SUBJECT AREA:	**Mathematics**	YEAR / GROUP:	10	**aimed at grade 4 – 5** aimed at grade 6 - 9

BRIEF SUMMARY OF CURRICULUM INTENT

At H3 our Maths vision is to ensure every pupil feels supported and confident to achieve their maximum potential as we lay the foundations in algebra, number, geometry, and data handling for work at GCSE level. We promote mathematical fluency as an essential life skill and create a positive culture of deep understanding, confidence, independence, and competence. Lessons are carefully planned and sequenced to meet the individual needs of our students with special educational needs, and /or disabilities. 1:1 TA support may be appropriate.

Assessment of progress is made based on the teachers' classroom questioning, the review of pupils' work, and their performances in tests. Feedback is given to pupils orally, in written form in exercise books and as part of analysis of tests. Feedback focuses on positive aspects and corrects misconceptions.

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

- To set ambitious targets with high expectations of all students
- To offer a variety of approaches to teaching and learning to engage and motivate students
- Coherently planned and sequences
- Successfully adapted, designed and developed for students with special educational needs, and/or disabilities
- Broad and balanced for all students

The curriculum delivery in mathematics relies on:

- Embedding quality teaching and learning opportunities in lessons
- Verbal and/ or written weekly feedback focused on positive aspects of the student in lessons
- 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
- 1 to 1 conversations focused on personal ability, progression, self-reflection and support
- Supporting students who are struggling to work in the mathematics room by offering 1 : 1 support with a TA
- Purposeful questioning allowing for development in mathematical through reasoning and discussion within the lessons.
- A baseline assessment that exposes knowledge gaps. Developing a personalised plan

Re-engaging students in Mathematics at H3 will be established by:

- Using the BKSB Functional Skills Baseline Assessment to expose knowledge gaps, attitude, anxieties and development needs towards maths.
- Initially removing formal aspects of maths lessons from the learning
- Trusted staff members investigating the student's apprehension towards maths and development needs
- Designing a personalised plan that focuses on building personal and mathematical resilience and targets key skills in the gaps in their knowledge
- Through verbal discussion and maths games highlighting and recording student's strengths
- Developing strategies to access support at H3 and understanding the importance of making mistakes
- A methodical progression of integrating formal aspects of learning back into lessons; a workbook, lesson objectives, assessment terminology

Due to pupils being on a part-time timetable, coverage of this curriculum map will be proportional to the amount of time spent covering the subject and differentiated to meet their SEN needs and best ways of working. Pupils arrive at H3 with significant gaps in their learning and individual learning programmes (often from lower year groups or key stages) are developed to meet their needs.

An induction period of two weeks to precede the curriculum map below.

How SMSC and British Values are delivered in this subject

Spiritual – using maths as a tool to make sense of the world around us. 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 through the use of OFQUAL approved past papers questions.

Social – students in seating plan to facilitate good working practise, collaboration and the opportunity to work with students from a variety of different backgrounds. Students will learn to support each other with the complexities of maths and provide self and peer reviews. 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 to allow students to gain a deeper understanding of topics through reasoning and discussion, marking will be timely and detailed.

A combination of these, along with teacher judgement, will form a half termly grade for each subject on the assessment tracker and a comment explaining overall progress will be reported back to parents/carers at the end of each term

If it is deemed beneficial to an individual student, we will have them sit Functional Skills Level 1 Maths qualification in the autumn Term and Functional Skills Level 2 Maths qualification in the Spring Term. In our experience the confidence gained from achieving a Maths exam qualification early in the year, increases self-confidence and resilience in students of all abilities.

Assessments will be a combination of Corbett maths past papers, Dr Frost Maths Chapter reviews, 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	Review Number • use inequality notation to specify simple error intervals due to truncation or rounding • apply and interpret limits of accuracy Geometry and Measures • use these to construct given figures and solve loci problems; know that the perpendicular distance from a point to a line is the shortest distance to the line • construct plans and elevations of 3D shapes	Teaching & Learning Themes Number • Explore the effects of rounding Geometry and Measures • Apply standard mathematical constructions • Explore ways of representing 3D shapes Teaching & Learning Styles • Teacher led new content, through Modelling and Scaffolding • Visuals and Images • Paired Learning • Group Discussion • Collaborative Learning • Independent Learning • ICT and Online Learning • Game Based Learning • Inquiry Based Learning • Personalised Learning • Repetition and Reinforcement	Summative Assessment • End of unit tests relevant to the topics covered this half term. • 1:1 discussion following the completion of an end of topic assessment. • Written Feedback following the completion of an end of topic assessment. Formative Assessment • Paired and small group assessment tasks focusing on reasoning and discussion to develop mathematical language. • Opportunities to self-assess and assess peers to further understanding and identify progress • Verbal feedback throughout lessons	Literacy Elements • Spelling • Definitions • understanding of mathematical vocabulary • developing the ability to read and understand mathematical language • use mathematical language and representations to communicate problems and solutions • use mathematics in a range of contexts • develop exam technique

