HPRS

CURRICULUM MAP

SUBJECT AREA:	Mathematics	YEAR / GROUP:	11 – aimed at grade 1 – 3 ***aimed at grade 4 - 5***

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.

It is the intent that the mathematics curriculum at HPRS is:-

- A curriculum that is ambitious for all students
- A curriculum that is coherently planned and sequences
- A curriculum that is successfully adapted, designed and developed for students with special educational needs, and/or disabilities
- A curriculum that is broad and balanced for all students

The curriculum delivery in mathematics relies on:-

- Embedding quality teaching a learning opportunities in lessons with increased thinking time planned for students before the need to respond
- Marking in such a way that it is personalised to identify and correct misconceptions in student friendly language
- Assessing progress regularly and reporting this to parents/carers each term
- Comparing student progress with their individual learning profiles
- Supporting student who are struggling to work in the mathematics room by offering 1 : 1 support with a TA
- Monitoring students who are being taught separately from the main cohort by supplying resources to support the staff working towards the Functional Skills qualification with students
- Purposeful questioning provoking discussion within the lessons.

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

Assessment will be a mixture of on-going formative assessments and summative assessments at the end of specific topics.

Questioning throughout lessons will take place and marking will be timely and detailed.

A combination of these, along with teacher judgement, will form a RAG rated entry half termly on the assessment tracker and this will be reported back to parents/carers at the end of each term

Assessments will be a combination of Corbett maths past papers, BKSB assessments and AQA past papers

Timing	**Key Skills** *What pupils are learning to do*	**Teaching & Learning Themes & Styles** *Topics, Activities, Learning Styles*	**Assessment Focus** *including dates and suggested assessments and methods of assessment*	**Additional Features** • Literacy Elements • Curriculum Links • Visits / Events
AUTUMN Half term 1	Understand the nature of transformations and appreciate what changes and what is invariant Understand the minimum information required to describe a translation (vertical and horizontal displacement) Understand the minimum information required to	Transformations ***Geometry and measures*** Using mirrors to show reflection and famous logos showing rotational symmetry. Laminated examples of reflection such as the Blue Temple in Istanbul	Corbett maths foundation paper set A Paper 1 – non-calculator Corbett maths videos and practice questions Enlargements – videos 104, 105, 106, 107 and 108	Know the meaning and spelling of the following terms:_ Transformations Invariant Vertical Horizontal Reflection Rotation Translation

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	describe a reflection (line of reflection) Understand the minimum information required to describe a rotation (centre of rotation, size and direction of rotation) Understand the minimum information required to describe an enlargement (centre of enlargement and scale factor) Use the properties of a circle in constructions Understand a circle as the locus of a point equidistant from a fixed point Use intersecting circles to construct triangles and rhombuses from given lengths Use the properties of a rhombus in constructions Be aware that the diagonals of a rhombus bisect one another at right angles Be aware that the diagonals of a rhombus bisect the angles ***Vectors*** ***Understand that the trigonometric functions are derived from measurements within a unit circle***	Enlargements demonstrated on photo sizes – A 4 – A3 paper etc Using hola hoop to demonstrate parts of a circle Anglelegs resources to show triangles, rhombus etc	Reflections – videos 272. 273 and 274 Rotation – video 275 Translations – video 325 and 326 Mymaths – GCSE 9 – 1 (England) Revision and assessment booster packs for 3 & 4 - Transformations - Properties of shapes	Enlargement Locus Equidistant **Trigonometry** **Cosine** **Sine** **Tangent** **Arcs** **Sectors** **Pythagoras' theorem**

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	Recognise a right-angled triangle within a unit circle and use proportion to scale to similar triangles ***Know how sine, cosine and tangent ratios are derived from the sides of a right-angled triangle*** ***Use trigonometry to solve problems in a range of contexts*** ***Arcs and sectors*** ***Understand and use Pythagoras' theorem*** ***Be aware that there is a relationship between the lengths of the sides of a right angled triangle*** ***Use and apply Pythagoras' theorem to solve problems in a range of contexts*** ***Use the properties of a range of polygons to deduce perimeters***			
AUTUMN Half term 2	Explore, describe and analyse the frequency of outcomes in a range of situations Understand that some outcomes are equally likely and some are not Understand that the likelihood of events happening can be ordered on a scale from impossible to certain	Probability Loads of dice games to show this Making spinners	Corbett maths foundation paper set A Paper 2 – calculator Paper 3 - calculator BKSB Maths Reformed – Level 2 –	Know the meaning and spelling of the following terms:_ Probability Likelihood Theoretical probability Venn diagram

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	Understand that probability is a measure of the likelihood of an event happening and that it can be assigned a numerical value Calculate and use theoretical probabilities for single events Understand that the probabilities of all possible outcomes sum to one Calculate and use theoretical probabilities for combined events using a variety of appropriate representations, including Venn diagrams ***Frequency trees***	Full size venn diagrams on the floor so students can stand in sections	- Probability Mymaths – GCSE 9 – 1 (England) Revision and assessment booster packs for 3 & 4 - Probability	**Frequency tree**
SPRING Half term 3	Construct bar charts, pie charts, pictograms and scatter graphs from data presented in a number of different ways Interpret reasonably statistical measures and representations Choose appropriately statistical measures and representations Understand what mean, median, mode and range are measuring , how it is measured and be able to identify each from data presented in a range of different ways ***Correlation*** ***Time series graphs***	Statistics	Corbett maths foundation paper set B Paper 1 – non-calculator Paper 2 – calculator Paper 3 - calculator BKSB Maths Reformed Level 2 - Scatter diagrams - Median and mode - Comparing 2 data sets - Finding the mean – frequency table	Know the meaning and spelling of the following terms:_ Bar chart Pie chart Pictogram Scatter graph Data Statistical measures Mean Median Mode Range **Correlation** **Time series graph**

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			- Finding the mean – grouped frequency table - Tree diagrams and tables - Two way tables Mymaths – GCSE 9 – 1 (England) Revision and assessment booster packs for 3 & 4 - Average spread - Presenting data	
SPRING Half term 4	Revision:- Multiples, factors and primes Fractions, decimals and percentages Working with number Sequences of numbers Coordinates and graphs Expressions and equations	Number		
SUMMER Half term 5	Revision:- Ratio and proportion Percentages Angles and polygons Perimeter, area and volume Transformations Probability Statistics		Corbett maths foundation paper set C Paper 1 – non-calculator Paper 2 – calculator Paper 3 - calculator	

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SUMMER Half term 6	GCSE papers			