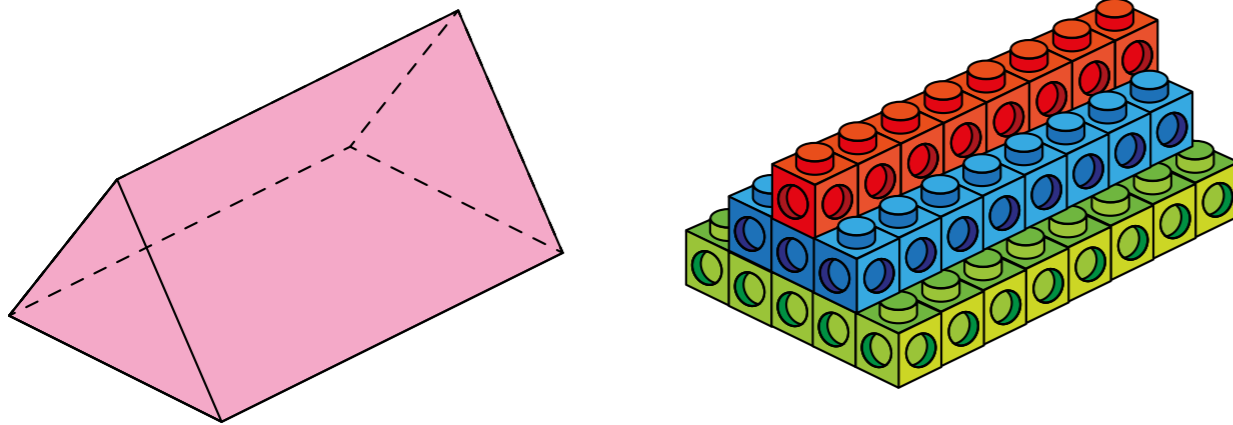# Estimate volume

1 Rosie is using cubes to estimate the volume of a triangular prism.


a) Why do you think Rosie stacked her cubes like this?

b) The volume of each cube is 1 cm³

Work out an estimate for the volume of the triangular prism.

Show your workings.

$$40 + 24 + 8 = 72$$

volume ≈ 72 cm³

c) Why is the answer only an estimate?

It isn't exactly the same shape and size as the triangular prism.

d) Do you think the estimate is more or less than the actual volume?

2 Here are some 3D shapes.
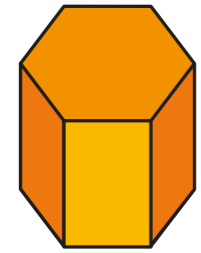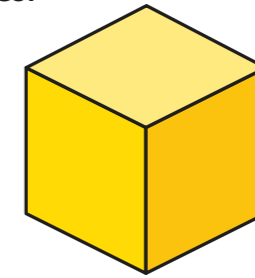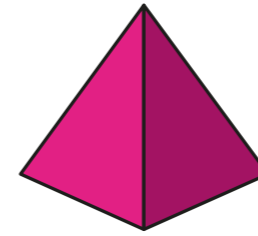
Rosie uses cubes to estimate the volume of each shape.

Each cube has a volume of 1 cm³

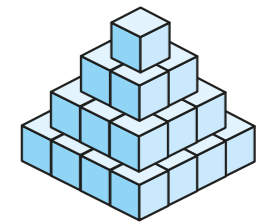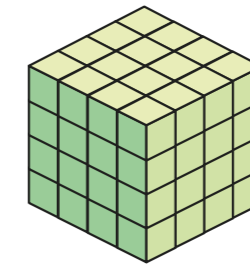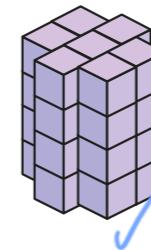**a)** Tick the representation that will give Rosie the best estimate for the volume of the cube.
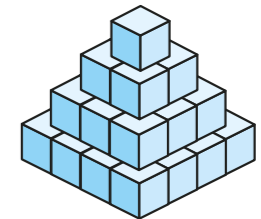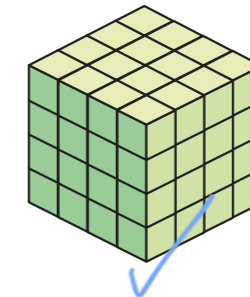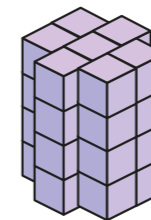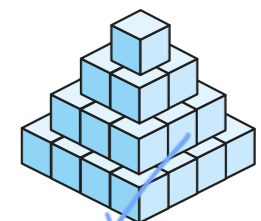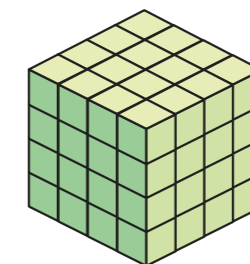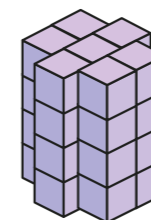

Estimate the volume of the cube. 64 cm³

b) Tick the representation that will give Rosie the best estimate for the volume of the hexagonal prism.

