Curriculum Map **Subject:** **Maths** **Year Group: 10 Higher**

	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.**	1 Statistics • Populations, samples and misconceptions • Summarising data, averages and grouped frequency tables 2 Statistics • Categorising data in graphs and identifying trends • Constructing histograms and calculating average measures 3 Statistics • Summarising data in cumulative frequency graphs and box plots • Analysing data using averages such as the median, quartiles and interquartile range 4 Number • Understanding prime numbers and index notation • Use prime factor decomposition to calculate the HCF and LCM 5 Algebra • Collecting like terms, products and quotients • Multiplying out brackets and factorising squares and difference of two squares	6 Algebra • Factorising quadratics expressions where a = 1 and a is not = 1 • Completing the square and substitution into formulae 7 Algebra • Algebraic proof and formulae in real life context • Changing the subject of a formula • Kinematic formulae 8 Number • Rounding and estimation • Upper and lower bounds 9 Geometry • Perimeter of shapes and circumference of a circle • Area of a circle • Surface area and volume of cones, spheres and pyramids 10 Geometry • Pythagoras' Theorem in 2D and 3D • Trigonometry in right angled triangles 11 Geometry • Change the subject of a formula • Trigonometry in right angled triangles 12 Algebra • Terminology and proof • Substitution into formulae and expressions • Change the subject of a formula	1 Geometry • Perpendicular bisector and angle bisector • Perpendicular from a point to a line • Loci 2 Geometry • Angles around a point, on a line and on parallel lines • Angles in a polygon 3 Geometry • Angles in a polygon • Properties of triangles and quadrilaterals 4 Algebra and number • Equivalent ratio and sharing in a ratio • Direct proportion 5 Algebra • Direct proportion • Inverse proportion 6 Number • Percentage change • Growth and decay 7 Algebra • Simultaneous equations graphically • Approximating solutions using a graph • Approximating solutions by iteration	8 Algebra • Linear equations in one unknown • Quadratic equations in context 9 Algebra • Completing the square and rearranging quadratic equations • Simultaneous equations both linear in two variables • Simultaneous equations with one linear and one quadratic in two variables 10 Number • Calculations which include mixed numbers and BIDMAS • Changing recurring decimals into fractions • Dividing decimals calculations, including negatives 11 Statistics • Interpreting scatter graphs and using a line of best fit • Interpret correlation of the variables • Understand outliers are possible	1 Number • Index notation • Estimating powers and roots • Laws of indices and products and quotients 2 Number • Standard form calculations 3 Number • Exact calculations by leaving the answer as a fraction • Leaving answers in terms of Pi, as surd or trigonometric value 4 Number • Exact calculations, rounding and mensuration • Manipulating surds and factorising 5 Algebra • Solving linear and quadratic equations • Solving linear and quadratic inequalities	6 Algebra • Solving linear inequalities graphically • Plotting linear graphs from a table of values and representing them as dashed or solid line for the inequality 7 Geometry • Units of measure • Compound units of measure 8 Geometry • Exact Trigonometric ratios • Plans and elevations • Pythagoras and Trigonometry • Maps and scale drawings 9 Geometry • Area of a triangle • Applications of the Sine Rule, Cosine Rule and area of a triangle
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 solutions to problems and	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 problems and	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 problems and	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 problems and	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 problems and	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 problems and

