Maths – Year 10 Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	
	Number	**Algebra**	**Number**		**Geometry & Measure**		**Careers**
Foundation 1	• Percentage calculations *(Understand percentage is number of parts of per hundred. Calculate a percentage of a quantity and express one quantity as a percentage of another with or without a calculator).* • Percentage change *(Increase or decrease a quantity by a percentage, including decimal or fractional multipliers).* • Careers Lesson 1. • Equivalent ratio *(Find the ratio of quantities in the form a:b and simplify).* • Division in a ratio *(Split a quantity into two parts given the ratio of parts. Express the division of a quantity into two parts as a ratio).* • Ratio & Proportion problems *(Solve ratio and proportion problems).*	• Sequences *(Generate a sequence using term-to-term and position-to-term rule for an arithmetic sequence. Generate a sequence given a formula for the nth term).* • Careers Lesson 2. • Circles (Nomenclature) *(Understand and use the terms centre, radius, chord, diameter, circumference, tangent, arc, sector and segment. Know and apply the formual for circumference= $2\pi r=\pi d$ Know and apply the formula for area πr^2).*	• Four Rules *(Place value, addition, subtraction, multiplication, division).*	• Four Rules *(Types of number, order of operations negative numbers).* • Percentage conversion, Equivalent fractions, Ordinality *(Convert between fractions decimals and percentages, recognise and use equivalence and ordering).* • Decimals Fractions *(Express simple fractions as terminating decimals or vice versa without a calculator. Carry out calculations involving decimals).* • Rounding *(Round numbers to the nearesy whole number, ten, hundred etc or to a given number of significant figures or decimal places).*	• Angles *(To know and use angle facts involving points, lines and triangles).* • Properties of triangles & Quadrilaterals *(Know basic properties different types of triangles and quadrilaterals. Give geometrical reasons to justify these properties).*	• Plane Isometric transformation *(Apply and describe rotations, reflections and translations).*	Lesson 1 – Car Sales After the unit on percentages, students will be able to apply their knowledge in this real life situation. They will look at the different types of car finance and be able to understand how interest rates work. Lesson 2 - Games Design. Students will be able to appreciate the mathematics behind being a games designer. Following on from our work on sequences and linking the work students have just covered to different systems and patterns. Lesson 3 – In this lesson students will be learning about the mathematics of casino's and being a casino dealer. This will show students about the probability unit they will have just covered in real life and outcomes that can happen, proving that the house always wins!

Geometry & Measure	Number	Algebra	Statistics	Algebra	
• Plans & Elevations (2D & 3D shapes) Maps & Scale drawings) *(Interpret and construct plans and elevaltions of simple 3D solids and use representations of solids from plans and elevations. Use the scale of maps. Construct and interpret scale drawings).* • Enlargement / Units of measure *(Enlarge a simple shape from a given centre using a whole number scale factor and identify the scale factor of an enlargement, use and covert standard units of measurement for length, volume, mass, time and money).*	• Calculations with fractions *(add, subtract, multiply and divide with fractions).*	• Substitute numerical values into formulae & expressions *(substitute positive numbers into simple expressions and formulae to find the value of the subject).* • Collecting like terms in sums and difference *(Simplify algebraic expressions by collecting like terms. Simplify algebraic expressions involving product and quotient).* • Linear equations in one unknown *(Solve linear equations in one unknown algebraically).*	• Categorical and numerical data *(Interpret and construct charts appropriate to the data type. Design tables to classify data. Inperpret and construct line graphs for time series data).*	• Formulate algebraic expressions *(Formulate simple formulae and expressions from real-world context).* • Linear equations in one unknown (form & solve) *(Set up and solve linear equations in mathematical and non-mathematical contexts).*	• Graphs of equations and functions *(Use a table of values to plot linear, graphs. Recognise and sketch graphs).*
	Algebra	**Geometry & Measure**		**Statistics**	**Probability**
	• Inequalities *(Understand and use the symbols <, ≤, > and ≥. Solve linear inequalites in one variable expressing solutions on a number line).* • Interpreting graphs *(Construct and interpret graphs in real-world context such as distance-time, temperature conversion).*	• Perimeter of rectilinear shapes & area calculations *(Calculate the perimeter of rectalinear and composite shapes. Know and apply formulae to work out the area of 2D shapes).* • Volume *(Calculate the volume of cuboids and other right prisms).*	• Symmetry *(Identify reflection and rotation symmetries of triangles, quadrilaterals and other polygons).*	• Summary Statistics *(Calculate the mean, mode, median and range for ungrouped data.).*	• Probability scale, relative frequency and probability *(Use the 0-1 probability scale as a measure of likelihood of random events. Use relative frequency as an estimate of probability).* • Equally likely outcomes and probability *(Calculate probabilities expressed as fractions or decimals. Calculate and use probabilites to calculate expected outcomes in repeated experiments).* • Sample space/Addition law of probability. *(Use tables and grids to list the outcomes of single*

