

Subject Intent

The curriculum is a spiral and mastery-based curriculum developed from White Rose that is structured to build gradually and provide opportunities to revisit content and deepen understanding over time ensuring fluency and conceptual coherence. Taught in mixed ability groups every learner- regardless of starting point- will be given opportunities to develop fluency, problem solving skills and a deep understanding of mathematics. We aim to cultivate numerate, confident and curious learners who can navigate and interpret the mathematical demands of everyday life and the wider world through equipping students with the skills required to tackle challenges with determination and logical reasoning.

Cross Curricular Links

The idea of ordering numbers will be used in History where they look at the chronology of events and dates.
The continued use of equipment links to the work students do in Design and Technology for example drawing and measuring lines/angles which also links with PE and Science.
Plotting data and analysing this data (averages) links with work they will do in Geography and Science.

KS2 Links

Most topics will have been introduced in KS2 and will be built on in KS3, for example students will have been introduced to solving equations in KS1 with pictorial problem solving, this will have developed in KS2 to look at algebraic methods and we will build on this in KS3 and look at its applications.

RISE Links

In each lesson we look at how knowledge can be applied outside of the classroom, this often comes from discussions of key words and how these are used in other contexts. Application questions are asked with context of potential careers and students are encouraged to think of careers that would use skills learned.

Literacy Links

Students will be encouraged to develop their subject specific vocabulary and use fluently in lessons. They will add key words and definitions to a topic page which they can refer to and add to at any point during the lesson. We discuss which tier vocabulary falls into and where words we use are found in other subjects.

Numeracy Links

Students will regularly require and revisit core number concepts that KS3 topics will build on. Our first topic is algebra which applies basic arithmetic skills and shows students how numeracy skills can be applied in new contexts. Each topic thereafter using numeracy skills in application.

STEM Links

The numeracy skills we cover are useful in all STEM subjects. In particular the data work and constructions (drawing lines, angles and triangles) that we cover can be used across STEM subjects.

	HT1	HT2	HT3	HT4	HT5	HT6
Topic	The Fundamentals of Algebra	Place Value, Averages & FDP	Arithmetic & it's application	Directed numbers & Fractions	Geometry (angles)	Number Sense & Statistics
Key Themes / Questions	Sequences Algebraic Notation Function Machines Substitution Equality and equivalence	Understanding Place Value Rounding Standard Form Finding Averages Converting and applying FDP	Addition and Subtraction Problems Multiplication and Division Problems Fractions and Percentages	Directed numbers (negatives) Adding and subtracting fractions in a variety of contexts	Constructions and measuring Geometric reasoning	Number Sense Sets and Probability
Indicative Content	Sequences: 1. Describing and continuing sequences 2. Identifying term to term rules 3. Continuing non-linear sequences 4. Representing sequences in tables and graphs 5. Finding missing terms in a sequence Algebraic Notation: 1. Creating and using function machines 2. Writing expressions 3. Substitution (including in the context of sequences) 4. Representing functions graphically Equality and equivalence: 1. Equality and equivalence 2. Solving an equation to find a variable 3. Collecting terms that are alike	Place Value 1. Understand and recognise place value 2. Creating and populating number lines 3. Ordering and comparing numbers 4. Rounding numbers to different degrees 5. Recognising and writing numbers in standard form 6. Use standard form to order numbers Averages 1. Understand the meaning of average 2. Finding the mean, mode, median and range 3. Apply knowledge of finding averages FDP 1. Find equivalent fractions (use to simplify and order fractions) 2. Use fractions to interpret a pie chart 3. Use fractions greater than 1 4. Convert between fractions, decimals and percentages	Addition and Subtraction Problems 1. Use mental methods for arithmetic 2. Use written methods for arithmetic 3. Solve problems involving data representations/charts/time/geometry 4. Add and subtract numbers in standard form Multiplication and Division Problems 1. Multiply and divide by powers of 10 (application of metric conversions) 2. Understand linked multiplications and divisions 3. Written methods of multiplication and division of integers and decimals 4. Application of knowledge to finding area 5. Use the order of operations 6. Use multiplication and division to simplify algebraic expressions Fractions and Percentages 1. Fractions of amounts 2. Percentages of amounts with and without a calculator 3. Working with percentages over 100%	Directed numbers 1. Four operations with directed numbers (negatives) 2. Use directed numbers 3. Use directed numbers in expressions through substitution and solving equations 4. Order of operations with directed numbers 5. Roots and powers Adding and subtracting fractions 1. Recap of fractions (mixed/improper and equivalence) 2. Add and subtract fractions (with the same and different denominators) 3. Use fractions in the context of algebra	Constructions and measuring 1. Use labelling conventions for shapes 2. Classify, measure and draw all types of angles 3. Recognise 2D shapes and their angles 4. Construct pie charts using angles Geometric reasoning 1. Know and apply basic angle facts 2. Calculate missing angles in shapes	Number Sense 1. Use mental strategies for arithmetic 2. Work confidently with decimals 3. Use factors to simplify calculations 4. Estimate by rounding to one significant figure 5. Use numerical calculations and algebraic expressions to derive other facts 6. Choose between mental and written strategies Sets and Probability 1. Identify and represent sets including in Venn diagrams 2. Identify and use the intersection, union and complement of sets 3. Probability scales 4. Sample space diagrams Prime numbers and proof 1. Recap multiples and factors 2. Recognise and identify sets of numbers 3. Prime factor decomposition 4. Test conjectures and use counter examples
Assessment	Students will sit a baseline assessment in the first few weeks of the term. Students will then have low stakes end of topic tests at the end of each unit which will assess their understanding of the content.	Students will sit a low stakes end of topic test at the end of each unit which will assess understanding. At the end of the term they will sit a summative assessment which will test their memory of the content they have covered so far.	Students will sit a low stakes end of topic test at the end of each unit which will assess understanding	Students will sit a low stakes end of topic test at the end of each unit which will assess understanding. At the end of the term they will sit a summative assessment which will test their memory of the content they have covered so far.	Students will sit a low stakes end of topic test at the end of each unit which will assess understanding	Students will sit a low stakes end of topic test at the end of each unit which will assess understanding. At the end of the term they will sit an end of year assessment which is MAT aligned therefore other John Taylor schools will be sitting the same assessment based on our aligned curriculum.