

# Numbers & Thinking - Mastermind 1 - Unit 4

## Sine and Cosine Rules

 **Sessions:** 6 sessions    **Subject:** Numbers & Thinking

### TOPICS

- Non-right triangles
- Find sides or angles

### KNOWLEDGE

- Sine rule links sides and opposite angles.
- Cosine rule generalises Pythagoras with angle: e.g.,  $3^2 + 4^2 = 5^2$ .
- Choose rule based on given data.

### SKILLS

- Label triangle and pick rule.
- Solve for missing side.
- Check answer size reasonable.

## INCLUSION (DIFFERENTIATION)

- Stretch: find area using  $\frac{1}{2}ab \sin C$ .
- Support: recap Pythagoras compare.

## KEYWORDS

sine rule, cosine rule, triangle

## TEACHING IDEAS

Write formula then plug numbers.  
Estimate if side should be longest.  
Draw sketch to keep track.  
Make two card strips with a split pin to form an angle; measure with a protractor..  
Draw shapes on squared paper and work out perimeter and area..

## BOOK RESOURCES

CGP GCSE Maths Higher - Section 6: Pythagoras and Trigonometry - Common Trig Values and the Sine Rule (Page 49) / The Cosine Rule Area of a Triangle (Page 50)