<table>
<tr><td></td><td></td><td></td><td></td><td></td><td>events and simple combinations of events and calculate theoretical probabilities. Use p(A) + P(not A) = 1.
• Careers Lesson 3.</td><td></td></tr>
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Maths – Year 10 Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	
	Number	Algebra	Number		Geometry & Measure		Careers
Foundation 2	• Percentage calculations *(Understand percentage is number of parts of per hundred. Calculate a percentage of a quantity and express one quantity as a percentage of another with or without a calculator).* • Percentage change *(Increase or decrease a quantity by a percentage, including decimal or fractional multipliers).* • Careers Lesson 1. • Equivalent ratios *(Find the ratio of quantities in the form a:b and simplify).* • Division in a ratio *(Split a quantity into two parts given the ratio of parts. Express the division of a quantity into two parts as a ratio. Calculate one quantity from another given the ratio of the two quantities).* • Ratio and proportion problems *(Solve ratio and proportion problems such as adapt a recipe).*	• Sequences *(Generate a sequence using term-to-term and position-to-term rule for an arithmetic sequence. Generate a sequence given a formula for the nth term. Find a formula for a linear, sequences).* • Careers Lesson 2.	• Four Rules *(Place value, addition, subtraction, multiplication, division).* • Definitions, terms & prime numbers *(understand & use terms such as multiple and factor).* • Index notation/laws of indices *(Use positive integer indices as well to know and apply the laws of indices for product and quotient).*	• Four rules *(Types of number, order of operations negative numbers).* • Percentage conversions Equivalent fractions Ordinality. *(Convert between fractions decimals and percentages, recognise and use equivalence and ordering).* • Decimal fractions *(Express simple fractions as terminating decimals or vice versa without a calculator. Carry out calculations involving decimals).* • Calculations with fractions *(add, subtract, multiply and divide with fractions).*	• Angles *(To know and use angle facts involving points, lines and triangles) (To know and use angle facts involving quadrilaterals, intersecting & parallel lines).*	• Plane isometric transformations *(Apply and describe rotations, reflections and translations.*	Lesson 1 – Car Sales After the unit on percentages, students will be able to apply their knowledge in this real life situation. They will look at the different types of car finance and be able to understand how interest rates work. Lesson 2 - Games Design. Students will be able to appreciate the mathematics behind being a games designer. Following on from our work on sequences and linking the work students have just covered to different systems and patterns. Lesson 3 – In this lesson students will be learning about the mathematics of casino's and being a casino dealer. This will show students about the probability unit they will have just covered in real life and outcomes that can happen, proving that the house always wins!

