

Y7-11 Mathematics

Long Term Plan Dixons Middleton Academy

Year 7:

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Orientation												
		Sequences Describe and continue with linear and non-linear Sequences with diagrams	Sequences Nth term, generating sequences Determine if a number is in a sequence	Directed Number Order negative numbers, Add and subtract with directed number	Directed Number Multiply and divide with directed number Continue sequences with negative numbers	Algebraic Notation Function machines Algebraic expressions	Algebraic Notation Order of operations Substitution	Equality and Equivalence Collecting like terms including multiplying and dividing	Equality and Equivalence Expanding single brackets Factorising single brackets	Equality and Equivalence Solving one and two step equations including brackets and negative answers	Equality and Equivalence Solving one and two step equations including brackets and negative answers	Place Value Place value of numbers and decimals Use the Inequality symbol Ordering whole numbers and decimals	Place Value Rounding and estimation
wCycle 2					Cycle assessment weeks								
	Place value Midpoints Median and range Standard form	Fractions, Decimals and Percentages Read, write and represent Fractions, decimals and percentages	Fractions, Decimals and Percentages Equivalent fractions Convert between FDP Order FDP	Addition and Subtraction Word problems Frequency trees Two-way tables	Assessments Addition and Subtraction Time and timetables, Perimeter, bar and line charts	Assessments Addition and Subtraction Add and subtract with money	Addition and Subtraction Add and subtract with standard form	Multiplication and Division Multiply and divide including decimals	Multiplication and Division Factors and multiples Square, cube and triangle numbers Examples and counter examples	Multiplication and Division Product of prime factors, HCF and LCM,	Intervention week	Multiplication and Division Area of 2D and compound shapes	Multiplication and Division Mean
Cycle 3													
	Fractional Arithmetic Fractions of amounts Interpret pie charts	Fractional Arithmetic Add and subtract fractions including mixed numbers Add and subtract mixed numbers and decimals	Fractional Arithmetic Multiply and divide fractions and mixed numbers Worded fraction problems Algebraic fractions	Constructing and Measuring Estimate, label, draw and measure lines and angles Metric units Scale conversions including square and cube units	Constructing and Measuring Names and properties of angles and shapes Draw pie charts	Geometric Reasoning Angles on a line, around a point Angles in triangles and quadrilaterals	Geometric Reasoning Mixed angles facts	Revision and Assessments	Revision and Assessments	Percentages of Amounts Percentage of amounts Increase and decrease by percentages Use of a calculator	Percentages of Amounts Repeated percentage change Simple interest Compound interest	Intervention Week	Intervention Week

Year 8:

