

**Subject:** Maths      **Year** 9      **Ability** Foundation

Half Term 6 / weeks	Week 1-3	Week 4-6	
<b>Topic</b>	Unit 11 – Straight Line	Unit 12 - Probability	Reteach and Retention
Topic overview	To draw and understand straight line graphs understanding and using $y=mx+c$	To use the idea of simple probability in context of multiple step problems that would require representation through tree diagrams	Focus on the process of reteach and retention, knitting together the learning in reaction to the assessments completed
<b>Pupils will learn...</b>			
<b>Components</b>	<ul style="list-style-type: none"> <li>Plot points <math>(x, y)</math> in any of the four quadrants in 2D and 3D</li> <li>To be able to find the coordinates of the midpoint of a line segment</li> <li>To be able to write down the equations of vertical and horizontal lines (<math>x = c</math>, and <math>y = c</math>).</li> <li>To be able to plot a linear graph from a table of values</li> <li>To be able to find the gradient of a straight line from its equation</li> <li>To be able to identify the co ordinate of the y intercept from its equation</li> <li>To be able to find the gradient and intercept, and hence the equation, of a straight line from a diagram.</li> <li>To be able to draw and interpret straight line graphs for real-life situations</li> </ul>	<ul style="list-style-type: none"> <li>To be able to find the probability of mutually exclusive events. Eg a six on a die</li> <li>To know that all probabilities sum to 1, and be able to use this to find the probability of an event not occurring</li> <li>To know the difference between theoretical probability and experimental</li> <li>To use the results of an experiment or trial to calculate relative frequencies</li> <li>To be able to list all possible outcomes and construct sample space diagrams.</li> <li>To be able to draw and label a frequency tree diagram. Using them to calculate probabilities</li> </ul>	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.
<b>What pupils should already know (prior learning components)</b>	Students should be confident in substituting positive and negative values into a equation/formula. Students should be able to plotting co-ordinates in 4 quadrants and solve linear equations to find an unknown variable	Students should be confident at FDP conversions. Pupils could be confident at performing calculations with decimals and fractions	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.
<b>Transferrable knowledge (skills)</b>	The topic will build pupils' confidence with basic formula manipulation. Elements of this unit will be built on when learning about quadratic graphs in Y11. The gradient aspects will be used further in variable rates of change	The use of decimals and fractions to find values for probability will increase the confidence of student when handling these values. The use of probability here will be used again when looking are not replaced tree diagrams and harder probability that does not require diagrams in KS4. The use of probability will continue throughout and into KS5 statistics. A key idea of this unit moves students to visualisation of multiple outcomes and possibilities depending on earlier events.	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.

<b>Key vocabulary pupil will know and learn</b>	Coordinates, Querants, Line segment, Plot, Draw, Straight line, Linear, Interpreting, Gradient, $y=mx+c$ , Y Intercept, Real life graph,	Probability, Mutually exclusive, Theoretical, Sample size, Estimate, Trials, Outcomes, Space diagrams, Independent, Frequency trees,	
<b>Assessment activities</b>	Year 9 Half Term Test 6 Homework Unit 11 – Straight Line	Year 9 Half Term Test 6 Homework Unit 12 - Probability	AFL and adaptive teaching will continue to support staff to assess the address areas.
<b>Resources available</b>	MathsWatch clips: 8, 96, 97, 133, 159	MathsWatch clips: 14, 58, 59, 60, 125, 126, 152, 204	Before any assessments are completed, revision and guidance materials are provided for students to assist in independent study.
<b>Notes</b> <b>Why this topic is important...</b>	The entry to this unit uses the skills to create and plot a coordinate through the use of a table of values. Once this is grasped move to understanding the role of these in terms of $y=mx+C$ . This then moves to finding the gradient from points and using this with $y -y_1=m(x-x_1)$ to find equations including perpendiculars. The unit finishes with the use and understanding real life graphs using m and c where needed from earlier in the unit	The topic starts with relatively simple probability scales with students able to understand the meaning of a given probability in context. The notation of probability will be used in later harder elements as well as other topics such as Venn diagrams. The unit finishes with tree diagrams that allow students to sort harder problems visually and then find the calculations associated with this.	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.