	when responding to mathematical statements. **Statistical concepts learned here are crucial for the final GCSE examination and will be continually revisited via interleaved work and retrieval practise. They require a good understanding of many skills learned earlier in the course hence they are placed after all such concepts have been covered. The number and algebra work will re-visit skills that are required for the latter stages of the year and require a firm foundation for these to be taught.**	when responding to mathematical statements. **Geometry, and algebra skills learned here are used either as standalone topics or intertwined in a variety of mathematics concepts and problems after this point in time such as circle theorems and polygons as well as being embedded in many algebraic and geometric problems.**	when responding to mathematical statements. **Number, Geometry, and algebra skills learned here are used either as standalone topics or intertwined in a variety of mathematics concepts and problems after this point in time such as circle theorems and polygons as well as being embedded in many algebraic and geometric problems.**	when responding to mathematical statements. **All these skills are intertwined in many concepts that will be learnt after this point in year 10. All are vital skills that are assessed as part of another topic in the final examination.**	when responding to mathematical statements. **All these skills are intertwined in many concepts that will be learnt after this point in year 10. All are vital skills that are assessed as part of another topic in the final examination.**	when responding to mathematical statements. **All concepts learned here are revisited and explored further in year 11. They are skill that are regularly assessed in the final examination as either a standalone question or as part of a more intricate problem.**
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. **Previously learned topics are revisited in the early stages of this part of the curriculum and built upon to allow more difficult concepts to be understood. The number**	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, Algebra and Geometry skills from earlier in the course are used here and further techniques are introduced. introduction to probability, many 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 Geometry, Number and 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 Algebra and statistics work here showing progression within the curriculum. These are all skills which are continually developed and built upon throughout 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. **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. **All topics here rely on many skills that have already been covered. a good foundation of these skills allows pupils to explore these new concepts with confidence.**

	and algebra skills are also embedded in more difficult elements later in the course.					
SEND- how will support be seen? Seating plans? Simplified questions?	• Seating plans for all classes. SEND and identified pupils 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)	• Seating plans for all classes. SEND and identified pupils 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)	• Seating plans for all classes. SEND and identified pupils 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)	• Seating plans for all classes. SEND and identified pupils 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)	• Seating plans for all classes. SEND and identified pupils 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)	• Seating plans for all classes. SEND and identified pupils 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	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	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	Informal assessment via low stakes quizzes and cold calling to check the understanding of all pupils regularly
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 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 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

