Levenshulme High School – Curriculum Map – Maths

		Term 1		Term 2		Term 3	
		Year 9 Foundation					
Year 9F	**Topic Title and NC link**	A1, A2, A3, A4, A5, A7, A8, A11, G8, G9, R6, R9	A14, A15, A16, G3, G5, G7, G10, G11, G12	G1, G2, G4, G9, R6, R9	A4, A5, A7, G1, G2, G14	G8, G14, N3, S3	S1, S2, P1, P2, P3
	Pupils should know…	• How to simplify algebraic expressions by collecting like terms • How to substitute into a formula or expression • How to expand a single bracket • How to factorise a linear expression into a single bracket • How to form an expression from a word problem • How to plot co-ordinates in all 4 quadrants • How to plot a linear graph • How to identify the gradient and y-intercept of a linear graph from the equation • How to reflect a shape across horizontal, vertical and diagonal mirror lines	• How to find the term to term rule of a sequence and use it to generate terms of an arithmetic sequence • How to find the position to term rule and use it to generate terms of aa arithmetic sequence • How to calculate the nth term of an arithmetic sequence and use it to generate terms of a sequence • How to recognise special sequences, such as, square and triangle numbers • How to recognise a geometric sequence and know how they differ from an arithmetic sequence	• How to find the area of rectangles, triangles, parallelograms and trapeziums • How to find the area of compound shapes • To be able to define congruence and give the postulates for congruent triangles • To be able to spot congruent shapes and explain why they are congruent • To be able to define what a similar shape is • To be able to recognise similar shapes • How to calculate the scale factor of similar shapes • How to find missing sides	• How to draw a bar model to represent an equation • How to solve a linear equation with an unknown on one side • How to solve an equation with an unknown on both sides • How to solve equations involving bracket expansion • How to identify the subject of a formula • How to change the subject of a formula • How to express a formula or equation as a function machine • How to recognise the hypotenuse of a right-angled triangle • How to use Pythagoras theorem to	• How to rotate a shape with and without a centre of rotation • How to describe a rotation fully • How to describe a translation using words • How to translate a shape using a column vector • How to translate a shape using a column vector • How to identify factors and multiples • How to find the HCF and LCM from listing strategies • How to write a number as a product of its prime factors • How to find the HCF and LCM using prime factors	• How to calculate the mean, median, mode and range from a list of data • How to find missing numbers from a data set using the mean, median, mode and range • How to compare data sets using averages • How to recognise different types of data and data collection • How to draw and read a frequency table • How to draw and interpret a pictogram, bar chart and pie chart • How to plot a vertical line chart

		- How to recognise congruent and similar shapes - How to describe a reflection - How to represent a proportional relationship as a ratio or a fraction - How to use the unitary method for variables in direct proportion - How to calculate the multiplicative relationship between variables in direct proportion - How to use a multiplicative table to answer proportion questions in a variety of contexts such as recipes - How to calculate which offer is the best value for money	- How to measure and draw acute, obtuse and reflex angles - How to use our known angle facts to calculate missing angles on a straight line, at a point, in triangles and quadrilaterals - To know what the different quadrilaterals are and describe their shape properties. Such as, lines of symmetry and angle properties - To know what a polygon is - How to calculate interior and exterior angles of a regular polygon	- and angles in similar shapes - How to recognise an enlargement (links to recognising similar shapes) - How to identify the scale factor of an enlargement - How to enlarge a shape both with and without a centre of enlargement - How to describe and enlargement - How to construct triangles using a protractor and a compass - How to construct line and angle bisectors using a compass - How to construct simple loci - How to construct multiple loci and identify the correct region - How to calculate the volume of a cube and cuboid - How to calculate the volume of composite solids	- calculate the missing hypotenuse of a right-angled triangle - How to rearrange Pythagoras theorem to calculate a missing shorter side of a right-angled triangle - How to calculate the volume of a prism, including a cylinder - How to find missing sides of a 3D shape when given the volume	- How to use the 3 trigonometric ratios to calculate missing sides in a right-angled triangle - How to use the 3 trigonometric ratios to calculate a missing angle in a right-angled triangle - How to plot a scatter graph - How to describe the relationship between 2 variables using correlation - How to identify outliers - How to draw a line of best fit - How to use a line of best fit to estimate	- How to represent events on a probability scale - How to calculate simple probability of a single event - How to calculate the probability of an event not happening (P sum to 1) - How to calculate the relative frequency - How to complete a sample space diagram and use it to answer probability questions - How to complete a frequency tree and use it to solve number problems
	Pupils should be able to do…	Simplify algebraic expressions by collecting like terms	Find the term to term rule of a sequence and use it to generate terms of an	Find the area of rectangles, triangles, parallelograms and trapeziums	To be able to draw a bar model to represent an equation	Rotate a shape with and without a centre of rotation	Calculate the mean, median, mode and range from a list of data

