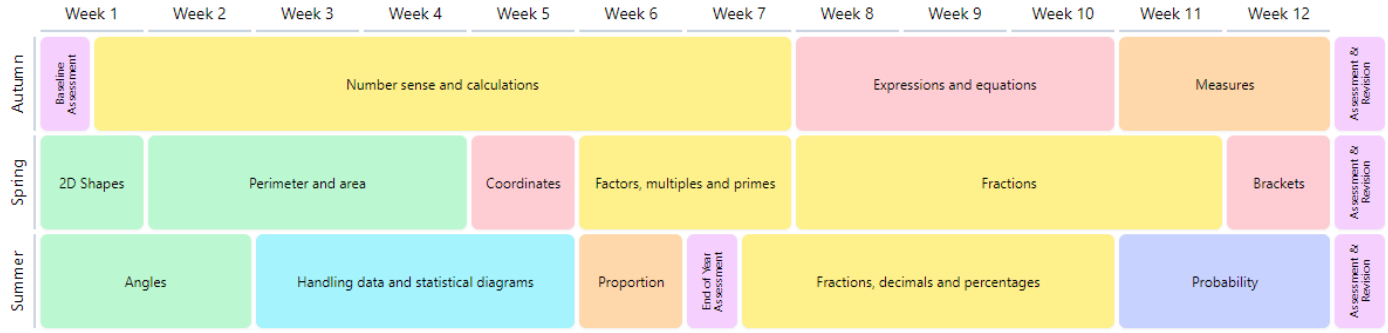
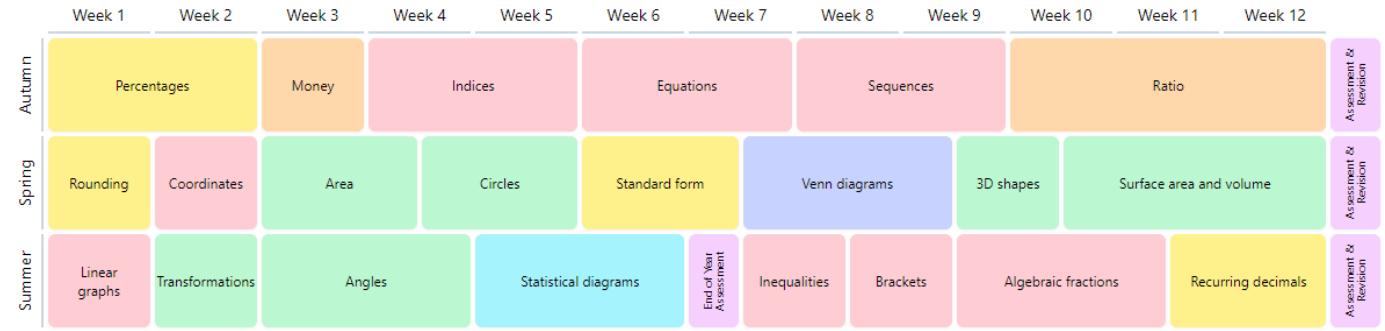
The Market Weighton School
Expect More - Achieve More

