and/or HCF.	Recognise and	use them to	Find missing			
	formulas.	brackets.	Simplify surds.	continue simple	define the	values in data			
	Manipulate	Simplify and use		sequences	equation of a	sets given an			
	expressions	arithmetic with	<u>Percentages</u> Convert	including odd, even triangular	grapn. Interpret the	average or the			
	rules of	simple algebraic	between	square, cube,	gradient in	Recognise the			
	arithmetic in	fractions.	fractions,	and Fibonacci-	context.	advantages and			
	order to simplify	Solve 'show	decimals and	type sequences.	Find	disadvantages			
		using algebraic	Express one	to-term rule for a	solutions to	measures of the			
		skills.	number as a	sequence	equations using	average in			
			percentage of	including use it	a linear graph.	different			
			including	sequence	parallel graphs	Construct and			
			working with	Find the nth	have the same	find averages			
			more than	term of a linear	gradient.	and the range			
			100%.	sequence.	Fractions	trom stem and			
			Find a	to find a specific	Express one	Calculate			
			percentage of	term within a	value as a	averages and			
			an amount	sequence or to	fraction of	range from a			
			calculator and	generate a	Simplify and find	Calculate			
			non-calculator	sequence.	equivalent	averages and			
			techniques.	Use the nth term	fractions	range from a			
		1		to deduce	including to	grouped			

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			Increase and decrease by a given percentage. Solve problems in real-life contexts using percentages, including comparisons.	whether a specific value appears in a sequence.	compare or order fractions. Find a fraction of an amount. Convert between mixed numbers and improper fractions. Use the four rules of arithmetic, including with mixed numbers. Find the reciprocal of an integer or a fraction.	frequency table and recognise why the mean will be an estimate.
Assess- ments	Baseline Assessment Assessment 1		Assessment 2		Assessment 3	EOY Assessment
Homework	Mathswatch: Assessment 1 HU revision Core skills homework booklets	Retrieval grid	Mathswatch: Assessment 2 HU revision	Core skills homework booklets	Mathswatch: Assessment 3 HU revision	Mathswatch: EOY assessment revision

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SUBJECT: MATHEMATICS – Foundation Pathway (Upper)

