Curriculum Assessment Map: Year 7 Mathematics

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	Numbers and the Number System Checking, Approximating and Estimating Calculating	Visualising and Constructing Investigating Properties of Shapes Exploring Fractions, Decimals and Percentages	Algebraic Proficiency: Tinkering Proportional Reasoning Sequences	Measuring Space Investigating Angles Calculating Fractions, Decimals and Percentages	Solving Equations And Inequalities Calculating Space Mathematical Movement	Presentation of Data Measuring Data Revision of key concepts as identified from assessments
Key Learning & Skills	• Factors, multiples and primes • Powers and roots • Sequences • Rounding • Estimation • BIDMAS • Perform mental and written calculations using the four operations, including with mixed operations, large, negative and decimals numbers.	• Drawing 2D shapes • 3D shapes and their nets. • Labelling sides and angles of triangles. • Constructing triangles • Measuring lines and angles. • Calculating angles in polygons. • Circles and their properties. • Equivalence between fractions, decimals and percentages. • Compare and order fractions. • Use common factors and multiples with fractions.	• Use vocabulary of expressions, equations, formulae and terms. • Use and interpret algebraic notation. • Use simple formulae. • Convert between miles and kilometres. • Use ratio notation, including reduction to simplest form. • Dividing a quantity into a given ratio. • Similar shapes • Generate linear number sequences.	• Use standard units of mass, time, length, money and other measures. • Use, read, write and convert between standard units. • Measure line segments and angles in geometric figures. • Describe properties and find missing angles of angles at a point, in a line or are vertically opposite. • Apply four operations to fractions, including improper and mixed numbers. • Solve problems including percentage change.	• Solving equations with one unknown. • Solve multi step equations where the solution is either an integer or fraction. • Find pairs of numbers that solve equations with 2 unknowns. • Calculate the perimeter and area of 2D shapes. • Calculate, estimate and compare the volume of cubes and cuboids. • Know formulae of area and volume of a shape. • Solve multistep problems involving the calculation and conversion of units. • Understand a 4-quadrant coordinate grid. • Translate and reflect simple shapes. • Use vectors to describe translation. • Solve geometric problems.	• Interpret and construct tables, charts and diagrams including: frequency tables, bar and pie charts and pictograms for categorical data. • Use vertical line charts for ungrouped discrete numerical data. • Compare distributions through central tendency and spread. • Calculate and interpret mean as an average.

Curriculum Assessment Map: Year 7 Mathematics

		• Percentages	• Generate the nth term of a sequence.	• Find percentages of a quantity and be able to make comparisons.	• Identify, describe and construct congruent shapes.	

| **End points** | **Foundation Core**
• Use positive integer powers and associated real roots
• Apply the four operations with decimal numbers
• Write a quantity as a fraction or percentage of another
• Use multiplicative reasoning to interpret percentage change
• Add, subtract, multiply and divide with fractions and mixed numbers
• Check calculations using approximation, estimation or inverse operations
• Simplify and manipulate expressions by collecting like terms
• Simplify and manipulate expressions by multiplying a single term over a bracket
• Substitute numbers into formulae
• Solve linear equations in one unknown
• Understand and use lines parallel to the axes, y = x and y = -x
• Calculate surface area of cubes and cuboids
• Understand and use notation for labelling angles, lengths, equal lengths and parallel lines | **Higher Core**
• Apply the four operations with negative numbers
• Convert numbers into standard form and vice versa
• Apply the multiplication, division and power laws of indices
• Convert between terminating decimals and fractions
• Find a relevant multiplier when solving problems involving proportion
• Solve problems involving percentage change, including original value problems
• Factorise an expression by taking out common factors
• Change the subject of a formula when two steps are required
• Find and use the nth term for a linear sequence
• Solve linear equations with unknowns on both sides
• Plot and interpret graphs of linear functions
• Apply the formulae for circumference and area of a circle
• Calculate theoretical probabilities for single events |
| **Informal (formative) Assessment** | Sparx homework tasks
Exit tickets
GRIT | |

