

# estimating volume

## discover

Estimate the volume of each shape with cubes.

This is my estimate for the volume of one of the shapes.



Jamilla

Miss Hall

1 a) Which 3D shape did Jamilla estimate the volume of?

What is the estimate of the volume of the shape?

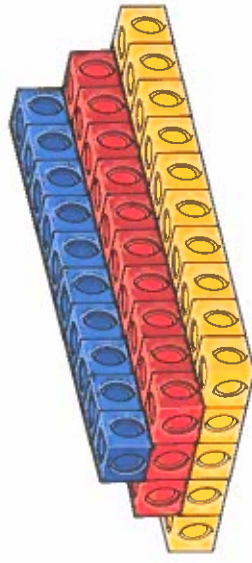
b) Why is it only an estimate?

## Share

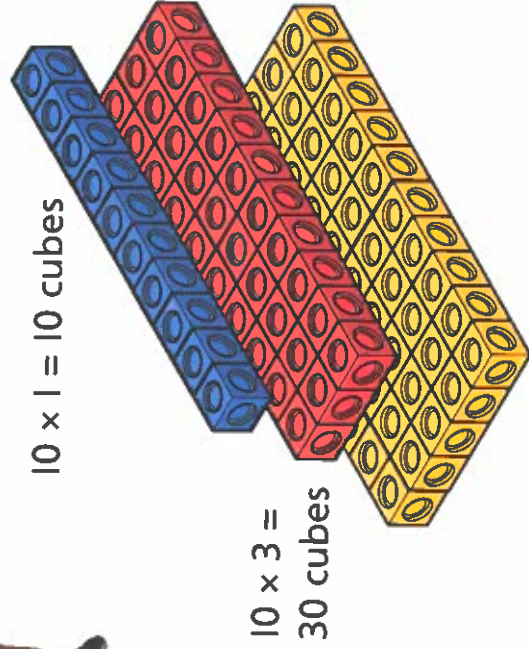
a) Jamilla estimated the volume of the triangular prism by making a shape out of cubes that could fit inside it.



I worked out the volume of each layer and added them together.



$$10 \times 1 = 10 \text{ cubes}$$



$$10 \times 3 = 30 \text{ cubes}$$

$$10 \times 5 = 50 \text{ cubes}$$

$$50 + 30 + 10 = 90 \text{ unit cubes}$$



$$10 \times 9 = 90 \text{ unit cubes}$$

An estimate of the volume of the triangular prism is 90 unit cubes.

I tried another way. I worked out the volume in each 'slice' and multiplied.

b) The volume is an estimate because it is not exact, as there would still be spaces left in the triangular prism if it were filled with the cubes.

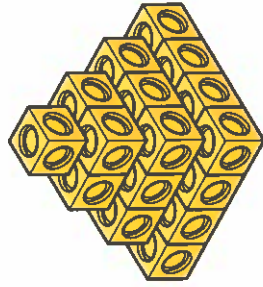
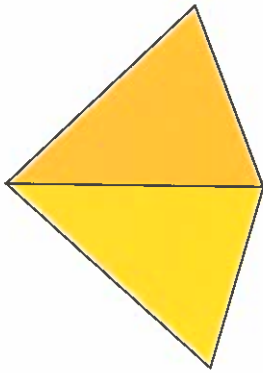
The volume of the 3D shape is likely to be a bit more than 90 cubes.



## Think together

1 Use the models to estimate the volume of each of the 3D shapes.

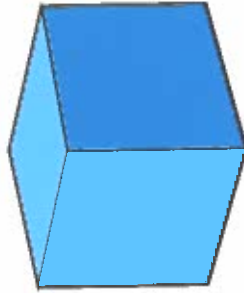
a)



b)



c)



Which do you think is the most accurate estimate of the volume? Explain your answer.

2 Pick an object in your classroom.

How can you use cubes to estimate the volume of the object?

3 a) Discuss how to compare the volume of each ball.

CHALLENGE



I will make a model of each shape with cubes.

b)



Reena

The football is about three times as tall as the tennis ball, so I think the volume will be three times greater, too.



Do you agree with Reena?

I will imagine each ball is a cube.

