

Mathematics

Curriculum intent: The 5-year mathematics curriculum at Dormston intends for all pupils to become fluent in the fundamentals of mathematics whilst enabling all to reach their full potential. In order for learning to take place effectively some knowledge has to be taught before others. With this in mind our ambitious and connected curriculum aims to build upon prior learning and links to other aspects of the mathematics curriculum in order to not only develop pupil's fluency in key areas, as outlined by the national curriculum, but to also deepen their understanding by ensuring reasoning and problem-solving opportunities are embedded throughout. This scheme of work is based on the whiterose scheme that many of our feeder primary schools use, it embodies fluency, reasoning and problem solving in order to help all our students reach their full potential and build our mathematicians of the future. Pupils are placed in to sets soon after arrival in year 7 but due to the mastery style approach and pedagogy, all students are taught similar skills and movement between sets is very fluid.

Assessment in mathematics

Homework is an important tool for the mathematics department and end of topic mini assessments to aid planning and intervention is done on the mathswatch website, which all students will have a personal login for. We also do a baseline assessment at beginning of year 7 and 3 further assessments throughout the year for data reporting and intervention purposes.

Literacy/Reading/Oracy opportunities: A large emphasis is placed on oracy in the mathematics department with reasoning being one of the key components that is used regularly to deepen understanding. Both key words and the etymology of new vocabulary is discussed regularly in order for pupils to gain a deeper understanding of these things

Curriculum rationale Year 7 - 11	Autumn	Spring	Summer
Year 7	<ol style="list-style-type: none"> 1. Sequences 2. Algebraic notation 3. Equality and equivalence 4. Place value 5. Fractions, decimals and percentages 	<ol style="list-style-type: none"> 6. Addition and subtraction 7. Multiplication and division 8. Fractions and percentages of amounts 9. Directed numbers 10. Addition and subtraction of fractions 	<ol style="list-style-type: none"> 11. Constructing and measuring 12. Geometric reasoning 13. Number sense 14. Sets and probability 15. Primes and proof

Why?

1. Sequences is taught in mixed ability. The diagrammatical nature of its introduction coupled with the fact it is a new topic to year 7s lends itself well to this. This is built on in spring block 2 in year 8.
2. Algebraic notation is a new topic to year 7s and underpins all other algebra topics that will follow in later years. This is built on in spring block 1 in year 8.
3. Equality and equivalence follows on from work done in year 6 relating to finding numbers that satisfy equations and equations with unknowns on both sides of an equals. This is built on in spring of year 8.
4. Place value in year 7 builds on the work done in year 6 where students read and write numbers up to 10,000,000 and explored further in spring block 5.
5. Fractions, decimals and percentages in secondary school extends the work from primary education by adding to student knowledge problems that are greater than one. This unit of work builds towards spring block 4.
6. During year 7 we will look at both written and mental methods addition and subtraction which will lead to problem solving with money and lengths as well as work on order of operations in Spring block 6
7. Multiplication and division is taught to solidify skills which are needed in situations when finding the area or side lengths in 2d shapes as well as other problems in year 8 autumn 3 where fractions will be introduced.
8. Fractions and percentages of amounts continues the ground work put in during primary and allows us to build towards the work we will be doing in year 8 on converting fluency of concepts in to reasoning and problem solving
9. Directed numbers is a critical topic for mathematical success at secondary school. The concept of numbers above and below zero and being able to calculate with them will appear in several topics throughout all years.
11. Constructing and measuring in year 7 is designed to lead into work on loci in year 9 block 5
12. Geometric reasoning is an introduction to all kinds of geometry problems in later years such as angles in parallel lines angles in polygons and circle theorems.
13. Number sense in year 7 will build the skills that are needed in and outside the class room this topic culminates in when or not to use mental methods of calculation.
14. Sets and probability introduces probability for the first time the introduction of the chance of an event having and how to calculate probability in year 8 autumn block 6.
15. Primes and proof include topics such as factors and multiples which will build aspects of other mathematical learning in year 9 with work on conjectures.