Curriculum Assessment Map: Year 7 Mathematics

	Year 7 Test 1	Year 7 Test 2	Year 7 Test 3	Year 7 Test 4	Year 7 Test 5	Year 7 Test 6
Formal (summative) Assessment						

Curriculum Assessment Map: Year 8 Mathematics

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	Numbers and the Number System Calculating Checking, Approximating and Estimating	Counting and Comparing Visualising and Constructing Investigating Properties of Shapes Algebra: Simplifying	Exploring Fractions, Decimals and Percentages Proportional Reasoning Sequences Measuring Space	Investigating Angles Calculating Fractions, Decimals and Percentages Solving Equations	Calculating Space Mathematical Movement Algebra Graphs	Probability Presentation of Data Measuring Data Revision of key concepts as identified from assessments
Key Learning & Skills	• Prime Numbers • Lowest Common Multiple • Prime Factorisation • Product Notation • Factorisation Theorem • Rounding including decimal places and significant figures • Written methods to calculate integers, decimals, fractions and mixed numbers (positive/negative) • BIDMAS • Place value • Inverse operations • Estimating	• Interpret standard form. • Order positive and negative integers, decimals and fractions. • Use the symbols =, ≠, >, <, ≥, ≤. • Use key terminology to explain shapes. • Draw diagrams from written descriptions • Identify properties of shapes • Apply properties and definitions to shapes. • Use vocabulary of expressions, equations, formulae and terms. • Interpret algebraic notation • Simplify expressions • Interpret functions with inputs and outputs • Substitute into formulae and expressions • BIDMAS	• Express one quantity as a fraction of another. • Define percentage as 'number of parts per hundred'. • Express one quantity as a percentage of another. • Express division of a quantity into a ratio. • Apply ratio to real life context. • Use proportion as equality of ratios. • Express multiplicative relationship between 2 quantities (ratio/fraction). • Compound units • Simplify ratio • Divide a quantity by a given ratio. • Generate terms of a sequence from a term-to-term rule.	• Understand alternate and corresponding angles on parallel lines. • Apply the properties of angles round a point, on a straight line and vertically opposite. • Deduce the angle sum in any polygon. • Work with percentages greater than 100%. • Solve problems involving percentage change including simple interest (financial mathematics) • Calculate exactly with fractions. • Compare two quantities using percentages. • Solve linear equations with one unknow and with unknowns on both sides. • Find solutions using a graph.	• Compare lengths, areas and volumes. • Calculate perimeter of 2D shapes, including circles. • Identify and apply circle definitions and properties. • Know the formulae for area and circumference of a circle. • Calculate areas of circles and composite shapes. • Calculate the volume of prisms (including cylinders).	• Apply systematic listing strategies. • Describe and analyse outcomes of experiments using frequency trees. • Enumerate sets systematically using tables, grids and Venn diagrams. • Construct and calculate possibility spaces for combined experiments. • Use the probability scale. • Apply the property of exhaustive events sum to one. • Interpret, analyse and compare distributions. • Interpret scatter graphs and recognise correlation. • Interpret and construct tables, charts and diagrams. • Compare data using median, mean, mode and range. • Apply statistics to describe population

