Year 10	AUTUMN			
	Ratio and Proportion	**Equations and Inequalities**	**Factors, powers and roots**	**Graphs 1**
Declarative *What should they know? What key facts/concepts/knowledge do we want all students to know?*	Multiply and divide by powers of ten. Use percentage multipliers. Visualise and draw shapes. Read maps and scales. Ability to answer problem-solving questions	Collect like terms Simplify expressions. Expand brackets Factorise expressions. Draw inequalities on a number line.	Recall factors, multiples and primes. Identify types of numbers such as Square numbers and Cube numbers.	Be able to draw, read and label axes. Use substitution to correctly plot coordinates . Read from graphs accurately.
Procedural *What should they be able to do? What things should all students be able to do?*	Understand Proportion in problems Use ratio and scales in problems Calculate percentage Change	Solve linear equations Solve quadratic equations Solve simultaneous equations Use iterative processes to approximate solutions Solve inequalities	Identify Factors and multiples of numbers Complete prime factor decomposition Identify powers and roots	Draw straight-line graphs Identify the equation of straight line Interpret kinematic graphs
Disciplinary Literacy (Tier 3 Vocab)	Scale factors, compound interest, variable	Quadratic, factorising, iteration, inequality, region	Prime factor decomposition, highest common factor, lowest	Linear, quadratic, bisector, intercept, function

			common multiple, irrational numbers, surds	
Assessment	1 x Ratio and Proportion assessment	1 x Equations and Inequalities assessment	1 x Factors, Powers, Roots assessment	1 x progress checkpoint

Year 10	SPRING			
	Pythagoras and Trig	**Handling Data**	**Graphs 2**	**Circles and Constructions**
Declarative *What should they know?*	Substitute into formulae Recall formulae Able to mathematically reason Recognise different parts of shapes Understand and use of square numbers Use a calculator accurately	Pattern recognition Recognise trends and relationships Able to mathematically reason	Read axes Draw and label axes Substitute into formulae Use a calculator accurately Able to answer problem-solving questions Recall formulae	Label the diagram of a circle. Use of formulas for area and circumference of circles and arcs. Use of mathematical equipment for Loci and Constructions. Identify and use circle theorems.
Procedural *What should they be able to do?*	Use Pythagoras' Theorem Use Trigonometric ratios Understand Vectors	Draw and interpret frequency diagrams Work out averages and interpret spread Draw and interpret Scatter graphs and correlation	Know and understand the properties of quadratic functions Sketch functions Draw and interpret real-life Graphs	Calculate the circumference of a circle Calculate the area of a circle Calculate the surface area of 3D shapes such as cones, cylinders Calculate arc length and sector area Complete constructions

		Draw and interpret time series		Understand and draw loci
Disciplinary Literacy (Tier 3 Vocab)	Trigonometric functions, hypotenuse, vectors, sine, cosine	Frequency, quartiles, spread, centrality, box plot, interquartile range, correlation, anomaly, time series	Cubic, reciprocal, exponential, trigonometric functions, gradients, area, circumference, arc, sector, segment, chord, tangent, perpendicular, locus	Area, circumference, arc, sector, segment, chord, tangent, perpendicular, locus
Assessment	1 x Pythagoras and Trigonometry unit assessment	1 x Handling Data assessment	1 x progress checkpoint	1 x Circles and constructions unit assessment

Year 10	SUMMER				
	Circles and Constructions	**Formula and Functions**	**Units of proportionality**	**Working with 3D shapes**	**Angles**
Declarative *What should they know?*	Label of a diagram of a circle. Use of formulas for area and circumference of circles and arcs. Use of mathematical equipment for Loci and Constructions.	Substitute into formulae Use standard Formulae Equations, Identities and Functions	Understand proportion and modelling. Use growth and decay to help you understand the past and make predictions about the future.	Draw and interpret plans and elevations of 3D shapes. Find the volume of cuboids and right prisms. Calculate the surface area and volume of different 3D shapes.	Use of bearings to specify directions. Identify congruency and similarity to prove geometric results. Calculate the properties of polygons including interior and exterior angles.

	Identify and use circle theorems.				
Procedural *What should they be able to do?*	Calculate circumference of a circle Calculate area of a circle Work out thesSurface area of 3D shapes such as cones, cylinders Calculate arc length and sector area Complete constructions Understand and draw loci	Recall and manipulate formulae Substitute into formulae Able to spot patterns Able to answer problem-solving questions Recall key formulae	• Compound Units • Direct Proportion • Inverse Proportion • Growth and Decay	• 3D shapes • Volume of a prism • Volume and surface area	• Calculating missing angles: -around a point -in a straight line -in a triangle -in a quadrilateral -in parallel lines • Coordinates • Congruence • Similarity • Angle sum in polygons
Disciplinary Literacy (Tier 3 Vocab)	Area, circumference, arc, sector, segment, chord, tangent, perpendicular, locus	Term, expression, equation, identity, formulae, quadratic simultaneous, inequalities, simplifying, scale factors compound interest.	Compound, direct, inverse, rate	Plan, elevation, net, prism, vertex, edge, face, frustrum	Acute, obtuse, reflex, interior, exterior, congruence, similarity
Assessment	1 x Circles and constructions unit assessment	1 x Progress Test	1 x Units of proportionality unit assessment	1 x Working in 3D unit assessment	2 x progress checkpoint (one non calculator and one calculator)