



## Curriculum Overview: MATHEMATICS

Exam Board: EDEXCEL

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
7	<ul style="list-style-type: none"> <li>Place value, decimals and scales</li> <li>Four operations with integers and decimals</li> <li>Factors, multiples and primes</li> </ul>	<ul style="list-style-type: none"> <li>Understanding fractions</li> <li>Compare and order fractions</li> <li>Four operations with fractions</li> </ul>	<ul style="list-style-type: none"> <li>Solving equations</li> <li>Probability as a concept</li> </ul>	<ul style="list-style-type: none"> <li>Sequences</li> <li>Presenting and interpreting data</li> </ul>	<ul style="list-style-type: none"> <li>Properties of 2D shapes</li> <li>Perimeter and area</li> <li>Introduction to ratio</li> </ul>	<ul style="list-style-type: none"> <li>Angle properties</li> <li>Parallel lines and angles</li> </ul>
8	<ul style="list-style-type: none"> <li>Order of operations</li> <li>Powers and roots</li> <li>Application of ratio</li> </ul>	<ul style="list-style-type: none"> <li>Proportion</li> <li>Understanding percentages</li> <li>Percentages and multipliers as operators</li> </ul>	<ul style="list-style-type: none"> <li>Data handling</li> <li>Probability calculations</li> </ul>	<ul style="list-style-type: none"> <li>Simplify and manipulate algebra</li> <li>Area of circles</li> </ul>	<ul style="list-style-type: none"> <li>Coordinates and transformations</li> <li>Plotting and interpreting graphs</li> <li>Similarity and congruence</li> </ul>	<ul style="list-style-type: none"> <li>Constructions</li> <li>3d shapes, capacity and volume</li> </ul>
9	<ul style="list-style-type: none"> <li>Calculations with fractions, decimals and percentages</li> <li>Multiplicative reasoning</li> </ul>	<ul style="list-style-type: none"> <li>Multiplicative reasoning</li> <li>Direct and inverse proportion</li> </ul>	<ul style="list-style-type: none"> <li>Expanding, factorising expressions and sequences</li> <li>Quadratic graphs</li> </ul>	<ul style="list-style-type: none"> <li>Index laws, standard form and surds</li> </ul>	<ul style="list-style-type: none"> <li>Angles and Pythagoras' theorem</li> <li>Trigonometry</li> </ul>	<ul style="list-style-type: none"> <li>Representing and interpreting data: histograms and scatter graphs</li> </ul>
10	<ul style="list-style-type: none"> <li><b>Foundation/higher:</b> FDP recap</li> <li><b>Foundation:</b> Equations and Inequalities</li> <li><b>Higher:</b> Probability calculations.</li> </ul>	<ul style="list-style-type: none"> <li><b>Foundation/higher:</b> Compound measures</li> <li><b>Foundation:</b> Probability calculations</li> <li><b>Higher:</b> Transformations</li> </ul>	<ul style="list-style-type: none"> <li><b>Foundation:</b> Transformations</li> <li>Plans elevations and bearings</li> <li><b>Higher:</b> Circle theorems</li> <li>Real life graphs</li> </ul>	<ul style="list-style-type: none"> <li><b>Foundation:</b> Perimeter, surface area and volume.</li> <li>Linear and real-life graphs</li> <li><b>Higher:</b> Circle Theorems</li> <li>Real Life Graphs</li> </ul>	<ul style="list-style-type: none"> <li><b>Foundation:</b> Grouped frequency averages and scatter graphs</li> <li><b>Higher:</b> Surface area &amp; volume</li> <li>Further Trigonometry</li> </ul>	<ul style="list-style-type: none"> <li><b>Foundation:</b> Rates of change</li> <li>Solving quadratics</li> <li><b>Higher:</b> Data handling</li> </ul>
11	<ul style="list-style-type: none"> <li><b>Foundation:</b> Reciprocals index form and indices</li> <li>Ratio and proportion</li> <li><b>Higher:</b> Algebraic fractions</li> <li>Further trigonometry</li> </ul>	<ul style="list-style-type: none"> <li><b>Foundation:</b> Rates of change</li> <li><b>Higher:</b> Similarity congruence proof</li> <li>Transformations of graphs</li> </ul>	<ul style="list-style-type: none"> <li><b>Higher:</b> Vectors and proof</li> <li>Bespoke revision content based on mock exams</li> </ul>	<ul style="list-style-type: none"> <li>Bespoke revision content based on mock exams</li> </ul>	<ul style="list-style-type: none"> <li>Bespoke revision content based on mock exams</li> </ul>	