	machines. Scaffolding in lessons appropriate to each group. Knowledge organisers used to support learning and understanding. **The more basic skills from year 9 are practised as starters and model answers are demonstrated where appropriate in during the early stages of year 9.** **Knowledge organisers are encouraged and how to use them is re-visited and refined** **Regular checking of understanding of new topics via questioning and mini quizzes**	machines. Scaffolding in lessons appropriate to each group. Knowledge organisers used to support learning and understanding. **More skills from year 9 are practised as a starter along with some questions on topics learned in the early stages of year 10 and model answers are demonstrated where appropriate.** **Knowledge organisers should be used to jog the memory of these skills where needed.** **Regular checking of understanding of new topics via questioning and mini quizzes**	machines. Scaffolding in lessons appropriate to each group. Knowledge organisers used to support learning and understanding. **Questions from previously learned skills are used as starter questions, some year 9 skills are checked during starter activities as well to ensure that the foundations are regularly revisited. Model answers are demonstrated where appropriate.** **Use of knowledge organisers should be regular to remind pupils of skills that they may not be able to recall straight away.** **Regular checking of understanding of new topics via questioning and mini quizzes**	machines. Scaffolding in lessons appropriate to each group. Knowledge organisers used to support learning and understanding. **KS4 topics revisited as starters, model answers are demonstrated where appropriate.** **Knowledge organisers should be used where appropriate and managed by the pupils.** **Regular checking of understanding of new topics via questioning and mini quizzes**	machines. Scaffolding in lessons appropriate to each group. Knowledge organisers used to support learning and understanding. **KS4 topics revisited as starters, model answers are demonstrated where appropriate. And knowledge organisers are used.** **Regular checking of understanding of new topics via questioning and mini quizzes**	machines. Scaffolding in lessons appropriate to each group. Knowledge organisers used to support learning and understanding. **Routines should now be embedded, and pupils should now be able to manage expectations of all aspects of the teaching.**
Literacy- reading, extended accurate writing and oracy opportunities	Key words/terms emphasised and highlighted in lessons. Reading and breaking down questions to allow all learners to access the skills needed.	Key words/terms emphasised and highlighted in lessons. Reading and breaking down questions to allow all learners to access the skills needed.	Key words/terms emphasised and highlighted in lessons. Reading and breaking down questions to allow all learners to access the skills needed.	Key words/terms emphasised and highlighted in lessons. Reading and breaking down questions to allow all learners to access the skills needed.	Key words/terms emphasised and highlighted in lessons. Reading and breaking down questions to allow all learners to access the skills needed.	Key words/terms emphasised and highlighted in lessons. Reading and breaking down questions to allow all learners to access the skills needed.
Numeracy/computing skills	All topics require good numeracy skills	All topics require good numeracy skills	All topics require good numeracy skills	All topics require good numeracy skills	All topics require good numeracy skills	All topics require good numeracy skills
Character development	Cold calling ensures that all pupils are required to answer questions as there is a no opt out culture. Pupils with Anxiety around this are managed well and the teachers ensure that they are included but feel supported. Real life examples and experiences are called upon regularly. **Routines are a vital part of life, and they will be reminded of these regularly**	Cold calling ensures that all pupils are required to answer questions as there is a no opt out culture. Pupils with Anxiety around this are managed well and the teachers ensure that they are included but feel supported. Real life examples and experiences are called upon regularly. **Routines should be established but they should also be regularly re-iterated**	Cold calling ensures that all pupils are required to answer questions as there is a no opt out culture. Pupils with Anxiety around this are managed well and the teachers ensure that they are included but feel supported. Real life examples and experiences are called upon regularly. **Routines well established so that pupils feel confident in taking chances and explore**	Cold calling ensures that all pupils are required to answer questions as there is a no opt out culture. Pupils with Anxiety around this are managed well and the teachers ensure that they are included but feel supported. Real life examples and experiences are called upon regularly. **Teacher pupil relationships well established and the confidence from each party**	Cold calling ensures that all pupils are required to answer questions as there is a no opt out culture. Pupils with Anxiety around this are managed well and the teachers ensure that they are included but feel supported. Real life examples and experiences are called upon regularly. **Throughout the year pupils are building their skills in conjunction with the**	Cold calling ensures that all pupils are required to answer questions as there is a no opt out culture. Pupils with Anxiety around this are managed well and the teachers ensure that they are included but feel supported. Real life examples and experiences are called upon regularly. **Throughout the year pupils are building their skills in conjunction with the**

	in the first part of the year. Teachers will outline expectations and pupils will be expected to follow. **Pupils by now should be resilient in their maths class and be able to manage themselves well when things become difficult.**	**to ensure high standards throughout the year. This happens at the start of each half term.** **Pupils by now should be resilient in their maths class and be able to manage themselves well when things become difficult.**	**the work to their potential with the support of the teacher as a driving force.** **Pupils by now should be resilient in their maths class and be able to manage themselves well when things become difficult.**	**is such that they have mutual trust and respect to explore even more difficult concepts.** **Pupils by now should be resilient in their maths class and be able to manage themselves well when things become difficult.**	**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.** **Pupils by now should be resilient in their maths class and be able to manage themselves well when things become difficult.**	**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.** **Pupils by now should be resilient in their maths class 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.**	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. **Past exam questions are used as homework tasks to help with preparations for Exams that will be undertaken.**	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. **Past exam questions are used as homework tasks to help with preparations for Exams that will be undertaken.**	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. **Past exam questions are used as homework tasks to help with preparations for Exams that will be undertaken.**
CIAG coverage/links	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate **such as actuarial science, data analyst and research analyst.**	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate **such as architecture, data input and product design.**	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate **such as construction, carpentry, cooking, and the sciences.**	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate **such as engineering, data analysis, and aeronautics.**	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate **such as structural engineers, and**	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate **such as construction, landscaping, and product design.**

	Open dialogue with teachers from day one regarding potential careers in maths.				**computer programming, and astronomy.** **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.**	**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**