

SCHEME OF LEARNING - MATHS – YEAR 8

Year 8	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content	<p>Students will be looking at percentages this half term, exploring percentage of amounts and percentage change, looking at where we see percentages and percentages change in real life. The second unit this half term is focused on money calculations and value for money this builds positive life skills such as budgeting, the maths team will also explore concepts such as tax and national insurance.</p> <p>The remainder of Half Term 1 is centred around Algebra; looking at laws of indices and solving equations which builds upon the foundations and knowledge learnt in year 7.</p>	<p>Carrying on from Half Term 1 there is a continuation of Algebra topics such as solving equations and sequences which lay foundations for topics such as drawing linear graphs in year 9. Ratio will be the focus for the rest of Half Term 2.</p> <p>Topics like simplifying ratio, equivalent ratios, sharing ratios and converting between ratios/fractions/percentages will be covered this half term. Students will also look at scale diagrams, thinking of all the careers that use scale diagrams and the importance of maths in these jobs.</p>	<p>Half Term 3 starts by looking at rounding, exploring what significant figures are. Coordinates is the next unit that builds upon the work done in year 7, in year 8 the students will be extending their knowledge by considering how to find midpoints and further developing problem solving skills in worded problems.</p> <p>The last section of this half term the students will be focusing on geometry, growing knowledge of the areas of more complex shapes and then exploring circles in further depth.</p>	<p>This half term starts with focusing on the introduction of standard form, being able to convert small and large numbers from ordinary numbers to standard form. Students will next look at Venn diagrams, looking at how to construct them, then understanding how to use Venn diagrams to find HCF and LCM.</p> <p>The remainder of Half Term 4 is spent exploring nets of 3D shapes, surface area and volume moving towards looking at compound 3d shapes.</p>	<p>Half Term 5 covers topics such as plotting linear graphs and understanding the equation $y=mx+c$, transforming shapes through reflections or translations, finding unknown angles in parallel lines.</p> <p>A large section of this half term is devoted to statistics in particular statistical diagrams such as pie charts and stem and leaf diagrams. Students will look at not only interpreting these diagrams but ensuring they can draw them effectively also.</p>	<p>The final half term of year 9 predominantly algebra based starting with inequalities, looking at building on knowledge learnt in previous years on solving linear equations to solve linear inequalities, then looking at expanding double brackets and using knowledge learnt from work with fractions to apply this to algebraic fractions. The final unit of year 8 is recurring decimals; understanding what recurring means, how to denote recurring decimals and how it links to the higher tier topic of writing recurring decimals as fractions.</p>
Why?	<p>Percentage work is incredibly important aspect of maths that links heavily to real-life and other subjects such and Geography and science. Students being able to understand money calculations and key life skills such as budgeting and what tax is will provide students with further real-life mathematics. Algebra further develops the student's problem-solving skills.</p>	<p>It is important students can see the links between Sequences and the work they have done on Algebra. Students will explore the link between Linear Sequences and Linear Graphs which they will study in more depth in Year 9. The work done on Ratio and Scale Drawings will support students in some of the work they study in Design Technology.</p>	<p>Year 8 builds upon the knowledge learnt in Year 7 and focuses on considering how midpoint between two coordinates can be found and solving worded coordinate geometry questions to further their knowledge in this area of the subject. After studying Area of Rectangles and Triangles in Year 7 students will spend this half term looking at how to find the Area of a Circle, again this will support some of the work students will do in Science and Design Technology.</p>	<p>Standard Form builds on the place value work the students did in Year 7 and the students will explore the links to Science and how Standard Form is used within that subject. Venn Diagrams are also further explored at KS4 and link significantly to the Probability work done at the end of Year 10.</p>	<p>Equations of Linear Graphs are a key concept the students need to master and they build on the work done on Sequences in Half Term 2. Linear Graphs are studied in Maths right through to KS5 and students need strong understanding of these for the content that is to come. In Year 10 for example, students study Simultaneous Equations and it is crucial students can identify solutions for these both algebraically and graphically. Statistics is also a topic that recurs frequently throughout KS3, 4 and 5 content and that has many real-life applications. Collecting, analysing and representing data is a skill needed in a significant number of jobs, being able to make comparisons from information given as well as finding mathematical evidence that can strengthen points and help make informed decisions.</p>	<p>Students are expected to be able to solve equations in Science, particularly in Physics problems and it is important they are fluent in this early in their Maths study. Students will be taught how to solve equations using Algebra Tiles which should give them a strong conceptual understanding of the processes needed to get from question to answer. Students will also look at Recurring Decimals which are commonly seen in calculations in Science, Geography and Design Technology. It is important students have the knowledge to interpret numbers given on their calculators successfully.</p>
Assessments	<p>Students will complete a class Sparx Feedback activity as well as being assessed on a Topic Presentation. For the Topic Presentation students will pick one of the topics they have been taught during the Half Term and create a presentational piece of work on it, this might be on a OneNote page, as a PowerPoint or on paper. Students will Peer Assess each other's work and complete the Feedback Template. Both pieces of Feedback will be stored in the Assessment + Feedback section of OneNote.</p>	<p>Students will complete a class Sparx Feedback activity as well as being assessed on a Topic Presentation. For the Topic Presentation students will pick one of the topics they have been taught during the Half Term and create a presentational piece of work on it, this might be on a OneNote page, as a PowerPoint or on paper. Students will Peer Assess each other's work and complete the Feedback Template. Both pieces of Feedback will be stored in the Assessment + Feedback section of OneNote.</p>	<p>This Half term students will complete their mid Key Stage 3 assessments. Students will complete two papers: one non-calculator and one calculator paper. These will be papers to assess students' current position and to help identify gaps in their knowledge. Students will have a QLA (question level analysis) which breaks down the topics and colour codes each topic for the student (red, amber, and green). Students will then have a topic list of areas they need to work on. Both pieces of Feedback will be stored in the Assessment + Feedback section of OneNote. The assessments also help the Maths Team</p>	<p>Students will complete a class Sparx Feedback activity as well as being assessed on a Topic Presentation. For the Topic Presentation students will pick one of the topics they have been taught during the Half Term and create a presentational piece of work on it, this might be on a OneNote page, as a PowerPoint or on paper. Students will Peer Assess each other's work and complete the Feedback Template. Both pieces of Feedback will be stored in the Assessment + Feedback section of OneNote.</p>	<p>Students will complete a class Sparx Feedback activity as well as being assessed on a Topic Presentation. For the Topic Presentation students will pick one of the topics they have been taught during the Half Term and create a presentational piece of work on it, this might be on a OneNote page, as a PowerPoint or on paper. Students will Peer Assess each other's work and complete the Feedback Template. Both pieces of Feedback will be stored in the Assessment + Feedback section of OneNote.</p>	<p>Students will complete a class Sparx Feedback activity as well as being assessed on a Topic Presentation. For the Topic Presentation students will pick one of the topics they have been taught during the Half Term and create a presentational piece of work on it, this might be on a OneNote page, as a PowerPoint or on paper. Students will Peer Assess each other's work and complete the Feedback Template. Both pieces of Feedback will be stored in the Assessment + Feedback section of OneNote.</p>

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