

Measures problem-solving and review

CURRICULUM ALIGNMENT

MEA.MSR.4a

determine and calculate units of measurement in fractional and/or decimal form to solve practical problems.

INTERACTIVES [Shape Measurer · explore](#)

WHAT THIS LESSON TEACHES

A problem that needs more than one kind of measure at once, for example the length of a frame, the area of glass and the capacity of water in the same container.

→ Designing a fish tank needs perimeter (frame), area (glass) and capacity (litres of water).

→ A 50 cm by 30 cm by 40 cm tank holds 60000 cm cubed which is 60 litres.

MODEL THIS ON THE BOARD

WORK OUT THREE MEASURES FOR THE CLASSROOM TANK

- 1 Find the perimeter of the base using length 50 cm and width 30 cm.
- 2 Find the area of the four sides using height 40 cm.
- 3 Convert the volume 60000 cm cubed to litres by dividing by 1000.

DISCUSSION STARTER

REFLECT

When you estimate before measuring, are you usually close? What helps your estimate?

ANSWER KEY

a) 31

b) 100 cm

c) 3,000 cm³

Q1: 160 cm

Q2: 4000 cm²Q3: 60,000 cm³

Q4: 3 litres

Q5: 8,000 cm³

a) **Always** : Multiply length × width × height for cm³, then divide by 1000 for litres.

b) **Always** : You multiply edge lengths to get the area of each face, then add the faces.

c) **Sometimes** : True for some full design tasks. False when you only find the volume of water.

d) **Never** : The frame is about edge lengths; add up the edges, no weighing needed.

EXTENSION SHEET · STRETCH ANSWERS

S1: 21.2 m

S2: 156 m

S3: 84 m

S4: 119 m²S5: 189 m²