

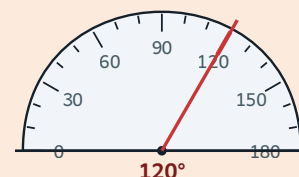
Drawing angles with a protractor

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

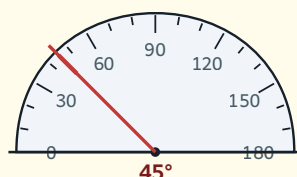
To draw a given angle: draw the **base line** first, mark the **vertex**, place the protractor's centre on the vertex with the 0° line along the base, then **mark a dot** at the required degree and join from the vertex.

→ **Drawing 60°** : count 60° from the 0° line, mark a dot, join from the vertex through the dot.

→ **Drawing 135° (obtuse)**: count past 90° to 135° ; the line slopes back over the vertex.



DRAWING A 45° ANGLE



- 1 Draw a straight base line and mark a **vertex point** on it.
- 2 Place the protractor so its centre cross is on the vertex and the 0° line runs along the base line.
- 3 Find **45°** on the scale that starts at 0° and make a small mark.
- 4 Lift the protractor and join the vertex to the mark with a ruler — that's your **45° angle**.

HOW TO ANSWER TODAY

- **Classify an angle.** Acute $< 90^\circ$ · right = 90° · obtuse 90° – 180° · straight = 180° · reflex $> 180^\circ$.
 $75^\circ \rightarrow$ acute · $120^\circ \rightarrow$ obtuse · $220^\circ \rightarrow$ reflex
- **Read a protractor.** Protractors have two scales. Pick the one that reads 0° on the side the angle's first arm sits on.
 First arm on outer $0^\circ \rightarrow$ use the outer scale to read the second arm

WARM-UP

1



Mr Ó Briain is marking out a mini athletics track in the yard for 5th class sports day. He draws two chalk lines from the starting cone, and a protractor shows the lines meet at an angle of **30°** . Is this angle acute, right, obtuse, straight or reflex?

- 2 Saoirse is measuring an angle on a Seachtain na Gaeilge banner she is pinning to the class door. The protractor's two scales show **121°** and **59°** where the banner's corner sits. The angle clearly looks obtuse, so which reading is correct?

On a protractor, one scale reads 121° and the other scale reads 59° . Which reading is correct if the angle looks obtuse?