

The circle – centre, radius and diameter

WHAT THIS LESSON TEACHES

The centre is the exact middle of a circle, the same distance from every point on the edge. The radius is a straight line from the centre to the edge; the diameter goes straight across through the centre and is always twice the radius.

- The pin holding a clock's hands sits at the centre; a spoke to the rim is one radius.
- If the radius is 5 cm, the diameter straight across is 10 cm.

MODEL THIS ON THE BOARD

DIAMETER FROM RADIUS

- 1 The diameter passes through the centre, so it is two radius lengths.
- 2 One radius is 4 cm.
- 3 Double it: $4 + 4 = 8$.

DISCUSSION STARTER

REFLECT How many radii fit along one diameter, and why does that always work?

ANSWER KEY

Scaffold: visual check on the page

Q1: 14 cm

Q2: 18 cm

Q3: 11 cm

a) Always — The diameter is made of two radius lengths joined at the centre.

b) Always — A straight line across the widest part always goes through the middle.

c) Always — That equal distance is exactly what makes it the centre.

d) Never — The radius is only half the diameter, so it is always shorter.

EXTENSION SHEET · STRETCH ANSWERS

S1: diameter, 8 cm

S2: radius, 5 cm

S3: radius, 5 cm

S4: 9 cm; centre

S5: 10