

Module assessment – design a class garden bed

MODEL THIS ON THE BOARD

DESIGNING A 6 M × 2 M RECTANGULAR GARDEN BED

- ① **Perimeter** (length of edging needed): $6 + 2 + 6 + 2 = 16 \text{ m}$.
- ② **Area** (surface to plant): $6 \times 2 = 12 \text{ m}^2$.
- ③ **Soil volume** for a **30 cm** ($= 0.3 \text{ m}$) deep bed: $12 \times 0.3 = 3.6 \text{ m}^3$.
- ④ If a bag of soil holds **40 litres** (0.04 m^3), the bed needs $3.6 \div 0.04 = 90 \text{ bags}$.

DISCUSSION STARTER

REFLECT

When you estimated before measuring, were you usually close? What helped your estimates?

ANSWER KEY

a) Pupil-driven; check arithmetic against the chosen dimensions.

Q1: 106 m

Q2: 119 m²

a) Never — 1 m = 100 cm exactly.

b) Always — 1 ml of water has a mass of about 1 g, so 1 l $\approx$ 1 kg.

c) Never — Perimeter is in cm, m... Area is in cm², m².

d) Never — 1×12 and 3×4 both have area 12; perimeters are 26 and 14.

e) Never — Doubling the side quadruples the area ($2^2 = 4$).

f) Always — Standard SI conversion.

EXTENSION SHEET · STRETCH ANSWERS

S1: 3.29 km

S2: 34.71 m²

S3: 22.5 cm²

S4: 25.2 m

S5: 21.2 m