Long term planning grid

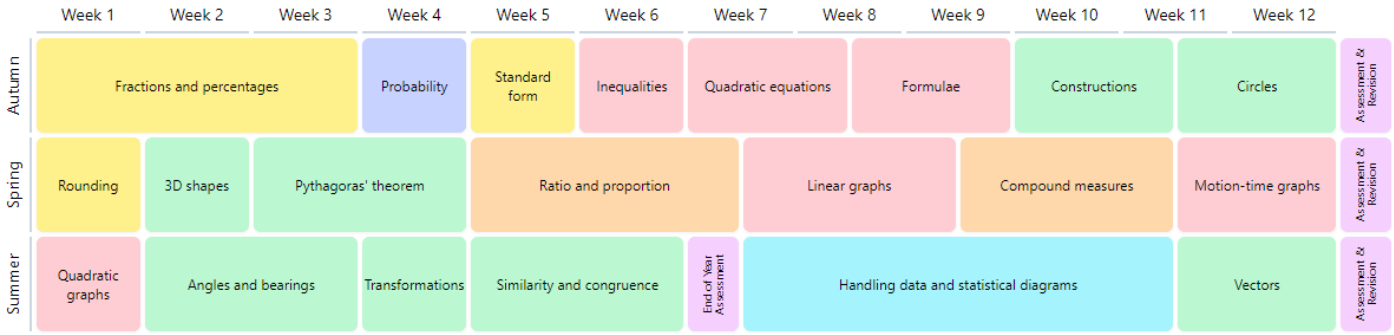
Year 7



Year 8



Year 9



The Market Weighton School
Expect More - Achieve More

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
10 Foundation	Chapter 12 Geometry and measures: Transformations Chapter 13 Probability: Probability and events	Chapter 14 Geometry and measures: Volumes and surface areas of prisms Chapter 15 Algebra: Linear equations	Chapter 16 Ratio and proportion and rates of change: Percentages and compound measures Chapter 17 Ratio and proportion and rates of change: Percentages and variation	Chapter 18 Statistics: Representations and interpretation Chapter 19 Geometry and measures: Constructions and loci	Chapter 20 Geometry and measures: Curved shapes and pyramids Chapter 21 Algebra: Numbers and sequences	Revision and exams Chapter 22 Geometry and measures: Right angles triangles
10 Higher	Chapter 12 Geometry and measures: Similarity Chapter 13 Probability: Exploring and applying probability	Chapter 15 Algebra: Equations and inequalities Chapter 14 Number: Powers and standard form Chapter 16 Number: Counting, accuracy, powers and surds	Chapter 17 Algebra: Quadratic equations	Chapter 18 Statistics: Sampling and more complex diagrams Chapter 19 Probability: Combined events	Chapter 20 Geometry and measures: Properties of circles Chapter 21 Ratio and proportion and rates of change: Variation	Revision and exams Chapter 22 Geometry and measures: Triangles
11 Foundation	Review of Chapter 22 Geometry and measures: Right angles triangles Chapter 23 Geometry and measures: Congruency and similarity	Chapter 24 Probability: Combined events Chapter 25 Number: Powers and standard form	Chapter 26 Algebra: Simultaneous equations and linear inequalities Chapter 27 Algebra: Non-linear graphs	Revision	Revision	Exam
11 Higher	Chapter 22 Geometry and measures: Triangles Chapter 23 Algebra: Graphs	Chapter 24 Algebra: Algebraic fractions and functions Chapter 25 Geometry and measures: Vector geometry	Revision	Revision	Revision	Exam

Medium Term Planning

HIGHER

Topic	Big Questions	Approx Lessons	Key Knowledge and Skills / Assessment	Links to other subjects
1: Basic number	1.1 Solving real-life problems	2	Solve problems set in a real-life context.	
	1.2 Multiplication and division with decimals	2	Multiply a decimal number by another decimal number. Divide by a decimal number.	
	1.3 Approximation of calculations	3	Round to a given number of significant figures. Estimate before calculating. Round a calculation to give a reasonable answer.	
	1.4 Multiples, factors, prime numbers, powers and roots	3	Find multiples and factors. Identify prime numbers. Identify square and triangular numbers. Find square roots. Identify cubes and cube roots.	
	1.5 Prime factors, LCM and HCF	3	Identify prime factors. Identify the least common multiple of two numbers. Identify the highest common factor of two multiples.	
	1.6 Negative numbers	2	Multiply and divide positive and negative numbers.	
2: Fractions, ratio and proportion	2.1 One quantity as a fraction of another	1	Find one quantity as a fraction of another.	
	2.2 Adding, subtracting and calculating with fractions	3	Add and subtract fractions with different denominators.	
	2.3 Multiplying and dividing fractions	3	Multiply proper fractions and mixed numbers. Divide by fractions.	
	2.4 Fractions on a calculator	2	Use a calculator to accurately solve problems involving fractions.	
	2.5 Increasing and decreasing quantities by a percentage	3	Increase and decrease quantities by a percentage.	
	2.6 Expressing one quantity as a percentage of another	2	Work out percentage change. Express one quantity as a percentage of another.	
3: Statistical diagrams and averages	3.1 Statistical representation	3	Draw and interpret bar charts and pie charts. Draw and interpret line graphs.	Science Geography Business
	3.2 Statistical measures	4	Use averages to solve more complex problems. Identify the advantages and disadvantages of each type of	Science Geography Business

			average and learn which one to use in different situations. Work out and use the range of a set of data. Calculate the mode, the median and the mean from a frequency table. Identify the modal group. Estimate the mean from a grouped frequency table.	
	3.3 Scatter diagrams	2	Draw, interpret and use scatter diagrams. Draw and use a line of best fit.	Science Geography
4: Number and sequences	4.1 Patterns in number	1	Recognise patterns in number sequences.	
	4.2 Number sequences	2	Generate sequences, given the *n*th term.	
	4.3 Finding the *n*th term of a linear sequence	3	Find the *n*th term of a linear sequence.	
	4.4 Special sequences	2	Recognise and continue some special number sequences such as square numbers.	
	4.5 General rules from given patterns	2	Find the *n*th term from practical problems involving sequences.	
	4.6 The *n*th term of a quadratic sequence	2	Generate the terms of a quadratic sequence from the *n*th term.	
	4.7 Finding the *n*th term for quadratic sequences	3	Work out the *n*th term of a quadratic sequence.	
5: Ratio and proportion	5.1 Ratio	3	Simplify a ratio. Express a ratio as a fraction. Divide amounts in given ratios. Complete calculations from a given ratio and partial information.	
	5.2 Direct proportion problems	2	Recognise and solve problems that involve direct proportion.	
	5.3 Best buys	3	Find either the cost per unit mass or the mass per unit cost and use to this to find which product is cheaper.	
	5.4 Compound measures	3	Recognise and solve problems involving the compound measures of rates of pay, speed, density and pressure.	
	5.5 Compound interest and repeated percentage change	2	Calculate simple and compound interest. Solve problems involving repeated percentage change.	
	5.6 Reverse percentage (working out the original amount)	2	Calculate the original amount after a known percentage change.	
6: Angles	6.1 Angle facts	2	To know the sum of the angles on a straight line and around a point. Use vertically opposite angles.	