		10. Addition and subtraction of fractions is needed in year 7 to establish the skills relating to fractions which will transfer to work on mixed number and algebraic fractions. Year 8 block 3.	
How parents / carers can support	<p>All pupils have been set non-required work consolidating and recapping work previously taught. Parents could encourage pupils to work through this throughout the year.</p> <p>Pupils could also be encouraged to use the whiterose home learning website to watch recap videos of their current learning.</p> <p>Parents and carers encouraging pupils to ensure their homework is done to a good standard would be a big support as it is an important part of our assessment cycle and informs our planning and in class interventions.</p>		
	Autumn	Spring	Summer
Year 8	<ol style="list-style-type: none"> 1. Ratio and scale 2. Multiplicative change 3. Multiplying and dividing fractions 4. Cartesian plane 5. Representing data 6. Tables and probability 	<ol style="list-style-type: none"> 7. Brackets, equations and inequalities 8. Sequences 9. Indices 10. Fractions and percentages 11. Standard form 12. Number sense 	<ol style="list-style-type: none"> 13. Angles in parallel lines 14. Area of trapezia and circles 15. Line symmetry and reflection 16. The data handling cycle 17. Measures of location
Why?	<ol style="list-style-type: none"> 1. Pupils will be introduced to and use ratio notation. These new skills will be extended in year 9 	<ol style="list-style-type: none"> 7. Brackets, equations and equalities will revise and extend skills taught in year 7 autumn 	<ol style="list-style-type: none"> 13. Knowledge of angles learnt during year 7 summer block 2 will be developed further during

	<p>spring block 2 and summer block 3.</p> <ol style="list-style-type: none"> 2. During multiplicative change pupils will develop skills to understand scale factors and currency conversions. This will lead into year 9 summer block 2. 3. Multiplying and dividing fractions is an extension of skills learnt in year 7 spring block 5 where pupils were taught how to add and subtract fractions. This in turn develops further in year 9 spring block 1. 4. Cartesian plane develops skills involving co-ordinates and plotting graphs. This builds on work taught in year 7 autumn block 2 and will be extended further in year 9 autumn block 1. 5. Pupils will be able to recognise types of data and construct frequency tables using grouped and ungrouped data. This will be revised in year 9 summer block 4. 6. After reviewing year 7 knowledge from summer block 4, pupils learn how to calculate probabilities using tables and diagrams. This is reviewed and 	<p>block 2/3 and spring block 4. To include forming and solving equations and expanding brackets. These skills will build towards year 9 autumn block 1, 2 and 3.</p> <ol style="list-style-type: none"> 8. Pupils will revise and extend work covered in year 7 autumn block 1 and 2. This will include more complex rules which will develop into testing conjectures and nth terms in year 9 autumn block 3. 9. Pupils will continue to develop their algebraic skills by exploring powers and working with indices. 10. Pupils will revise and extend skills covered in year 7 autumn block 5 and spring block 3. Both calculator and non-calculator skills will be developed ready for more complex fractions and percentages in year 9 spring block 2 and 3. 11. Pupils will learn standard form by developing skills taught in year 7 autumn block 4. This will be developed and extended further in year 9 summer block 1. 12. By revisiting skills from year 7 autumn block 4, and spring 	<p>this topic. This will extend into year 9 spring block 4.</p> <ol style="list-style-type: none"> 14. Pupils will develop their knowledge of area of simple shapes from year 7 and learn how to calculate areas of more complex shapes. This will be developed further into volume during year 9 autumn block 4 15. Pupils will increase their knowledge of simple shapes from year 7 summer block 1 and begin to understand how to use a ruler and compass accurately ready for constructions and loci in year 9 autumn block 5. 16. The data handling cycle develops skills from year 7 spring block 1 and summer block 1, collecting data and constructing appropriate diagrams. 17. After revising knowledge from year 7, pupils will calculate averages from both grouped and ungrouped data and compare distributions using statistical data.
--	--	---	--

	developed further in year 9 summer block 4.	block 1 and 2, pupils will develop skills further including order of operations, converting units and estimation.	
How parents / carers can support	<p>All pupils have been set non-required work consolidating and recapping work previously taught. Parents could encourage pupils to work through this throughout the year.</p> <p>Pupils could also be encouraged to use the whiterose home learning website to watch recap videos of their current learning.</p> <p>Parents and carers encouraging pupils to ensure their homework is done to a good standard would be a big support as it is an important part of our assessment cycle and informs our planning and in class interventions.</p>		
	Autumn	Spring	Summer
Year 9	<ol style="list-style-type: none"> 1. Straight line graphs 2. Forming and solving equations 3. Testing conjectures 4. 3D shapes 5. Constructions and congruency 	<ol style="list-style-type: none"> 6. Numbers 7. Using percentages 8. Maths and money 9. Deduction 10. Rotation and translation 11. Pythagoras theorem 	<ol style="list-style-type: none"> 12. Enlargement and similarity 13. Ratio and proportion 14. Rates 15. Probability 16. Algebraic representation
Why?	<ol style="list-style-type: none"> 1. Pupils will develop their skills of plotting co-ordinates from year 8 as well as their knowledge of algebraic notation by learning to plot and interpret $y=mx+c$. 	<ol style="list-style-type: none"> 6. Pupils will revisit and consolidate number skills previously taught in year 7 and 8 and extend these further by 	<ol style="list-style-type: none"> 12. Pupils will explore ratios in right angled triangles and develop their skills of enlargement. This will be consolidated in year 10 and then developed further for

