NHSG Key Stage 3 Unit Overview for Y8 (Spring): Mathematics

Scheme of Learning	Maths Y8 Spring Term Proportion; Compound Measures; Shapes; Algebra		
Learning outcomes	By the end of the Spring term, you should have knowledge and understanding of Proportion, compound measures, geometric shapes and constructions, formula and graphing.		
Knowledge	Key concepts and skills Proportion – using multiplicative methods Compound measures and graphing Accurate construction and measurement Problem solving skills in geometric shapes and algebraic systems. Graphing of quadratic, cubic and Reciprocal graphs Continue from KS3 overview Contents	Key terminology Proportion Imperial and metric Compound measures Right prism Cylinder Loci Perpendicular bisector Angle bisector Proof Interior and exterior angles Bearings Set notation Identity, equations, formulae and functions	
Ongoing Assessment	In Maths, the most important assessment takes place in every lesson where teachers observe and support whilst they are practicing applying knowledge and new skills. This assessment enables teachers to tailor their lessons to their class. At a point when teachers know that students are ready, a class will have a skills check in a lesson. These checks are low stakes and help to inform both teachers and students of each individuals next steps. Students are not given warning of these skills checks so that teachers can determine how regularly students are engaging in maths, rather than measure how much work a student has been able to do to prepare for a test. **Support for revision:** On SharePoint in the 'Topic Information' folder are overview sheets for each topic. Students can download these sheets from here Good ways to revise for the end of unit include: • Review their notes, • Use / Review materials from SharePoint • Boost, Target and Independent learning tasks from SparxMaths.		

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<tr><td>Key Assessment</td><td>At the end of the Spring term students will have a large, announced assessment which covers the key concepts outlined above. The aim of this assessment is for student to develop revision skills.

The most valuable part of this assessment is the feedback that students get. The question analysis sheets direct students to additional support using Sparx Codes that link to specific topics and content. Students will identify these areas for support through the feedback lesson set aside for assessment feedback</td></tr>
<tr><td>Clear sequencing of content</td><td>
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<tr><td>Proportion</td><td>Proportion change using multiplicative methods</td></tr>
<tr><td>Compound Measures</td><td>Metric and imperial measures in context
Using compound measures to calculate unknowns and solve problems using speed, distance and time; density, mass and volume; pressure, force and area.
Draw and interpret distance-time graphs</td></tr>
<tr><td>Shapes</td><td>Area of trapezium
Calculate volume and TSA of right prisms and Cylinder.
Accurately construct triangle, perpendicular and angle bisectors
Find locus of points according to given rules
Proof of sum of angles of a triangle and of a quadrilateral.
Sum of interior and exterior angles of regular polygons.
Measure and construct bearings.
Calculate bearings using known angle facts.</td></tr>
<tr><td>Algebra</td><td>Linear inequalities and solution sets.
Substitution values into formulae
Derive and use simple formulae
Change subject of formula using one or two step rearrangements.
Plot quadratic, cubic and reciprocal functions and identify them from their shapes.</td></tr>
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<tr><td>Links to Careers</td><td>The overarching skills achieved within Mathematics are integral to numeracy in any career. If students choose to progress from GCSE into A-Level maths, they will begin to see how different types of mathematical application may feed into careers, for example, statistical analysis of data, mechanics and engineering.</td></tr>
<tr><td>Diversity and Inclusion</td><td>Year 8 students are introduced to female mathematicians via their assessments and can learn about their achievements.</td></tr>
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Support	SharePoint pages (text based, images and videos) Weekly lunchtime support sessions, by invitation only. Key Terminology Sheet
Challenge	Sparx – independent learning challenge sections guide to 'codes'. UKMT Enrichment club with the UKMT Team Challenge selected from these students.