[Curriculum Map

Subject: Maths

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content- WHAT will be learned? What previous learning can be linked? Why this order/sequence? We sequence our curriculum in this order to reduce cognitive load by drawing on prior knowledge and logically plan episodes of learning so that they accumulate in small stages, securing understanding at one stage before moving on to the next. Skills are revisited as via interleaved starters and retrieval practise throughout the year. Knowledge of course content is covered during early stages of the curriculum and then built upon at spaced intervals allowing skills to be improved upon over time.	 Number Index notation and powers Multiply, add, subtract and divide (positive and negative numbers) Number Standard form notation Standard form calculations with and without a calculator Number Types of number -even, odd, prime, factors and multiples HCF and LCM BIDMAS Algebra Proof, simplifying and substitution Products, quotients, sums and differences. Algebra Expanding brackets Factorising expressions Algebra Solving linear equations Understanding inequality notation and solving linear inequalities 	 7 Geometry Angles on lines, around a point and parallel lines Properties of triangles, polygons, quadrilaterals, and symmetry 8 Number Equivalent, simplifying, mixed number, exact calculations and finding fractions of amounts Express one amount as a fraction of another amount 9 Number Converting between fractions, decimals and percentages Order fractions, decimals and percentages Four operations with decimal including negative numbers without a calculator 10 Probability Usting outcomes Venn diagrams 12 Geometry Understanding the properties of 2D and 3d shapes To sketch in 2D and identify plans and elevations 	 1 Algebra Functions and changing the subject Generating sequences and finding the position to term rule 2 Algebra Recognising special sequences and diagrammatical sequences Plotting co-ordinates from tables of values Using tables of values to plot quadratics functions 3 Number Rounding to a whole number, decimal place, powers of 10 or significant figures Check and estimate without using a calculator Substitution decimal numbers into simple expressions 4 Algebra Solve simultaneous equations graphically and use a graph to estimate a solution to a linear equation Recognise and sketch common graphs e.g. linear and quadratic Find approximate solutions to equations using systematic trial and improvement 	 5 Algebra To find the gradient, y intercept and equation of a line Identify the equation of a line from more complication equations 6 Number Comparing ratios to include comparing different units Use n:1 Share in a given ratio and express one ratio as fraction of another 7 Number Reverse ratio, ratio problems in context, ratio and proportion problems in context 8 Geometry To identify straight line graphs Complete reflections, rotations and translations using column vectors 9 Geometry Complete enlargements with whole and fraction scale factors, identify scale factors and centre of enlargements o 10 Number Complete percentage calculations Percentage change Growth and decay 	 1 Geometry Units of measure Perimeter and area 2 Geometry Area of compound shapes Volume 3 Proportion Conversion graphs Simple direct and inverse proportion 4 Geometry Congruent triangles Similar shapes – linear, area and volume 5 Number Compound units Kinematics formulae Speed, distance and time 6 Geometry Pythagoras Trigonometry 	 7 Geometry Pi, circumference, area and volume Surface area 8 Data Presenting information in graphs and charts Interpreting information Averages 9 Statistics Averages Analysing and interpreting data Plotting scatter diagrams 10 Geometry Maps and scale drawings Constructing congruent triangles 11 Geometry Constructing shapes, bisecting angles and perpendicular constructions
Skills- What will be developed?	Learners develop their mathematical fluency in a range of areas through a concrete, pictorial and abstract (CPA) approach. Learners apply their understanding to be able to solve problems in a range of different contexts. Learners explain their reasoning when identifying	Learners develop their mathematical fluency in a range of areas through a concrete, pictorial and abstract (CPA) approach. Learners apply their understanding to be able to solve problems in a range of different contexts. Learners explain their reasoning when identifying solutions to	Learners develop their mathematical fluency in a range of areas through a concrete, pictorial and abstract (CPA) approach. Learners apply their understanding to be able to solve problems in a range of different contexts. Learners explain their reasoning when identifying	Learners develop their mathematical fluency in a range of areas through a concrete, pictorial and abstract (CPA) approach. Learners apply their understanding to be able to solve problems in a range of different contexts. Learners explain their reasoning when identifying	Learners develop their mathematical fluency in a range of areas through a concrete, pictorial and abstract (CPA) approach. Learners apply their understanding to be able to solve problems in a range of different contexts. Learners explain their reasoning when identifying	Learners develop their mathematical fluency in a range of areas through a concrete, pictorial and abstract (CPA) approach. Learners apply their understanding to be able to solve problems in a range of different contexts. Learners explain their reasoning when identifying

Year Group: 9