	<p>This knowledge will then aide pupils in year 10 autumn block 4.</p> <ol style="list-style-type: none"> 2. Pupils revise and extend their algebraic knowledge from year 8 spring block 1 by forming and solving equations and inequalities with unknowns on both sides. This will build towards year 10 autumn block 4 where pupils will be introduced to simultaneous equations. 3. Testing conjectures enables pupils to develop their reasoning skills by evaluating whether a mathematical statement is true or false. 4. Pupils will develop their knowledge of area from year 8 and learn about volume and surface area of 3D shapes. This will build towards more complex shapes in year 10 spring block 2. 5. Accurate use of a ruler and compass from year 8 summer block 3 is extended further in constructions and congruency by introducing pupils to the concept of Loci. Pupils will also explore the idea of congruency which builds towards year 10 autumn block 1 where they will 	<p>linking skills to problem solving problems.</p> <ol style="list-style-type: none"> 7. Pupils extend their knowledge of percentages from year 8 spring block 4 by calculating percentage increase and decrease and solving reverse percentage problems. This will also be revisited again during year 10 where problem solving skill will be developed further. 8. During this topic, pupils will learn about financial maths, including exchange rates and interest as well as wages and tax. This will be developed further in year 10 spring block 5 when pupils will calculate compound interest. 9. The topic Deduction will develop pupil knowledge of angles from year 8 summer block 1 and enable pupils to reason and explore geometrical proofs. 10. Pupils revise and extend work covered in year 8 summer block 3 by focusing on transformations of shape. This will be revised and developed further in year 10. 11. Pythagoras' Theorem is a new skill introduced to year 9. This 	<p>those pupils on the higher tier to negative scale factors.</p> <ol style="list-style-type: none"> 13. Pupils will revisit the concept of direct proportion and link this skill into calculating value for money problems. These skills will be consolidated and extended further in spring of key stage 4. 14. Pupils will be taught about compound units, including problems relating to speed, distance and time. This will be built upon in key stage 4 when problems relate to pressure and density. 15. Knowledge of probability from year 7 and 8 will be built upon as pupils will compare experimental and theoretical probability. This will be consolidated and developed further in year 10 spring block 6 when they will draw and interpret probability tree diagrams. 16. Pupils will consolidate their knowledge of algebraic representation so far and develop their problem solving skills ready for year 10 autumn block 3 when this will extend into quadratics.
--	--	--	---

	be introduced to congruent triangles.	will be revisited again in year 10 autumn block 2 and extended further into trigonometry.	
How parents / carers can support	<p>All pupils have been set non-required work consolidating and recapping work previously taught. Parents could encourage pupils to work through this throughout the year.</p> <p>Pupils could also be encouraged to use the whiterose home learning website to watch recap videos of their current learning.</p> <p>Parents and carers encouraging pupils to ensure their homework is done to a good standard would be a big support as it is an important part of our assessment cycle and informs our planning and in class interventions.</p>		
	Autumn	Spring	Summer
<p>Year 10</p> <p>We currently have 3 schemes of work in our key stage 4 curriculum to accommodate our different pupils.</p> <p>Higher: For pupils who will be sitting the higher paper</p> <p>Crossover: For pupils with targets/aiming for crossover grades and have some potential to sit either paper</p>	<ul style="list-style-type: none"> • Higher Tier pupils: <ol style="list-style-type: none"> 1. Congruence, similarity and enlargement 2. Trigonometry 3. Representing solutions of equations and inequalities • Crossover pupils <ol style="list-style-type: none"> 1. Two-way tables 2. Frequency trees 3. Venn diagrams 4. Product of prime factors 5. Multiples in context 6. Best value 7. Exchange rates 	<ul style="list-style-type: none"> • Higher Tier pupils: <ol style="list-style-type: none"> 4. Angles and bearings 5. Working with circles 6. Vectors 7. Ratio and fractions 8. Percentages and interest 9. Probability • Crossover pupils <ol style="list-style-type: none"> 15. Ratio 16. Proportion 17. Index laws 18. Standard index form 19. Expand and simplify 20. Factorising 	<ul style="list-style-type: none"> • Higher Tier pupils: <ol style="list-style-type: none"> 10. Collecting, representing and interpreting data 11. Non-calculator methods 12. Types of number and sequences 13. Indices and roots • Crossover Pupils <ol style="list-style-type: none"> 26. Inequalities 27. Frequency diagrams 28. Scatter graphs 29. Time series 30. Straight line graphs 31. Coordinate geometry 32. Speed distance time