Geometry & Measure		Algebra	Statistics	Algebra	
• Plans & Elevations (2D & 3D shapes) maps and scale drawings *(Interpret and construct plans and elevaltions of simple 3D solids and use representations of solids from plans and elevations. Use the scale of maps. Construct and interpret scale drawings).* • Enlargement / Similar shapes *(Enlarge a simple shape from a given centre using a whole number scale factor and identify the scale factor of an enlargement, Compare lengths, areas and volumes using ratio notation and scale factors).*	• Similar triangles/ Congruence *(Identify and prove that two triangles are similar. Identify and prove that two triangles are congruent using the cases: 3 sides (SSS), 2 angles one side (ASA), 2 sides one angle (SAS), right-angle hypotenuse side (RHS).* • Circles (nomenclature) *(Understand and use the terms centre, radius, chord, diameter, circumference, tangent, arc, sector and segment. Know and apply the formual for circumference= 2πr=πd Know and apply the formula for area πr².*	• Substitute numerical values into formulae & expressions *(substitute positive numbers into simple expressions and formulae to find the value of the subject).* • Collecting like terms sum, difference, product & quotient *(Simplify algebraic expressions by collecting like terms. Simplify algebraic expressions involving product and quotient).* • Multiplying out brackets/factorising *(Simplify algebraic expressions by multiplying a sinlge term over a bracket. Factorise algebraic expressions by taking out common factors).* • Linear equations in one unknown *(Solve linear equations in one unknown algebraically).*	• Categorical & numerical data *(Interpret and construct charts appropriate to the data type. Design tables to classify data. Inperpret and construct line graphs for time series data).* • Bivariate data *(Plot an interpret scatter diagrams. Interpret correlation with context and appreciate the distinction between correlation and causation. Draw a line fo best fit and use IT to make predictions).*	• Formulate algebraic expressions *(Formulate simple formulae and expressions from real-world context).* • Linear equations in one unknown (form & solve) *(Set up and solve linear equations in mathematical and non-mathematical contexts).*	• Graphs of equations & functions *(Use a table of values to plot linear, quadratic graphs. Recognise and sketch graphs).*
	Algebra	Geometry & Measure		Statistics	Probability
	• Inequalities *(Understand and use the symbols <, ≤, > and ≥. Solve linear inequalites in one variable expressing solutions on a number line).*	• Perimeter of rectilinear shapes & area calculations *(Calculate the perimeter of rectalinear and composite shapes. Know and apply formulae to work out the area of 2D shapes).*	• Symmetry properties of triangles & quadrilaterals *(Identify reflection and rotation symmetries of triangles, quadrilaterals and other polygons. Know basic properties different types of*	• Summary Statistics *(Calculate the mean, mode, median and range for ungrouped data. Find the modal class and calculate estimates of range, mean and median for grouped data*	• Probability scale, relative frequency and probability *(Use the 0-1 probability scale as a measure of likelihood of random events. Use relative frequency as an estimate of probability).*

Geometry & Measure				
• Pythagoras *(Know, derive and apply Pythagoras' theorem $a^2 + b^2 = c^2$ to find lengths in right-angled 2D figures).* • Compound units *(Use and convert compound units, Know and apply: speed = distance ÷time. Know and apply: Density = mass ÷volume).*	• Surface area *(Calculate the surface area of cuboids and other right prisms).* • Volume *(Calculate the volume of cuboids and other right prisms).*	*triangles and quadrilaterals. Give geometrical reasons to justify these properties).*	*understanding why they are estimates).*	• Equally likely outcomes and probability *(Calculate probabilities expressed as fractions or decimals. Calculate probabilties of simple combined events. Use probabilites to calculate expected outcomes in repeated experiments).* • Sample Space / Addition law of probability. *(Use tables and grids to list the outcomes for more complex combinations of events and calculate theoretical probabilities. Use p(A) + P(not A) = 1).* • Careers Lesson 3.