Key 'How' /'Wby' Questions- What	solutions to problems and when responding to mathematical statements. Basic number and Algebra skills are taken from our KS3 curriculum and used as a starting block. The skills are then honed and built upon to enable these skills to be used throughout the KS4 course. These skills will be used for a variety different element of the course that are covered after this point in the curriculum.	problems and when responding to mathematical statements. Geometry, number, and probability skills learned here are used in a variety of mathematics concepts and problems after this point in time such as circle theorems and polygons as well as being embedded with algebraic skills	solutions to problems and when responding to mathematical statements. These number and algebra skills are the basics which are to be used in more advanced problem-solving scenarios. Beginning here allows these skills to be revisited and built upon further in the KS4 course.	solutions to problems and when responding to mathematical statements. Linear graphs are introduced here following on from work on sequences. Similarities are drawn upon making the concept easier to teach given a good starting point. Likewise, the preceding geometry supports the work on polygons here as well as linear graphs supporting work on transformations.	solutions to problems and when responding to mathematical statements. The skills needed during this half term are reliant on the foundations from earlier in the year. Understanding of key words and skill are crucial here given that the intensity of the work is becoming increasingly more challenging. The building blocks of knowledge from earlier in the year will all be utilised from these topics.	solutions to problems and when responding to mathematical statements. The Statistical skills learned here rely heavily on the number work foundations from earlier in the year and are a crucial life skill as all will be used in the majority of careers that our pupils will pursue.
Key 'How'/'Why' Questions- What powerful knowledge will be gained? What areas/themes/concepts will be explored?	How to apply the content listed above in the real-world address why the skills are learned in school. Contextual questions related to the learning designed to embed the ideas to allow the concepts to be used later in the curriculum where they are built upon in other topics that rely of the fluency of these skills. All of the basic Number and algebra skills are essential for the application of skills in context and further in the course. These foundations allow the skills to refined and used in questions which cross topics such as algebraic fractions and area problems with unknown dimensions. Basic Number and Algebra skills come first as so many other topics/concepts rely heavily on a good understanding of them.	How to apply the content listed above in the real-world address why the skills are learned in school. Contextual questions related to the learning designed to embed the ideas to allow the concepts to be used later in the curriculum where they are built upon in other topics that rely of the fluency of these skills. All skills listed above are used later in the course, so it is essential to build solid foundations before moving on. Number and Algebra skills are honed, and further techniques are introduced here as well as and introduction to probability, all of which will be embedded further on in the course.	How to apply the content listed above in the real- world address why the skills are learned in school. Contextual questions related to the learning designed to embed the ideas to allow the concepts to be used later in the curriculum where they are built upon in other topics that rely of the fluency of these skills. All skills listed above are used later in the course, so it is essential to build solid foundations before moving on. More Algebraic techniques are learned here all of which rely on the previous skills which are covered in the course.	How to apply the content listed above in the real- world address why the skills are learned in school. Contextual questions related to the learning designed to embed the ideas to allow the concepts to be used later in the curriculum where they are built upon in other topics that rely of the fluency of these skills. All skills listed above are used later in the course, so it is essential to build solid foundations before moving on. More essential number and Algebra work here showing progression within the curriculum. Also, there is an introduction to geometry where the skills will be built upon in the same way as the Number and Algebra skills which are continuing to be developed.	How to apply the content listed above in the real-world address why the skills are learned in school. Contextual questions related to the learning designed to embed the ideas to allow the concepts to be used later in the curriculum where they are built upon in other topics that rely of the fluency of these skills. All skills listed above are used later in the course, so it is essential to build solid foundations before moving on. All skills here are reliant on several skills already covered. this allows pupils to explore the new concepts knowing that they already have the skills to be successful on the topics.	How to apply the content listed above in the real- world address why the skills are learned in school. Contextual questions related to the learning designed to embed the ideas to allow the concepts to be used later in the curriculum where they are built upon in other topics that rely of the fluency of these skills. Data manipulation is essential in every career. These underpinning skills pave the way for the work-related statistics to be learned. Work with circles and statistical analysis relies on many skills that have already been covered. a good foundation of these skills allow pupils to explore these new concepts with confidence.
