# Stage 10 – Investigating Properties of Shape

## Know it!

### Knowledge

| | |
|---|---|
| I know… | The three trigonometric ratios Sine, Cosine and Tangent |
| I know… | How to set up and solve a trigonometric equation to find a missing angle |
| I know… | How to set up and solve a trigonometric equation to find a missing side |
| I know… | The exact values of Sinθ, Cosθ and Tanθ for 0, 30, 45, 60 and 90 degrees. |
| I know… | How to find angles of elevation and depression |

## Link it!

| Backward | Forward |
|---|---|
| Identify types of angle<br>Simplify Surds<br>Calculate with Powers and Roots | Geometric Proof<br>Forming and Solving equations<br>Circle Theorems |

## Prove it!

Does 2, 3, 6 give a right-angled triangle?
Justify when to use Pythagoras' Theorem and when to use trigonometry.

## Say it!

| Vocabulary | Definition |
|---|---|
| Pythagoras' Theorem | A formula that says, in a right angled triangle, the sum of the area of the squares produced from the two shorter sides will equal the area of the square produced from the hypotenuse.<br>$$a^2 + b^2 = c^2$$ |
| Hypotenuse | The longest side in a right angled triangle, it is always opposite the right angle. |
| Opposite | The side opposite a given angle in a right angled triangle. |
| Adjacent | The side next to a given angle in a right angled triangle. |
| Sin θ | The value found when dividing the length of the opposite side by the length of the hypotenuse. |
| Cos θ | The value found when dividing the length of the adjacent side by the length of the hypotenuse. |
| Tan θ | The value found when dividing the length of the opposite side, by the length of the adjacent side. |
| Depression | The angle produced below the horizontal |
| Elevation | The angle produced above the horizontal. |