<p>Foundation: For pupils sitting the foundation paper</p>	<ol style="list-style-type: none"> 8. Rounding and error intervals 9. Estimation 10. Percentages of an amount 11. Interest and growth 12. Depreciation and decay 13. Reverse percentages 14. Fractions <ul style="list-style-type: none"> • Foundation Tier Pupils: <ol style="list-style-type: none"> 1. Place Value and Number Operations 2. Money 3. Displaying Data 4. Probability 5. Two Way Tables and Venn Diagrams 6. Types of Number 	<ol style="list-style-type: none"> 21. Solving equations 22. Changing the subject of a formula 23. Averages 24. Averages from a table 25. Averages from grouped data <ul style="list-style-type: none"> • Foundation Tier Pupils: <ol style="list-style-type: none"> 7. Algebraic Manipulation 8. Properties of 2D and 3D Shape 9. Directed Number and Number Sense 10. Statistical Analysis 11. Rounding and Accuracy 12. Proportion and Rates of Change 	<ol style="list-style-type: none"> 33. Compound measures 34. Real life graphs 35. Pythagoras theorem <ul style="list-style-type: none"> • Foundation Tier Pupils: <ol style="list-style-type: none"> 13. Fractions and Decimals 14. Percentages 15. Geometric Reasoning 16. Standard Form 17. Mensuration and Time
<p>Why?</p>	<ul style="list-style-type: none"> • Higher tier pupils <ol style="list-style-type: none"> 1. This leads on from scale factors and congruency taught in year 8 and 9 Autumn terms and extended in to proofs Ready to be further developed in year 11 Spring term. 2. Multiplicative relationships were explored in the Summer of year 7. And links closely to Pythagoras has also been taught year 9 Spring term. In yr11 the Trig ratios will be extended further in graphical form, including Transformations in Spring term, and also re- 	<ul style="list-style-type: none"> • Higher tier pupils <ol style="list-style-type: none"> 4. Pupils build on their knowledge from year 9 block 4. Bearings are introduced and explored in year 10. 5. Pupils extend their knowledge from year 8 block 2 & in year 9 block 4. This is linked to Spring of year 11 when reasoning with shapes is explored further 6. Pupils enhance on their basic knowledge of vectors from year 9 Spring term. This is then developed further in Spring of year 11 in the context of proofs 	<ul style="list-style-type: none"> • Higher tier pupils <ol style="list-style-type: none"> 10 Pupils will consolidate and extend their prior learning from year 7-9 on the collection, representation and use of summary statistics to describe data. This follows on in year 11 in Spring term when pupils deepen their understanding by comparing and describing distributions. 11 This topic build upon prior learning from across year 7, 8 and 9 and is built upon in year 11 In Autumn term, when pupils review volume formulae