SEND- how will support be seen? Seating plans? Simplified questions?	 Seating plans for all classes. SEND and identified pupils placed 	Seating plans for all classes. SEND and identified pupils	Seating plans for all classes. SEND and identified pupils	Seating plans for all classes. SEND and identified pupils	Seating plans for all classes. SEND and identified pupils	 Seating plans for all classes. SEND and identified pupils

	 strategically to ensure the best possible support. Colour copies for all Irlen's students All SEND notes taken into consideration for the pupils that this affects. Support given to pupils who struggle or have been identified as weaker in the groups. Classrooms and boards uncluttered to ensure an optimal learning environment (only relevant information given) 	 placed strategically to ensure the best possible support. Colour copies for all Irlen's students All SEND notes taken into consideration for the pupils that this affects. Support given to pupils who struggle or have been identified as weaker in the groups. Classrooms and boards uncluttered to ensure an optimal learning environment (only relevant information given) 	 placed strategically to ensure the best possible support. Colour copies for all Irlen's students All SEND notes taken into consideration for the pupils that this affects. Support given to pupils who struggle or have been identified as weaker in the groups. Classrooms and boards uncluttered to ensure an optimal learning environment (only relevant information given) 	 placed strategically to ensure the best possible support. Colour copies for all Irlen's students All SEND notes taken into consideration for the pupils that this affects. Support given to pupils who struggle or have been identified as weaker in the groups. Classrooms and boards uncluttered to ensure an optimal learning environment (only relevant information given) 	 placed strategically to ensure the best possible support. Colour copies for all Irlen's students All SEND notes taken into consideration for the pupils that this affects. Support given to pupils who struggle or have been identified as weaker in the groups. Classrooms and boards uncluttered to ensure an optimal learning environment (only relevant information given) 	 placed strategically to ensure the best possible support. Colour copies for all Irlen's students All SEND notes taken into consideration for the pupils that this affects. Support given to pupils who struggle or have been identified as weaker in the groups. Classrooms and boards uncluttered to ensure an optimal learning environment (only relevant information given)
Assessment- What? Why?	Informal assessment via low stakes quizzes and cold calling to check the understanding of all pupils regularly. GL Assessments for accurate target grades	Informal assessment via low stakes quizzes and cold calling to check the understanding of all pupils regularly. Formal Maths assessments to determine progress towards target grade. QLA to inform future planning of retrieval practice and interleaved learning. Sets meetings are had to ensure pupils are in the correct learning environment to allow optimal progress.	Informal assessment via low stakes quizzes and cold calling to check the understanding of all pupils regularly.	Informal assessment via low stakes quizzes and cold calling to check the understanding of all pupils regularly. Formal Maths assessments to determine progress towards target grade. QLA to inform future planning of retrieval practice and interleaved learning. Sets meetings are had to ensure pupils are in the correct learning environment to allow optimal progress.	Informal assessment via low stakes quizzes and cold calling to check the understanding of all pupils regularly. Formal Maths assessments to determine progress towards target grade. QLA to inform future planning of retrieval practice and interleaved learning	Informal assessment via low stakes quizzes and cold calling to check the understanding of all pupils regularly. Sets meetings are had to ensure pupils are in the correct learning environment to allow optimal progress.
What memory for learning skills will be required- modelling? Concrete answers? Retrieval?	Interleaved starts used to retrieval practise. Cold calling in lessons. Questioning techniques to draw out knowledge of pupils and re-enforce their understanding. Model answers using visualisers/surface pro	Interleaved starts used to retrieval practise. Cold calling in lessons. Questioning techniques to draw out knowledge of pupils and re- enforce their understanding. Model answers using visualisers/surface pro	Interleaved starts used to retrieval practise. Cold calling in lessons. Questioning techniques to draw out knowledge of pupils and re-enforce their understanding. Model answers using	Interleaved starts used to retrieval practise. Cold calling in lessons. Questioning techniques to draw out knowledge of pupils and re-enforce their understanding. Model answers using	Interleaved starts used to retrieval practise. Cold calling in lessons. Questioning techniques to draw out knowledge of pupils and re-enforce their understanding. Model answers using	Interleaved starts used to retrieval practise. Cold calling in lessons. Questioning techniques to draw out knowledge of pupils and re-enforce their understanding. Model answers using

	machines Scaffolding in	machines Scaffolding in lessons	visualisers/surface.pro	visualisers/surface pro	visualisers/surface.pro	visualisers/surface pro
	lessons appropriate to each	appropriate to each group	machines Scaffolding in	machines Scaffolding in	machines Scaffolding in	machines Scaffolding in
	group. Knowledge organisers	Knowledge organisers used to	lossons appropriate to each	lossons appropriate to each	lossons appropriate to each	lossons appropriate to each
	used to support loarning and	support loarning and	group Knowledge organisers		group. Knowledge organisers	group Knowledge organisers
	understanding	understanding	used to support learning and	organisers used to support	used to support learning and	used to support learning and
	understanding.	understanding.	understanding	learning and	understanding	understanding
	Basic skills from KS2 practised	More skills from KS2 practised	understanding.	understanding		
	as startors and model answers	as a startor along with some	Questions from proviously	understanding.	KSA topics revisited as	Poutinos should now bo
	as starters and model answers	austions on tonics loarned in		KEA topics revisited as	startors model answers are	ambaddad and nunils
	and demonstrated where	the early stages of year 0 and	starter questions come VS2	startors model answers	domonstrated where	should now be able to
	appropriate in during the	model answers are	starter questions, some KSS	are demonstrated where		manage expectations of all
	early stages of year 5.	domonstrated where	startor activitios as well to	and demonstrated where	appropriate.	aspects of the teaching
	Knowledge organisers are	appropriate	onsure that the foundations	appropriate.	Pegular checking of	aspects of the teaching.
