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| **Year 10 Term 5 - Maths** | |  | | | | | |
| **Enquiry Question: How can we measure the height of a tree without climbing it?** | | | | | | | |
| **Unit title: Trigonometry**  **Why now?** You have been learning about **triangles, angles, and ratios** separately in different units from **Year 7-9.** In **Year 9** you also learnt about the special properties of **similar shapes** and **Pythagoras’ theorem** which is applied to **right angled triangles**. In this unit we combine these ideas together and learn about the **special ratios** between similar triangles. | | | | | | | |
| **Knowledge**  Students will know about… | **Application/Skills**  Students will be able to… | | **Vocabulary**  *(Tier 2 and 3)* | **Home**  **Learning** | **Assessment** | **Extra Resources**  **Extended Reading** | **Cultural Capital** |
| 1. Labelling the sides of a right-angled triangle- hypotenuse, opposite and adjacent- relative to an angle 2. The three ratios - sine, cosine and tangent and why they don’t change as a triangle is enlarged 3. Using the trigonometric ratios to find a missing side in a right-angled triangle 4. Using the trigonometric ratios to find a missing angle in a right-angled triangle 5. Using a calculator efficiently in trigonometry 6. Exact values of trigonometric ratios for some angles 7. Using trigonometry to solve problems in context 8. (extension) Trigonometry and the area of a triangle 9. (extension) The graphs of trigonometric functions- symmetry, periodicity and asymptotes | 1. Label sides of a triangle. 2. Use triangle notation. 3. Recall the trigonometric ratios. 4. Form and solve equations. 5. Find missing sides and angles. 6. Use trigonometry in context. | | ***Tier 2***  Recall  Identify  Label  Understand  Relationship  Adjacent  unknown  ***Tier 3***  Triangles  Hypotenuse  Ratio  Function | **Pre-classroom:**  Pre-lesson tasks on **google classroom** to get you thinking.  Diagnostic questions  **Post-Classroom:**  Post lessons online tasks:   * My Maths * Google Form Quizzes * Independent learning notes | Summative Assessment at the end of T5. | **Enrichment:**  Explore **the trigonometric graphs.**  a) You can sketch the **graph of sine and cosine.**  b) You know what an **asymptote** is.  c) you can sketch the **graph** of **tangent.**  d) You can have explored combinations of **trigonometric graphs** on **Autograph or desmos.** | **Cultural Capital:**  Check the Bank of England Museum.  In their workshop you will learn the role of mathematics in the economy, they explain what the bank does to keep inflation law and maintain financial stability. |
| **Numeracy**  Product  Sum  Total  Add  Subtract  Difference |