

## INDEPENDENT LEARNING PROJECT TASK SHEET

<b>Subject:</b> Maths	<b>Project title:</b> Loads of lines
<b>Project task:</b> To produce a revision tool (booklet, power point etc) about drawing algebraic graphs.	

<p><b>Key questions:</b></p> <ul style="list-style-type: none"> <li>• How do we plot co-ordinates? How can a formula generate these co-ordinates?</li> <li>• How can we plot graphs that have the structure <math>y=mx+c</math>? What if this isn't the structure we are given?</li> <li>• What is the difference between a linear graph and a quadratic? Are there any other types of graph?</li> </ul>	<p><b>Project should include:</b></p> <ul style="list-style-type: none"> <li>• Accurately drawn graphs of equations with points in all four quadrants.</li> <li>• Discussion comparing two or more graphs and their properties.</li> <li>• A test to give yourself to aid with your SAT revision. This could include past SAT questions.</li> </ul>
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**Use the outcome levels below to help you see what you should be aiming to achieve.**

Outcome levels	
<b>Level 3</b>	N/A
<b>Level 4</b>	Co-ordinates are used to plot points in the first quadrant.
<b>Level 5</b>	Co-ordinates are used to plot points in all four quadrants. Real life graphs are used and interpreted. Algebraic expressions are used to generate co-ordinates.
<b>Level 6</b>	Co-ordinates generated from algebraic expressions are plotted and joined to make a line of that expression. Algebraic expressions are used to check if a co-ordinate is on a line without plotting. Simple comparisons between lines are made. Similarities between lines are also noted.
<b>Level 7</b>	The structure $y=mx+c$ is used to plot graphs without generating co-ordinates beforehand. Graphs of equations are used to solve simultaneous equations.
<b>Level 8</b>	Linear, quadratic and cubic graphs are all plotted and interpreted. The equation of a line can be identified from it's general shape.