Subject	Year	Month	
Mathematics	10	March	Balcarras *From strength to strength*

Topic:

Quadratic, cubic, reciprocal, exponential and circle graphs	5 lessons

Content (Intent)

Prior Learning	**Future Learning**
Year 9 Quadratic graphs March Year 10 Quadratic sequences November Year 10 Straight line graphs February	Year 11 Sketching quadratic graphs using roots and turning points October **Year 12** Pure Chapter 4 Graphs and transformations Pure Chapter 6 Circles Mech Chapter 11 Variable acceleration

Objectives

- Recognise a linear, quadratic, cubic, reciprocal, exponential and circle graph from its shape;
- Generate points and plot graphs of simple quadratic functions, then more general quadratic functions;
- Find approximate solutions of a quadratic equation from the graph of the corresponding quadratic function;
- Interpret graphs of quadratic functions from real-life problems;
- Draw graphs of simple cubic functions using tables of values;
- Interpret graphs of simple cubic functions, including finding solutions to cubic equations;
- Draw graphs of the reciprocal function $y = \dfrac{1}{x}$ with $x \neq 0$ using tables of values;
- Draw graphs of the exponential function $y = k^x$
- Draw circles, centre the origin, equation $x^2 + y^2 = r^2$.

Pedagogical notes (implementation)	**How will understanding be assessed & recorded (Impact)**
Use lots of practical examples to help model the quadratic function, e.g. draw a graph to model the trajectory of a projectile and predict when/where it will land. Ensure axes are labelled and pencils used for drawing. Graphical calculations or appropriate ICT will allow students to see the impact of changing variables within a function.	**End of half term** no **End of Year** Mocks in April
	How can parents help at home?
	MathsWatch clips (Qualification KS4)

Further reading/discussion

Reading / Enrichment	**Literacy**	**Numeracy Links**	**Careers Links** Engineer Physicist Statistician Actuary