Mathematics: Year 10 (nurture)

Intent:

At Brayton Academy, we recognise the importance of mathematics as a life skill in society and industry, as well as a beautiful and elegant subject in its own right.

We have carefully sequenced the foundational skills to be consistently developed throughout pupils' time at school, to provide students with the fluency they need to tackle problems confidently.

Our curriculum is grounded in using assessment to identify where students are and builds up knowledge securely to ensure no gaps are left. Our expectations are very high; we expect pupils to take pride in their work, to complete homework to a high standard, bring a positive attitude to the classroom and always strive to be their best. This goes hand-in-hand with helping students to develop a love of learning maths by supporting them to be successful at every step through expert teaching. We believe that all students have the potential to learn maths to a high level when we take this approach.

- Create an atmosphere where ALL students feel comfortable to give their all to learning maths without being scared of making mistakes
- Open ALL students' eyes to the real-world transferable skills that maths equips them with and the opportunities that arise from this
- Encourage ALL students to further develop their resilience skills with a determined mind-set when approaching new material and problem-solving tasks
- Eliminate any fear of maths through meeting ALL students at their level and supporting them to be successful

Implementation:

In year 10 pupils continue to study either the higher or foundation GCSE course. Staff constantly assess whether pupils are in the appropriate band and there is still the opportunity to move between tiers throughout the year if appropriate. Pupils in foundation classes who show the potential to achieve a grade 6 will study selected higher material as extensions to individual topics, with the aim of them sitting a higher paper in year 11.

By the end of year 10 pupils will have studied the majority of content that is tested on the foundation paper. Increasingly this year pupils will look at how to apply their mathematical knowledge to the context of "exam-style" questions, including an emphasis on problem solving that is necessary for success at the new GCSE. The focus that we place on constant revision is now even more important as pupils will need to have as much knowledge as possible at their fingertips as they enter final preparations for GCSE in year 11.

Throughout the year pupils will be set homework on the Hegarty Maths platform that will revise content they have already studied, rather than focusing on what they are currently looking at in class. This gives them another opportunity to ensure that previously studied material is retained.

Our nurture scheme of learning supports students who have previously found maths more challenging by introducing concepts at a slower pace than our regular scheme of learning, and allowing more time for those concepts to be practised, re-visited over the course of the year and interleaved with other topics.

Term	Year 10 (nurture)		
	Topic	**Knowledge**	**Skills/Assessment**
Term 1	**Metric and imperial measures**	Group measures, select appropriate units, convert between units	All topics begin with an initial assessment, and prior knowledge gaps are filled in before moving on to new content. Pupils complete a revision quiz part-way through each half term to be marked by their teacher. This will allow gaps to be closed before the end of half-term assessment. At the end of each half-term there will be an assessment on all of the topic's pupils have studied in that block.
	Sequences	Write and use the nth term rule for linear sequences	
	Speed, distance and time	Use the formula for speed to calculate any one of the three components	
	Surface area	Calculate the surface area of cubes and cuboids	
	4 operations with fractions	Add, subtract, multiply and divide with proper fractions	
	Scale models and diagrams	Convert between diagram and real-life measurements, work with conversions in equation and ratio form	
Term 2	**Percentages**	Write percentages, decimal multiplies, calculations involving simple interest	All topics begin with an initial assessment, and prior knowledge gaps are filled in before moving on to new content. Pupils complete a revision quiz part-way through each half term to be marked by their teacher. This will allow gaps to be closed before the end of half-term assessment. At the end of each half-term there will be an assessment on all of the topic's pupils have studied in that block.
	Ungrouped frequency tables	Read frequency tables, identify the range, and mode, calculate the mean and median	
	Bearings	Measure and draw three-figure bearings	
	Proportionality	Best buy questions, other worded proportion questions, exchange rates	
	Application of algebra	Derive simple expressions and equations based on knowledge of shapes	
	Real life graphs	Cost graphs, distance time graphs	
Term 3	**Pie charts**	Read and draw pie charts	All topics begin with an initial assessment, and prior knowledge gaps are filled in before moving on to new content. Pupils complete a revision quiz part-way through each half term to be marked by their teacher. This will allow gaps to be closed before the end of half-term assessment. At the end of each half-term there will be an assessment on all of the topic's pupils have studied in that block.
	Volume	Calculate the volume of cubes and cuboids	
	Probability	Estimate outcomes using probability	
	Number	Place value of numbers, Ordering numbers, all four operations with positive number, factors, multiples, prime numbers inverse operations, common factors and multiples, all four operations with negative numbers, squares, cubes and roots and order of operations.	