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**Mathematics Faculty**

**Year 10 Higher – Summer Term 1**

**Unit 10 Overview – Algebraic Graphs**

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| **Topic** | **Key Ideas** | **Progress** | | |
| **R** | **A** | **G** |
| **Algebraic Graphs** | I can find the equation of a line, parallel lines and perpendicular lines. |  |  |  |
| I can represent linear inequalities on a coordinate grid. |  |  |  |
| I can construct and interpret quadratic, cubic, reciprocal and exponential graphs. |  |  |  |
| I can recognise the equation of a circle. |  |  |  |
| I can find the equation of a tangent to a circle. |  |  |  |
| I can recognise and use the graphs of trigonometrical functions. |  |  |  |

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| **Lesson** | **Learning Focus** | **Assessment** | **Key Words** |
| **1** | **Finding the equation of a line, given its gradient and a point or given two points** (CM clips 194 & 195) | Formative assessment strategies e.g. MWBs, whole class questioning, Diagnostic Questions, SLOP time with self-assessment, Live Marking etc.  Assessment is also supported with our use of ILOs, set through Century Learning, Corbettmaths, Dr Frost Maths and Justmaths.  Finally, units are assessed through skills checks and half termly assessments, as part of our Assessment Calendar in Mathematics. | equation, linear, gradient, intercept, point, coordinate, substitute |
| **2** | **Finding the equation of a line which is parallel to a given line** (CM clip 196) | equation, linear, parallel, gradient, coordinate, substitute |
| **3** | **Finding the equation of a line which is perpendicular to a given line** (CM clip 197) | equation, linear, perpendicular, gradient, reciprocal, negative, coordinate, substitute |
| **4** | Representing linear inequalities on a coordinate grid (CM clips 180 – 182) | inequality, greater than, less than, linear, plot, axis, region |
| **5** | Constructing and interpreting quadratic graphs by finding roots and intercepts. Finding the equations of the line of symmetry of quadratic graphs (CM clips 264 & 265) | quadratic, table of values, parabola, axis, intercept, root, symmetry, equation, solution |
| **6** | Identifying turning points of quadratic functions by completing the square (CM clip 10) | quadratic, turning point, minimum, maximum, completing the square, equation |
| **7** | Finding approximate solutions to 2 linear or a linear and a quadratic equation using a graph (CM clips 267c & 297) | simultaneous equation, linear, quadratic, solve, plot, intersection, coordinate, value |
| **8** | Constructing and interpreting cubic and reciprocal graphs (CM clips 344 & 346) | cubic, reciprocal, table of values, equation, substitute, intercept |
| **9** | Constructing and interpreting exponential graphs (CM clip 345) | exponential, table of values, equation, substitute |
| **10** | **Recognising and using the equation of a circle with centre at the origin** (CM clip 12) | equation, circle, radius, origin, centre |
| **11** | **Finding the equation of a tangent to a circle at a given point** (CM clip 372) | equation, circle, radius, origin, centre, tangent, radius, gradient, perpendicular, reciprocal, negative |
| **12** | **Sketching the graphs of trigonometrical functions** (CM clip 338 – 340) | sine, cosine, tangent, function, symmetry, periodic |
| **13** | Using the graphs of trigonometrical functions to solve equations (CM clip 338 – 340) | sine, cosine, tangent, function, symmetry, periodic, equation, solve |