Curriculum Assessment Map: Year 8 Mathematics

	Foundation Core	Higher Core			
End points	• Apply the four operations with negative numbers • Convert numbers into standard form and vice versa • Apply the multiplication, division and power laws of indices • Convert between terminating decimals and fractions • Find a relevant multiplier when solving problems involving proportion • Solve problems involving percentage change, including original value problems • Factorise an expression by taking out common factors • Change the subject of a formula when two steps are required • Find and use the nth term for a linear sequence • Solve linear equations with unknowns on both sides • Plot and interpret graphs of linear functions • Apply the formulae for circumference and area of a circle • Calculate theoretical probabilities for single events	• • Calculate with roots and integer indices • Manipulate algebraic expressions by expanding the product of two binomials • Manipulate algebraic expressions by factorising a quadratic expression of the form $x^2 + bx + c$ • Understand and use the gradient of a straight line to solve problems • Solve two linear simultaneous equations algebraically and graphically • Plot and interpret graphs of quadratic functions • Change freely between compound units • Use ruler and compass methods to construct the perpendicular bisector of a line segment and to bisect an angle • Solve problems involving similar shapes • Calculate exactly with multiples of π • Apply Pythagoras' theorem in two dimensions • Use geometrical reasoning to construct simple proofs • Use tree diagrams to list outcomes			
Informal (formative) Assessment	• Sparx homework tasks • BAM • Exit tickets • GRIT				
Formal (summative) Assessment	• Year 8 Test 1	• Year 8 Test 2	• Year 8 Test 3	• Year 8 Test 4	• Year 8 Test 5	• Year 8 Test 6

Curriculum Assessment Map: Year 9 Mathematics

	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic	Numbers and the Number System Calculating Visualising and Constructing	Algebra: Simplifying Exploring Fractions, Decimals and Percentages Proportional Reasoning	Sequences Solving Equations 1 Investigating Angles	Calculating Fractions, Decimals and Percentages Solving Equations 2	Calculating Space Algebra: Graphs Probability	Presentation of Data Measuring Data Revision of key concepts as identified from assessments
Key Learning & Skills	• Prime Numbers • Lowest Common Multiple • Prime Factorisation • Product Notation • Rounding including decimal places and significant figures • Interpret standard form. • Written methods to calculate integers, decimals, fractions and mixed numbers (positive/negative) • BIDMAS • Interpreting maps and scale drawings and use of bearings. • Identify, describe and construct similar shapes. • Use scale factors, scale drawings and maps.	• Interpret algebraic notation. • Use the concepts and vocabulary of factors. • Simplify and manipulate expressions. • Substitute values into scientific formulae. • Rearrange formulae to change the subject. • Work interchangeably with terminating decimals and their corresponding fractions. • Solve problems involving direct and inverse proportion (graphically and algebraically). • Apply concepts of congruence and similarity. • Compound unit • Express division of a quantity into a ratio. • Link proportion and ratio.	• Generate terms of a sequence from either a term-to-term or a position-to-term rule. • Calculate the nth term. • Solve simultaneous equations algebraically and graphically. • Derive simultaneous equations and solve. • Solve linear equations with unknowns on both sides. • Find solutions to linear equations using a graph. • Use congruence facts • Apply angle facts to obtain simple proof. • Understand alternate and corresponding angles on parallel lines. • Deduce the angle sum in any polygon.	• Interpret fractions and percentages as operators. • Work with percentages greater than 100% (increase) • Solve problems involving percentage change and simple interest (financial mathematics). • Calculate exactly with fractions. • Use concepts and vocabulary of inequalities. • Solve linear inequalities with one unknown. • Represent the solution set on a number line.	• Identify and apply circle definitions. • Calculate arc lengths, angles and areas of sectors of circles. • Calculate surface area and volume of prisms (including cylinders). • Exact calculations with π. • Pythagoras's Theorem • Compare lengths, area and volume. • Perimeters of 2D shapes, including circles. • Calculate area and circumference of circles. • Interpret gradients and intercepts • Use $y = mx + c$ • Find equation of line between 2 points. • Recognise and interpret linear, quadratic and cubic graphs. • Plot linear graphs. • Calculate independent and dependant combine events using tree diagrams. • Describe and analyse outcomes of probability experiments. • Construct possibility spaces top calculate probabilities.	• Interpret and construct tables, charts and diagrams. • Draw lines of best fit to make predictions. • Understand correlation and the effects. • Compare distributions of data sets – discrete, continuous and grouped data. • Interpret scatter graph of bivariate data. • Compare distributions through central tendency and spread. • Describe populations using statistics – understanding there are limitations of sampling.

