

Subject: Maths **Year** 10 **Ability** Foundation

Half Term 5 / weeks	Week 1-2	Week 3-4	Week 5-6	Final week of the half term
Topic	Unit 25 – Quadratic and cubic graphs	Unit 26 – Unit conversions and harder 3D problems	Unit 27 – Percentage problems and interest	Reteach and Retention
Topic overview Students will learn...	Students should be able to create coordinate points and plot both quadratic and cubic graphs	To find the volume and surface area of 3D shapes before using this to complete density questions. Finally using the skills of scale factors and the use of LAV to convert units.	To recall and use percentage multipliers in the context of interest questions both simple and compound.	Focus on the process of reteach and retention for this half term, knitting together the learning in reaction to the assessments completed. Students will follow a bespoke set of lessons looking at errors seen in the work covered in this half term and any supporting knowledge. If this is covered staff will look forward to cover historic supporting knowledge for the next half term.
Components	Students should be able: <ul style="list-style-type: none"> To plot quadratics with a table of values. To plot quadratics given a table of values. To plot exponential and reciprocal functions from a given table of value. To match equations with their graphs. 	Students should be able: <ul style="list-style-type: none"> To convert between measures of length, area and volume. To solve problems involving density, mass and volume. To find the surface area of 3D shapes. To find the volume of prisms To find the surface area and volume of compound 3D shapes. 	Students should be able: <ul style="list-style-type: none"> To increase and decrease an amount by a percentage. To calculate compound interest. To solve reverse percentage problems. 	Staff complete a program of adaptive reteaching on specific topics based on the individual/class needs within their groups that have been flagged in this block of learning. Regular assessments are used to identify gaps in learning. Any gaps found are then addressed in lessons to help support learning and retention. Clear areas for improvement are monitored by individual staff and at a departmental level.
What students should already know (prior learning components)	Students will need to be able to substitute positive and negative values into a formula/equation and be able to plot coordinates in 4 quadrants	Students will need to recall formulas for area of 2D shapes, formula for volume of cuboid previously taught and be able to convert into different measurements	Students should be confident at non-calculator techniques to calculate percentages of an amount. Basic indices and understanding of proportion will also be required. Higher students should have a grasp of percentage multipliers and how to use them	All the half term content will have been covered by this point. Staff will use departmental tracking documents to analyse the gaps in learning from the most recent assessments and all previous assessments. The ability to structure and breakdown a problem-solving question as exemplified in the TFI questions throughout the course.
Transferrable knowledge (skills)	The topic will build students' confidence with plotting and the use of substitution. The skills of plotting these values and understanding these more complicated graphs pulls together a number of lower skills. The students should be able to now	This unit will look to bring together a number of shape and space topics to put them into a real context that includes density and volume style questions. This unit will help to support other subjects such	This unit looks at applying mathematical skills with percentages and applies them to real world problems including discounts, inflation and interest rates. All of these elements should be connected to life	This activity should serve to highlight and address areas of weakness in teaching and learning or retention. This early intervention to understand specific key areas for improvement or development. This should help to build confidence and

	use these skills to pull out information from graphical representations improving interpretation skills.	as science and other real-world applications.	elements as much as possible throughout the unit.	improve students' ability to answer these and directly sequential problems.
Key vocabulary student will know and learn	Graphs, Quadratic, Cubic, Plot, Reciprocals, Functions,	Conversions, Volume, Measures, Cubic centimetres, Metres, Density, Mass, Volume, Surface area, Prisms,	Percentages, Increase, Decrease, Multipliers, Amounts, Compound interest, Years, Reverse percentages, Original value, Profit and loss.	
Assessment activities	Sparx Homework - Quadratic and cubic graphs Year 10 Test 11 non-calc and Test 12 calc. Each will be completed in lesson (~50mins) at the end of the half term before the R&R section. It will cover the topics taught in this unit primarily but other previous knowledge maybe included.	Sparx Homework - Unit conversions and harder 3D problems Year 10 Test 11 non-calc and Test 12 calc. Each will be completed in lesson (~50mins) at the end of the half term before the R&R section. It will cover the topics taught in this unit primarily but other previous knowledge maybe included.	Sparx Homework - Percentage problems and interest Year 10 Test 11 non-calc and Test 12 calc. Each will be completed in lesson (~50mins) at the end of the half term before the R&R section. It will cover the topics taught in this unit primarily but other previous knowledge maybe included.	AFL and adaptive teaching will continue to support staff to assess the address areas.
Resources available	Sparx Clips U989, U593, U229 Departmental lesson folder Departmental resource folder www.corbettmaths.com www.justmaths.co.uk www.mathsbox.org.uk www.mathsgenie.co.uk www.mathspad.co.uk	Sparx Clips U388, U248, U468, U910, U929, U259, U464, U523, U893, U561, U174, U915 Departmental lesson folder Departmental resource folder www.corbettmaths.com www.justmaths.co.uk www.mathsbox.org.uk www.mathsgenie.co.uk www.mathspad.co.uk	Sparx Clips U773, U671, U332, U286 Departmental lesson folder Departmental resource folder www.corbettmaths.com www.justmaths.co.uk www.mathsbox.org.uk www.mathsgenie.co.uk www.mathspad.co.uk	Before any assessments are completed, revision and guidance materials are provided for students to assist in independent study.
Notes Why this topic is important...	This unit starts with students ensuring that they can generate points before plotting the graphs associated. Students should ensure they can sketch these including important information communicating these.	This unit reminds students of 2D skills before moving to 3D ones. Once this is established students should be challenged to move this to density problems. The use of scale factors should be revisited through LAV when converting units in different dimensions.	Students should be reminded of multipliers for percentages, increase and decrease before looking at interest questions. A focus on comparisons of investments (simple/compound/multiple rates) should be made including working backwards to find given rates and original amounts. Links to real life including depreciation should be made where possible.	This is an important point in the curriculum plan that enables individual teachers to review the gaps in learning for the classes they teach. The half-termly assessments are used to track students' progress and enable teachers to react quickly to any gaps in knowledge and prepare students for the next assessment. The feedback and modelling of the exam answers enables students to pick up exam techniques and the ability to communicate effectively.