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| **Key Topics and Learning Sequence**  |
| **= First Steps** |  **= Moving On** |  **= Stretch** |  **= Challenge** |
| 1. **Labelling triangles**

1. Identify a **right triangle.**
2. **Label** the sides of a triangle correctly using **opposite**, **adjacent** and **hypotenuse.**
3. You understand the notation **abc** and **ABC** in a triangle.
 | 1. **Trigonometric Ratios**
2. Know the three **trigonometric ratios and understand them as scale factors in similar triangles**
3. You can **use a table** to find an angle given any given ratio
4. You can find the **ratio** between **two sides** with a given angle using a **table**
5. Understand that there is a **fixed relationship** between the **sides** of a **right-angle** triangle
6. Find a **ratio** from a **calculator**
 | 1. **Finding missing sides**
2. Can form an **equation** involving **two sides** and a correct **ratio**
3. Can find a **missing side** when the **unknown** is on the **numerator.**
4. Can find a **missing side**

when the **unknown** is in the **denominator.**1. Can find a **missing side** in **3D**
2. Can find a **missing side** in a **non-right angle triangle**
 | 1. **Finding missing angles**
2. Can form an **equation** involving the **two sides** and the **missing angle**
3. Can find a **missing angle** by using the **inverse function** on the **calculator**
4. You know the **exact** trigonometric ratios for **0, °30°, 45°, 60°,90°.**
 | **5. Trigonometry in context** 1. Apply **similarity** to find a missing **side/angle**
2. Use/draw **diagrams** from context
3. Find a missing **side/angle** in context.
4. Find the **area of a triangle** using trig**.**
5. Solve problems which require the application of **trigonometry and Pythagoras**
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| **How does this unit fit into your mathematical learning journey?** | **Further Exploration, Enrichment and Cultural Capital** |
| 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. | **Enrichment:** Explore the **trigonometric graphs** of sine, cosine and tangent using <https://www.desmos.com/calculator>. Test your trigonometry vocabulary knowledge with this quiz <https://www.helpfulgames.com/subjects/mathematics/256-trigonometry-vocabulary.html> or try to beat the computer in this trig ratio race http://thewessens.net/ClassroomApps/Main/trigrace.html?topic=geometry&id=8 **Cultural Capital:** Make a clinometer <https://brainchase.com/build-clinometer/>, then pop outside and measure the height of anything you want following the easy guide here <https://www.instructables.com/Using-a-clinometer-to-measure-height/> |

**LPS Mathematics: Year 10 – Unit 9 Trigonometry**

**Enquiry Question: How can we measure the height of a tree without climbing it?**

**Date: Initial Thoughts:**

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**Date: New Thoughts:**

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**Date: Final Thoughts:**

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