	given and how to use them is	appropriate.	are regularly revisited	Knowledge organisers	understanding of new tenics	
	introduced	Knowledge organisers should	Model answers are	should be used where	via questioning and mini	
	Introduced.	he used to log the memory of	demonstrated where	should be used where		
	Pogular checking of	these skills where peeded	appropriate	by the pupils	quizzes	
	understanding of new tenics	these skins where heeded.	appropriate.	by the pupils.		
	via questioning and mini	Begular checking of	Use of knowledge	Pagular checking of		
		understanding of now taniss	organicare chould be regular	understanding of now		
	quizzes	via questioning and mini	to romind nunils of skills	topics via questioning and		
			that they may not be able	mini quizzos		
		quizzes	to recall straight away	mini quizzes		
			to recall straight away.			
			Pogular checking of			
			understanding of now			
			tonics via questioning and			
			mini quizzos			
Literacy reading extended accurate	Kouwards/torms amphasisad	Koy words (torms omphasisad	Koy words/torms	Koy words /torms	Koy words (torms omphasisod	Koy words /torms
writing and oracy opportunitios	and highlighted in lossons	and highlighted in lossons	amphasised and highlighted	amphasised and	and highlighted in lossons	amphasised and highlighted
writing and oracy opportunities	Reading and breaking down	Reading and breaking down	in lessons	highlighted in lessons	Reading and breaking down	in lessons
	questions to allow all learners	questions to allow all learners	Reading and breaking down	Reading and breaking	questions to allow all learners	Reading and breaking down
	to access the skills needed	to access the skills needed	questions to allow all	down questions to allow all	to access the skills needed	questions to allow all
	to access the skins needed.	to access the skins needed.	learners to access the skills	learners to access the skills	to access the skins needed.	learners to access the skills
			needed	needed		needed
Numeracy/computing skills	All topics require good	All topics require good	All topics require good	All topics require good		All topics require good
Numeracy/computing skins	numeracy skills	numeracy skills	numeracy skills	numeracy skills	numeracy skills	numeracy skills
Character development	Cold calling ensures that all	Cold calling ensures that all	Cold calling ensures that all	Cold calling ensures that all	Cold calling ensures that all	Cold calling ensures that all
	pupils are required to answer	pupils are required to answer	pupils are required to	pupils are required to	pupils are required to answer	pupils are required to
	questions as there is a no opt	questions as there is a no opt	answer questions as there is	answer questions as there	questions as there is a no opt	answer questions as there is
	out culture. Pupils with Anxiety	out culture. Pupils with Anxiety	a no opt out culture. Pupils	is a no opt out culture.	out culture. Pupils with	a no opt out culture. Pupils
	around this are managed well	around this are managed well	with Anxiety around this are	Pupils with Anxiety around	Anxiety around this are	with Anxiety around this are
	and the teachers ensure that	and the teachers ensure that	managed well and the	this are managed well and	managed well and the	managed well and the
	they are included but feel	they are included but feel	teachers ensure that they	the teachers ensure that	teachers ensure that they are	teachers ensure that they
	supported. Real life examples	supported. Real life examples	are included but feel	they are included but feel	included but feel supported.	are included but feel
	and experiences are called	and experiences are called	supported. Real life	supported. Real life	Real life examples and	supported. Real life
	upon regularly.	upon regularly.	examples and experiences	examples and experiences	experiences are called upon	examples and experiences
			are called upon regularly.	are called upon regularly.	regularly.	are called upon regularly.