## Curriculum Intent

- Our aim at Beacon Hill Academy is for our learners to leave us as numerate, mathematically capable young people, ready to enter a world where maths is an essential part of everyday life. It is therefore crucial that our curriculum is accessible for all, whilst also exposing all learners to challenge.
- Our subject is taught as a spiral curriculum, with an iterative revisiting of topics across the five years. Our curriculum map is progressive, and we build knowledge horizontally throughout each year, reinforcing key ideas across all five years throughout each strand.
- We begin the KS3 curriculum with a heavy number focus, ensuring a solid foundation before other strands are introduced. We then seek to utilise these skills when manipulating algebraic expressions, working with shapes or calculating probabilities. As we progress through the curriculum, more time is devoted to algebra, geometry, ratio and proportion, probability and data handling.
- Frequent opportunities for recall and retrieval are built into all mathematics lessons, through Do Now Activities, Yellow Stickers and Low Stakes Quizzes, to support all learners in managing the volume of content covered.
- Through this approach, we are providing a framework for learners to organise knowledge, by forming connections between related topics, moving from the routine to the non-routine and revisiting the same idea multiple times to ensure that it is learned.
- The curriculum is ambitious in that all learners access the same content and are not restricted by teaching group or ability, focussing to varying degrees on declarative, procedural and conditional knowledge.

## Curriculum Implementation

- Core concepts of number run throughout the curriculum for each year group, allowing continual opportunities to reinforce the basic principles of mathematics, such as the four key operations and the decimal system.
- Teachers of mathematics at Beacon Hill Academy use their professional judgement to amend the SMART curriculum, to differentiate and personalise the lessons for individual groups of learners.
- All lessons begin with a recall and retrieval 'Do Now Activity' that draws on prior learning, with the intention that this is used as an opportunity to create links between different schemas. This also supports learners in recalling and applying their knowledge more rapidly and accurately, developing mathematical fluency.
- We utilise the I do/we do/you do model to support learners in demonstrating their mathematical thinking efficiently and effectively. By modelling our thought processes and gradually removing the scaffold, we are encouraging independence and increased confidence with the content.
- We further support our learners, we aim to encourage purposeful communication, improving the use of mathematical language through the use of Frayer Models, glossaries and reciprocal reading strategies. We have included the phonetic breakdown of keywords in our glossaries to support learners in accessing this essential language, and encourage learners to use keywords in context when discussing their learning.
- Throughout each lesson, teachers use a number of formative assessment strategies to identify any misconceptions, gaps in understanding or opportunities for stretch. Such strategies include cold calling, hinge questions and mini whiteboards.
- Following the mathematics department feedback policy, teachers give regular feedback to learners against key assessment objectives through strategies such as Demonstrate and Connect, low stakes quizzes and verbal feedback during the lesson. Learners respond to this feedback during green for growth activities.
- Through regular assessments, both formative and summative, teachers can identify learners who may need intervention. Through monitoring and follow ups, we ensure that learners have the appropriate amount of support. This requires a regular liaison with class teachers, SENCO, parents/guardians and learning managers to identify what might help each pupil make the next steps in their learning. For year 11, immersive revision days such as the Golden Day, Walking Talking Mocks and Period 6 sessions are used to help plug gaps in learning. Teachers can also identify learners who need additional challenge, and are then able to provide them with more in-depth tasks that extend and deepen their knowledge of a given topic.

- For the 2023 academic year, 7% of learners achieved grade 7+, 44% of learners achieved grade 5+, with 62% of learners achieving grade 4+. Overall, we achieved a positive progress score of 0.13.
- We predict that for 2024, 13% of learners will achieve grade 7+, 38% of learners will achieve grade 5+ and 56% of learners will achieve grade 4+. Whilst this is a drop percentage wise across grades 4 and 5, this year's cohort has an additional 34 learners than 2023 and so we are managing to convert a higher number of learners to grades 4 and 5. Overall, we predict a positive progress score of 0.1.
- In November, 14 critical cohort learners secured a grade 3. By March, 11 of those learners had secured a grade 4 or 5. Of the 12 critical cohort learners who secured a grade 4 in November, 11 of them achieved a more secure grade 4 or a grade 5.
- We have altered our approach for the 2023/2024 academic year and have included a 7+ group in our critical cohort, ensuring our higher attaining pupils receive bespoke interventions to support their progress. I am pleased to say we are predicting a 6% increase in learners achieving the top grades this year.
- Revision sessions are run during each school holiday and are well attended, especially by our critical cohort learners. Easter attendance was up by 50% this year, signalling how dedicated our learners are to achieving their potential.
- During our last Ofsted visit, assessment was identified as an area needing development. Since 2021, we have done extensive work in this area across the Trust. We now have an assessment strategy that focuses on cumulative knowledge that learners have been exposed to, rather than generic GCSE papers, and we have developed PLCs that identify strengths and areas for development for learners following completion of these assessments. With appropriate systems now in place, we have been focusing as a department on the assessment loop – what happens once we have completed the assessment? Where previously, green for growth did not match up to topics identified on the PLCs, we have since made significant progress in this area. PLCs now identify areas for development, which are then re-taught by staff and followed up with some form of reassessment to check learners understanding following the reteach.
- Learner voice conducted as part of the Trust quality assurance process showed that, in general, learners enjoyed their maths lessons and felt supported by their teacher. Staff used I/We/You effectively and learners felt that this helped with their understanding of difficult concepts. Learners felt that staff are fair, approachable and care about their classes.