



HPRS CURRICULUM MAP



SUBJECT AREA: Mathematics

YEAR / GROUP: 7, 8 and 9

BRIEF SUMMARY OF CURRICULUM INTENT

Our main aim in mathematics in HPRS is to give students the best possible chance to enjoy and succeed in mathematics in such a way that will positively impact on their lives post 16. We believe that maths is not only about numbers, equations etc but is about real understanding and we work with students to help them see that by studying mathematics/numeracy they can make a real difference to their future prospects. Maths has a structure that can be learnt through practical applications and we plan lessons to be as “hands-on” and problem solving as possible to increase student participation and self esteem. As enthusiastic teachers we hope to convey our enjoyment of the subject and the fun in the topic in a way that brings the teaching moment into focus.

This programme of study is based on the “Teaching for Mastery” approach developed by the National Centre of Excellence in the Teaching of Mathematics (NCETM)

Teaching for mastery is teaching which aims for deep and sustainable learning that is:

- Rooted in an appreciation of the connectedness of mathematical ideas and concepts
- Based on an understanding of the underlying mathematical structures

It allows for the 6 broad mathematical themes to be taught in a different order if required with the principle that students need to be aware of and understand in order to be able to work fluently in mathematics

These 6 broad themes are the titles in bold in the 3rd column with the core concepts listed below
Knowledge, skills and understanding statements are in the first column

How SMSC and British Values are delivered in this subject

Spiritual – encourage interest in the power of mathematics in everyday life and use spiritual examples to exemplify this – Rangoli patterns in symmetry and tessellation, Fibonacci sequence and the golden ratio etc.

Moral – teachers provide good role models on how to interact with each other and students are encouraged to value the contributions of other students without judgement. Handouts and worked examples avoid stereotypes regarding gender, race, sexual orientation etc.

Social – students in seating plan to facilitate good working practise, collaboration and the opportunity to work with students from a variety of different backgrounds. Work within the British values of rule of law, individual liberty and mutual respect of each other.

Cultural – students are taught methods for mathematics from around the world such as the Singapore Bar Method, the Chinese lattice method of multiplication etc. Students learn about the traditional methods of mathematics which their parents/grandparents/carers may have been taught as part of the “teaching for mastery” initiative.

KEY DATES / NOTES

These are the topics that NCETM consider need to be taught over KS3 and form the basis of the work to be covered by students at Aconbury – this in itself needs to be very flexible to take into account the traded model with some students attending for 10/12 week blocks whilst others are in permanent placements. It is also reflective of the mixed age and ability groupings of the classes. Sections in italics and bold can be used to offer stretch to the more able students but would not necessarily be covered until KS4. Normal text shows the main teaching points for each half term

Timing	Key Skills <i>What pupils are learning to do</i>	Teaching & Learning Themes & Styles <i>Topics, Activities, Learning Styles</i>	Assessment Focus <i>including dates and suggested assessments and methods of assessment</i>	Additional Features <ul style="list-style-type: none"> • Literacy Elements • Curriculum Links • Visits / Events
<p>AUTUMN Half term 1</p>	<p>Understand the value of digits in decimals, measure and integers Round numbers to a required number of decimal places Round numbers to a required number of significant figures Estimate calculation by rounding Understand multiples Understand integer exponents and roots <i>Understand and use the unique prime factorisation of a number</i> Work interchangeably with terminating decimals and their corresponding fractions Compare and order positive and negative integers, decimals and fractions <i>Interpret and compare numbers in standard form</i> <i>Understand and use the conventions and vocabulary or algebra including forming</i></p>	<p>The structure of the number system:- Place value, estimation and rounding Properties of number Ordering and comparing <i>Simplifying and manipulating expressions, equations and formulae</i></p>	<p>Baseline testing</p>	

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	<p>and interpreting algebraic expressions and equations Rearrange formulae to change the subject</p>			
<p>AUTUMN Half term 2</p>	<p>Understand and use the structures that underpin addition and subtraction</p> <p>Understand and use the structures that underpin multiplication and division</p> <p>Know, understand and use fluently a range of calculation strategies for addition and subtraction of fractions</p> <p>Know, understand and use fluently a range of calculation strategies for multiplication and division of fractions</p> <p>Understand what is meant by finding a solution to a linear equation with one unknown Solve a linear equation with a single unknown on one side where obtaining the solution requires one step Solve a linear equation with a single unknown where obtaining the solution requires 2 or more steps</p>	<p>Operating on number:- Arithmetic procedures</p> <p>Solving linear equations</p>		
<p>SPRING Half term 3</p>	<p>Understand the concept of multiplicative relationships</p>	<p>Multiplicative reasoning:-</p>		

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	<p>Understand that fractions, ratios and percentages are examples of multiplicative relationships</p> <p>Understand proportionality</p> <p>Understand trigonometric functions</p> <p>Use trigonometry to solve problems in a range of contexts</p>	<p>Understanding multiplicative relationships</p> <p>Trigonometry</p>		
<p>SPRING Half term 4</p>	<p>Understand the features of sequences</p> <p>Recognise and describe arithmetic sequences</p> <p>Recognise and describe non arithmetic sequence</p> <p>Connect co-ordinates, equations and graphs</p> <p>Explore linear relationships</p> <p>Model and interpret a range of situations graphically</p>	<p>Sequences and graphs:-</p> <p>Sequences</p> <p>Graphical representations</p>	<p>End of term assessment</p>	
<p>SUMMER Half term 5</p>	<p>Understand and calculate accurately measures of central tendency and spread</p> <p>Construct accurately statistical representations</p> <p>Interpret and choose appropriately statistical measures and representations</p>	<p>Statistics and probability:-</p> <p>Statistical representations and measure</p> <p>Statistical analysis</p> <p>Probability</p>		

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	Calculate and use probabilities of single and combined events			
SUMMER Half term 6	<p>Understand and use angle properties Understand and use similarity and congruence</p> <p>Understand and use Pythagoras' theorem Understand the concept of perimeter and use it in a range of problem solving situations Understand the concept of area and volume use it in a range of problem solving situations Understand and use translations, rotations, reflections and enlargements Use the properties of circles and rhombus in constructions</p>	<p>Geometry:- Geometrical properties</p> <p>Perimeter, area and volume</p> <p>Transforming shapes</p> <p>Constructions</p>	End of year assessment	