

Constructing circles and exploring their parts

MODULE 7 · 2D SHAPE, 3D SHAPE AND ANGLES REVIEW

A circle is drawn with a compass set to the **radius**. Key parts: centre, radius, diameter ($= 2 \times$ radius) and circumference.

→ Diameter $= 2 \times$ radius; a 3 cm radius gives a **6 cm** diameter.

HOW TO ANSWER TODAY

- **Radius** ↔ **diameter**. Diameter $= 2 \times$ radius. Radius $=$ diameter $\div 2$.

Radius 5 cm → diameter 10 cm · Diameter 12 cm → radius 6 cm

- **Compass drawing**. Set the compass opening to the radius. Hold the point still; sweep the pencil all the way round.

Circle, radius 3.5 cm → open compass to 3.5 cm, draw

WARM-UP

- 1 At granny's house for Sunday dinner, Oisín helps set the table by placing a round coaster under each glass. Each coaster is a circle with a radius of **5 cm**. What is the diameter of one coaster?

A circle has a radius of 5 cm. What is its diameter?

- 2 Niamh's 5th class is making round paper tickets for their class film afternoon. Each ticket needs to be a circle with radius **3 cm**. Use your compass to draw the circle, setting it against a ruler, planting the sharp point firmly and rotating fully without lifting.

Use your compass to draw a circle with radius 3 cm. Set the compass against a ruler, plant the sharp point firmly, and rotate fully without lifting.

PRACTICE

- 1 Niamh spots a round biscuit tin on the shelf at SuperValu. The lid has a radius of **3 cm** from the centre to the edge. What is the diameter of the lid?

A circle has a radius of 3 cm. What is its diameter?

- 2 At break time, Saoirse wants to draw a perfect circle on her copybook to plan how to arrange a packet of biscuits in a ring. She sets her compass to a radius of **6 cm**, checking the spread carefully against her ruler. Use your compass to draw the circle Saoirse needs.

Use your compass to draw a circle with radius 6 cm. Measure the compass spread against a ruler before you start — the half-centimetre tick matters.

CHALLENGE

- 1 Niamh is making a memory-match game with circular cards for her 5th class. Each card has a radius of **2.3 cm**. What is the diameter of each card?

A circle has a radius of 2.3 cm. What is its diameter?

- 2 Saoirse is planning the school garden on grid paper, with herbs planted in three rings around a central bird feeder. She needs to draw three concentric circles with radii **3 cm**, **5 cm** and **7 cm** to mark the planting positions. Mark the centre with a small cross first, then re-set the compass between each circle. Can you draw the three circles for her plan?