Maths – Year 10 Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	
	Number	**Geometry & Measure**	**Number**		**Geometry & Measure**	**Number**	**Careers**
Higher 1	• Equivalent ratio *(Find the ratio of quantities in the form a:b and simplify. Find the ratio of quantities in the form 1:n).* • Division in a ratio *(Split a quantity into two parts given the ratio of parts. Express the division of a quantity into two parts as a ratio. Calculate one quantity from another given the ratio of the two quantities).* • Ratio and fraction *(Interpret a ratio of two parts as a fraction of a whole. Solve ratio and proportion problems).* • Direct proportion *(Solve simple & formal problems involving quantities in direct proportions including algebraic proportion. Recognise that if y=kx, where k is a constant, then y is proportional to x).* • Inverse proportion *(Solve simple & formal problems involving quaties in inverse proportion. Recognise that if $y = \frac{k}{x}$ where k is a constant then y is*	• Compound units *(Use and convert compound units, Know and apply: speed = distance ÷time. Know and apply: Density = mass ÷volume Use and covert compound units in alegraic context).* • Kinematic formula *(Use v = u + at, s = ut + ½at², v²= u² + 2as where a is a constant accleration, u is initial velocity, v is final velocity, s is displacement from position when t = 0 and t is time taken).* • Circle (nomenclature) *(Understand and use the terms centre, radius, chord, diameter, circumference, tangent, arc, sector and segment. Know and apply the formual for circumference= 2πr=πd Know and apply the formula for area πr²).* • Plane vector geometry *(Understand addition, subtraction and scalar multiplication of vectors. Represent a 2D vector as a column vector on a square or coordinate grid).*	• Definitions, terms & Prime numbers *(understand & use terms such as multiple and factor).* • Prime factor decomposition (HCF, LCM) *(Represent numbers as a product of their prime factors and use them the identify highest common factors & lowest common multiples).* • Index notation (calculations & estimations with powers & roots) Laws of indices *(Use postive integer indices as well to know and apply the laws of indices for product and quotient. Use negative integer indices to represent reciprocals & to calculate with roots).* • Standard form *(Convert numbers to and from standard form. Interpret & order numbers expressed in standard form. Carry out calculations involving numbers expressed in standard form).*	• Percentage conversion, equivalent fractions, ordinality *(Convert between fractions decimals and percentages, recognise and use equivalence and ordering).* • Estimation *(Estimate/check, without a calculator, the result of a calculation by using suitable approximations including complex calculations involving roots).* • Upper & lower bounds *(Use inequality notation to write down an error interval for a number or measurement rounded or truncated to a given degree of accuracy).* • Decimal fractions *(Express simple fractions as terminating decimals or vice versa without a calculator. Carry out calculations involving decimals).*	Angles *(To know and use angle facts involving points, lines, triangles, Quadrilaterals, intersecting & parallel lines).*	Plane isometric transformations *(Apply and describe rotations, reflections and translations).*	Lesson 1 - Games Design. Students will be able to appreciate the mathematics behind being a games designer. Following on from our work on sequences and linking the work students have just covered to different systems and patterns. Lesson 2 – In this lesson students will be learning about the mathematics of casino's and being a casino dealer. This will show students about the probability unit they will have just covered in real life and outcomes that can happen, proving that the house always wins! Lesson 3 – Car Sales After the unit on percentages, students will be able to apply their knowledge in this real life situation. They will look at the different types of car finance and be able to understand how interest rates work.

inversely proportional to x).			• Calculations with fractions *(add, subtract, multiply and divide with fractions including the use of mixed numbers & improper fraction).*		

Geometry & Measure	**Algebra**		**Statistics**	**Algebra**	
• Plans & elevations *(Interpret and construct plans and elevaltions of simple 3D solids and use representations of solids from plans and elevations).* • Ruler and compass constructions *(Construct perpendicular bisector and mid point of a line. Construct the bisector of an angle formed from two lines.Constrct a perpendicular point to a line and a line at a point. Apply ruler & compass constructions to construct figures and identify loci of points including real-world problems).* • Enlargement /Similar shapes *(Identify the centre and scale factor of an enlargment and performace an enlargement, Apply similarity to calculate unknown lengths in similar figures).* • Congruence/ Similar triangles *(Identify and prove that two*	• Inequalities *(Solve linear inequalites in one variable expressing solutions on a number line).* **Geometry & Measure** • Pythagoras theorem *(Know, derive and apply Pythagoras' theorem $a^2 + b^2 = c^2$ to find lengths in right-angled 2D figures).* • Trigonometry in right-angled triangles (bearings) (exact Trig values) *(Know and apply the trigonometric*	• Substitute numerical values into formulae & expressions. *(Substitute positive or negative numbers into more complex formulae including powers & roots).* • Multiplying out brackets & factorise *(Simplify algebraic expressions by multiplying a sinlge term over a bracket. Factorise algebraic expressions by taking out common factors. Expand products of two binomials. Factorise quadratic expressions of the form $x^2 + bx + c$).* • Linear equations in one unknown *(Solve linear equations in one unknown algebraically including those with the unknowns on both sides of the equation).* • Change of subject of a formula *(rearrange formulae to change the subject including cases where the subject appears twice or where*	• Categorical & numerical data *(Interpret and construct charts appropriate to the data type. Design tables to classify data. Inperpret and construct line graphs for time series data).* • Bivariate data *(Plot an interpret scatter diagrams. Interpret correlation with context and appreciate the distinction between correlation and causation. Draw a line fo best fit and use it to make predictions).*	• Linear equations in one unknown (form & solve) *(Set up and solve linear equations in mathematical and non-mathematical contexts including those with the unknown on both sides of the equation).* • Simultaneous equations *(set up and solve two linear simultaneous in two variables algebraically and graphically).*	• Graphs of equations and functions *(Use a table of values to plot linear, quadratic, other polynominal and reciprocal graphs. Recognise and sketch graphs).* • Straight line graphs *(Find and interpret the gradient and intercept of straight lines, graphically and using y = mx+ c. Find the equation of a line through two given points or through one point given the gradient).* • Parallel & Perpendicular* *(Identify and find equations of parallel lines).* **Probability** • Venn Diagrams *(Use and construct a Venn diagram to classify outcomes and calculate probabilities).* • Tree Diagrams *(Use tree diagrams to record the probability of successive events to solve probability problems).* • Careers Lesson 2.

