MATHEMATICS

Intent

Mathematics increases students' resilience for problem solving when they have limited information. It teaches them how to think and work systematically, critically analyse information and effectively communicate the steps within their thinking. Our curriculum adopts a 'no tricks' approach to teaching, developing a growth mindset: everybody can do mathematics. We aim to increase awareness and understanding of where the mathematics is used in the real world to enable our students to be 'school ready, work, ready, life ready'.

Strands

Number:

Methods of calculating, representing and interacting with figures in the world.

Algebra:

Operating and manipulating with abstract symbols, rather than numbers, to find and generalise solutions for a set of variables.

Geometry:

Understanding shapes, angles, dimensions and sizes of a variety of things we see in everyday life.

Probability and Statistics:

Using likelihood, chance and data to inform our understanding and even predict future events.

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Our carefully crafted Scheme of Learning follows a spiral curriculum, interweaving topics from each of the Mathematical strands before returning regularly to build upon prior learning with new content and deeper understanding.

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Assessment & Feedback in Maths

Students complete progress checks at the end of each topic in Maths usually every two weeks. This progress check is a series of exam questions designed to check student understanding of individual skill taught from the scheme within the topic, as well as drawing on prior learning from other topics. These progress checks are marked by the students in lessons in y7-9 and marked by the teacher in y10 and y11. The class teacher then identifies the 'next steps' for the students by providing whole class feedback focusing on at least one of the skills that was assessed in the progress check. Students are then shown correct modelling of this skill and expected to reflect on their own specific mathematical errors or misconceptions within that skill, before writing a step by step guide and attempting a similar question. These reflections are teacher marked for quality and SPaG. There are 2 summative assessments for each year group across the academic year, in KS3 students are assessed against the Age-Related skill expectation and KS4 students are assessed against the AQA GCSE criteria.

In The Library

The Horizon Library contains several books that both support the Maths curriculum and also accessibly written books that give a taste of Mathematics beyond the curriculum. Students can ask either Mrs Wakefield or Miss Dickinson to help them find any of these books

Teacher's suggestion:

KS3

- Infinity and Me by Kate Hosford
- Humble Pi: A Comedy of Maths Errors by Matt Parker
- The Simpsons and Their Mathematical Secrets by Simon Singh

KS4

- Fermat's Last Theorem by Simon Singh
- Seventeen Equations that Changed the World by Professor Ian Stewart

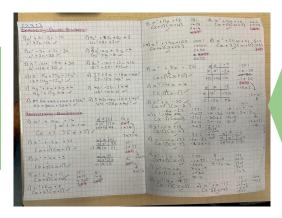
What are our students currently working on?



Year 7 have been looking at negative numbers and expressing them with inequality symbols



Year 8 have been looking at properties of numbers including prime factors, highest common factors and lowest common multiples



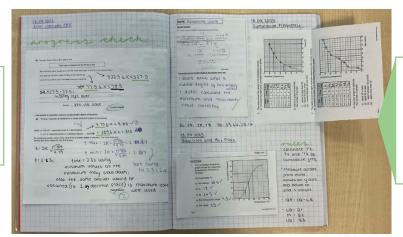
Year 9 have recently been expanding and factorising quadratics.

Sparx Maths

Every other week students are set 20 mins of Home Learning on Sparx Maths. This work is both specific to the subjects they are currently studying and personalised to their individual needs, using algorithms to set questions at the appropriate difficulty for each student and providing short videos for support where necessary. To log on to Sparx, students use their school email account (with the same password). Sparx is now set week 2 Friday and due in week 1 Friday.



The first topic for **Year 10** has been working with and manipulating indices



Year 11 have been looking at Data and Histograms. Here is also an example of the feedback and response work.