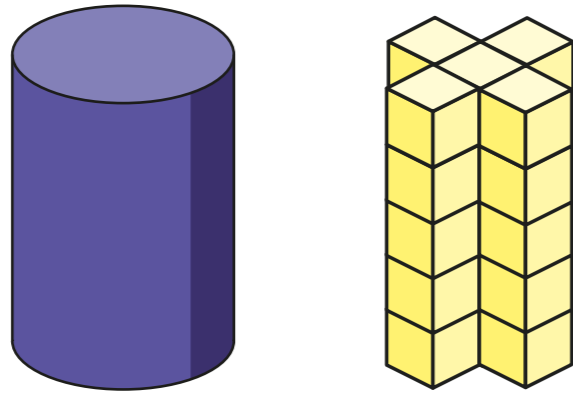
Estimate the volume of the hexagonal prism. 28 cm³

c) Tick the representation that will give Rosie the best estimate for the volume of the square based pyramid.

Estimate the volume of the square based pyramid. 30 cm³

3 Jack has used cubes to estimate the volume of a cylinder.

Each cube has a volume of 1 cm³

a) Estimate the volume of the cylinder.

volume ≈ $\boxed{25}$ cm³

b) Will the actual volume be greater than or less than your estimate?

greater

Explain your answer.

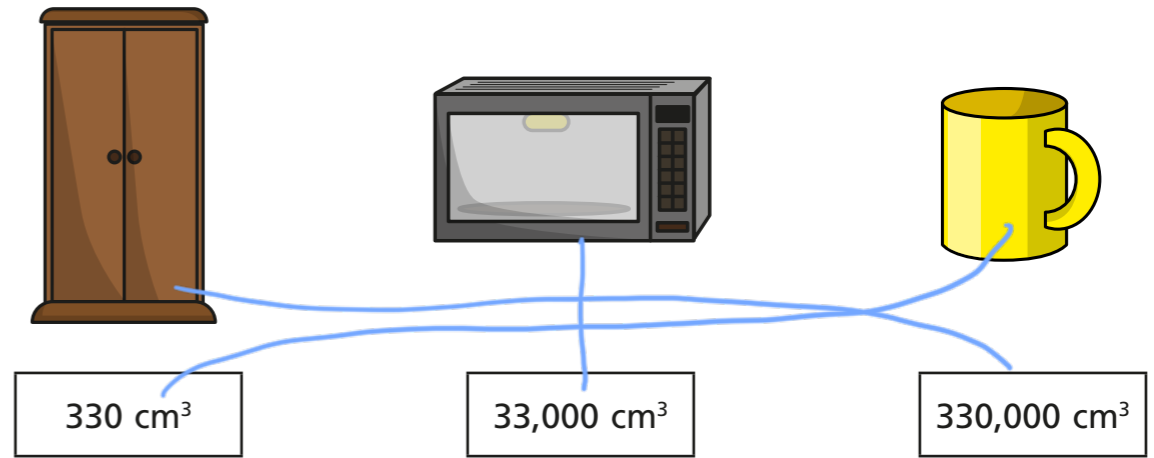_The cubes wouldn't fill the entire space inside the cylinder._

4 Use cubes to estimate the volume of objects in your classroom.

Record some of your answers here. _Various answers._

_____ ≈ ☐ cubes   _____ ≈ ☐ cubes

_____ ≈ ☐ cubes   _____ ≈ ☐ cubes

Compare answers with a partner.

5 Match the object to its approximate volume.
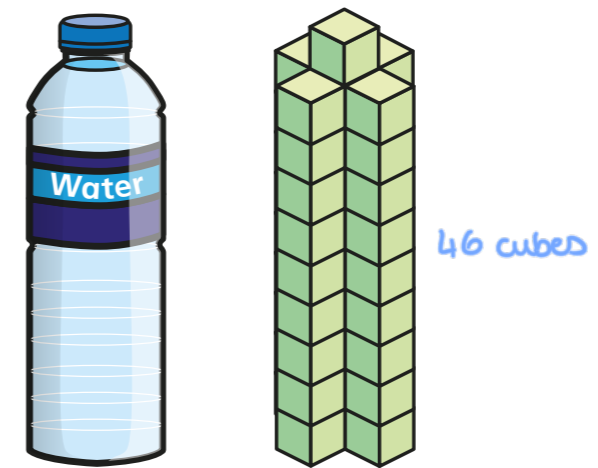
330 cm³   33,000 cm³   330,000 cm³

How did you decide?

6 A shopkeeper is estimating the volume of a fridge.

The fridge holds 40 bottles of water.

The shopkeeper uses cubes to estimate the volume of one bottle of water.

Each cube has a volume of 10 cm³

Water

46 cubes

Estimate the volume of the fridge.

460 cm³ × 40 = 18,400 cm³

volume ≈ $\boxed{18,400}$ cm³

Does this mean that all fridges have the same volume?