Curriculum Map **Subject:** **Maths** **Year Group: 11 Foundation**

	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 Geometry • Understand the properties of a circle • To recap on area and circumference of a circle • Angles at point on a line and angles between parallel lines 2 Geometry • Recap angles in triangles and quadrilaterals • Recap interior, exterior angles in a polygon and regular polygons 3 Geometry • Properties of triangles and quadrilaterals • Pythagoras and Trigonometry 4 Algebra • Linear graphs • Perpendicular and parallel lines 5 Data • Probability • Relative Frequency • Venn Diagrams • Sample space	6 Probability • Tree diagrams • The multiplication law of probability and conditional probability 7 Algebra • Generating terms of a sequence 8 Algebra • Using standard formulae 9 Algebra • Gradients of a line to measure change in velocity, kinematics, speed and distance-time measures 10 Geometry • Graphs in real-life context • Estimating areas under a graph 11 Algebra • Trigonometric functions • Equations of a circle • Parallel and perpendicular lines to a circle and tangents	1 Geometry • Reflections and rotations • Combined transformations 2 Geometry • Congruent triangles • Similar triangles and shapes 3 Geometry • Enlargements • Combined transformations 4 Number • Exact calculations • Similar triangles 5 Algebra • Polynomial functions – properties of quadratic graphs • Exponential functions	6 Algebra Polynomial • Functions and composite functions • Translations and reflections 7 Algebra • Graphs of equations and functions • Polynomial functions – properties of special graphs 8 Geometry • Vectors arithmetic • Column vectors	Revision and exam focus	
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 when responding to mathematical statements. **The foundations of the topics listed above have all been taught at an earlier stage in the curriculum. Here is where the in-depth work begins. All basics are re-capped and then taken 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 solutions to problems and when responding to mathematical statements. **The foundations of the topics listed above have all been taught at an earlier stage in the curriculum. Here is where the in-depth work begins. All basics are re-capped and then taken 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 solutions to problems and when responding to mathematical statements. **The foundations of the topics listed above have all been taught at an earlier stage in the curriculum. Here is where the in-depth work begins. All basics are re-capped and then taken**	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. **The foundations of the topics listed above have all been taught at an earlier stage in the curriculum. Here is where the in-depth work begins. All basics are re-capped and then taken**	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. **This term is for preparing pupils for their final examinations. Real life context is important as well as exam practise. All lessons are given to the bespoke needs of each class. QLA**	

	a higher degree of difficulty – for instance, Pythagoras and trigonometry will be taken into three dimensions and applied to both real-life and algebraic contexts.	**a higher degree of difficulty – for instance, real life formulae are used which highlights the significance of why they exist and their application as well on such formulae. Graphs are developed further and calculating the equation of a graph is here. All previous knowledge of straight-line graphs is essential here hence this part is on the latter stages of the curriculum.**	**to a higher degree of difficulty – for instance, Transformations require a lot of geometry learned in the two previous years. Polynomial functions feed into next half terms work whilst requiring many algebraic skills that have been covered earlier.**	**to a higher degree of difficulty – for instance, functions and graphs both build upon the content from the previous half term. Column vector notation is required here from transformations and explore further.**	**data is used from previous mock exams to plan the lessons around these needs.**	
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 the skills above are essential for their application in context and further in the course or as part of the final examination. The skills learned throughout the course are re-capped and used in questions which cross 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. **All skills listed above are used later in the course or as part of the final examination, so it is essential to secure this knowledge before moving on. Some skills above are used further on in the course and the foundations from this section will be used and built upon later.**	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. **Geometry skills from earlier in the course need to be utilised here to solve the increasingly difficult problems that arise in the form of transformations and similar shapes. Exact calculations are essential as part of the non-calculator part of the course. These skills are honed from previous topics that require solutions to be written in an exact form such as solutions to quadratic equations, area & circumference of a circle as well as problem solving intertwined with area questions. Polynomial functions are part of this half terms topics that feed into the next. The basic**	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. **Graphs of functions and vectors are among the most challenging topics in the curriculum, and both require multiple skills that are built upon over the three-year curriculum. Placing them here ensures that all foundations are in place before tackling the most difficult concepts.**	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. **Continued preparations for the final examinations via recall and past papers questions is vital for the success of our pupils hence this half term is dedicated to this**	

			skills are taught here in order for pupils to build upon the skills later in the year.			
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)	
Assessment- What? Why?	Informal assessment via low stakes quizzes and cold calling to check the understanding of all pupils regularly. **Revision session topics are generated from QLA of the last formal assessment.** **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. Formal Maths assessments **(mock examinations)** 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. **Revision session topics are generated from QLA of the last formal assessment.** **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. Formal Maths assessments **(mock examinations)** 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. **Revision session topics are generated from QLA of the last formal assessment.** **QLA to inform future planning of retrieval practice and interleaved learning.**	
What **memory for learning** skills will be required- modelling? Concrete answers? Retrieval?	Interleaved starters used to retrieval practise. Cold calling in lessons. Questioning techniques to draw out knowledge of	Interleaved starters used to retrieval practise. Cold calling in lessons. Questioning techniques to draw out knowledge of	Interleaved starters used to retrieval practise. Cold calling in lessons. Questioning techniques to draw out knowledge of	Interleaved starters used to retrieval practise. Cold calling in lessons. Questioning techniques to draw out knowledge of	Interleaved starters 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, flash cards and revision guides for year 11. **Modelling of solutions is seen regularly in lessons.** **Pupils should be used to the expectations of the school and will see all the above happening on a regular basis in Maths lessons.**	pupils and re-enforce their understanding. Model answers using visualisers/surface pro machines. Scaffolding in lessons appropriate to each group. Knowledge organisers, flash cards and revision guides for year 11. **Modelling of solutions is seen regularly in lessons.** **Pupils should be used to the expectations of the school and will see all the above happening on a regular basis in Maths lessons.**	pupils and re-enforce their understanding. Model answers using visualisers/surface pro machines. Scaffolding in lessons appropriate to each group. Knowledge organisers, flash cards and revision guides for year 11. **Modelling of solutions is seen regularly in lessons.** **Pupils should be used to the expectations of the school and will see all the above happening on a regular basis in Maths lessons.**	pupils and re-enforce their understanding. Model answers using visualisers/surface pro machines. Scaffolding in lessons appropriate to each group. Knowledge organisers, flash cards and revision guides for year 11. **Modelling of solutions is seen regularly in lessons.** **Pupils should be used to the expectations of the school and will see all the above happening on a regular basis in Maths lessons.**	pupils and re-enforce their understanding. Model answers using visualisers/surface pro machines. Scaffolding in lessons appropriate to each group. Knowledge organisers, flash cards and revision guides for year 11. **Modelling of solutions is seen regularly in lessons.** **Pupils should be used to the expectations of the school and will see all the above happening on a regular basis in Maths lessons.**	
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.	
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	
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 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**	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 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**	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 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.**	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 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**	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 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**	

	themselves well when things become difficult.	**themselves well when things become difficult.**		**themselves well when things become difficult.**	**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. **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. **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.**	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. **Engineering, insurance, data analysis and actuarial science are all areas where the above skills are required and used regularly.**	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate. **Engineering, architecture, product design and fashion are all areas where the above skills are utilised in abundance.**	Super curriculum activities in maths. Real life examples and uses for the topics where appropriate. **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. **All aspects of the curriculum at this stage are important skills for the final examinations and appear in many careers and such those highlighted within the work.**	N/A	