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Orientation				Cycle assessment weeks								
		Sequences Generate sequences Find the nth term Determine if a number is in a sequence	Brackets and Equations Form expressions Collect like terms	Brackets and Equations Expand a bracket (single and double)	Assessments Brackets and Equations Factorise to a single and double bracket Simplify algebraic fractions	Assessments Brackets and Equations Solve equations with brackets (including unknowns on both sides) Change the subject	Brackets and equations Use inequality statements Solve inequalities Form and solve equations and inequalities	Cartesian Plane Coordinates Graphs parallel to the axes Straight line graphs	Cartesian Plane Gradients of lines Non-linear graphs Midpoint of a line segment	Intervention week	Probability The probability scale Listing outcomes Writing a probability Probability of an event not happening Experimental probability	Probability Sample spaces Probability from sample spaces, two-way tables, frequency trees and Venn diagrams	Data Handling Data collection and sampling Bar charts Pictograms
Cycle 2													
	Data Handling Pie charts Line graphs Grouped frequency diagrams	Data Handling MMMR Mean from a frequency table Compare distributions	Ratio Represent a ratio Find equivalent ratios Simplify ratio 1 : n	Ratio Share in a ratio Find the whole/part ratio Compare ratio	Fractions and Percentages FDP Fractions of amounts Percentages of amounts	Fractions and Percentages Percentage increase and decrease Percentage change Repeated percentage change Reverse percentage and fractions	Indices Add and subtract with indices Multiply and divide with indices	Indices Powers of powers Negative indices Fractional indices	Indices Calculating with powers and roots Pythagoras	Standard Form Read and write in standard form Convert between standard form and ordinary numbers	Standard Form Add and subtract with standard form Multiply and divide with standard form Use a calculator	Number Sense Rounding and estimating Error intervals Time Speed, distance time	Number Sense Multiply and divide fractions
Cycle 3													
	Number Sense Fractional arithmetic with mixed numbers Algebraic fractions	Number Sense Factors, multiples and primes HCF and LCM	Angles Label lines, angles and shapes Angles on a line, around a point and in a triangle	Angles Angles in parallel lines Names and properties of shapes Interior and exterior angles	Angles Construct shapes Lines and angle bisectors	Perimeter and Area Metric units Perimeter Circumference Arc length	Perimeter and Area Area of 2D shapes Area of a circle Area of a sector Compound areas Metric units of area	Revision and Assessments	Revision and Assessments	3D Geometry Nets Plans and elevations Faces/edges vertices Surface area of cubes, cuboids and triangular prisms	3D Geometry Volume of cubes, cuboids and prisms	3D Geometry Volume of cylinders, cones and pyramids Metric units of volume Surface area of cylinders and spheres Composite solids	Intervention Week

Year 9:

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Orientation				Cycle assessment weeks								
		Sequences Continue a sequence Linear and quadratic sequences nth term linear and quadratic Fibonacci Geometric sequences	Equations Solve equations and inequalities with unknowns on one side and both sides Represent Inequalities on a number line	Equations Form and solve equations and inequalities Change the subject	Assessments Algebraic expressions Expand binomials and triple brackets Factorise quadratics Difference of 2 squares Simplify algebraic fractions	Assessments Straight line graphs Plot and read coordinates Midpoints Graphs parallel to axis	Straight line graphs Straight line graphs Equation of a line Real life graphs	Straight line graphs Perpendicular lines Inequalities on a graph Regions	Ratio and proportion Direct proportion Conversion graphs Inverse proportion	Ratio and proportion Share in a ratio Best buy Exchange rates Ratio and algebra	Intervention week	Data Handling Collect and organise data Two-way tables Frequency polygons	Data Handling Stem and leaf diagrams MMMR Averages from frequency tables and diagrams including grouped frequency
Cycle 2													
	Data Handling Scatter diagrams Identifying errors and misconceptions in statistical diagrams (histograms)	Probability Probability scale Experimental probability Estimated outcomes Sample spaces	Probability Tree diagrams Venn diagrams Probability from two-way tables	Percentages Increase and decrease Percentage change Bills and bank statements VAT Wages and tax	Percentages Repeated percentage change Simple and compound interest Reverse percentages	Rates Speed distance time Units of time Distance time graphs	Rates Density, mass and volume Rates of change Compound units	Algebraic representation Substitution Quadratic graphs Cubic graphs Reciprocal graphs	Algebraic representation Use graphs to solve equations, find points of intersection, turning points and roots	Simultaneous equations Solve linear simultaneous equations	Simultaneous equations Solve linear simultaneous equations	Deduction Draw and measure angles Angles on a line, around a point, in a triangle and quadrilateral Angles in parallel lines	Deduction Form and solve with angles Conjectures Reasoning
Cycle 3													
	Deduction Interior and exterior Angles in polygons	Pythagoras and Trigonometry Squares and square roots Calculate using Pythagoras Prove a triangle is right angled using Pythagoras Find the length of a line segment 3D Pythagoras	Pythagoras and Trigonometry Label a right-angled triangle Find sides using SOHCAHTOA Find angles using SOHCAHTOA	Pythagoras and Trigonometry Pythagoras or Trigonometry? Exact trig	Shape and construction Name 2D and 3D shapes Circles, arcs and sectors	Shape and construction Scale drawing Map scales Loci Construction	Shape and construction Congruency Congruent triangles Similar shapes Similar triangles Similar area and volume	Revision and Assessments	Revision and Assessments	Transformations Symmetry Rotate a shape Translate a shape Reflect a shape	Transformations Recognise enlargement Enlarge by a positive negative scale factor Enlarge by a fractional scale factor Describe an enlargement	Transformations Compare transformations Combine and describe transformations	Intervention Week

