



### Activity description

Students find the volume of a variety of cuboids in real life contexts.

### Suitability and Time

Levels 1 and 2 (Foundation and Intermediate/Higher)  
1–2 hours

### Resources

Student information sheet, student worksheet  
*Optional:* slideshow

### Equipment

*Optional:* calculators

### Key mathematical language

Volume, dimensions, length, width, height, depth, units

### Notes on the activities

Information sheets show students how to find the volume of a cuboid, and include examples set in real life contexts. The slideshow includes the same examples – it can be used as an introduction to volume calculations or for revision at the end of the course.

The information sheets include two formulae:

$$\text{Volume} = \text{length} \times \text{width} \times \text{height}$$

and  $\text{Volume} = \text{area of cross-section} \times \text{length}$

If you prefer to use just one of these, the other could be removed.

Some examples require the conversion of units (including the use of litres).  
With less able students you may wish to simplify these examples.

### During the activity

Encourage students to follow the layout of calculations given in the examples on the student sheets and slideshow. You could decide to allow the use of a calculator, or ask students to work without a calculator to include some number practice.

### Points for discussion

Discuss the need to ensure that dimensions are all in the same units before multiplying them to find the volume.

Discuss the units of volume  $\text{mm}^3$ ,  $\text{cm}^3$  and  $\text{m}^3$ .

## Extensions

Use volume in a practical and relevant way, using cuboids and other shaped containers found in school/college or at home.

- Estimate the volume of a variety of boxes (or the room), then measure their dimensions and work it out.
- Estimate the quantity of liquid in a variety of bottles (such as squash or shampoo) with the contents removed from the labels.
- Estimate the amount of water in a variety of containers, then measure it.
- Share the water from a 1 litre or 2 litre bottle equally between a number of identical cups, measure how much is in each cup, and check by calculation.

## Answers

1  $45 \text{ m}^3$

2  $1000 \text{ mm}^3$

3  $2400 \text{ cm}^3$

4  $1.8 \text{ m}^3$

5  $480 \text{ cm}^3$

6  $1.2 \text{ m}^3$

7  $16.8 \text{ m}^3$

8  $8000 \text{ mm}^3$

9  $1053 \text{ cm}^3$

10 500 000 litres

11a  $800 \text{ cm}^3$ ; b 5 blocks

12  $7.2 \text{ m}^3$

13 2000 litres

14  $18 \text{ m}^3$