	6.2 Triangles	1	To solve missing angle problems in triangles.	
	6.3 Angles in a polygon	2	To work out the sum of the interior angles in a polygon.	
	6.4 Regular polygons	2	To be able to calculate the size of the interior and exterior angles of any regular polygon.	
	6.5 Angles in parallel lines	2	To solve problems involving alternate, corresponding, allied and opposite angles.	
	6.6 Special quadrilaterals	2	To be able to calculate the size of angles in special quadrilaterals using their geometric properties	
	6.7 Scale drawings and bearings	2	To read scale drawings and maps. To draw scale drawings. To use a bearing to specify a direction.	Geography
7: Transformations, constructions and loci	7.1 Congruent triangles	1	Demonstrate that two triangles are congruent.	
	7.2 Rotational symmetry	1	Find the order of rotational symmetry for a 2D shape. Recognise shapes with rotational symmetry.	
	7.3 Transformations	5	Translate, reflect, rotate and enlarge a 2D shape.	
	7.4 Combinations of transformations	2	Combine transformations.	
	7.5 Bisectors	2	Construct the bisectors of lines and angles. Construct angles of 60° and 90°.	
	7.6 Defining a locus	3	Draw a locus for a given rule.	
	7.7 Loci problems	2	Solve practical problems using loci.	
	7.8 Plans and elevations	2	Construct and interpret plans and elevations of 3D shapes.	
8: Algebraic manipulation	8.1 Basic algebra	2	Recognise expressions, equations, formulae and identities. Substitute into, manipulate and simplify algebraic expressions.	
	8.2 Factorisation	2	Factorise an algebraic expression.	
	8.3 Quadratic expansion	2	Expand two binomials to obtain a quadratic expression.	
	8.4 Expanding squares	1	Expand the square of a binomial.	
	8.5 More than two binomials	2	Expand more than two binomials.	
	8.6 Quadratic factorisation	2	Factorise a quadratic expression of the form $x^2 + ax + b$ into two linear brackets.	
	8.7 Factorising $ax^2 + bx + c$	3	Factorise a quadratic expression of the form $ax^2 + bx + c$ into two linear brackets.	
	8.8 Changing the subject of a formula	3	Change the subject of a formula.	
9: Length	9.1 Circumference and area of a circle	2	Calculate the circumference and area of a circle.	

	9.2 Area of a parallelogram	1	Calculate the area of a parallelogram.	
	9.3 Area of a trapezium	1	Calculate the area of a trapezium.	
	9.4 Sectors	2	Calculate the length of an arc. Calculate the area and angle of a sector.	
	9.5 Volume of a prism	3	Calculate the volume of a prism.	
	9.6 Cylinders	3	Calculate the volume and surface area of a cylinder.	
	9.7 Volume of a pyramid	3	Calculate the volume of a pyramid.	
	9.8 Cones	1	Calculate the volume and surface area of a cone.	
	9.9 Spheres	1	Calculate the volume and surface area of a sphere.	
10: Linear graphs	10.1 Drawing linear graphs from points	1	Draw linear graphs by finding points.	
	10.2 Gradient of a line	3	Find the gradient of a straight line. Draw a line with a certain gradient.	
	10.3 Drawing graphs by gradient-intercept and cover-up methods		Draw graphs using the gradient-intercept method. Draw graphs using the cover-up method.	
	10.4 Finding the equation of a line from its graph	3	Find the equation of a line, using its gradient and intercept. Find the equation of a line given two points on the line.	
	10.5 Real-life uses of graphs	2	Convert from one unit to another unit by using a conversion graph. Use straight-line graphs to find formulae.	Science
	10.6 Solving simultaneous equations using graphs	3	Solve simultaneous linear equations using graphs.	
	10.7 Parallel and perpendicular lines	3	Draw linear graphs parallel or perpendicular to other lines and passing through a specific point.	
11: Right-angled triangles	11.1 Pythagoras' theorem	1	Calculate the length of the hypotenuse in a right angled triangle.	
	11.2 Finding the length of the shorter side	1	Calculate the length of a shorter side in a right angled triangle.	
	11.3 Applying Pythagoras' theorem in real-life situations	2	Solve practical problems involving Pythagoras' theorem.	
	11.4 Pythagoras' theorem and isosceles triangles	1	Use Pythagoras' theorem and isosceles triangles.	
	11.5 Pythagoras' theorem in three dimensions	2	Use Pythagoras' theorem to solve problems involving three dimensions	
	11.6 Trigonometric ratios	1	Use the three trigonometric ratios.	
	11.7 Calculating angles		Use the trigonometric ratios to calculate an angle.	

