Walkwood Church of England Middle School

Mathematics

		Year 7 — 7 X lessons per fortnight		
	Wk	Topic	Learning content	Assessment
Autumn	1 W/C 31st Aug	Place value and Proportion- Place value	-Recognise place value -Order numbers -Round integers -Compare and order numbers -Compare two numbers using =, ≠, <, >, ≤, ≥ -Find the range of a set of numbers -Find the median of a set of numbers -Recognise intervals on a number line -Round any number to one significant figure (higher) -Write positive integers in the form A x 10n (higher) -Write 10, 100, 1000 as powers of 10 (higher) Key vocabulary: range, median, significant figures	
	2 W/C 7th Sept			
	3 W/C 14th Sept			Place value topic assessment- end of topic
	4 W/C 21st Sept	Place value and Proportion- Fractions, decimals and percentages	-Represent tenths and hundredths pictorially -Understand percentage on a hundred square -Convert fractions, decimals and percentages -Identify and use equivalent fractions -Represent fractions as a diagram -Understand fractions as division -Use and interpret pie charts (higher) -Explore fractions above one, decimals and percentages equivalences (higher) Interchange between fractional and decimal number lines (higher) Key vocabulary: fractions, decimals, percentages	
	5 W/C 28th Sept			
	6 W/C 5th Oct			Fraction, decimals and percentage topic assessment- end of topic
	7 W/C 12th Oct	Algebra- sequences	-Describe sequences -Continue sequences -Predict next terms -Explain the term-to-term rule -Understand sequences in a table and graphically (higher) Key vocabulary: sequence, linear, term	
	8 W/C 19th Oct			
	9 W/C 2nd Nov			Sequences topic assessment- end of topic
	10 W/C 9th Nov	Algebra- notation	-Work with inputs and outputs -Use inverse operations -Substitute values into single operation expressions and two step (higher) -Work with two-step function machines -Represent one- and two-step functions graphically -Solve some one-step equations using the inverse -Generate sequences when given the algebraic rule (Higher) -Solve one-step linear equations with all operations (higher) -Simplify like terms (higher) -Understand the meaning of equality (higher) Key vocabulary: function, simplify, equality	
	11 W/C 16th Nov			**Autumn assessments**

	Year 8 — 7 X lessons per fortnight		
	Topic	Learning content	Assessment
1 W/C 31st Aug	Ratio and Proportion- Ratio	-Understand ratio -Compare ratios -dividing into a ratio -ratio notation -simplifying ratios -representation of ratio (higher) -Solve proportional problems (higher) -Understand pi as a ratio (higher) Key vocabulary: ratio, proportion, Pi	
2 W/C 7th Sept			
3 W/C 14th Sept			Ratio topic assessment- end of topic
4 W/C 21st Sept	Ratio and Proportion- Multiplicative change	-Explore graphs -Convert between currencies -Similar shapes -Draw scale diagrams -Interpret maps -direct proportion (higher) -Explore direct proportion graphs (higher) -Understand scale factor (higher) Key vocabulary: currencies, scale, similar	
5 W/C 28th Sept			
6 W/C 5th Oct			Multiplicative change topic assessment- end of topic
7 W/C 12th Oct	Ratio and Proportion- Multiplying and dividing fractions	- Understand fractions -Represent fractions pictorially -Find the product of a pair of unit fractions -Divide a fraction by an integer - Multiply a fraction by an integer -Multiply and divide improper and mixed fractions (higher) -Multiply and divide algebraic fractions (higher) -Understand and use the reciprocal (higher) Key vocabulary: product, reciprocal	
8 W/C 19th Oct			Multiplying and dividing fractions topic assessment- end of topic
9 W/C 2nd Nov	Statistics- Cartesian plane	-coordinates in all four quadrants -Identify and draw lines that are parallel with the axes -Explore gradients -Recognise and use the line y = x -Solve problems involving graphs -Link graphs to linear sequences (higher) -Recognise and use lines in the forms; y=x+a, y=Kx (higher) -Explore negative gradients (higher) Key vocabulary: axes, linear, gradient	
10 W/C 9th Nov			
11 W/C 16th Nov			Cartesian plane topic assessment- end of topic **Autumn assessments**
12 W/C 23rd Nov	Statistics- Data and Probability	- Draw and interpret scatter graphs -Understand and describe a linear correlation -Draw and use a line of bets fit -Identify different types of data -Read frequency tables -Construct and interpret two-way tables -Find simple probabilities -Find probabilities from sample space, two-way tables, and Venn diagrams (higher) -Use the product rule for finding total outcomes (higher) Key vocabulary: correlation, sample space	