		- Substitute into a formula or expression - Expand a single bracket - Expand a simplify an expression involving brackets - Factorise a linear expression into a single bracket - Form an expression from a word problem - Plot co-ordinates in all 4 quadrants - Plot a linear graph - Identify the gradient and y-intercept of a linear graph from the equation - Reflect a shape across horizontal, vertical and diagonal mirror lines - Recognise congruent and similar shapes - Describe a reflection, including the equation of the mirror line - Represent a proportional relationship as a ratio or a fraction - Use the unitary method for	arithmetic sequence - Find the position to term rule and use it to generate terms of aa arithmetic sequence - Calculate the nth term of an arithmetic sequence and use it to generate terms of a sequence - Recognise special sequences, such as, square and triangle numbers - Recognise a geometric sequence and know how they differ from an arithmetic sequence - Measure and draw acute, obtuse and reflex angles - Use known angle facts to calculate missing angles on a straight line, at a point, in triangles and quadrilaterals - To know what the different quadrilaterals are and describe their shape	- Calculate the area of compound shapes - Define congruence and give the postulates for congruent triangles - Recognise congruent shapes and explain why they are congruent - Define what a similar shape is - Recognise similar shapes - Calculate the scale factor of similar shapes - Find missing sides and angles in similar shapes - Recognise an enlargement (links to recognising similar shapes) - Identify the scale factor of an enlargement - To be able to enlarge a shape both with and without a centre of enlargement - Describe and enlargement - To be able to construct triangles using a	- Solve a linear equation with an unknown on one side - Solve an equation with an unknown on both sides - Solve equations involving bracket expansion - To be able to identify the subject of a formula - Change the subject of a formula - Express a formula or equation as a function machine - Recognise the hypotenuse of a right-angled triangle - To be able to use Pythagoras theorem to calculate the missing hypotenuse of a right-angled triangle - To be able to rearrange Pythagoras theorem to calculate a missing shorter side of a right-angled triangle	- Describe a rotation fully - Describe a translation using words - Translate a shape using a column vector - Translate a shape using a column vector - Identify factors and multiples - Find the HCF and LCM from listing strategies - Write a number as a product of its prime factors - Find the HCF and LCM using prime factors - Use the 3 trigonometric ratios to calculate missing sides in a right-angled triangle - Use the 3 trigonometric ratios to calculate a missing angle in a right-angled triangle - Plot a scatter graph - Describe the relationship between 2 variables using correlation	- Find missing numbers from a data set using the mean, median, mode and range - Compare data sets using averages - Recognise and know the pros and cons of different types of data and data collection - Draw and read a frequency table - Draw and interpret a pictogram, bar chart and pie chart - Plot a vertical line chart - Represent events on a probability scale - Calculate simple probability of a single event - Calculate the probability of an event not happening (P sum to 1) - Calculate the relative frequency - Complete a sample space diagram and

		variables in direct proportion • Calculate the multiplicative relationship between variables in direct proportion • Multiplicative table to answer proportion questions in a variety of contexts such as recipes and missing sides of similar shapes • Calculate which offer is the best value for money	properties. Such as, lines of symmetry and angle properties • To know what a polygon is • Calculate interior and exterior angles of a regular polygon	protractor and a compass • To be able to construct line and angle bisectors using a compass • To be able to construct simple loci • To be able to construct multiple loci and identify the correct region • Calculate the volume of a cube and cuboid • Calculate the volume of composite solids	• Calculate the volume of a prism, including a cylinder • Find missing sides of a 3D shape when given the volume	• Identify outliers • Draw a line of best fit • Use a line of best fit to estimate	use it to answer probability questions • Complete a frequency tree and use it to solve number problems
	Pupils should have remembered…	• Basic algebra notation • Order of operations and how to apply this to algebra expressions • How to find common factors • How to read and plot co-ordinates • Inverse operations	• Basic angles facts • Shape properties • Properties of special triangles • Basic algebra notation • Times tables	• Multiplicative reasoning • Inverse operations • Times tables • How to half a number • Identify parallel lines • Use on compass and protractor	• Inverse operations • Expand a single bracket • Order of operations • Shape properties • How to label a shape • How to calculate area of 2D shapes, including a circle	• How to use tracing paper • Read co-ordinates • Know directions such as left and anti-clockwise • Degrees in a quarter and half turn • Prime numbers • Plot co-ordinates	• Inverse operation • FDP conversions • How to represent a whole as a fraction • Basic arithmetic • How to order numbers