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
		• Differentiated Lessons using multiple intelligences.		
AUTUMN Half term 2	Algebra • argue mathematically to show algebraic expressions are equivalent, and use algebra to support and construct arguments • translate simple situations or procedures into algebraic expressions or formulae Ratio and Proportion, Rates of Change • apply the concepts of congruence and similarity, including the relationships between lengths in similar figures • change freely between compound units (e.g. density, pressure) in numerical and algebraic contexts • use compound units such as density and pressure	Teaching & Learning Themes Algebra • Construct algebraic statements Ratio, Proportion and Rates of Change • Understand and solve problems involving congruence • Understand and solve problems involving similarity • Know and use compound units in a range of situations Teaching & Learning Styles • Teacher led new content, through Modelling and Scaffolding • Visuals and Images • Paired Learning • Group Discussion • Collaborative Learning • Independent Learning • ICT and Online Learning • Game Based Learning • Inquiry Based Learning • Personalised Learning • Repetition and Reinforcement • Differentiated Lessons using multiple intelligences.	Summative Assessment • Assessments before week beginning the 28th of November • Students may sit a Functional Skills Past Paper • Students may be entered for the Functional Skills exam • End of unit tests relevant to the topics covered this half term. • 1:1 discussion following the completion of an end of topic assessment. • Written Feedback following the completion of an end of topic assessment. Formative Assessment • Paired and small group assessment tasks focusing on reasoning and discussion to develop mathematical language. • Opportunities to self-assess and assess peers to further understanding and identify progress. • Verbal feedback throughout lessons	Literacy Elements • Spelling • Definitions • understanding of mathematical vocabulary • developing the ability to read and understand mathematical language • use mathematical language and representations to communicate problems and solutions • use mathematics in a range of contexts • develop exam technique
SPRING Half term 3	Algebra • recognise and use Fibonacci type sequences, quadratic sequences Geometry • *calculate surface area of right prisms (including cylinders)*	Teaching & Learning Themes Algebra • Investigate Fibonacci numbers • Investigate Fibonacci type sequences • Explore quadratic sequences Geometry	Summative Assessment • Students may sit a Functional Skills past paper • Students may sit a Functional Skills exam	Literacy Elements • Spelling • Definitions • understanding of mathematical vocabulary

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
	• calculate exactly with multiples of π	• Solve problems involving prisms • Investigate right-angled triangles Teaching & Learning Styles • Teacher led new content, through Modelling and Scaffolding • Visuals and Images • Paired Learning • Group Discussion • Collaborative Learning • Independent Learning • ICT and Online Learning • Game Based Learning • Inquiry Based Learning • Personalised Learning • Repetition and Reinforcement • Differentiated Lessons using multiple intelligences.	• End of unit tests relevant to the topics covered this half term. • 1:1 discussion following the completion of an end of topic assessment. • Written Feedback following the completion of an end of topic assessment. Formative Assessment • Paired and small group assessment tasks focusing on reasoning and discussion to develop mathematical language. • Opportunities to self-assess and assess peers to further understanding and identify progress • Verbal feedback throughout lesson	• developing the ability to read and understand mathematical language • use mathematical language and representations to communicate problems and solutions • use mathematics in a range of contexts • develop exam technique
SPRING Half term 4	Geometry • use the basic congruence criteria for triangles (SSS, SAS, ASA, RHS) • apply angle facts, triangle congruence, similarity and properties of quadrilaterals to conjecture and derive results about angles and sides, including Pythagoras' Theorem and the fact that the base angles of an isosceles triangle are equal, and use known results to obtain simple proofs Algebra • use the form $y = mx + c$ to identify parallel lines • find the equation of the line through two given points, or	Teaching & Learning Themes Geometry • Explore the congruence of triangles • Investigate geometrical situations • Form conjectures • Create a mathematical proof Algebra • Investigate features of straight line graphs Teaching & Learning Styles • Teacher led new content, through Modelling and Scaffolding • Visuals and Images • Paired Learning • Group Discussion	Summative Assessment • Assessments before week beginning the 20th of March • Students will sit a full GCSE paper. • End of unit tests relevant to the topics covered this half term. • 1:1 discussion following the completion of an end of topic assessment. • Written Feedback following the completion of an end of topic assessment. Formative Assessment • Paired and small group assessment tasks focusing on reasoning and discussion to	Literacy Elements • Spelling • Definitions • understanding of mathematical vocabulary • developing the ability to read and understand mathematical language • use mathematical language and representations to communicate problems and solutions

