Mathematics: Year 11 (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 11 pupils continue to study either the higher or foundation GCSE course. Teaching staff work closely with the head of mathematics to ensure that all pupils are entered for the correct tier. Students following the foundation scheme of learning may be entered for the higher tier if they have successfully studied enough appropriate content in years 10 and 11, and if they have a good chance of achieving a grade 6 or higher.

A significant amount of time in year 11 is allocated for revision to consolidate previously studied material and to allow pupils ample time to prepare for the demands of a GCSE exam paper. Staff use information from the 2 mock exam series that pupils sit to guide them as to what should be covered, as well as each class's year 10 assessment data. As the exam season approaches class time will increasingly be given over to exam paper practice.

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. In year 11 pupils will also receive weekly partial papers to complete at home. These begin with just the first section of the exam paper and gradually build up over time to encompass the full paper.

For this year 11 nurture SOL after content has been checked and thorough understanding has been ensured staff may deliver extension content to push pupils to achieve higher marks on their exams. This extension content is noted below by <u>underlining</u>.

Term	Year 11 (nurture)		
	Topic	**Knowledge**	**Skills/Assessment**
Term 1	**Angles and bearings**	Angle properties, measuring and drawing, know and apply angle rules to solve problems, measure and draw bearings,	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-every two weeks 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.
	Manipulating algebra	Write expressions, substitution, simplifying expressions, solve one and two-step equations, expand single brackets, list integers that satisfy inequalities and represent inequalities on number lines, apply algebra to shape contexts, factorise a single bracket, expand and factorise double brackets, index laws	
	Decimals and rounding	Round numbers to any place value, round to significant figures, truncate decimal numbers, addition and subtraction with decimals, order decimals, estimate the solutions to complex calculations using rounding, multiply and divide decimals	
	Averages and representing data	Calculate averages and use to make comparisons or solve problems, draw and interpret tally charts, bar charts, line graphs, stem and leaf diagrams, pie charts, calculate averages from ungrouped frequency tables, frequency polygons, scatter graphs, averages from grouped tables	
	Fractions	Equivalent fractions, compare and order fractions, convert between mixed numbers and improper fractions, the 4 operations with fractions, reciprocals, 4 operations with mixed numbers	
	Probability	The worded probability scale, writing probabilities as fractions, listing outcomes, frequency trees and two-way tables, estimating outcomes from probabilities, probability tree diagrams	
	2D and 3D shapes	Properties of 2D shapes, naming parts of a circle, perimeter and area of polygons, volume and surface area of cubes and cuboids, area and circumference of circles, area of trapezia and compound shapes, Pythagoras, volume of any prism	
	Percentages	Find percentages of amounts with and without a calculator, increase/ decrease numbers by a percentage, understand and use decimal multipliers, write one quantity as a percentage of another, simple interest, compound interest	
Term 2	**Sequences and graphs**	Coordinates, equations of horizontal and vertical lines, plot linear graphs, linear sequences, simple geometric sequences, pattern sequences, plotting quadratic graphs	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 every two weeks 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.
	Ratio, proportion, money and scale drawings	Write and simplify ratios including 1: n, share a quantity in a ratio, the relationship between ratios and fractions, the unitary method, conversion graphs, scale models and diagrams, best-buy questions, proportion, exchange rates, time and timetables	
	Measures	Metric and imperial units of measure including conversions, estimate real life measures, speed, travel graphs	
	Transformations, congruence and similarity	Midpoints, rotation, reflection, enlargement (without COE), congruence and similarity in 2D shapes, constructions	

			During this part of the year pupils will complete formal mock examinations. The results from this will be used alongside other data to write personalised revision plans for each class. Students will regularly complete past exam papers during this period of time, including additional papers completed in exam conditions during lessons, and these will be marked by the class teacher and used to refine their planning.
Term 3	**Revision and exam preparation**	During the final part of the year pupils will complete whole class revision on areas of weakness identified by their teachers. They will also be signposted to specific areas of weakness for them to address individually and complete exam paper practise on whole papers and specific topics	