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	12 W/C 23rd Nov								
	13 W/C 30th Nov			Algebra notation topic assessment- end of topic		13 W/C 30th Nov			
	14 W/C 7th Dec 15 W/C 14th Dec	Consolidation lessons for the term topics	Teachers will cover areas for development identified in the Autumn Term.			14 W/C 7th Dec 15 W/C 14th Dec	Consolidation lessons for the term topics	Teachers will cover areas for development identified in the Autumn Term.	Data and probability topic assessment- end of topic
Spring	1 W/C 4th Jan	Number – Addition and subtraction	- Use formal methods for addition and subtraction - Use formal methods for adding and subtracting decimals - Choose the most appropriate method: mental strategies, formal written or calculator - Solve financial maths problems - Solve problems with frequency trees (higher) - Solve problems with bar charts and line charts - Add and subtract numbers given in standard form (higher) - Solve problems in the context of perimeter Key vocabulary: integer, column, inverse			1 W/C 4th Jan	Algebra – equations	- Form algebraic expressions - Use directed number with algebra - Multiply out a single bracket - Factorise into a single bracket - Expand multiple single brackets and simplify - Expand a pair of binomials (higher) - Solve equations, including with brackets - Form and solve equations with brackets - Understand and solve simple inequalities - Form and solve inequalities - Solve equations and inequalities with unknowns on both sides (higher) - Identify and use formulae, expressions, identities and equations Key vocabulary: inequality, expression	
	2 W/C 11th Jan			Addition and subtraction topic assessment – end of topic		2 W/C 11th Jan			
	3 W/C 18th Jan	Number – multiplying and dividing	- Determine the properties of multiplication and division - Understand and use factors and multiples - Multiply and divide integers and decimals by powers of 10 - Multiply by 0.1 and 0.01 (higher) - Convert metric units - Use formal methods to multiply integers and also decimals - Use formal methods to divide integers, and also decimals - Solve problems using the area of rectangles and parallelograms - Solve problems using the area of triangles - Solve problems using the area of trapezia (higher) - Solve problems using the mean - Explore multiplication and division in algebraic expressions (higher) Key vocabulary: powers, roots, metric			3 W/C 18th Jan			
	4 W/C 25th Jan					4 W/C 25th Jan			Equations topic assessment - end of topic
	5 W/C 1st Feb			Multiplying and dividing topic assessment – end of topic		5 W/C 1st Feb	Algebra – sequences and indices	- Generate sequences given a rule in words or a simple algebraic rule - Find the rule for the nth term of a linear sequence (higher) - Adding and subtracting expressions with indices - Simplifying algebraic expressions by multiplying indices - Simplifying algebraic expressions by dividing indices - Using the addition and subtraction law for indices - Exploring powers of powers (H) Key vocabulary: rule, law, term	
	6 W/C 8th Feb	Number - Directed number	- Understand and use representations of directed numbers - Order directed numbers using lines and appropriate symbols - Perform calculations that cross zero - Add and subtract directed numbers - Multiply and divide directed numbers - Use a calculator when working with directed numbers - Evaluate algebraic expressions with directed numbers - Two-step equations (higher) - Use the order or operations with directed numbers - Understand roots of positive numbers (higher) - Explore higher powers and roots (higher) Key vocabulary: negative, roots, positive			6 W/C 8th Feb			Sequences topic assessment - end of topic
	7 W/C 22nd Feb			Directed numbers topic assessment – end of topic		7 W/C 22nd Feb	Number – fractions	- Convert fluently between key fractions decimals and percentages - Calculate key fractions, decimals and percentages of an amount without a calculator - Calculate fractions, decimals and percentages of an amount using calculator methods - Convert between decimals and percentages greater than 100% - Percentage decrease with a multiplier - Calculate percentage increase and decrease using a multiplier - Express one number as a fraction or a percentage of another without a calculator - Express one number as a fraction or a percentage of another using calculator Key vocabulary: convert, equivalent, increase, decrease, inverse	
	8 W/C 1st Mar	FDP – fractions and percentages of amounts	- Use a given fraction to find the whole and/or other fractions - Find a percentage of a given amount using mental methods and a calculator - Solve problems with fractions greater than 1 and percentages greater than 100% (higher) Key vocabulary: divide, fraction, percentage, equivalent	**Spring assessments**		8 W/C 1st Mar			**Spring assessments**
	9 W/C 8th Mar			Fractions and percentages of amounts topic assessment - end of topic		9 W/C 8th Mar			Fractions topic assessment - end of topic