	through one point with a given gradient	• Collaborative Learning • Independent Learning • ICT and Online Learning • Game Based Learning • Inquiry Based Learning • Personalised Learning • Repetition and Reinforcement • Differentiated Lessons using multiple intelligences.	develop mathematical language. • Opportunities to self-assess and assess peers to further understanding and identify progress • Verbal feedback throughout lessons	• use mathematics in a range of contexts • develop exam technique
SUMMER Half term 5	Algebra • recognise, sketch and interpret graphs of simple cubic functions and the reciprocal function y = 1/x with x ≠ 0 • plot and interpret graphs (including reciprocal graphs) and graphs of non-standard functions in real contexts, to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration	Teaching & Learning Themes Algebra • Explore graphs of other standard non-linear functions • Create and use graphs of non-standard functions • Solve kinematic problems • Use graphs to solve equations Teaching & Learning Styles • Teacher led new content, through Modelling and Scaffolding • Visuals and Images • Paired Learning • Group Discussion • Collaborative Learning • Independent Learning • ICT and Online Learning • Game Based Learning • Inquiry Based Learning • Personalised Learning • Repetition and Reinforcement • Differentiated Lessons using multiple intelligences.	Summative Assessment • End of unit tests relevant to the topics covered this half term. • 1:1 discussion following the completion of an end of topic assessment. • Written Feedback following the completion of an end of topic assessment. Formative Assessment • Paired and small group assessment tasks focusing on reasoning and discussion to develop mathematical language. • Opportunities to self-assess and assess peers to further understanding and identify progress • Verbal feedback throughout lessons	Literacy Elements • Spelling • Definitions • understanding of mathematical vocabulary • developing the ability to read and understand mathematical language • use mathematical language and representations to communicate problems and solutions • use mathematics in a range of contexts • develop exam technique
SUMMER Half term 6	Algebra • derive an equation (or two simultaneous equations), solve the equation(s) and interpret the solution • find approximate solutions to simultaneous equations using a graph Probability • enumerate sets and combinations of sets systematically, using tree diagrams	Teaching & Learning Themes Algebra • Solve problems involving simultaneous equations Probability • Use probability to make predictions Statistics • Interpret scatter diagrams • Explore correlation Teaching & Learning Styles	Summative Assessment • Assessments before week beginning the 26th of June • Students will sit a full GCSE paper. • End of unit tests relevant to the topics covered this half term. • 1:1 discussion following the completion of an end of topic assessment.	Literacy Elements • Spelling • Definitions • understanding of mathematical vocabulary • developing the ability to read and understand mathematical language • use mathematical language and

	• understand that empirical unbiased samples tend towards theoretical probability distributions, with increasing sample size Statistics • draw estimated lines of best fit; make predictions • know correlation does not indicate causation; interpolate and extrapolate apparent trends whilst knowing the dangers of so doing	• Teacher led new content, through Modelling and Scaffolding • Visuals and Images • Paired Learning • Group Discussion • Collaborative Learning • Independent Learning • ICT and Online Learning • Game Based Learning • Inquiry Based Learning • Personalised Learning • Repetition and Reinforcement • Differentiated Lessons using multiple intelligences.	• Written Feedback following the completion of an end of topic assessment. Formative Assessment • Paired and small group assessment tasks focusing on reasoning and discussion to develop mathematical language. • Opportunities to self-assess and assess peers to further understanding and identify progress • Verbal feedback throughout lessons	representations to communicate problems and solutions • use mathematics in a range of contexts • develop exam technique