Subject	Year	Month	
Mathematics	10	January	Balcarras From strength to strength

Topic:

Pythagoras' Theorem and trigonometry **(already covered at the end of Y9 so focus should** **be on highlighted content)**	5 lessons

Content (Intent)

Prior Learning Year 9 GCSE Pythagoras and trigonometry June & July	**Future Learning** Year 11 Advanced trigonometry September Year 11 Graphs of trig functions September **Year 12** Pure Chapter 9 Trigonometric ratios Pure Chapter 10 Trigonometric identities and equations

Objectives

- Understand, recall and use Pythagoras' Theorem in 2D and 3D;
- Given three sides of a triangle, justify if it is right-angled or not;
- Calculate the length of the hypotenuse in a right-angled triangle (including decimal lengths and a range of units);
- Find the length of a shorter side in a right-angled triangle;
- Calculate the length of a line segment AB given pairs of points;
- Give an answer to the use of Pythagoras' Theorem in surd form;
- Understand, use and recall the trigonometric ratios sine, cosine and tan, and apply them to find angles and lengths in general triangles in 2D figures;
- Use the trigonometric ratios to solve 2D and 3D problems;
- Find angles of elevation and depression;
- Know the exact values of sin θ and cos θ for θ = 0°, 30°, 45°, 60° and 90°; know the exact value of tan θ for θ = 0°, 30°, 45° and 60°.

Pedagogical notes (implementation)	How will understanding be assessed & recorded (Impact)

Students may need reminding about surds. Scale drawings are not acceptable. Calculators need to be in degree mode. To find in right-angled triangles the exact values of sin θ and cos θ for θ = 0°, 30°, 45°, 60° and 90°, use triangles with angles of 30°, 45° and 60°. Use Pythagoras' Theorem and trigonometry together.	**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	**Literacy**	**Numeracy Links**	**Careers Links** https://careertrend.com/info-8466810-jobs-use-pythagorean-theorem.html Management, agriculturist, surveyor, cartographer, production worker, geologist, sailor, engineer,