triangles are similar. Identify and prove that two triangles are congruent using the cases:3 sides (SSS), 2 angles one side (ASA), 2 sides one angle (SAS), right-angle hypotenuse side (RHS). • Maps & scale drawings *(Use the scale of maps and work with bearings. Construct and interpret scale drawings).*	*ratios $\sin\vartheta$ $\cos\vartheta$ and $\tan\vartheta$ and apply them to find angles and lengths in right-angled triangles in 2D figures (Know and apply the exact value of $\sin\vartheta$ and $\cos\vartheta$ for $\vartheta = 0°$, 30°, 45°, 60°, and 90°Know and apply the exact values of $\tan\vartheta$ for $\vartheta = 0°$, 30°, 45°and 60°).*	*powers or reciprocals appear).*		

Algebra		Geometry & Measure		Statistics	Number
• Sequences *(Generate a sequence given a formula for the nth term. Find a formula for a linear sequences).* • Careers Lesson 1.	• Quadratic equations *(Solve quadratic equations with coefficient of x^2equal to 1 by factorising).*	• Perimeter of rectilinear shapes & area calculations *(Calculate the perimeter of rectalinear and composite shapes. Know and apply formulae to work out the area of 2D shapes).* • Surface area *(Calculate the surface area of cuboids and other right prisms including composite).* • Volume *(Calculate the volume of cuboids and other right prisms including composite).*	• Angles *(To know and use angle facts involving points, lines, triangles, Quadrilaterals, intersecting & parallel lines).*	• Summary Statistics *(Calculate the mean, mode, median and range for ungrouped data. Find the modal class and calculate estimates of range, mean and median for grouped data understanding why they are estimates).* **Geometry & Measure** • Plane isometric transformations *(Apply and describe rotations, reflections and translations).*	• Percentage change *(Increase or decrease a quantity by a percentage, including decimal or fractional multipliers. Apply this to original value problems and simple interest).* • Growth and decay *(Solve problems step-bystep involvng multipliers over a given interval such as compound interest and depreciation. Express exponential growth or decay as a formula. Solve and interpret answers in growth and decay problems).* • Careers Lesson 3.

