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| **Mathematics - Year 10** | | |
| Throughout the year, pupils will be exploring a range of mathematics which builds on the content, knowledge and skills developed in Key Stage 3. This will include Probability, Statistics, Number, Algebra, Geometry and Measures and Ratio, proportion and rates of change. Pupils will solve problems and not only learn to do maths, but why and how we do maths.  Pupils will learn to understand the following concepts in order to deepen and broaden their knowledge, skills and understanding.  *Use and apply standard techniques* Students should be able to: accurately recall facts, terminology and definitions ; use and interpret notation correctly ; accurately carry out routine procedures or set tasks requiring multi-step solution  *Reason, interpret and communicate mathematically* Students should be able to: make deductions, inferences and draw conclusions from mathematical information; construct chains of reasoning to achieve a given result; interpret and communicate information accurately; present arguments and proofs; assess the validity of an argument and critically evaluate a given way of presenting information.  *Solve problems within mathematics and in other contexts* Students should be able to: translate problems in mathematical or nonmathematical contexts into a process or a series of mathematical processes; make and use connections between different parts of mathematics; interpret results in the context of the given problem; evaluate methods used and results obtained; evaluate solutions to identify how they may have been affected by assumptions made. | | |
| **Topics Covered** | | |
| **Term 1** | **Term 2** | **Term 3** |
| * Constructions * Patterns and sequences * Algebra * Shape and Angles * Calculating Space * Representing Data | * Area and Perimeter * Probability. * Fractions, decimals and percentages. * Linear Equations * Simultaneous equations | * Pythagoras * Trigonometry * Transformations * Inequalities * Real life graphs * Measuring Data. |
| **Assessment/Exams Information** | | |
| **December** | **March** | **June** |
| Main exam : 1 hour  Extension: + 30 mins | Main exam : 1 hour  Extension: + 30 mins | Main exam calculator: 1 hour  Main non calculator: 1 hour |
| Cross curricular | | |
| **Literacy** :   * Correct spelling of 2D and 3D shape names. * Correct use and understanding of words describing probability. | **Literacy :**   * Constructing sentences to visualise 3D shapes. * Correct use and understanding of words describing probability. | **Literacy :**   * Use mathematical vocabulary associated with transformations * To be able to highlight key words in a question. |
| **Numeracy :**   * Write the next terms of a sequence and find the nth term. * Introducing the use of letters to replace numbers and the rules used. * Organising and representing data using a number of different strategies. * Use rulers, protractors and compasses in construction. | **Numeracy :**   * Use ratio and proportion. * Concert between fractions, decimals and percentages. * Solve linear equations. * Know how to calculate area and perimeter of a number of different shapes. | **Numeracy :**   * Reflect, rotate, translate and enlarge 2D shapes. * Use Venn diagrams to sort information. * Apply the four rules to fractions, decimals and percentages. * Analyse data using a number of different strategies |
| **PSHCE :**   * Discuss the effects of different types of data have on society. * Collect and interpret primary data collected by pupils. | **PSHCE :**   * Linking area and perimeter to real life questions. * Real life questions looking at finance eg: profit/loss, interest etc | **PSHCE :**   * Working together to solve real life problems. * Linking measurements to real life. Eg: distance/time and speed/time graphs |
| **Homework**  Weekly ‘topic based’ homework for consolidation or ‘mixed’ homework to revisit previously taught topics and extend learning. Online homework via My Maths can be used where appropriate. | | |
| **Additional Support:**  Pupils will be given regular topic tests. Intervention sessions will then be set up according to GAP analysis from both formal end of term exams and topic tests. | | |
| **Extra-curricular/Enrichment:**  Intervention groups after school on Wednesdays will be put in place. | | |