Striving for Excellence

Curriculum Overview: MATHEMATICS

Exam Board: EDEXCEL

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
7	○ Place value, decimals and scales ○ Four operations with integers and decimals ○ Factors, multiples and primes	○ Understanding fractions ○ Compare and order fractions ○ Four operations with fractions	○ Solving equations ○ Probability as a concept	○ Sequences ○ Presenting and interpreting data	○ Properties of 2D shapes ○ Perimeter and area ○ Introduction to ratio	○ Angle properties ○ Parallel lines and angles
8	○ Order of operations ○ Powers and roots ○ Application of ratio	○ Proportion ○ Understanding percentages ○ Percentages and multipliers as operators	○ Data handling ○ Probability calculations	○ Simplify and manipulate algebra ○ Area of circles	○ Coordinates and transformations ○ Plotting and interpreting graphs ○ Similarity and congruence	○ Constructions ○ 3d shapes, capacity and volume
9	○ Calculations with fractions, decimals and percentages ○ Multiplicative reasoning	○ Multiplicative reasoning ○ Direct and inverse proportion	○ Expanding, factorising expressions and sequences ○ Quadratic graphs	○ Index laws, standard form and surds	○ Angles and Pythagoras' theorem ○ Trigonometry	○ Representing and interpreting data: histograms and scatter graphs
10	○ Foundation/higher: FDP recap ○ Foundation: Equations and Inequalities ○ Higher: Probability calculations.	○ Foundation/higher: ○ Compound measures ○ Foundation: Probability calculations ○ Higher: Transformations	○ Foundation: ○ Transformations ○ Plans elevations and bearings ○ Higher: ○ Circle theorems ○ Real life graphs	○ Foundation: ○ Perimeter, surface area and volume. ○ Linear and real-life graphs ○ Higher: ○ Circle Theorems ○ Real Life Graphs	○ Foundation ○ Grouped frequency averages and scatter graphs ○ Higher: ○ Surface area & volume ○ Further Trigonometry	○ Foundation: ○ Rates of change ○ Solving quadratics ○ Higher: ○ Data handling
11	○ Foundation: ○ Reciprocols index form and indices ○ Ratio and proportion ○ Higher: ○ Algebraic fractions ○ Further trigonometry	○ Foundation: ○ Rates of change ○ Higher: ○ Similarity congruence proof ○ Transformations of graphs	○ Higher: ○ Vectors and proof ○ Bespoke revision content based on mock exams	○ Bespoke revision content based on mock exams	○ Bespoke revision content based on mock exams	

Stages of Practice

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.

Impact

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- [illegible] 2024, 13% [illegible] 7+, 38% [illegible] 5+ [illegible] 56% [illegible] 4+. [illegible] 4 [illegible] 5, [illegible] 34 [illegible] 2023 [illegible] 4 [illegible] 5. [illegible], [illegible] 0.1.

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