Curriculum Assessment Map: Year 9 Mathematics

End points	Foundation Core	Higher Core
	- Know the meaning of powers and roots - Know the multiplication and division laws of indices - Understand and interpret numbers using standard form. - Round to a given number of decimal places or significant figures - Know the meaning of the inequality symbols - Solve linear equations by balancing when the solution is a whole number or a fraction - Work with coordinates in all four quadrants - Carry out a reflection, rotation and translation. - Manipulate expressions by collecting like terms - Calculate with negative numbers - Know the difference between an expression, an equation and a formula. - Solve basic ratio, best buys, recipe problems. - Find a relevant multiplier in a situation involving proportion - Plot the graph of a linear function - Understand the meaning of a compound unit - Convert between units of length, capacity, mass and time. - Generate a linear sequence from its nth term - Find the nth term for a linear sequence - Substitute numbers into formulae - Solve linear equations including those with unknowns on both sides. - Know and use the value of π - Know and use the formula for area and circumference of a circle - Calculate the area of rectangles, parallelograms, triangles, trapezia and compound shapes. - Apply basic angle facts including angles at a point, on a line and in a triangle - Apply angle facts involving parallel lines and vertically opposite angles - Know and apply Pythagoras' theorem. - Plot straight-line graphs and non-standard graphs. - Interpret gradients and intercepts of linear functions graphically and algebraically - Recognise, sketch and interpret graphs of linear and simple quadratic functions - Calculate with proper fractions, improper fractions and mixed numbers - Use calculators to find a percentage of an amount and percentage increase/decrease. - Know that percentage change = (actual change ÷ original amount) x100 - Convert between fractions, decimals and percentages - Use experimental and theoretical probability to calculate expected outcomes - Construct and interpret Frequency tables, pictograms, bar charts, pie charts, tables, vertical line charts and scatter diagrams.	- Understand and work with similar shapes - Solve linear equations, including those with the unknown in the denominator of a fraction - Know the meaning of powers and roots. - Know the multiplication and division laws of indices - Understand and interpret numbers using standard form. - Round to a given number of decimal places or significant figures - Know the meaning of the inequality symbols - Solve linear equations by balancing when the solution is a whole number or a fraction - Calculate with positive indices using written methods and negative indices in the context of standard form - Understand and apply the concept of solving simultaneous equations by elimination. - Carry out reflection, rotations, translations and enlargements of 2D shapes - Calculate with negative numbers - Multiply two linear expressions of the form $(x \pm a)(x \pm b)$ - Factorise a quadratic expression when a≥1 - Add, subtract, multiply and divide fractions. - Change the subject of a formula when two steps are required. - Find the nth term for a linear sequence. - Identify and work with quadratic sequences. - Use a formal method to solve an inequality in one/two variables and show on a number line. - Calculate the area and circumference of a circle - Calculate the area of rectangles, parallelograms, triangles, trapezia, circles, sectors and compound shapes. - Calculate the surface area of a right prism and a cylinder - Know the vocabulary of circles/parts of a circle - Apply basic angle facts including angles at a point, on a line and in different triangles - Apply angle facts involving parallel lines and vertically opposite angles, knowing appropriate language - Plot graphs of linear, quadratic, cubic, reciprocal functions and non-standard functions. - Use a multiplier to calculate the result of percentage changes - Know when to add or multiply two or more probabilities, including both non-independent and independent events - Convert between fractions, decimals and percentages - Use a tree diagram to calculate probabilities of dependent and independent combined events - Interpret and construct frequency tables - Analyse data using measures of central tendency - Understand and apply $y = mx + c$ to different problems, including parallel lines - Know and apply Pythagoras' Theorem - Understand column vector notation
Informal (formative) Assessment	- Sparx homework tasks - Exit tickets - GRIT	
Formal (summative) Assessment	Year 8 Test 1 · Year 8 Test 2 · Year 8 Test 3 · Year 8 Test 4 · Year 8 Test 5 · Year 8 Test 6	