	<p>visited in the context of functions in yr11 Autumn block.</p> <p>3. This unit seeks to revise and extend work done in Autumn and Spring of year 7 as well as Year 8 Spring and Autumn in year 9. Equations will then be extended further year 11 Autumn term in the form of solving quadratic equations.</p> <ul style="list-style-type: none"> • Crossover pupils <p>1-3. This develops learning from year 7 & 8 Autumn terms where pupils were introduced to these tools/concepts. This is with the aim of extend pupils in to more reasoning and problem solving to prepare them for GCSE style questions and is a basis for probability questions that will be looked at the beginning of year 11.</p> <p>4-5. Consolidates work done in Summer of year 7 and looked at in a reasoning context in year 9 whilst extending pupils to incorporate this in to problem solving.</p> <p>6. Extends work done throughout KS3 on proportional reasoning in order to prepare students for GCSE style questions.</p> <p>7. Revisits work looked at in Autumn of year 8 in order to</p>	<p>7. This unit builds on KS3 work on ratio and fractions to incorporate deeper level of understanding. This will be further explored in Spring of year 11 when pupils review multiplicative change</p> <p>8. Pupils extent their knowledge of fractions & percentages from across KS3 by applying it to real life contexts in the form of simple, compound interest & reverse percentages which all relate well to problem solving. This understanding is further explored in Spring of year 11 when proving equivalence.</p> <p>9. In this unit pupils revisit the basic concepts of probability taught in Autumn of year 8 & Summer of year 9. This is reviewed again with a mastery focus in spring of year 11</p> <ul style="list-style-type: none"> • Crossover pupils <p>15. Recaps and consolidates work done on ratio throughout KS3 in order to enhance retention, recall and mastery. This will be developed further in terms of area and volume ratios for those pupils following the higher course.</p>	<p>for the context of rearranging formulas.</p> <p>12 Pupils will enhance the nth term rule work done in Summer of year 9 by bringing in quadratic sequences. This will be reviewed in more depth in year 11 spring term.</p> <p>13 Extends work done on standard form in Spring of year 8. This will be consolidated and extended in Spring and Summer of year 11. Enhances work done throughout ks3 in terms of manipulating expressions in preparation for Autumn in year 11 when pupils will use this in terms of factorising quadratics and changing the subject of a formula.</p> <ul style="list-style-type: none"> • Crossover pupils <p>26. Pupils will revise work from Spring of year 8 and Summer year 9 in order to progress to representing inequalities on a number line.</p> <p>27. Frequency diagrams were initially taught in Summer of year 7 and 8. This knowledge will be extended to incorporate more opportunities for reasoning and</p>
--	--	--	---

	<p>develop pupil's retention and understanding. 8-9. Consolidates work done throughout years 7-9 and extends pupils in to error intervals and bounds which will be developed further in to calculations if they take the higher paper route in year 10. Reinforces work done on percentages throughout KS3 in order to recap pupils' skills for topics 11 & 13 11 & 13. Develops previously covered percentage skills in terms of repeated percentage change and reverse percentages which will be new content for most pupils. 12. Recap of some previously looked at buttons whilst introducing new content such as sin, cos and tan in preparation for trigonometry topic in year 11. 13. Revision of fraction topics in order to develop pupils problem solving and reasoning abilities in preparation for GCSE style questions.</p> <ul style="list-style-type: none"> • Foundation Tier Pupils: <p>Pupils will be revisiting and consolidating topics taught throughout</p>	<p>16. Revisits proportion work done in Summer of year 9 in order to develop it in terms of recipes which is a commonly tested topic in GCSE 17. Revision of basic index laws looked at in Spring of year 8 in order to extend in to the next topic of standard form. These will be extended in to harder index laws for pupils sitting higher in year 11. 18. Leads on from work done in previous topic to extend learning done in year Spring of year 8 19. Reinforces work done in Spring of year 8 and extends pupils expand quadratics which will be further extended in to solving in topic 21. 20. Leads on from previous topic taught to do the inverse. Initial concepts of factors were taught in Summer of year 7. 21. Consolidates work done throughout KS3 and incorporates work done in topic 19 in order to extend pupils in to solving quadratics. In year 11 pupils will extend this knowledge further in terms of simultaneous equations. 22. New knowledge for most students with concepts and methods relating to previous topic 23. Revision of Autumn and Spring of year 7 and Summer of year 8 in</p>	<p>problem solving in order to compare distributions and show mastery of the topic. 28. This topic recaps work done in Autumn of year 8 and extends this further so pupils understand the risk of extrapolation. 29. Leads on from work done in Summer of year 8 on line graphs to incorporate analysis and comparisons. 30-31. Revisits work done in Autumn of year 8 and 9 in order to aid retention and recall whilst extending pupils on to gradient and Y intercept knowledge. 32. Pupils have previously looked at the basics behind speed distance time but revise it in order to extend them into problem solving and reasoning. The principles behind this will link to work pressure and density which will be covered in topic 33. 33. See topic 32 34. Real life graphs links together topics 30 and 32 in order to consolidate and bring together for mastery. 35. New content for pupils which links to work taught on indices in spring of year 8. This is also extended in 3 dimensions for pupils</p>
--	---	---	---

