Subject	Year	Month	
Mathematics	10	February	Balcarras From strength to strength

Topic:

Straight line graphs	6 lessons

Content (Intent)

Prior Learning	**Future Learning**
Year 9 Straight line graphs March	Year 10 Real life straight line graphs February Year 10 Quadratic graphs March Year 10 Simultaneous equations May Year 11 Graph sketching October **Year 12** Pure Chapter 5 Straight line graphs

Objectives

- Plot and draw graphs of $y = a$, $x = a$, $y = x$ and $y = -x$
- Identify and interpret the gradient of a line segment;
- Recognise that equations of the form $y = mx + c$ correspond to straight-line graphs in the coordinate plane;
- Identify & interpret the gradient and y-intercept of a linear graph given by equations of the form $y = mx + c$;
- Find the equation of a straight line from a graph in the form $y = mx + c$;
- Plot and draw graphs of straight lines of the form $y = mx + c$ with and a table of values;
- Sketch a graph of a linear function, using the gradient and y-intercept (i.e. without a table of values);
- Find the equation of the line through one point with a given gradient;
- Identify and interpret gradient from an equation $ax + by = c$;
- Find the equation of a straight line from a graph in the form $ax + by = c$;
- Plot and draw graphs of straight lines in the form $ax + by = c$;
- Interpret and analyse information presented in a range of linear graphs:
- use gradients to interpret how one variable changes in relation to another;
- find approximate solutions to a linear equation from a graph;
- identify direct proportion from a graph;
- find the equation of a line of best fit (scatter graphs) to model the relationship between quantities;
- Explore the gradients of parallel lines and lines perpendicular to each other;
- Interpret and analyse a straight-line graph and generate equations of lines parallel and perpendicular to the given line using the fact that when $y = mx + c$ is the equation of a straight line, then the gradient of a line parallel to it will have a gradient of m and a line perpendicular to this line will have a gradient of $-\dfrac{1}{m}$.
- Higher groups may wish to use $y - y_1 = m(x - x_1)$

Pedagogical notes (implementation)	**How will understanding be assessed & recorded (Impact)**
Encourage students to sketch what information they are given in a question – emphasise that it is a sketch.	**End of half term** Assessment in Feb **End of Year** Mocks in April
	How can parents help at home?
	MathsWatch clips (Qualification KS4)

Further reading/discussion

Reading / Enrichment http://passyworldofmathematics.com/mountain-gradients/	**Literacy**	**Numeracy Links**	**Careers Links** Medicine – identify links Economist

			Meteorologists Actuaries graph risks