Rationale To build on skills developed at KS2 and consolidate through extension and problem solving. To be introduced to the ability to model and generalise through algebraic techniques. To begin to use a scientific calculator confidently. Topic/Unit Autum Term 1 Autum Term 2 Spring Term 2 Summer Term 1 Summer Term 2 Knowledge • Integers & Pace Value • Perimeter & Area • Perimeter & Precentages • Forming & Summer Term 2 • Decimals & Pace Value • Averages & Range Skills Integers & Pace Value • Decimals & Extracts & Pace Value • Decimals & Extra	Year Group	Year 7						
Topic/Unit Autumn Term 1 Autumn Term 2 Spring Term Spring Term 2 Summer Term 1 Summer Term 2 Knowledge • Integers & Place Value • Perimeter & Area Substitution • Perimeter & Area Substitution • Perimeter & Area Substitution • Factors, Primes • Factors, Primes • Linear Graphs Equations • Linear Graphs Coordersions • Decimals & Coordersions Skills Integers & Place Value Perimeter & Area Substitution • Emmeter & Area Substitution • Conversions • Conversions • Conversions • Conversions Skills Integers & Place Value Perimeter & Area Substitution • Emmeter & Area Substitution • Conversions • Conversions • Conversions Skills Integers & Made sensible estimate for machines, heaps bio find perimeter of positive, negative and decimal numbers, bio powers of timeles and areas. Perimeter of tractors, wheaps parallelograms, trapezia and compacts of machines with an input of actors, parallelograms, trapezia and compacts of actors, and trapezia and compacts of tractors, and trapezia and compacts of tractors, and trapezia and compacts of tractors, and trapezia and compacts of tractors, and trade actors, parallelograms, trapezia and compacts of tractors, and trapezia and compacts of tractors, and trapezia and compacts of tractors, and trapezia and tra	Rationale	To build on skills developed at KS2 and consolidate through extension and problem solving. To be introduced to the ability to model and generalise through algebraic techniques. To begin to use a scientific calculator confidently.						
Knowledge • Perimeter & Area • Factors. • Forming & Solving • Concordinate & Place Value • Place Value • Place Value • Place Value	Topic/Unit	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2	
Skills Integers & Place Value Perimeter & Area appropriate unit of measurement integers and decimals. Perimeter & Area appropriate unit of measurement for a range of ules of rules of rules of rules of Decimals & appropriate unit situations. Exactors. Primes Exactors. Builting to solve a range of solve a range of rom given solve a range of rom given solve a range of rules of rules of a rumbers. Decimals & Perimes Value (dentify and plot rules of rules of rectangles, rectangles, rectangles, rectangles, rumbers solve a range of rom given rumbers. Forming & rumbers rules of rumbers, rectangles, rectangles, rectangles, rumbers rules for rules of rules rules rules rules of rules of rules rules rules of rules rules rules of rules rules rules of rules of rules	Knowledge	 Integers & Place Value Expressions, Formulas & Substitution 	 Perimeter & Area Brackets & Factorising 	 Factors, Multiples & Primes Percentages & Conversions 	 Forming & Solving Equations Sequences 	 Linear Graphs & Co-ordinate Geometry Fractions 	 Decimals & Place Value Averages & Range 	
algebra. equivalent. equivalent. equivalent. convert fractions into recurring decimals. Express one express one	Skills	Integers & Place Value Order positive and negative integers and decimals. Apply the four rules of arithmetic with positive, negative and decimal numbers. Multiply and divide numbers by powers of 10. Round numbers by powers of 10. Round numbers to different levels of accuracy and use rounded values in estimation. <u>Expressions,</u> Formulas & <u>Substitution</u> Define types of algebra. Write expressions and formulas from a range of situations. Substitute values into expressions and formulas. Manipulate expressions using the four rules of arithmetic in order to simplify. Use basic index laws when manipulating algebra.	Perimeter & Area Choose the appropriate unit of measurement for a range of situations. Make sensible estimate of a range of measures in everyday settings. Measure shapes to find perimeters and areas. Find the perimeter of rectangles, triangles, parallelograms, trapezia and composite shapes. Use formulae to find the area of rectangles and triangles and composite shapes. Use formulae to find the area of rectangles and triangles and composite shapes. Bracket & Factorising Multiply a single bracket. Simplify expressions involved repeated single brackets. Factorise a single bracket by taking out common numerical or algebraic factors. Show algebraic expressions are equivalent.	Factors, Multiples & Primes List all numbers that can be made from given sets of digits. Define and identify factors, multiples and prime numbers. List all factors of a number systematically. List multiples of integers. Write a number in prime factor form including using index notation. Find common factors and common multiples of two numbers. Find the LCM and HCF including using Venn diagrams or listing.Percentages & Convert between fractions, decimals and percentages. Recognise recurring decimals and convert fractions into recurring decimals. Express one pumber on o 	Forming & Solving Equations Use function machines, including to solve equations. Solve a range of linear equations, including the use of simple brackets or fractions, when the unknown appears on either one or both sides of the equation. Form equations or formulae from simple given information or diagrams and then solve them in order to solve a problem. <u>Sequences</u> Recognise and continue simple sequences including odd, even and Fibonacci-type sequences. Use function machines to generate terms in a sequence. Describe a term-to-term rule for a sequence. Find the nth term of a linear sequence. Use the nth term to find a specific term	Linear Graphs & Co-ordinate Geometry Identify and plot co-ordinates in all 4 quadrants. Find the co- ordinates of the midpoint of line segments or missing co- ordinates on 2D shapes given on a grid. Use function machines with an input of x, to find the output, y. Identify and/or draw horizontal and vertical graphs. Use a table of values to generate points on a linear graph. Plot and draw a range of linear graphs. Draw, label and scale axes accurately. <u>Fractions</u> Write fractions to describe shaded parts of a diagram and use diagrams to compare or order fractions. Simplify and find equivalent fractions including to compare or order fractions. Express one value as a fraction of another	Decimals & Place Value Identify the value of digits in a decimal or integer. Compare and order decimals. Indicate given values on a scale, including decimals. Apply the four rules of arithmetic to decimal calculations, including money. Multiply and divide by a value between 0 and 1. Round numbers to the nearest integer, to a given number of decimal places and to a given number of significant figures. Estimate answers to calculations by rounding to 1 sig. fig. Use one calculation to find the answer to another, in simple cases. <u>Averages &</u> <u>Range</u> Find the mean, mode, median and range from a bar chart. Calculato the	

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			percentage of another. Find a percentage of a quantity without a calculator for 50%, 25% and multiples of 10% and 5%. Find a percentage of a quantity with a calculator. Increase or decrease by a percentage. Solve problems in real-life contexts using percentages, including comparisons.	generate a whole sequence. Use the nth term to deduce whether a specific value appears in a sequence.	Convert between mixed numbers and improper fractions. Use the four rules of arithmetic, including with mixed numbers. Find a fraction of an amount. Find the reciprocal of an integer or a fraction.	from a frequency table and identify the greatest and least values leading to finding the range. Find the mode/modal value from a frequency table or grouped frequency table.
Assess- ments	Baseline Assessment Assessment 1		Assessment 2		Assessment 3	EOY Assessment
Homework	Mathswatch: Assessment 1 HU revision Core skills homework booklets	Retrieval grid	Mathswatch: Assessment 2 FU revision	Core skills homework booklets	Mathswatch: Assessment 3 FU revision ,	Mathswatch: EOY assessment revision



SUBJECT: MATHEMATICS – Foundation Pathway (Lower)