Maths – Year 10 Overview

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6	
	Geometry & Measure		Number		Algebra	Probability	Careers
Higher 2	• Ruler and compass constructions *(Construct perpendicular bisector and mid point of a line. Construct the bisector of an angle formed from two lines.Construct a perpendicular point to a line and a line at a point. Apply ruler & compass constructions to construct figures and identify loci of points including real-world problems).* • Maps and scale drawings (bearings) *(Use the scale of maps and work with bearings. Construct and interpret scale drawings.* • Enlargement / Similar shapes *(Identify the centre and scale factor, including negative scale factors, of an enlargement and performace an enlargement, including by negative scale factors.* • *Understand and apply the*	• Pythagoras theorem *(Know, derive and apply Pythagoras' theorem $a^2 + b^2 = c^2$ to find lengths in right-angled 2D figures. Apply Pythagoras' thoerem in more complex figures including 3D).* • Trigonometry in right-angled triangles *(Know and apply the trigonometric ratios $\sin\vartheta$ $\cos\vartheta$ and $\tan\vartheta$ and apply them to find angles and lengths in right-angled triangles in 2D figures. Apply the trigonometry of right-angled triangles in more complex figures including 3D).* • Exact trig values *(Know and apply the exact value of $\sin\vartheta$ and $\cos\vartheta$ for $\vartheta = 0°$, 30°, 45°, 60°, and 90°Know and apply the exact values of $\tan\vartheta$ for $\vartheta = 0°$, 30°, 45°and 60°)* Sine & Cosine rule (area of a triangle) *(Know and apply the sine rule $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$ to find lengths and angles. Know and apply the cosine rule $a^2 = b^2 + c^2 - 2bc\cos A$ to find lengths and angles, Know and apply the formula area = 1/2 ab sinC).*	• Prime factor decomposition (HCF/LCM) *(Represent numbers as a product of their prime factors and use them the identify highest common factors & lowest common multiples).* • Index notation (calculations & estimations with powers & roots). • Laws of indices *(Know and apply the laws of indices for product and quotient.Use negative integer indices to represent reciprocals, fractional powers to represent rootsand combinations of powers & roots).* • Standard form *(Convert numbers to and from standard form. Interpret & order numbers expressed in standard form. Carry out calculations involving numbers expressed in standard form).*	• Manipulation surds *(Simplify expressions with surds, including rationalising the denominator).* • Estimation *(Estimate/check, without a calculator, the result of a calculation by using suitable approximations including complex calculations involving roots).* • Upper & lower bounds (calculations) *(Calculate the upper and lower bounds of a calculation using numbers rounded to a known degree of accuracy).*	• Algebraic fractions *(simplify and manipulate algebraic fractions. Solve equations involving algebraic fractions).* • Simultaneous equations *(set up and solve two linear simultaneous in two variables algebraically and graphically). (Set up and solve two simultaneous equations including one linear & one quadratic in two variables algebraically and graphically).*	• Enumeration *(Use product rule for counting numbers of outcomes on combined events).* • Venn diagrams *(Use & construct a Venn diagram to classify outcomes and calculate probabilities including more complex problems where the structure of the diagram may not be given).* • Tree diagrams *(Use tree diagrams to record the probability of successive events to solve probability problems including conditional probabilities; structure of diagrams may not be given).* • Careers Lesson 2.	Lesson 1 - Games Design. Students will be able to appreciate the mathematics behind being a games designer. Following on from our work on sequences and linking the work students have just covered to different systems and patterns. Lesson 2 – In this lesson students will be learning about the mathematics of casino's and being a casino dealer. This will show students about the probability unit they will have just covered in real life and outcomes that can happen, proving that the house always wins! Lesson 3 – Car Sales After the unit on percentages, students will be able to apply their knowledge in this real life situation. They will look at the different types of car finance and be able to understand how interest rates work.

relationship between lengths, areas and volumes of similar shapes).