	11.8 Using the sine and cosine functions	2	Find lengths of sides and angles in right-angled triangles using the sine and cosine functions.	
	11.9 Using the tangent function	1	Find lengths of sides and angles in right-angled triangles using the tangent function.	
	11.10 Which ratio to use		Decide which trigonometric ratio to use in a right-angled triangle.	
	11.11 Solving problems using trigonometry	2	Solve practical problems using trigonometry. Solve problems using an angle of elevation or an angle of depression.	
	11.12 Trigonometry and bearings	2	Solve bearing problems using trigonometry.	
	11.13 Trigonometry and isosceles triangles	1	Use trigonometry to solve problems involving isosceles triangles.	
12: Similarity	12.1 Similar triangles	2	Show two triangles are similar. Work out the scale factor between similar triangles.	
	12.2 Similar shapes	3	Area and volume of similar shapes	
13: Exploring and applying probability	13.1 Experimental probability	3	Calculate experimental probabilities and relative frequencies. Estimate probabilities from experiments. Use different methods to estimate probabilities.	
	13.2 Mutually exclusive exhaustive outcomes	1	Recognise mutually exclusive, complementary and exhaustive events.	
	13.3 Expectation	2	Predict the likely number of successful events, given the number of trials and the probability of any one outcome.	
	13.4 Probability and two-way tables	2	Read two-way tables and use them to work out probabilities.	
	13.5 Probability and Venn diagrams	2	Use Venn diagrams to solve probability questions.	
15: Equations and inequalities	15.1 Linear equations	5	Solve equations in which the variable (the letter) appears as part of the numerator of a fraction. Solve equations where you have to expand brackets first Solve equations where the variable appears on both sides of the equals sign Set up equations from given information and then solve them.	
	15.2 Elimination methods for simultaneous equations	2	Solve simultaneous linear equations in two variables using the elimination method.	

	15.3 Substitution method for simultaneous equations	3	Solve simultaneous linear equations in two variables using the substitution method.	
	15.4 Balancing coefficients to solve simultaneous equations	2	Solve simultaneous linear equations by balancing coefficients.	
	15.5 Using simultaneous equations to solve problems	1	Solve problems using simultaneous linear equations.	
	15.6 Linear inequalities	1	Solve a simple linear inequality and represent it on a number line.	
	15.7 Graphical inequalities	3	Show a graphical inequality Find regions that satisfy more than one graphical inequality.	
	15.8 Trial and improvement	2	Estimate the answer to an equations that does not have an exact solution using trial and improvement.	
14: Powers and standard form	14.1 Powers (indices)	1	Use powers (also known as indices). Multiply and divide by powers of 10.	Science
	14.2 Rules for multiplying and dividing powers	2	Use rules for multiplying and dividing powers.	
	14.3 Standard form	3	Change a number into standard form. Calculate using numbers in standard form.	Science
16: Counting, accuracy, powers and surds	16.1 Rational numbers, reciprocals, terminating and recurring decimals	4	Recognise rational numbers, reciprocals, terminating decimals and recurring decimals. Convert terminal decimals to fractions. Convert fractions to recurring decimals. Find reciprocals of numbers or fractions.	
	16.2 Estimating powers and roots	1	How to estimate powers and roots of any given positive number.	
	16.3 Negative and fractional powers	3	Apply the rules of powers to negative and fractional powers. Find and use the relationship between negative powers and roots.	
	16.4 Surds	3	Simplify surds. Calculate and manipulate surds, including rationalising a denominator.	
	16.5 Limits of accuracy	2	Find the error interval or limits of accuracy of numbers that have been rounded to different degrees of accuracy.	
	16.6 Problems involving limits of accuracy	2	Combine limits of two or more variables together to solve problems.	

	16.7 Choices and outcomes	2	Work out the number of choices, arrangements or outcomes when choosing from lists or sets.	
17: Quadratic equations	17.1 Plotting quadratic graphs	2	Draw and read values from quadratic graphs.	
	17.2 Solving quadratic equations by factorisation	3	Solve a quadratic equation by factorisation. Rearrange a quadratic equation so that it can be factorised.	
	17.3 Solving a quadratic equation by using the quadratic formula	2	Solve a quadratic equation by using the quadratic formula. Recognise why some quadratic equations cannot be solved.	
	17.4 Solving quadratic equations by completing the square	3	Solve a quadratic equation by completing the square.	
	17.5 The significant points of a quadratic curve	2	Identify the significant points of a quadratic function graphically. Identify the roots of a quadratic function by solving a quadratic equation. Identify the turning point of a quadratic function by using symmetry or completing the square.	
	17.6 Solving one linear and one non-linear equation using graphs	2	Solve a pair of simultaneous equations where one is linear and one is non-linear, using graphs.	
	17.7 Solving quadratic equations by the method of intersection	1	Solve equations by the method of intersecting graphs.	
	17.8 Solving linear and non-linear simultaneous equations algebraically	2	Solve simultaneous equations where one equation is linear and the other is non-linear.	
	17.9 Quadratic inequalities	3	Solve quadratic inequalities.	
18: Sampling and more complex diagrams	18.1 Collecting data	1	Understand sampling. Collect unbiased reliable data for a sample.	Science
	18.2 Frequency polygons	2	Draw and interpret frequency polygons.	
	18.3 Cumulative frequency graphs	4	Draw and interpret cumulative frequency graphs.	
	18.4 Box plots	2	Draw and interpret box plots.	
	18.5 Histograms	4	Draw and interpret histograms where the bars are of equal width. Draw and interpret histograms where the bars are of unequal width. Calculate the median, quartiles and interquartile range from a histogram.	
19: Combined event	19.1 Addition rules for outcomes of events	1	Work out the probability of different outcomes of combined events.	