Year 10:

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Orientation												
		Number Recurring decimals Surds Multiplying and dividing with decimals	Number Rounding and estimating Error intervals Estimating calculations Bounds	Sequences Sequences (Fibonacci, quadratic, geometric, nth term, problem solve)	Algebraic graphs Line segments Equation of a line from coordinates Parallel and perpendicular lines	Algebraic graphs Quadratic graphs Regions	Algebraic graphs Gradient of and area under curves	Enlargement and Similarity Similar shapes and congruency Area and volume of similar shapes Negative enlargement	Angles and bearings Draw and measure angles and bearings Angles rules and problem solving	Angles and bearings Converting metric units of area and volume Scale drawing	Pythagoras and trigonometry Find sides and angles using Pythagoras and trigonometry (SOHCAHTOA) Pythagoras and Trigonometry in 3D	Trigonometry Exact values Sine rule Cosine rule	Trigonometry Area of a triangle using sine rule Problem solving using Pythagoras and trigonometry
Cycle 2					Cycle assessment weeks								
	Equations and Inequalities Solving equations and inequalities including brackets, fractions and unknowns on both sides	Equations and Inequalities Represent inequalities on a number line Form and solve equations and inequalities	Equations and Inequalities Solving quadratic equations and inequalities	2D and 3D geometry Area of compound shapes Area and circumference of a circle Arcs and sectors	Assessments 2D and 3D geometry Plans and elevations, Volume of a prism, volume of a cylinder Density	Assessments 2D and 3D geometry Surface area and volume of a sphere, cone, frustrum, pyramid and cylinder	Indices and roots Indices and index laws (multiply, divide, brackets, negative and fractional) Standard Form Use of a calculator	Manipulating expressions Expanding brackets (single, double and triple) Factorising linear and simple quadratics	Manipulating expressions Simplify algebraic fractions Changing the subject	Manipulating expressions Algebraic fractions (Add, subtract, multiply, divide and solve) Algebraic proof	Intervention Week	Vectors Representing vectors, vector notations, column vectors, Vector addition, subtraction and scaling	Vectors Vector journeys and vector proof
Cycle 3													
	Data Handling MMMR Compare data sets Stem and leaf Cumulative frequency and box plots	Data Handling Frequency polygons Histograms	Data Handling and Probability Scatter graphs Comparing graphs Experimental probability Probability of combined events	Probability Conditional probability Expected frequency, Sampling Capture and recapture Product rule	Probability Two-way tables, Tree diagrams Venn diagrams Algebraic probability	Percentages Increase and decrease Repeated change Growth and decay Compound	Percentages Reverse percentages Iteration	Revision and Assessments	Revision and Assessments	Ratio Share in a ratio Direct and inverse proportion, exchange rates, best buy	Simultaneous equations Solve algebraically and graphically Form and solve simultaneous equations	Simultaneous equations Form and solve simultaneous equations Non-linear simultaneous equations Functions	Intervention Week

Year 10 Tailored Approach:

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Orientation												
		Number Four operations with fractions including simplifying and converting to a mixed number Working with money	Number 4 operations, integers and decimals, Rounding and estimating Error intervals Estimating calculations	Sequences Sequences (basic, types, nth term, problem solve)	Algebraic graphs Coordinates, midpoints and endpoints, plotting linear graphs	Algebraic graphs Line segments, state the gradient and y intercept and calculate given a graph	Algebraic graphs Parallel lines Substitution Quadratic graphs	Enlargement and Similarity Similar shapes and congruency	Enlargement and Similarity Enlarging a shape	Angles and bearings Draw and measure angles and bearings Angles rules and problem solving	Angles and bearings Converting metric units Scale drawing	Pythagoras Squares and square roots, calculate missing sides	Trigonometry *Find sides and angles using trigonometry (SOHCAHTOA)
Cycle 2					Cycle assessment weeks								
	Trigonometry Find sides and angles using trigonometry (SOHCAHTOA)	Equations and Inequalities Solving equations and inequalities including brackets, fractions and unknowns on both sides	Equations and Inequalities Represent inequalities on a number line Form and solve equations and inequalities	2D and 3D geometry Area of 2D and compound shapes Area and circumference of a circle Arcs and sectors	Assessments 2D and 3D geometry 3D properties, nets, plans and elevations, Volume of a prism, volume of a cylinder Density	Assessments 2D and 3D geometry Surface area Surface area and volume of a sphere, cone and cylinder	Indices and roots Indices and index laws (multiply, divide, brackets, basic negative)	Indices and roots Standard Form Use of a calculator	Manipulating expressions Collecting like terms Forming expressions Expanding brackets	Manipulating expressions Factorising linear and simple quadratics Changing the subject	Intervention Week	Vectors Representing vectors, vector notations, column vectors, Vector addition, subtraction and scaling	Data Handling MMMR from lists and group data Compare data sets Stem and leaf Frequency polygons
Cycle 3													
	Data Handling Pictograms and bar charts (dual and composite Line graphs Pie charts	Data Handling Scatter graphs Comparing graphs	Probability List outcomes, single events, events not happening, Experimental probability Expected frequency, Sampling	Probability Frequency trees, two-way tables, sample space Tree diagrams Venn diagrams	Percentages Equivalent FDP Increase and decrease	Percentages Simple and compound Reverse percentages	Ratio Link with fractions, share in a ratio	Revision and Assessments	Revision and Assessments	Ratio Direct proportion, exchange rates, best buy	Simultaneous equations Solve algebraically and graphically	Simultaneous equations Form and solve simultaneous equations	Intervention Week

Year 11:

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Orientation							Mock assessment weeks					
		Simultaneous Equations Worded simultaneous equations Linear simultaneous equations	Simultaneous Equations Solve a quadratic by factorising and using the formula Solve quadratic simultaneous equations	Linear Graphs Interpret $y = mx + c$ Find the equation of a line Determine if a point is on a line Solve graphical linear simultaneous equations	Linear Graphs Parallel and perpendicular lines Regions	Non-Linear Graphs Plot and read from quadratic graphs Plot cubic, reciprocal and exponential graphs Recognise graph shapes Identify roots, turning points and intercepts with quadratic graphs Complete the square	Non-Linear Graphs Equation of a circle Equation of the tangent to a circle Solve a quadratic inequality	Perimeter, Area and Volume Surface area cubes, cuboids, prisms, cylinders, spheres and cones Volume of cubes, cuboids, prisms and cylinders Density, Mass and volume	Perimeter, Area and Volume Form and solve with perimeter and area Problem solving with perimeter, area and volume	Using Graphs Conversions graphs Speed distance time Read and draw distance time graphs	Using Graphs Construct and interpret speed time graphs Gradient of and area under a graph	Geometric Reasoning Angles on a line, around a point, in a triangle and quadrilateral Angles in parallel lines Draw and measure a bearing	Geometric Reasoning Angles in polygons Circle Theorems
	Review Lessons	Paper	DIRT	Paper	DIRT	Paper	DIRT				DIRT	Paper	DIRT
Cycle 2								Mock assessment weeks					
	Pythagoras and Trigonometry Decide Pythagoras or Trigonometry 3D Pythagoras and trigonometry	Pythagoras and Trigonometry Sine rule Cosine rule Area of a triangle using the sine rule Trig graphs	Expanding and Factorising Factorise expressions Simplify algebraic fractions	Data Reverse mean Mean from a table Cumulative frequency Box plots	Functions Rules of indices Function notation Composite functions Inverse functions Translations and reflections of graphs by a given function	Multiplicative Reasoning Multi step ratio and FDP problems Best buy Exchange rates Combined ratio	Multiplicative Reasoning Construct and use direct and inverse proportion equations	Algebraic reasoning Nth term of a linear and quadratic sequence Determine if a number is in a sequence Fibonacci sequences Algebraic proof	Equations and Inequalities Form and solve equations and inequalities Change the subject including with factorising Solve equations with algebraic fractions iteration	Transforming and constructing Reflection, rotation and translation Enlarge a shape Invariant points			
	Review Lessons	Paper	DIRT	Paper	DIRT	Paper	DIRT	Paper		DIRT	Paper	DIRT	Paper
Cycle 3													
				Paper 1 exam - Friday 14 May 2027 am		Paper 2 exam - Thursday 27 May 2027 am		Paper 3 exam - Monday 14 June am					