	<p>year 7, 8 and 9. They will be developing their reasoning skills and a deeper understanding of each topic through problem solving. Pupils will apply skills to past exam questions therefore improving their examination technique.</p>	<p>or to extend in to frequency tables in the next 2 topics 24-25. Recap and extension of Summer year 8 in order to aid retention and mastery in preparation for GCSE.</p> <ul style="list-style-type: none"> Foundation Tier Pupils: Pupils will be revisiting and consolidating topics taught throughout year 7, 8 and 9. They will be developing their reasoning skills and a deeper understanding of each topic through problem solving. Pupils will apply skills to past exam questions therefore improving their examination technique. 	<p>who go on to study higher content in year 11.</p> <ul style="list-style-type: none"> Foundation Tier Pupils: Pupils will be revisiting and consolidating topics taught throughout year 7, 8 and 9. They will be developing their reasoning skills and a deeper understanding of each topic through problem solving. Pupils will apply skills to past exam questions therefore improving their examination technique.
<p>How parents / carers can support</p>	<p>All pupils have been set non-required work consolidating and recapping work previously taught. Parents could encourage pupils to work through this throughout the year.</p> <p>Parents and carers encouraging pupils to ensure their homework is done to a good standard would be a big support as it is an important part of our assessment cycle and informs our planning and in class interventions.</p> <p>Parents can also purchase revision materials through school and encourage the use of these.</p>		

	Autumn	Spring	Summer
<p>Year 11</p> <p>Please note this is a guide and during year 11, our schemes can be tailored even further to ensure that all pupils needs are accounted for.</p> <p>Also, currently our year 11 higher pupils are following a slightly different scheme of work. However, as of Sept 2022 the scheme of work shown will be followed by all higher pupils. Please contact your child's teacher if you require further information/guidance</p>	<ul style="list-style-type: none"> • Crossover pupils 1. Trigonometry 2. Bearings 3. Angles in parallel lines 4. Interior and exterior angles 5. Sampling 6. Pie charts 7. Probability 8. Plans and elevations 9. Constructions and loci 10. Circles 11. Surface area and volume 12. Congruency and Similar shapes • Foundation Tier Pupils: 1. Sequences 2. Area, Perimeter, Volume 3. Ratio 4. Symmetry 5. Equations and Inequalities 6. Co-ordinates and Transformations 7. Graphs 	<ul style="list-style-type: none"> • Crossover pupils 13. Transformations 14. Vectors 15. Sequences 16. Forming and solving equations 17. Simultaneous equations 18. Direct and inverse proportion • Foundation Tier Pupils: Mock Examination Analysis and revision 	
<p>Why?</p>	<ul style="list-style-type: none"> • Higher tier 1. This block builds on earlier study of straight-line graphs in Years 9 (Autumn Block 1 and Summer Block 5) and 10 (Autumn Block 3 and 4). Pupils plot straight lines from a given equation and find an interpret 	<ul style="list-style-type: none"> • Higher tier 7. Review multiplicative change from Key Stage 3 and Year 10 including Scale Factors and Similarity in Autumn Block 1 and direct and inverse proportion and compound units in Year 9 Summer Blocks 2 and 	

	<p>the equation of a straight line. This learning prepares pupils for Autumn Block 2 when this is applied to non-linear graphs.</p> <p>2. Pupils develop their knowledge of non-linear graphs including quadratic, cubic and reciprocal graphs to include sketching, finding solutions and roots and interpreting. This builds upon prior learning of recognising these graphs in Year 9 (Summer Block 5) and using them to solve equations in Year 10 (Autumn Block 4). It also provides the building blocks for Spring Block 4 which extends learners to Trigonometric Graphs and Transforming graphs.</p> <p>3. Pupils develop knowledge based on conversion graphs (Year 9 Summer Block 2), gradients (Year 9 Autumn Block 1 and Summer Block 5), Speed/distance/time (Year 9 Summer Block 5). They then extend their learning to include velocity-times graphs incorporating area under a curve and calculating gradients at a point (instantaneous rate of</p>	<p>3. Pupils extend this to firstly include formulae for pressure and density and then to interpret equations that describe both direct and inverse proportion.</p> <p>8. The four circle theorems learnt in Year 10 Spring Block 2 are revisited, proven and built upon to include the remaining theorems.</p> <p>9. Pupils build upon learning of solving linear simultaneous equations in Year 10 Autumn Block 4 to include linear and quadratic equations. This also extends to inequalities both graphical and linear. Pupils also consolidate their understanding of proof as studied in Year 9 Block 3 to prepare then for Year 11 Spring Block 6. Finally, pupils revisit quadratics sequences including surds, from Year 10 Summer Block 3 to deepen understanding and fluency.</p> <p>• Crossover pupils</p> <p>13. Leads on from previous topic of similarity and congruence to create links across the curriculum. Revisits work done</p>	
--	--	--	--

