Year 9 - Mathematics

Curriculum intent	By the end of year 9 we want all students to be equipped with the skills and knowledge to solve problems independently. We want them to demonstrate resilience and have confidence in their secure knowledge. Students will have opportunities throughout each topic to culminate their wealth of mathematical strategies. They will be challenged to use them in a vast range of contexts. This will form the foundation they will take through with them to KS4. Through mathematics lessons we promote mathematical thinking to allow all students to achieve their mathematical potential and engage in the study of mathematics. Using a mastery style approach to mathematics allows all students to develop their fluency, reasoning and problem solving using the concrete, pictorial, abstract (CPA) approach. As students progress through their learning topics from previous learning will be interleaved into future learning so students develop application and skill links between different areas of mathematics.

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge	• Straight Line Graphs • Forming and Solving Equations • Testing Conjectuires	• 3D Shapes • Constructions and Congruency	Numbers Using Percentages Maths and Money	Deduction Rotation and Translation Pythagoras	Enlargement and Similarity Solving Ratio and Proportion problems Rates	Probability Algebraic Representation

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Skills						
Assessments	• 3 unit assessments	• 2 unit assessments • Term 1 Assessment	• 3 unit assessments	• 3 unit assessments • Term 2 Assessment	• 3 unit assessments	• 2 unit assessments • Term 3Assessment
Curiosity	• Work out how much it would cost to re-carpet a room in your house. This will require you to measure the area of the floor in the room. • Get baking! The best way to practice weighing skills is to	• Test out your solving skills here https://www.abcya.com/games/mystic_numbers • Further your area skills ready for algebra applications here https://www.geogebra.org/m/Yr8kxmtU	• How golden are you? Apply the golden ratio to your body measurements to see if you are golden!? https://nrich.maths.org/7668 • Make a glass of juice, then work out the ratio of juice to water	• How many crazy averages facts can you find on the internet? Sort them out into the ones you believe are true and the ones you think are made up – here are some to start you off	• Try your problem solving skills by working out what the number could be https://www.topmarks.co.uk/Flash.aspx?f=ThinkingOfANumberv3 • Make a necklace or bracelet. Pick two colour (or more) and	• Make a set of revision flashcards for each topic you cover in class, include a full wagoll with notes and a practice question ready to use in Year 10 and 11

bake. Try this recipe to make cupcakes - https://www.bbcgoodfood.com/recipes/cupcakes . Or why not try something more challenging with this doughnut recipe - https://www.bbcgoodfood.com/recipes/watermelon-doughnuts • Map skills – practice orienteering in the local area. Here is Etherow Lodge parks orienteering course (10 minute walk from school) - https://gmoa.org.uk/borough_tameside/etherow-lodge-park-orienteering/ . • Look at a newspaper (in print or online) and make a note of all the times you see a percentage referred to in a headline. Read some of the articles to see if there are more percentages used within the article.	• Black History Month • Try this loci constructions task to develop your understanding https://www.transum.org/software/SW/Starter_of_the_day/Students/Pairs.asp?Topic=23 • Apply your loci skills to exact scale drawings in this goat problem https://www.transum.org/Software/SW/Starter_of_the_day/starter_March6.ASP	you used. Think about how you could work this out using measuring equipment. • How does the recipe change? Here are some online questions to help you - https://www.transum.org/Maths/Exercise/Ratio/Recipe.asp . Alternatively, pick a recipe from a cookbook at home and practice changing the measurements based on how many people you would cook for?	https://funfactz.com/tags/average/ • Choose a Venn Diagram quiz to complete here https://www.sporcle.com/games/tags/venndiagram • Try this with a real deck of cards or the online version here https://www.funtrivia.com/trivia-quiz/SciTech/Pick-A-Card-Any-Card-269306.html • PI day	stick to a ratio for the colours (e.g. for every red bead there will be 2 yellow beads). Maths challenge date TBC	https://collegeinfogeek.com/flash-card-study-tips/ • Make a how to use your calculator guide! It will come in helpful for future learning • Try a mini exam paper https://www.onmaths.com/mock_exams/mini-mock-1-foundation-calculator/