	19.2 Combined events	2	Work out the probability of two outcomes or events occurring at the same time.	
	19.3 Tree diagrams	2	Use tree diagrams to work out the probability of combined events.	
	19.4 Independent events	3	Use the connectors 'and' and 'or' to work out the probabilities for combined events.	
	19.5 Conditional probability	3	Work out the probability of combined events when the probabilities change after each event.	
20: Properties of circles	**20.1 Circle theorems**	3	Prove and use circle theorems to work out angles created in a circle from points on a circumference.	
	20.2 Cyclic quadrilaterals	1	Find the size of angles in cyclic quadrilaterals.	
	20.3 Tangents and chords	1	Use tangents and chords to find the size of angles in circles.	
	20.4 Alternate segment theorem	1	Use the alternate segment theorem to find the size of angles in circles.	
21: Variation	**21.1 Direct proportion**	3	Solve problems where two variables have a directly proportional relationship. Work out the constant of proportionality.	
	21.2 Inverse proportion	3	Solve problems where two variables have an inversely proportional relationship. Work out the constant of proportionality.	
22: Triangles	22.1 Further 2D problems	2	Use trigonometric ratios and Pythagoras' theorem to solve more complex two-dimensional problems.	
	22.2 Further 3D problems	4	Use trigonometric ratios and Pythagoras' theorem to solve more complex three-dimensional problems.	
	22.3 Trigonometric ratios of angles between 0° and 360°	3	Find the sine, cosine and tangent of any angle from 0° to 360°	
	22.4 Solving any triangle	3	Use the sine rule and the cosine rule to find sides and angles in any triangle	
	22.5 Using sine to calculate the area of any triangle	3	Work out the area of a triangle if you know two sides and the included angle.	
23: Graphs	23.1 Distance –time graphs	2	Interpret distance–time graphs Draw a graph of the depth of liquid as a container is filled.	Science
	23.2 Velocity–time graphs	3	Read information from a velocity–time graph.	Science

			Work out the distance travelled from a velocity–time graph. Work out the acceleration from a velocity–time graph.	
	23.3 Estimating the area under a curve	3	Use areas of rectangles, triangles and trapeziums to estimate the area under a curve. Interpret the meaning of the area under a curve.	Science
	23.4 Rates of change	3	Draw a tangent at a point on a curve and use it to work out the gradient at a point on a curve. Interpret the gradient at a point on a curve.	Science
	23.5 Equation of a circle	3	Find the equation of a tangent to a circle.	
	23.6 Other graphs	1	Recognise and plot cubic, exponential and reciprocal graphs.	
	23.7 Transformation of the graph y = f(x)	3	Transform a graph	
24: Algebraic fractions and functions	24.1 Algebraic fractions	3	Simplify algebraic fractions Solve equations containing algebraic fractions.	
	24.2 Changing the subject of a formula	2	Change the subject of a formula where the subject occurs more than once.	
	24.3 Functions	3	Find the output of a function. Find the inverse function.	
	24.4 Composite functions	3	Find the composite of two functions.	
	24.5 Iteration	3	Find an approximate solution for an equation using the process of iteration.	
25: Vector geom	25.1 Properties of vectors	2	Add and subtract vectors.	
	25.2 Vectors in geometry	4	Use vectors to solve geometric problems.	

Foundation

Topic	Big Questions	Approx Lessons	Key Knowledge and Skills / Assessment	Links to other subjects
1: Number: Basic number	1.1 Place value and ordering numbers	2	use a number line to represent negative numbers use inequalities with negative numbers compare and order positive and negative numbers.	
	1.3 The four rules	2	use the four rules of arithmetic with integers and decimals.	
	1.2 Order of operations and BIDMAS	3	work out the answers to problems with more than one mathematical operation.	
2: Geometry and measures: Measures and scale drawings	2.1 Systems of measurement	2	convert from one metric unit to another convert from one imperial unit to another.	Science
	2.2 Conversion factors	2	use approximate conversion factors to change between imperial units and metric units.	
	2.3 Scale drawings	2	read and draw scale drawings use a scale drawing to make estimates.	Science
	2.4 Nets	2	draw nets of some 3D shapes identify a 3D shape from its net.	
	2.5 Using an isometric grid	3	read from and draw on isometric grids interpret diagrams to draw plans and elevations.	
3: Statistics: Charts, tables and averages	3.1 Frequency tables	2	use tally charts and frequency tables to collect and represent data use grouped frequency tables to collect and represent data.	Geography Science
	3.2 Statistical diagrams	4	draw pictograms to represent statistical data draw bar charts and vertical line charts to represent statistical data.	Geography Science Business
	3.3 Line graphs	2	draw a line graph to show trends in data.	"
	3.4 Statistical averages	5	work out the mode, median, mean and range of small sets of data decide which is the best average to use to represent a data set.	Science

