

Curriculum Knowledge Map 2023-24



Year 9	AUTUMN				
Topic	FDP & Percentages	Expressions	Handling Data	Equations	Angles in polygons
Declarative <i>What should they know? What key facts/concepts/knowledge do we want all students to know?</i>	<ul style="list-style-type: none"> Convert between fractions, decimals and fractions. Work out Percentage Change. Increase/Decrease by a percentage. Use compound interest formula. Work with reverse percentages. 	<ul style="list-style-type: none"> Simplify Expressions Simplify Indices Expand and Factorise Simplify algebraic fractions. 	<ul style="list-style-type: none"> Use different sampling methods. Organise data. Represent Data Work with averages and spread. 	<ul style="list-style-type: none"> Solve Linear Equations. Solve quadratics by factorising. Solve inequalities. Solve simultaneous equations. Rearrange formula. 	<ul style="list-style-type: none"> Calculating missing angles: <ul style="list-style-type: none"> around a point. in a straight line. in a triangle. in a quadrilateral. in parallel lines. Understand and use coordinates. Understand Congruence Use similarity facts. Understand and use angle sum in polygons.
Procedural <i>What should they be able to do? What things should all students be able to do?</i>	<ul style="list-style-type: none"> Use percentage multipliers. Use addition, subtraction, multiplication and division. Calculate FDP conversions. Mathematically reason. Solve multistep word problems. 	<ul style="list-style-type: none"> Use the four operations to perform calculations with fractions. Use mental methods. Solve multistep word problems. Pattern recognition. Mathematically reason. 	<ul style="list-style-type: none"> Use mental methods. Solve multistep word problems. Pattern recognition Understand trends and relationships. Use mathematical equipment. Mathematically reason 	<ul style="list-style-type: none"> Use the four operations to perform calculations with integers and fractions. Use mental methods. Solve multistep word problems. Pattern recognition. Mathematically reason. 	<ul style="list-style-type: none"> Use addition, subtraction, multiplication and division. Calculate FDP conversions. Use mental methods. Solve multistep word problems.
Disciplinary Literacy <i>(Tier 3 Vocab)</i>	Compound interest, reverse percentages, growth and decay.	Simplifying, expressions, 'like' terms, expanding, factorising, Numerator, denominator.	Mean, median, mode, range, outlier, anomaly, population, bias.	Solve, simplify, factorise, expand, rearranging.	Interior, exterior, congruence, similarity.
Assessment	1 x FDP & Percentages Assessment	1 x Expressions Assessment	1x Handling Data Assessment	1 x Equations Assessment	1 x Skills check



Curriculum Knowledge Map 2023-24

Year 9	SPRING				
Topic	Angles in polygons	Linear Graphs	Working in 2D	Probability	Pythagoras and Trigonometry
Declarative <i>What should they know? What key facts/concepts/knowledge do we want all students to know?</i>	<ul style="list-style-type: none"> Calculating missing angles: <ul style="list-style-type: none"> around a point. in a straight line. in a triangle. in a quadrilateral. in parallel lines. Understand and use coordinates. Understand Congruence, Understand similarity. Use angle sum in polygons to solve problems. 	<ul style="list-style-type: none"> Work with coordinates Rearrange equations. Plot linear graphs. Find the gradient. Apply $y = mx + c$ Find the equation of a line given two points 	<ul style="list-style-type: none"> Measure lengths and angles Find area of 2D Shapes Use the four transformations: rotation, reflection, translation and enlargement. 	<ul style="list-style-type: none"> Conduct and interpret probability experiments. Work out expected outcomes Work out and use theoretical probability. Understand mutually exclusive events. 	<ul style="list-style-type: none"> Use Pythagoras to find missing lengths. Problem solve with Pythagoras. Use trigonometry to find missing angle. Use trigonometry to find a missing side.
Procedural <i>What should they be able to do? What things should all students be able to do?</i>	<ul style="list-style-type: none"> Use addition, subtraction, multiplication and division. Calculate FDP conversions. Mathematically reason. Solve multistep word problems. 	<ul style="list-style-type: none"> Simplify expressions. Substitute into formula Read from axes. Draw and label axes. Use mathematical equipment. Use addition, subtraction, multiplication and division. 	<ul style="list-style-type: none"> Measure and construct 2D shapes using a range of mathematical equipment. Complete and describe single and multiple transformations on a 2D shape. 	<ul style="list-style-type: none"> Simplify expressions. Use addition, subtraction, multiplication and division. Use language in probability. Use experiments to calculate relative probabilities and know the limitations. Calculate the probability of single and multiple events. 	<ul style="list-style-type: none"> Calculate the value of an unknown side or angles of a right-angled triangle including in context using Pythagoras' theorem or trigonometry. Substitute into formula. Use calculators effectively and accurately. Recall and manipulate formulae.
Disciplinary Literacy <i>(Tier 3 Vocab)</i>	Interior, exterior, congruence, similarity.	Gradient, intercept, negative, positive, axes, parallel, perpendicular.	Rotation, reflection, translation, enlargement, scale factors.	Event, outcome, bias, fair, theoretical probability, experimental probability, mutually exclusive, relative frequency, exhaustive events, sum, product, trials.	Angles, side, hypotenuse, opposite, adjacent, Sine, Cosine, Tangent.
Assessment	1 x Angles in Polygons	1 X Linear Graphs Assessment	1 x Working in 2D Assessment	1 x Probability Assessment	1 x Progress test (at some point in half term)