	Routines are vital to character	Routines should be established				
	development and in the early	but they should also be	Routines well established so	Teacher pupil relationships	Throughout the year pupils	Pupils by now should be
		regularly re-iterated to ensure	that pupils feel confident in	well established and the	are building their skills in	resilient in their maths class

	stages of the year these will be set by the teacher.	high standards throughout the year. This happens at the start of each half term.	taking chances and explore the work to their potential with the support of the teacher as a driving force.	confidence from each party is such that they have mutual trust and respect to explore even more difficult concepts.	conjunction with the teacher and growing in confidence so that they can manage themselves well even if the work becomes too difficult. Working alongside the teacher, each pupil should now know what to do when the work becomes difficult and does not ignore it.	and be able to manage themselves well when things become difficult.
Equality/Diversity opportunities	Real world e.g's used Super curriculum available for all learners. Where the curriculum lends itself, a range of diverse careers are incorporated into the real-life applications of the mathematics. Open dialogue with teachers from day one regarding potential careers in maths.	Real world e.g's used Super curriculum available for all learners. Where the curriculum lends itself, a range of diverse careers are incorporated into the real- life applications of the mathematics. Pupils are actively encouraged to ask appropriate questions and seek support. Catch up sessions offered to weaker pupils.	Real world e.g's used Super curriculum available for all learners. Where the curriculum lends itself, a range of diverse careers are incorporated into the real-life applications of the mathematics. Real life maths skills are identified within the teaching of the curriculum and highlighted during lessons.	Real world e.g's used Super curriculum available for all learners. Where the curriculum lends itself, a range of diverse careers are incorporated into the real- life applications of the mathematics. Practical applications of the maths work referred to in lessons and explored in context.	Real world e.g's used Super curriculum available for all learners. Where the curriculum lends itself, a range of diverse careers are incorporated into the real-life applications of the mathematics. Practical skills in many jobs are embedded in the skills and questions that are covered in lessons. Their application is addressed I the classroom too.	Real world e.g's used Super curriculum available for all learners. Where the curriculum lends itself, a range of diverse careers are incorporated into the real-life applications of the mathematics. All aspects of the curriculum at this stage are important life skills and appear in many careers and such careers are highlighted within the work
Homework/Independent learning	Regular homework on the topics listed above throughout the half term. Use of Hegarty (Sparx) and Mymaths to aid both homework and independent learning. Super curriculum activities in maths	Regular homework on the topics listed above throughout the half term. Use of Hegarty (Sparx) and Mymaths to aid both homework and independent learning. Super curriculum activities in maths	Regular homework on the topics listed above throughout the half term. Use of Hegarty (Sparx) and Mymaths to aid both homework and independent learning. Super curriculum activities in maths	Regular homework on the topics listed above throughout the half term. Use of Hegarty (Sparx) and Mymaths to aid both homework and independent learning. Super curriculum activities in maths	Regular homework on the topics listed above throughout the half term. Use of Hegarty (Sparx) and Mymaths to aid both homework and independent learning. Super curriculum activities in maths	Regular homework on the topics listed above throughout the half term. Use of Hegarty (Sparx) and Mymaths to aid both homework and independent learning. Super curriculum activities in maths
CIAG coverage/links	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate such as shopping lists, breaking down DNA and substances at a molecular level as well as solving practical problems such as splitting a bill or calculating ages. Open dialogue with teachers from day one regarding potential careers in maths.	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate such as architecture for all geometry-based topics, probability for all statistical based jobs such as insurance and data analysis and project management for listing outcomes.	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate such as patterns occurring in real life (golden ratio and Fibonnaci progression), costings such as taxi fares, and estimating how much a set of items will be.	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate such as real- life proportionality problems, true meaning of percentages, scale models and growth modelling in populations.	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate such as land area, shortest distances, and the basis of mechanics including speed, distances, and time. Practical applications to many jobs are embedded in the skills and questions that are covered in lessons. Their application is addressed I the classroom too.	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate such as data analysis in a job, applications to real world problems involving shapes such as circles and how they are used in conjunction with maps. All aspects of the curriculum at this stage are important life skills and appear in many careers and such

those which are highlighted
within the work
within the work