

The circle: centre, radius and diameter

CURRICULUM ALIGNMENT

SHA.SHP.3a

investigate and analyse the properties of 3-D and 2-D shapes and identify classes of shapes based on these properties.

SHA.SHP.3b

represent shapes with drawings and models, and calculate dimensions of shapes.

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: 20 cm

Q4: 11 cm

Q5: 30 cm

Spot: The diameter goes all the way across through the centre, so it is **twice** the radius. Diameter = 2×6 cm = **12 cm**.

EXTENSION SHEET · STRETCH ANSWERS

S1: diameter, 8 cm

S2: radius, 5 cm

S3: radius, 5 cm

S4: 9 cm; centre

S5: 10