Construction — triangles from sides, bisecting lines and angles

MODULE 6 · 2D AND 3D SHAPE, ANGLES, SYMMETRY SHAPE & SPACE

HOW TO ANSWER TODAY

- **Name a 2D shape.** Count sides, check which are equal, count right angles, check parallel pairs. Then name it.
  4 equal sides, 0 right angles → rhombus · 4 sides, 1 pair parallel → trapezium
- **Triangle facts.** Equilateral = all 3 sides equal. Isosceles = 2 equal. Scalene = all different. A triangle works only if the two shorter sides ADD UP TO MORE than the longest.
  5, 5, 7 → isosceles · 2, 3, 9 → impossible (2 + 3 = 5 < 9)

STRETCH PROBLEMS

1. Cian is painting shapes onto a banner for the GAA county finals day. His teacher asks him to add a shape with **6** equal sides and **6** equal angles in the centre. Which 2D shape should Cian paint?
   > Which 2D shape has these properties: 6 equal sides and 6 equal angles?

2. Tadhg is painting a banner for the GAA finals day at the local pitch. The banner has **4** sides, with **1** pair of parallel sides and the other **2** sides equal in length. Which 2D shape is the banner?

3. Cian is drawing a treasure hunt map of the school yard and marks a corner with an angle of **78°** between two paths. He bisects the angle to draw a new path exactly down the middle. What is the size of each half angle?
   > An angle of 78° is bisected (split exactly in half). What is each half angle?

4. Méabh is cutting card shapes for the 5th class corridor display. Her teacher asks her to find the shape with **3** sides and exactly **2** equal sides for the tessellation pattern. Which 2D shape should she cut?
   > Which 2D shape has these properties: 3 sides with exactly 2 equal sides?

5. Eoin is sketching a flowerbed for the 5th class school garden. He wants the flowerbed to have **4** sides with exactly **1** pair of parallel sides. Which 2D shape should he draw?
   > Which 2D shape has these properties: 4 sides with exactly 1 pair of parallel sides?