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Curriculum Planning Template

Subject: Maths Year 10 Ability Higher

Half Term 4 / weeks	**Week 1-2**	**Week 3-4**	**Week 5-6**	
Topic	Unit 22 Data handling	Unit 23 Inequalities	Unit 24 sine and cosine rules, 3D trig	Reteach and Retention
Topic overview **Pupils will learn…**	To recall and recap more basic charts and diagrams before adapting this knowledge to include more complicated diagrams including interpretations	To recall the knowledge gained when handling and solving equations and extend this into inequalities including diagrammatically.	To recall and use the trig ratios in 3D and introduce the sine and cosine rules including area of triangles using sine.	Focus on the process of reteach and retention, knitting together the learning in reaction to the assessments completed
Components	• To construct a cumulative frequency diagram • To use cumulative frequency to construct box plots. • To construct histograms for continuous data with unequal class intervals. • To interpret a histogram. • To plot and interpret time series.	• To represent inequalities on a number line. • To solve linear inequalities. • To represent inequalities graphically • To solve quadratic inequalities. • To solve problems involving inequalities.	• To convert units of length area and volume. • To solve problems involving Pythagoras and trigonometry. • To use the sine rule to find unknown side lengths and angles. • To use the cosine rule to find unknown side lengths and angles. • To use Pythagoras in 3 dimensions • To use trigonometry in 3 dimensions.	Staff complete a program of adaptive reteaching on specific topics based on the individual/class needs within their groups. 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 pupils should already know (prior learning components)	Students should understand the different types of data: discrete/continuous. Students should have experience of inequality notation. Students should be able to multiply a fraction by a number. Students should understand the data handling cycle.	Students should understand the ≥ and ≤ symbols. Students can substitute into, solve and rearrange linear equations. Students should be able to factorise simple quadratic expressions - where the coefficient of x^2 is equal to 1.	Students should be able to use axes and coordinates to specify points in all four quadrants. Students should be able to recall and apply Pythagoras' Theorem and trigonometric ratios. Students should be able to substitute into formulae.	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)	These data handling ideas and skills should allow students to be able to understand these charts and diagrams in wider life. The focus on interpretation at higher looks in greater detail at the processing of the data shown and what this means in terms of spread etc. This becomes a large part of KS5 in the stats element of A-level.	The topic will bring together the handling of algebra with the ability to show this information in diagrammatic form. This in turn will further support solving, drawing linear and quadratic graphs and being able to identified regions.	The use of trig will be repeated numerous times in KS4 and this is one of those times. The knowledge her will be used to underpin work later on sine, cosine, and tangent graphs as well as increasingly complicated multi step questions. At KS5 the confident use of tri is essential.	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 improve students' ability to answer these and directly sequential problems.
Key vocabulary pupil will know and learn	Sample, population, fraction, decimal, percentage, bias, stratified sample, random, cumulative frequency, box plot, histogram,	Quadratic, solution, root, linear, solve, simultaneous, inequality, factorise, rearrange, surd, function, solve	Axes, coordinates, sine, cosine, tan, angle, graph, transformations, side, angle, inverse, square root, 2D, 3D, diagonal, plane, cuboid	

	frequency density, frequency, mean, median, mode, range, lower quartile, upper quartile, interquartile range, spread, comparison, outlier			
Assessment activities	Homework 22 Inequalities Year 10 test 10	Homework 23 Inequalities Year 10 test 10	Homework 24 sine and cosine rules, 3D trig Year 10 test 10	AFL and adaptive teaching will continue to support staff to assess the address areas.
Resources available	Mathswatch clips: 186, 187, 205, 205, 153	Mathswatch clips: 138, 139, 198, 212	Mathswatch clips: 112, 150, 173, 168, 201, 202, 217, 218	Before any assessments are completed, revision and guidance materials are provided for students to assist in independent study.
Notes **Why this topic is important…**	Understanding how data is life skill that allows people of all ages to understand and process data that is being presented including hiding/promoting data. This topic works with existing basic skills and moves through the more complicated charts that students should be able to create and read. A strong focus should be made in what is "meant" in the data and what the data "shows" and "does not show". The deeper processing of the data shows students how this data can be interrogated further.	The manipulation and solving of standard equations are a key element of this unit as it will be needed to solve inequalities. The unit starts with students being able to show a given inequality on a number line before moving to solving them. After solving students should then be able to show these on a diagram. Students will then need to recall plotting of straight lines to be able to identify regions that satisfy given inequalities pulling together a number of previously discrete topics. The quadratics element of this unit should be stressed as it becomes a significant part of KS5. The need to draw the diagrams for this needs to be impressed to students to ensure "the right part(s) of the graph is identified.	This topic starts with the consolidation of trig and Pythagoras now being used in 3D. The introduction of the sine and cosine rules for students will now extend student knowledge to none right angled triangles. This will also look to include finding the area of triangles using sine and reversal questions. The unit should prepare students for the graphical work with trig including the knowledge to find possible obtuse answers.	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.