KS3 Maths

	Content
Year 7 HT1	Pupils will solve increasingly challenging problems involving time, developing confidence and resilience whilst they apply concepts to real life contexts. Pupils will then begin to develop a rich understanding of fractions from shading and simplifying to finding fractions of quantities and problem solving with fractions. Pupils will explore proportional relationships, identifying best buys, manipulating ratios and applying these contextually such as with recipes. Pupils will be given the opportunity to explore percentages, percentage change and interest rates building solid foundations for future learning. Woven throughout will be opportunities for decoding questions and developing fluency and oracy through a range of activities.
Year 7 HT2	This half term students study area and perimeter. Students will have had exposure to the area and perimeter of basic 2D shapes in KS2. However, they may not have taken these past squares and rectangles and will not have looked at surface area. This topic will develop a greater understanding into the calculations involved in finding the area of all types of quadrilaterals with the option of moving onto circles for the more able. This unit is also used as an opportunity to check students' understanding of the core arithmetic procedures with integers as well as with decimals.
Year 7 HT3	This half term students get an introduction to algebra. Students in year 6 only look at a small amount of algebra mostly focussing only on number sequences and missing number problems. Within this unit students continue from year 6 to solidify their understanding of the order of operations and negative numbers. These areas of numeracy are fundamental in being able to create and manipulate algebraic expressions. Algebraic manipulation is the foundation of all other algebraic content so it is vital that this content is taught in sufficient depth to build all future learning on. The content of the unit will be revisited in year 8, 9 & 10 explicitly however it will also be interleaved within the second algebra unit which will be taught after Easter. Links will be made to HT2 linking area with additional understanding of how algebra can be used. Then again links will be made in HT6 within the angles and shape unit.
Year 7 HT4	This half term students study probability. They study this branch of mathematics which deals with the occurrence of a random event. Probability predicts how likely events are to happen. Within this topic students will progress from year 6 to allow students to solidify their understanding of fractions, decimals, and percentages through probability. Decimal work will focus on decimals between 0 and 1 as preparation for its inclusion in probability. All four operations of fractions will be explicitly taught despite division of fractions not being necessary for probability. The content of the unit will be revisited in year 10 allowing for all students to revisit the topics they are taught in year 7 before moving on to more difficult content.
Year 7 HT5	This half term students study a second algebra unit. This unit builds on the foundations of algebra that were covered during HT3. Within this unit students will recap negative numbers which is important when students are substituting and solving equations. Negative integers will be taught within algebra in substitution and as solutions for equations as a way to stretch the more able. Volume is covered after substitution and is a good chance to recap previous work on area. Inequalities are also introduced after solving equations to allow students to solve inequalities as well. Various elements of algebra will be covered every year within the mathematics curriculum as it makes up 20-30%of the final GCSE exams.
Year 7 HT6	This half term students will be looking at angles and shapes, some of which will have been seen at primary age to varying levels. Students have the opportunity to look at shape properties and also missing angle problems within simple 2D shapes. Students will take this further as they move on to missing angles in polygons at the higher end. Bearings will also be introduced to some of the students as an upgrade to compass directions which they will have seen before. Coordinates will be used in conjunction with shapes to solve coordinate geometry problems. Students will be taught to work without calculators to help them to solidify their written methods before revisiting angles again in Year 9.
Within year 8 students will be consolidating and extending previous knowledge from KS2 and Year 7. Students will start to follow a path that suits their particular needs; Teachers will scaffold work to support less confident and offer extension activities and higher grade content to the more able. The topics they will cover are below.	
Year 8 HT1	•Calculations including negatives and BIDMAS •Algebraic manipulation •Rounding and place value

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	Content
Year 8 HT2	•Area and volume •Calculations with fractions*
Year 8 HT3	•Equations and inequalities
Year 8 HT4	•Ratio and proportion •Introduction to percentages*
Year 8 HT5	•Further percentages •Substitution •Factors, multiples and primes
Year 8 HT6	•Representing data
Within year 9 students will be consolidating and extending previous knowledge from Year 7&8. Students will start to follow a path that suits their particular needs. Teachers will scaffold work to support less confident and offer extension activities and higher grade content to the more able. Towards the end of Year 9 students will start to follow a foundation or higher GCSE course. The topics they will cover are below.	
Year 9 HT1	•Calculations including negatives and BIDMAS •Algebraic manipulation •Fractions*
Year 9 HT2	•Indices (this will cover roots and Surds for the HIgher students) •Area and volume*
Year 9 HT3	•Angles* (this will lead to Pythagoras and trigonometry for the Higher GCSE course)
Year 9 HT4	•Equations and inequalities
Year 9 HT5	•Sequences and graphs •Representing data*
Year 9 HT6	•Averages