Curriculum Knowledge Map 2023-24



Year 9	SUMMER				
Topic	Pythagoras and Trigonometry	Circles	Working with 3D Shapes	Sequences	Combined Events
Declarative <i>What should they know? What key facts/concepts/knowledge do we want all students to know?</i>	<ul style="list-style-type: none"> Use Pythagoras to find missing lengths. Solve problems with Pythagoras. Use trigonometry to find missing angle. Use trigonometry to find a missing side. 	<ul style="list-style-type: none"> Find the circumference of a circle. Find the area of a circle. Find the arc length and area of a sector. 	<ul style="list-style-type: none"> Name and know the properties of 3D shapes. Find the volume of a prism. Find the volume and surface area of prisms and spheres. 	<ul style="list-style-type: none"> Understand and use sequence rules. Work out and use nth term of linear sequences. Recognise special sequences. Find the nth term of a Quadratic Sequences. 	<ul style="list-style-type: none"> Understand and use sets. Construct and interpret tree diagrams.
Procedural <i>What should they be able to do? What things should all students be able to do?</i>	<ul style="list-style-type: none"> To calculate the value of an unknown side or angles of a right-angled triangle including in context using Pythagoras' theorem or trigonometry. To substitute into formulae. Use a calculator accurately. Able to answer problem-solving questions. Recall and manipulate formulae. 	<ul style="list-style-type: none"> Use mental methods for addition, subtraction, multiplication and division. Solve multistep word problems. Use mathematical equipment. Estimate by rounding. Able to mathematically reason. 	<ul style="list-style-type: none"> Identify a variety of 3D shapes and their component sides (especially the base). Use mental methods for addition, subtraction, multiplication and division. Solve multistep word problems. Use mathematical equipment. Able to mathematically reason. 	<ul style="list-style-type: none"> Able to recognise patterns and form relationships between list of numbers. Use mental methods for addition, subtraction, multiplication and division. Solve multistep word problems. Use mathematical equipment. Able to mathematically reason 	<ul style="list-style-type: none"> Able to manipulate fractions. Represent data in various formats. Use mental methods for addition, subtraction, multiplication and division. Solve multistep word problems. Use mathematical equipment. Able to mathematically reason.
Disciplinary Literacy <i>(Tier 3 Vocab)</i>	Angles, side, hypotenuse, opposite, adjacent, Sine, Cosine, Tangent.	Area, circumference, arc, sector, segment, chord, tangent, radius, diameter.	Prism, volume, surface area, formula, substitution, sphere, cone, pyramid, cylinder, base.	Term, formula, substitute.	Outcome, dependent, independent, conditional.
Assessment	1 X Pythagoras and Trigonometry. Assessment.	1 X Circles Assessment	1 X Progress test (at some point)	1 X Sequences Assessment	1 X Combined events Assessment.