Year 11 Tailored Approach:

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13
Cycle 1	Orientation							Mock assessment weeks					
		Simultaneous Equations Collecting like terms Proportion Solving equations Substitution	Simultaneous Equations Worded simultaneous equations Linear simultaneous equations	Linear Graphs Plot coordinates and solve coordinate problems Plot straight line graphs	Linear Graphs Interpret $y = mx + c$ Find the equation of a line Determine if a point is on a line Solve graphical linear simultaneous equations	Non-Linear Graphs Plot and read from quadratic graphs Plot cubic and reciprocal graphs Recognise graph shapes Identify roots, turning points and intercepts with quadratic graphs	Perimeter, Area and Volume Perimeter of shapes Area of 2D, compound shapes and circles Surface area cubes, cuboids and prisms	Perimeter, Area and Volume Volume of cubes, cuboids, prisms and cylinders Density, Mass and volume	Perimeter, Area and Volume Form and solve with perimeter and area Problem solving with perimeter, area and volume	Using Graphs Conversions graphs Speed distance time Read and draw distance time graphs	Geometric Reasoning Name, measure and draw angles Angles on a line, around a point, in a triangle and quadrilateral Angles in parallel lines	Geometric Reasoning Draw and measure a bearing Angles in polygons	Geometric Reasoning Draw a vector Add and subtract column vectors Enlarge a shape
	Review Lessons	Paper	DIRT	Paper	DIRT	Paper	DIRT				DIRT	Paper	DIRT
Cycle 2								Mock assessment weeks					
	Pythagoras and Trigonometry Squares and square roots Pythagoras	Pythagoras and Trigonometry Trigonometry Problem solving with Pythagoras and Trigonometry	Expanding and Factorising Expand and factorise with a single bracket Expand binomials	Expanding and Factorising Factorise a quadratic Solve a quadratic equation by factorising	Data Stem and leaf diagrams MMMR Pie Charts	Data Mean from a frequency table Reverse Mean Frequency Polygon	Functions Use a function machine Rules of indices	Multiplicative Reasoning Scale factors and scale diagrams Share in a ratio Best buy Exchange rates Combined ratio	Algebraic reasoning Continue a sequence nth term of a linear sequence Determine if a number is in a sequence Fibonacci sequences	Equations and Inequalities Solve equations and inequalities Represent inequalities on a number line Form and solve Change the subject	Transforming and constructing Reflection, rotation and translation Construct using a compass Plans and elevations		
	Paper	DIRT	Paper	DIRT	Paper	DIRT	Paper			DIRT	Paper	DIRT	Paper
Cycle 3													
				Paper 1 exam - Friday 14 May 2027 am		Paper 2 exam - Thursday 27 May 2027 am		Paper 3 exam - Monday 14 June am					