Year Group	Year 7						
Rationale	To consolidate skills developed at KS2 with progression to problem solving techniques. To be introduced to the ability to model and generalise through algebraic techniques. To ensure numerical skills are well practised						
	throughout. To be	gin to use a scientif	ic calculator confide	ently.		•	
Topic/Unit	Autumn Term	Autumn Term	Spring Term 1	Spring Term 2	Summer Term	Summer Term	
	Topic/Unit:	Z Topic/Unit:	Topic/Unit:	Topic/Unit:	Topic/Unit:	Z Topic/Unit:	
Knowledge	 Integers & Place Value Expression s, Formulas 	 Perimeter & Area Factors, Multiples & Primes 	 Brackets & Factorising Basic Percentage s & 	 Forming & Solving Equations Sequences 	Basic Linear Graphs & Co-ordinate Geometry	 Decimals & Place Value Averages & Range 	
Skills	& Integers &	Perimeter &	Conversion Bracket &	Forming &	 Fractions Basic Linear 	Decimals &	
Skills	Integers & Place Value Order positive and negative integers and decimals. Apply the four rules of arithmetic with positive and negative integers. Recall and use multiplication facts up to 12 x 12 and use them to support division. Multiply and divide numbers by powers of 10. Check answers by rounding or using inverse operations. Expressions, Formulas & Substitution Simplify algebraic expressions by collecting like terms with addition and subtraction. Multiply algebraic terms. Simplify division expressions by cancelling. Substitute values into simple expressions and formulas from a range of simple situations.	Perimeter & Area Choose the appropriate unit of measurement for a range of situations. Make sensible estimate of a range of measures in everyday settings. Convert between simple metric measurements. Measure shapes to find perimeters and areas. Find the perimeter of rectangles, triangles, parallelograms, trapezia and simple composite shapes. Use formulae to find the area of rectangles and triangles and simple composite shapes. Use formulae to find the area of rectangles and triangles and simple composite shapes made from rectangles and triangles. Factors, Multiples & Primes List all 3-digit numbers that can be made from given sets of digits. Define and identify factors, multiples and prime numbers.	Bracket & Factorising Multiply a single number term over a bracket. Simplify simple expressions involved repeated single brackets. Factorise a single bracket by taking out common numerical or algebraic factors. Basic Percentages & Conversions Understand that a percentage is a fraction in hundredths. Convert between simple fractions, decimals and percentages. Express one number as a percentage of another. Find a percentage of a quantity without a calculator for 50%, 25% and multiples of 10% and 5%. Find a percentage of a quantity with a calculator. Increase or decrease by a percentage. Solve simple problems in real-life contexts using	Forming & Solving Equations Use function machines, including to solve equations. Solve a range of linear equations, including the use of simple brackets or fractions, when the unknown appears on either side of the equation (not both sides). Form basic equations or formulae from simple given information or diagrams and then solve them in order to solve a problem. Sequences Recognise and continue simple sequences including odd, even and Fibonacci-type sequences. Use function machines to generate terms in a sequence. Describe a term-to-term rule for a sequence and use it to find extra terms. Recognise patterns from diagrams and draw the next diagram. Generate	Basic Linear Graphs & Co- ordinate Geometry Identify and plot co-ordinates in all 4 quadrants. Find the co- ordinates of the midpoint of line segments given on a diagram and axes. Use function machines with an input of x, to find the output, y. Identify and/or draw horizontal and vertical graphs. Use a table of values to generate points on a simple linear graph. Plot and draw a range of simple linear graphs. Draw, label and scale axes accurately. Fractions Write fractions to describe shaded parts of a diagram and use diagrams to compare or order fractions. Simplify and find equivalent fractions including to compare or order fractions. Express one value as a fraction of another.	Decimals & Place Value Identify the value of digits in a decimal or integer. Compare and order decimals. Indicate given values on a scale, including decimals. Apply the four rules of arithmetic to decimal calculations, including money. Round numbers to the nearest integer, to a given number of decimal places and to a given number of significant figures. Estimate answers to calculations by rounding to 1 sig. fig. <u>Averages & Range</u> Find the mean, mode, median and range from small sets of discrete data. Find the mode and range from a bar chart.	
	situations.	prime numbers.	using percentages,	Generate sequence of numbers:	another. Convert between mixed		

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		List all factors of a number systematically. List multiples of integers. Find common factors and common multiples of two numbers. Find the LCM	including comparisons.	arithmetic, square and cube numbers and triangular numbers, and those derived from sets of diagrams.	numbers and improper fractions. Add and subtract fractions. Find a fraction of an amount.	
		and HCF of simple pairs of numbers using listing.				
Assess- ments	Baseline Assessment Assessment 1		Assessment 2		Assessment 3	EOY Assessment
Homework	Mathswatch: Assessment 1 FL revision Core skills homework booklets	Retrieval grid	Mathswatch: Assessment 2 FL revision	Core skills homework booklets	Mathswatch: Assessment 3 FL revision	Mathswatch: EOY assessment revision