Constructing triangles from given measurements

MODULE 7 · 2D SHAPE, 3D SHAPE AND ANGLES · SHAPE & SPACE

HOW TO ANSWER TODAY

- **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. Aoife is decorating the class door for Seachtain na Gaeilge. She cuts a paper triangle with sides **3 cm**, **10 cm** and **11 cm** to pin on the door. What kind of triangle is it (equilateral, isosceles, right-angled or scalene)?

2. Aoife is designing a mosaic for the school library wall. One triangular tile has sides of **3 cm**, **7 cm** and **9 cm**. What kind of triangle is it: equilateral, isosceles, right-angled or scalene?

3. 6th class are decorating the classroom door for Seachtain na Gaeilge. Saoirse cuts three strips of coloured card measuring **3 cm**, **11 cm** and **14 cm** to make a triangular border. Can a triangle be constructed with these side lengths? Answer yes or no, and give a reason.

4. For Engineers Week, 6th class are building small triangle frames from wooden sticks. Tadhg has three sticks measuring **3 cm**, **7 cm** and **11 cm**. Can a triangle be constructed with these sides? Answer yes or no, and give a reason.

5. For STEM week Saoirse is building a model bridge. She has three rods of **4 cm**, **6 cm** and **9 cm** to form one triangular support. Can a triangle be constructed with sides **4 cm**, **6 cm** and **9 cm**? Answer yes or no, and give a reason.