

Circumference: measuring round things and meeting π

CURRICULUM ALIGNMENT

MEA.MSR.4b find, interpret and deduce measures experimentally with increasing precision.

ALG.PRR.4a identify, explain and apply generalisations, including properties of operations, mathematical models and patterns.

WHAT THIS LESSON TEACHES

The circumference is the distance all the way around the outside of a circle. It is always about 3.14 times the diameter; that unchanging ratio is called pi.

→ A bicycle wheel with a 65 cm diameter has a circumference of about 204 cm.

→ $31.4 \div 10 = 3.14$ and $12.56 \div 4 = 3.14$

MODEL THIS ON THE BOARD

CIRCUMFERENCE OF A BUILDING TIN

- 1 The tin measures **10** cm straight across the middle (its diameter).
- 2 Multiply diameter by pi: $10 \times 3.14 = \mathbf{31.4}$.
- 3 The string that wraps once around the tin is about **31.4** cm long.

ANSWER KEY

Scaffold: visual check on the page

Q1: 25.12 cm

Q2: 21.98 cm

Q3: 6 cm

Q4: 204.1 cm

a) **Always** : Pi is the constant ratio for every circle.

b) **Never** : Pi stays the same no matter the size of the circle.

c) **Always** : This ratio is always pi for any circle.

d) **Never** : The circumference would be about 31.4 cm.

EXTENSION SHEET · STRETCH ANSWERS

S1: 22.0 cm

S2: 3.15 ($\approx \pi$)

S3: 22.0 cm

S4: 31.4 cm

S5: 25.1 cm