Geometry & Measure	Algebra		Statistics	Number
• Compound units *(Use and convert compound units, Know and apply: speed = distance ÷time. Know and apply: Density = mass ÷volume Use and covert compound units in alegraic context).* • Similar triangles/ Congruence *(Identify and prove that two triangles are similar. Identify and prove that two triangles are congruent using the cases: 3 sides (SSS), 2 angles one side (ASA), 2 sides one angle (SAS), right-angle hypotenuse side (RHS).*	• Inequalities *(Solve linear inequalites in one variable expressing solutions on a number line. Solve Quadratic inequalities in one variable. Solve several linear inequalites in two variables representing the solution set on a graph).* • Quadratic equations *(Know the quadratic formula. Rearrange and solve quadratic equations by factorising or using the quadratic formula).* • Complete the square *(Complete the square on a quadratic expression e.g. $x^2 + 4x - 6 = (x+2)^2 - 10$ Solve quadratic equations by completeing the square).* • Equation of a circle *(Recognise and use the equation of a circle with a centre at the origin).*	• Substitute numerical values into formulae & expressions *(Substitute positive or negative numbers into more complex formulae including powers & roots).* • Multiplying out brackets & factorise *(Simplify algebraic expressions by multiplying a sinlge term over a bracket. Factorise algebraic expressions by taking out common factors. Expand products of two or more binomials. Factorise quadratic expressions of the form $ax^2 + bx + c$).* • Linear equations in one unknown *(Set up and solve linear equations in mathematical and non-mathematical contexts including those with the unknown on both sides of the equation).* • Change subject of a formula *(rearrange formulae to change the subject including cases where the subject appears twice, where powers or reciprocals*	• Categorical & numerical data *(Interpret and construct charts appropriate to the data type. Design tables to classify data. Inperpret and construct line graphs for time series data).* • Bivariate data *(Plot an interpret scatter diagrams. Interpret correlation with context and appreciate the distinction between correlation and causation. Draw a line fo best fit and use it to make predictions)* • Grouped data *(Interpret and construct diagramss for grouped data i.e. cumulative frequency graphs and histograms).*	• Percentage change *(Increase or decrease a quantity by a percentage, including decimal or fractional multipliers. Apply this to original value problems and simple interest).* • Growth & decay *(Solve problems step-by-step involvng multipliers over a given interval such as compound interest and depreciation. Express exponential growth or decay as a formula. Solve and interpret answers in growth and decay problems).* • Careers Lesson 3. • Equivalent ratio *(Find the ratio of quantities in the form 1:n).* • Division in a ratio *(Split a quantity into two or more parts given the ratio of parts. Express the division of a quantity into two or more parts as a ratio. Calculate one quantity from another given the ratio of the two or more quantities).*
Algebra			**Geometry & Measure**	• Ratio and fraction *(Interpret a ratio of two parts as a fraction of a whole. Solve ratio and proportion problems).*
• Kinematic formula *(Use $v = u + at$, $s = ut + \frac{1}{2}at^2$, $v^2 = u^2 + 2as$ where a is a constant accleration, u is initial velocity, v is final velocity, s is displacement from*			• Plane isometric transformations *(Perform a sequence of isometric transformations, reflections, rotations or translations on simple shapes. Describe the resulting*	

position when t = 0 and t is time taken).
- Sequences *(Generate a sequence given a formula for the nth term. Find a formula for a linear, quadratic, geometric and other sequences).*
- Careers Lesson 1.

appear or cases that require the application of factorising).

transformation and the changes and invariance achieved).

- Direct proportion *(Solve formal problems involving quantities in direct proportions including algebraic proportion. Formulate equations and solve problems involving a quantity in direct proportion to a power or root of another quantity).*
- Inverse proportion *(Solve formal problems involving quatities in inverse proportion. Formulate equations and solve problems involving a quantity in inverse proportion to a power of root of another quantity).*

Geometry & Measure		Algebra	
- Perimeter of rectilinear shapes & Area calculations *(Calculate the perimeter of rectalinear and composite shapes. Know and apply formulae to work out the area of 2D shapes).* - Surface area *(Calculate the surface area of cuboids and other right prisms including composite & pyramids).* - Volume *(Calculate the volume of cuboids and other right prisms including composite & pyramids).*	- Angles *(To know and use angle facts involving, intersecting & parallel lines, angles in polygons justiffy results in proof).* - Circle theorems (*Apply and prove a series of theorems such as alternate segement theorem and angles in the same segment).*	- Graphs of equations and functions *(Use a table of values to plot linear, quadratic, other polynominal graphs, reciproal and exponential graphs. Recognise and sketch graphs).* - Straight line graphs *(Find and interpret the gradient and intercept of straight lines, graphically and using y = mx+ c. Find the equation of a line through two given points or through one point given the gradient).*	- Algebraic proof *(Use algebra to construct proofs and arguements such as prove that the sum of three integers is a multiple of 3).*

		Number		• Parallel & Perpendicular *(Identify and find equations of parallel lines and perpendicular lines).*	
		• Decimal calculations with fractions *(Use division to convert fractions into terminating or recurring fractions. Convert a recurring decimal to an exact fraction).* • Calculations with fractions *(add, subtract, multiply and divide with fractions including the use of mixed numbers & improper fraction).*			