Year 10 Maths Learning Journey

Autumn Term 2

Similarity: Trigonometry

Core knowledge	Reference
Explore ratio in similar right-angled triangles. "Will the ratio remain constant if the given angle gets bigger/smaller? Why/Why not?"	Worksheet
Work fluently with the hypotenuse, opposite and adjacent sides "Why can the same side on a right-angled triangle be labelled the 'opposite' on some occasions, and the 'adjacent' on others?"	Worksheet
Use the tangent ratio to find missing side lengths "What does the 'tangent of an angle' mean?"	Worksheet
Use the sine and cosine ratio to find missing side lengths "How do we know which trigonometric ratio to use?"	Worksheet
Use the sine, cosine and tangent to find missing side lengths "Is there more than one method of finding a missing side length?"	Worksheet
Use the sine, cosine and tangent to find missing angles "What is an inverse trigonometric function?"	Worksheet
Calculate sides in right-angled triangles using Pythagoras' Theorem (R) "How can we use side lengths to explore whether a triangle is right-angled?"	Worksheet
Select the appropriate method to solve right-angled triangle problems "How do you select which method is the most effective?"	Worksheet
Work with key angles in right-angled triangles "What do we mean by 'leave your answer as an exact value'?"	Worksheet
Use trigonometry in 3-D shapes (H) "What is a prism? What is a plane in geometry?"	Worksheet
Use the formula 1/2absinC to find the area of non-right-angled triangles (H) "How do we label angles and sides in a non-right-angled triangles? Why is a standard format helpful?"	Worksheet
Understand and use the sine rule to find missing lengths (H) "How do we know which angle to substitute into the sine rule?"	Worksheet

Understand and use the sine rule to find missing angles (H) "How do you know which angle to substitute into the formula? How do you know which length to substitute into the formula?"	Worksheet
Understand and use the cosine rule to find missing lengths (H) "Why isn't it always possible to use the sine rule?"	Worksheet
Understand and use the cosine rule to find missing angles (H) "Why can't we use the sine rule in this triangle to find the missing angle?"	Worksheet
Choose and use the sine and cosine rules (H) "How do you know whether to use the sine or cosine rule to solve a problem?"	Worksheet

Learning Checkpoints

LC Title	Completed	Dirt
Trigonometry		

Key Vocabulary:

Right angle – 90-degree angle.

Hypotenuse – Side of a right-angled triangle which is opposite the right angle.

Adjacent side - Side of a right-angled triangle located next to the given angle.

Opposite side - Side of a right-angled triangle located opposite the given angle.

Ratio – Part to part comparison of two quantities.

Function – Mathematical process with an input and an output.

Acute – Angle less than 90 degrees.

Obtuse – Angle larger than 90 degrees but smaller than 180 degrees.

Surd – Non-reduceable square root.

Prism – 3D shape with a constant cross section.

Corresponding – Equivalent in form or function.

Subject – A variable is the subject of an equation if it is isolated on one side of the equation.