4: Geometry and measures: Angles	4.1 Angles facts	2	calculate angles on a straight line calculate angles around a point use vertically opposite angles.	
	4.2 Triangles	1	recognise and calculate the angles in different sorts of triangle.	
	4.3 Angles in a polygon	2	calculate the sum of the interior angles in a polygon.	
	4.4 Regular polygons	2	calculate the exterior angles and the interior angles of a regular polygon.	
	4.5 Angles in parallel lines	2	calculate angles in parallel lines.	
	4.6 Special quadrilaterals	3	use angle properties in quadrilaterals.	
	4.7 Bearings	2	use a bearing to specify a direction.	
5: Number: Number properties	5.1 Multiples of whole numbers	2	find multiples of whole numbers recognise multiples of numbers.	
	5.2 Factors of whole numbers	2	identify the factors of a number.	
	5.3 Prime numbers	1	identify prime numbers.	
	5.4 Prime factors, LCM and HCF	3	identify prime factors identify the lowest common multiple (LCM) of two numbers identify the highest common factor (HCF) of two numbers.	
	5.5 Square numbers	1	identify square numbers use a calculator to find the square of a number.	
	5.6 Square roots	1	recognise the square roots of square numbers up to 225 use a calculator to find the square roots of any number.	
	5.7 Basic calculations on a calculator	2	use some of the important keys when working on a calculator.	
6: Number: Approximations	6.1 Rounding whole numbers	1	round a whole number.	
	6.2 Rounding decimals	1	round decimal numbers to a given accuracy.	
	6.3 Approximating calculations	3	identify significant figures round numbers to a given number of significant figures use approximation to estimate answers and check calculations round a calculation at the end of a problem, to give what is considered to be a sensible answer.	
7 N ··	7.1 Calculating with decimals	2	multiply and divide with decimals.	

	7.2 Fractions and reciprocals	3	recognise different types of fraction, reciprocal, terminating decimal and recurring decimal convert terminating decimals to fractions convert fractions to decimals find reciprocals of numbers or fractions.	
	7.3 Writing one quantity as a fraction of another	2	work out a fraction of a quantity find one quantity as a fraction of another.	
	7.4 Adding and subtracting fractions	3	add and subtract fractions with different denominators.	
	7.5 Multiplying and dividing fractions	2	multiply proper fractions multiply mixed numbers divide by fractions.	
	7.6 Fractions on a calculator	2	use a calculator to add and subtract fractions use a calculator to multiply and divide fractions.	
8: Algebra: Linear graphs	8.1 Graphs and equations	2	use flow diagrams to draw graphs work out the equations of horizontal and vertical lines.	
	8.2 Drawing linear graphs by finding points	2	draw linear graphs without using flow diagrams.	
	8.3 Gradient of a line	2	work out the gradient of a straight line draw a line with a certain gradient.	Science
	8.4 $y = mx + c$	3	draw graphs using the gradient-intercept method draw graphs using the cover-up method.	
	8.5 Finding the equation of a line from its graph	3	work out the equation of a line, using its gradient and y-intercept work out the equation of a line given two points on the line.	
	8.6 The equation of a parallel line	2	work out the equation of a linear graph that is parallel to another line and passes through a specific point.	
	8.7 Real-life uses of graphs	2	convert from one unit to another unit by using a conversion graph use straight-line graphs to work out formulae.	Science
	8.8 Solving simultaneous equations using graphs	2	solve simultaneous linear equations using graphs.	
9 A ..	9.1 Basic algebra	2	write an algebraic expression	

			recognise expressions, equations, formulae and identities.	
	9.2 Substitution	2	substitute into, simplify and use algebraic expressions.	
	9.3 Expanding brackets	1	expand brackets such as $2(x - 3)$ expand and simplify brackets.	
	9.4 Factorisation	2	factorise an algebraic expression.	
	9.5 Quadratic expansion	2	expand two linear brackets to obtain a quadratic expression.	
	9.6 Quadratic factorisation	3	factorise a quadratic expression of the form $x^2 + ax + b$ into two linear brackets.	
	9.7 Changing the subject of a formula	3	change the subject of a formula.	
10: Ratio and proportion and rates of change: Ratio, speed and proportion	10.1 Ratio	4	simplify a ratio express a ratio as a fraction divide amounts into given ratios complete calculations from a given ratio and partial information.	
	10.2 Speed, distance and time	4	recognise the relationship between speed, distance and time calculate average speed from distance and time calculate distance travelled from the speed and the time taken calculate the time taken on a journey from the speed and the distance.	Science
	10.3 Direct proportion problems	2	recognise and solve problems that involve direct proportion.	
	10.4 Best buys	3	find the cost per unit mass find the mass per unit cost use the above to find which product is better value.	
11: Geometry and measures: Perimeter and area	11.1 Rectangles	1	calculate the perimeter and area of a rectangle.	DT
	11.2 Compound shapes	1	calculate the perimeter and area of a compound shape made from rectangles.	DT
	11.3 Area of a triangle	1	calculate the area of a triangle use the formula for the area of a triangle.	DT
	11.4 Area of a parallelogram	1	calculate the area of a parallelogram use the formula for the area of a parallelogram.	
	11.5 Area of a trapezium	1	calculate the area of a trapezium	