	<p>change in numerical, algebraic and graphical context).</p> <ol style="list-style-type: none"> 4. This block reviews expanding, factorising and solving from Year 10 Autumn Blocks 3 and 4. It extends learning further by including further methods to solve quadratics including using the quadratic formula, completing the square and linking this to calculating roots and the turning point algebraically and graphically. 5. Pupils build upon skills in Year 9 of changing the subject of a formula which they studied in Autumn Block 2. They extend their learning to include when the subject appears more than once. It prepares pupils for using Proof in Spring Block 3. This module also includes finding approximate solutions to equations using iteration. 6. Pupils will build upon their knowledge of Trigonometric functions (Year 10 Autumn Block 2) and their work on quadratic functions and graphs (Year 11 Autumn Blocks 1 to 5). It extends learning further to include the inverse functions, and composite functions. 	<p>in the spring of year 9 for retention and developing depth purposes</p> <ol style="list-style-type: none"> 14. Builds upon the basic vector work taught in previous topic in terms of translations 15. Recall of nth term rule from Summer of year 9 in order to extend pupils doing the higher paper in to quadratic sequences 16. Promotion of recall and understanding of basic equations and forming them in order to be extended in to simultaneous equations 17. New learning and an extension of previous topic taught 18. Revision of Summer year 9 topic on direct and inverse proportion in which pupils will be focussed on problem solving and reasoning to add depth. Pupils sitting higher paper will also be incorporating the general formula. <ul style="list-style-type: none"> • Foundation Tier Pupils: Pupils will continue to consolidate and revisit areas for improvement based on mock examination analysis. They will continue to apply skills to past exam questions therefore further improving and developing their technique 	
--	---	--	--

	<ul style="list-style-type: none">• Crossover pupils <ol style="list-style-type: none">1. Trigonometry extends work done on Pythagoras in Year 9 and 102. Builds on Year 8 block 1 on angles in parallel lines and chains of reasoning taught in spring of year 9 and links to the next topic taught3. This enables pupils to revisit and consolidate Year 8 block in greater depth to enhance understanding and recall in a mastery style4. As above5. New content which enhances pupils understanding of statistical procedures6. Uses knowledge from year 7 on drawing pie charts to look in greater depth to scaffold more problem-solving opportunities7. Recaps probability from years 7-9 in order to build on in the form of probability trees which incorporates work done in year 10 on fractions and decimals8. Previously taught in Autumn of year 9. Recapped for retention and retrieval and links to area and surface area topic to come		
--	---	--	--

9. Reviews constructions taught in year 9 to ensure understanding of loci in embedded
10. Recaps area of a circle work done in year 8 Summer term and extends in to sectors and arc lengths/perimeter
11. Follows on from area of a circle done in previous topic and work done in Autumn of year 9 on surface area and volume to extend in to surface area of prisms and volumes of spheres, cones and compound shapes
12. Recap of congruency from autumn of year 9 in order to enhance understanding in to next topic of transformations. Similar shapes is new learning and leads into enlargement in the next topic

- **Foundation Tier Pupils:**

Pupils will be revisiting and consolidating topics taught throughout year 7, 8 and 9. They will be developing their reasoning skills and a deeper understanding of each topic through problem solving. Pupils will apply skills to past exam questions therefore improving their examination technique.

How parents / carers can support

All pupils have been set non-required work consolidating and recapping work previously taught. Parents could encourage pupils to work through this throughout the year.

Pupils could also be encouraged to use the whiterose home learning website to watch recap videos from previous years of their current learning.

Parents and carers encouraging pupils to ensure their homework is done to a good standard would be a big support as it is an important part of our assessment cycle and informs our planning and in class interventions.

Pupils also have access to a website called pinpoint learning which personalises their revision and give helpful videos on how to improve, they could be encouraged to use this.