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	10 W/C 15th Mar	FDP – adding and subtracting fractions	- Convert between mixed numbers and fractions - Add and subtract fractions with the same denominator - Understand and use equivalent fractions - Add and subtract fractions where denominators share a simple common multiple - Add and subtract improper fractions and mixed numbers - Use fractions in algebraic contexts (higher) - Add and subtract simple algebraic fractions (higher) Key vocabulary: convert, simplify, improper			10 W/C 15th Mar	Number - Index form (higher) Number – consolidation (foundation)	Index form: - Investigate negative powers of 10 - Work with numbers between 0 and 1 in standard form - Compare and order numbers in standard form - Add, subtract, multiply and divide numbers in standard form - Understand and use negative and fractional indices Key vocabulary: power, standard form Consolidation: - Use the formal written methods for the four operations - Understand explicitly the order of operations - Work with directed numbers and decimals Key vocabulary: indices, negative, operations	Index form Or Consolidation topic assessment - end of topic
	11 W/C 22nd Mar					111 W/C 22nd Mar	Geometry – angles	- Understand and use basic angle rules and notation - Investigate angles between parallel lines and the transversal - Identify and calculate with alternate and corresponding angles - Constructions triangles and special quadrilaterals - Investigate the properties of special quadrilaterals - Identify and calculate with sides and angles in special quadrilaterals - Understand and use the properties of diagonals of quadrilaterals - Understand and use the sum of exterior and interior angles of any polygon - Prove simple geometric facts (higher) - Construct an angle bisector (higher) - Construct a perpendicular bisector of a line segment (higher) Key vocabulary: properties, parallel, perpendicular	
Summer	1 W/C 12th April			Adding and subtracting fractions topic assessment – end of topic		1 W/C 12th April			
	2 W/C 19th April	Geometry – constructions	- Understand and use letter and labelling conventions including those for geometric figures - Draw and measure line segments including geometric figures - Draw and measure angles up to 360° - Identify perpendicular and parallel lines - Recognise types of triangles and quadrilaterals - Identify polygons up to decagon - Construct triangles using SSS, SAS and ASA (higher) - Construct more complex polygons (higher) - Interpret pie charts - Draw pie charts Key vocabulary: angle, parallel, measure			2 W/C 19th April			Angles topic assessment – end of topic
	3 W/C 26th April					3 W/C 26th April	Geometry – area	- Calculate the area of triangles, rectangles, parallelograms and trapeziums - Calculate the perimeter and area of compound shapes - Investigate the area of a circle - Calculate the area of a circle and parts of a circle without a calculator - Calculate the area of a circle and parts of a circle with a calculator	
	4 W/C 3rd May			Constructions topic assessment – end of topic		4 W/C 3rd May			Area topic assessment – end of topic
	5 W/C 10th May	Geometry – angles	- Understand and use the sum of angles, at a point and on a straight line - Understand and use the equality of vertically opposite angles - Know and apply the sum of angles in a triangle - Know and apply the sum of angles in a quadrilateral - Solve angle problems using properties of triangles and quadrilaterals - Find and use the angle sum of any polygon (higher) - Investigate angles in parallel lines (higher) - Understand and use parallel line angles rules (higher) 2 3 4 5 Key vocabulary: bisect, angle, opposite			5 W/C 10th May	Geometry – transformation	- Recognise line symmetry - Reflect a shape in a horizontal or vertical line - Reflect a shape in a diagonal line Key vocabulary: symmetry, horizontal, vertical, reflection	Transformation topic assessment – end of topic
	6 W/C 17th May					6 W/C 17th May	Data reasoning – handling and measures	- Set up a statistical enquiry - Design and criticise questionnaires - Draw and interpret pictograms, bar charts and vertical line charts - Draw and interpret multiple bar charts - Draw and interpret pie charts - Draw and interpret line graphs - Choose the most appropriate diagram for given set of data - Represent and interpret grouped quantitative data - Find and interpret the range - Compare distributions using charts - Identify misleading graphs - Understand and use the mean, median and mode - Choose the most appropriate average - Find the mean from an ungrouped frequency table (higher) - Find the mean from a grouped frequency table (higher) - Identify outliers - Compare distributions using averages and the range	
	7 W/C 24th May			Angles topic assessment – end of topic		7 W/C 24th June			
	8 W/C 7th June	Number 2 – probability	- Identify and represent sets - Interpret and create Venn diagrams - Understand and use the intersection of sets - Understand and use the union of sets - Understand and use the complement of a set (higher)			8 W/C 7th June			
	9			**GL assessment fortnight**		9			**GL assessment fortnight**

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	W/C 14th June		- Know and use the vocabulary of probability - Generate sample spaces for single events - Calculate the probability of a single event - Understand and use the probability scale - Know that the sum of probabilities for all possible outcomes is 1 Key vocabulary: chance, outcome, event			W/C 14th June		Key vocabulary: average, data, interpret	Handling and measures topic assessment – end of topic
	10 W/C 21st June					10 W/C 21st June	Data reasoning – measures of location	- Compare distributions using averages and the range - Identify outliers - Find the mean from grouped and ungrouped frequency tables - Choose the most appropriate average - Understand and use mean, median and mode	
	11 W/C 28th June			Probability topic assessment – end of topic		11 W/C 28th June			Measures of location topic assessment – end of topic
	12 W/C 5th July	Number 2 – primes	- Identify factors of numbers and expressions - Recognise and identify prime numbers - Recognise square and triangular numbers - Find common factors of a set of numbers including the HCF - Find common multiples of a set of numbers including the LCM - Write a number as a product of its prime factors - Use a Venn diagram to calculate the HCF and LCM (higher) - Make and test conjectures - Use counter examples to disprove a conjecture Key vocabulary: union, intersection, complement, difference Once completed all topics, teachers will cover areas for development identified in the summer			12 W/C 5th July	Consolidation lessons for the term topics	Once completed all topics, teachers will cover areas for development identified in the Summer Term.	
	13 W/C 12th July	Consolidation lessons for the term topics		Primes topic assessment – end of topic		13 W/C 12th July	Consolidation lessons for the term topics		