			use the formula for the area of a trapezium.	
	11.6 Circles	1	recognise terms used for circle work calculate the circumference of a circle.	
	11.7 The area of a circle	2	calculate the area of a circle.	
	11.8 Answers in terms of π	2	give answers for circle calculations in terms of ð.	
12: Geometry and measures: Transformations	12.1 Rotational symmetry	1	work out the order of rotational symmetry for a 2D shape recognise shapes with rotational symmetry.	
	12.2 Translation	2	translate a 2D shape.	
	12.3 Reflections	2	reflect a 2D shape in a mirror line.	
	12.4 Rotations	2	rotate a 2D shape about a point	
	12.5 Enlargements	3	enlarge a 2D shape by a scale factor.	
	12.6 Using more than one transformation	2	use more than one transformation.	
	12.7 Vectors	3	represent vectors add and subtract vectors.	
13: Probability: Probability and events	13.1 Calculating probabilities	2	use the probability scale and the language of probability calculate the probability of an outcome of an event.	
	13.2 Probability that an outcome will not happen	1	calculate the probability of an outcome not happening when you know the probability of that outcome happening.	
	13.3 Mutually exclusive and exhaustive outcomes	1	recognise mutually exclusive and exhaustive outcomes.	
	13.4 Experimental probability	3	calculate experimental probabilities and relative frequencies from experiments recognise different methods for estimating probabilities.	
	13.5 Expectation	3	predict the likely number of successful outcomes, given the number of trials and the probability of any one outcome.	
	13.6 Choices and outcomes	2	apply systematic listing and counting strategies to identify all outcomes for a variety of problems.	
14: Geom	14.1 3D shapes	2	use the correct terms when working with 3D shapes.	

	14.2 Volume and surface area of a cuboid	2	calculate the surface area and volume of a cuboid.	
	14.3 Volume and surface area of a prism	3	calculate the volume and surface area of a prism.	
	14.4 Volume and surface area of cylinders	3	calculate the volume and surface area of a cylinder.	
15: Algebra: Linear equations	15.1 Solving linear equations	5	solve linear equations such as $3x - 1 = 11$ where the variable only appears on one side use inverse operations and inverse flow diagrams solve equations by balancing solve equations in which the variable (the letter) appears in the numerator of a fraction	
	15.2 Solving equations with brackets	2	solve equations where you have to first expand brackets.	
	15.3 Solving equations with the variable on both sides	3	solve equations where the variable appears on both sides of the equals sign.	
16: Ratio and proportion and rates of change: Percentages and compound measures	16.1 Equivalent percentages, fractions and decimals	1	convert percentages to fractions and decimals and vice versa.	
	16.2 Calculating a percentage of a quantity	1	calculate a percentage of a quantity.	
	16.3 Increasing and decreasing quantities by a percentage	2	increase and decrease quantities by a percentage.	
	16.4 Expressing one quantity as a percentage of another	1	express one quantity as a percentage of another work out percentage change.	
	16.5 Compound measures	3	recognise and solve problems involving the compound measures of rates of pay, density and pressure.	Science Business
17: Ratio and proportion and rates of change: Percentages and variation	17.1 Compound interest and repeated percentage change	4	calculate simple interest calculate compound interest solve problems involving repeated percentage change.	
	17.2 Reverse percentage (working out the original value)	2	calculate the original amount, given the final amount, after a known percentage increase or decrease.	
	17.3 Direct proportion	2	solve problems in which two variables have a directly proportional relationship (direct variation) work out the constant of proportionality recognise graphs that show direct variation.	

	17.4 Inverse proportion	2	solve problems in which two variables have an inversely proportional relationship (inverse variation) work out the constant of proportionality.	
18: Statistics: Representation and interpretation	18.1 Sampling	2	obtain a random sample from a population collect unbiased and reliable data for a sample.	Geography Science
	18.2 Pie charts	2	draw and interpret pie charts.	Geography Science Business
	18.3 Scatter diagrams	3	draw, interpret and use scatter diagrams draw and use a line of best fit.	Science
	18.4 Grouped data and averages	5	identify the modal group calculate an estimate of the mean from a grouped table.	
19: Geometry and measures: Constructions and loci	19.1 Constructing triangles	3	construct accurate drawings of triangles, using a pair of compasses, a protractor and a straight edge.	
	19.2 Bisectors	2	construct the bisectors of lines and angles construct angles of 60° and 90°	
	19.3 Defining a locus	3	draw a locus for a given rule.	
	19.4 Loci problems	2	solve practical problems using loci.	
20: Geometry and measures: Curved shapes and pyramids	20.1 Sectors	2	calculate the length of an arc calculate the area and angle of a sector.	
	20.2 Pyramids	2	calculate the volume and surface area of a pyramid.	
	20.3 Cones	2	calculate the volume and surface area of a cone.	
	20.4 Spheres	2	calculate the volume and surface area of a sphere.	
21: Algebra: Number and sequences	21.1 Patterns in number	1	recognise patterns in number sequences.	
	21.2 Number sequences	2	recognise how number sequences are built up generate sequences, given the *n*th term.	
	21.3 Finding the *n*th term of a linear sequence	2	find the *n*th term of a linear sequence.	
	21.4 Special sequences	2	recognise and continue some special number sequences	

			understand how prime, odd and even numbers interact in addition, subtraction and multiplication problems.	
	21.5 General rules from given patterns	2	find the *n*th term from practical problems involving sequences.	
23: Geometry and measures: Congruency and	23.1 Congruent triangles	2	demonstrate that two triangles are congruent.	
	23.2 Similarity	3	recognise similarity in any two shapes show that two shapes are similar work out the scale factor between similar shapes.	
22: Geometry and measures: Right-angled triangles	22.1 Pythagoras' theorem	2	Know what Pythagoras' theorem is calculate the length of the hypotenuse in a right-angled triangle.	
	22.2 Calculating the length of a shorter side	1	calculate the length of a shorter side in a right-angled triangle.	
	22.3 Applying Pythagoras' theorem in real-life situations	1	Solve problems using Pythagoras' theorem	
	22.4 Pythagoras' theorem and isosceles triangles	1	use Pythagoras' theorem in isosceles triangles.	
	22.5 Trigonometric ratios	1	define, understand and use the three trigonometric ratios.	
	22.6 Calculating lengths using trigonometry	2	use trigonometric ratios to calculate a length in a right-angled triangle.	
	22.7 Calculating angles using trigonometry	1	use the trigonometric ratios to calculate an angle.	
	22.8 Trigonometry without a calculator	2	work out and remember trigonometric values for angles of 30°, 45°, 60° and 90°.	
	22.9 Solving problems using trigonometry	2	solve practical problems using trigonometry solve problems using an angle of elevation or an angle of depression.	
	22.10 Trigonometry and bearings	2	solve bearing problems using trigonometry.	
	22.11 Trigonometry and isosceles triangles.	1	use trigonometry to solve problems involving isosceles triangles.	
24: Probability: Combined events	24.1 Combined events	2	work out the probabilities when two or more events occur at the same time.	
	24.2 Two-way tables	2	read two-way tables and use them to work out probabilities.	
	24.3 Probability and Venn diagrams	2	use Venn diagrams to solve probability questions.	

	24.4 Tree diagrams	4	understand frequency tree diagrams and probability tree diagrams use probability tree diagrams to work out the probabilities involved in combined events.	
25: Number: Powers and standard form	25.1 Powers (indices)	2	write a number as a power of another number use powers (also known as indices) multiply and divide by powers of 10.	Science
	25.2 Rules for multiplying and dividing powers	2	use rules for multiplying and dividing powers multiply and divide numbers by powers of 10.	
	25.3 Standard form	3	write a number in standard form calculate with numbers in standard form.	Science
26: Algebra: Simultaneous equations and linear inequalities	26.1 Elimination method for simultaneous equations	2	solve simultaneous linear equations in two variables using the elimination method.	
	26.2 Substitution method for simultaneous equations	2	solve simultaneous linear equations in two variables using the substitution method.	
	26.3 Balancing coefficients to solve simultaneous equations	2	solve simultaneous linear equations by balancing coefficients.	
	26.4 Using simultaneous equations to solve problems	2	solve problems using simultaneous linear equations.	
	26.5 Linear inequalities	2	solve a simple linear inequality and represent it on a number line.	
27: Algebra: Non-linear graphs	27.1 Distance-time graphs	2	interpret distance-time graphs draw a graph of the depth of liquid as a container is filled.	Science
	27.2 Plotting quadratic graphs	2	draw and read values from quadratic graphs.	
	27.3 Solving quadratic equations by factorisation	2	solve a quadratic equation by factorisation.	
	27.4 The significant points of a quadratic curve	3	identify the significant points of a quadratic function graphically identify the roots of a quadratic function by solving a quadratic equation. identify the turning point of a quadratic function.	
	27.5 Cubic and reciprocal graphs	1	recognise and plot cubic and reciprocal graphs.	

Short Term Planning

Individual lesson resources and assessments to include high quality texts and images. Lessons should promote the explicit teaching of vocabulary and give opportunities to speak, read and write extensively using high-level subject vocabulary. Core numeracy skills are incorporated into lessons where they can be covered in a real world context.

Opportunities should be created to support the wider curriculum:

- PSHE / RSE
- Careers
- Citizenship and British Values
- Financial Education

Lesson planning is shared across the department however teachers will adapt lessons to match needs to students.