# Homework/Extension
# Step 3: Estimate Volume

## National Curriculum Objectives:

**Mathematics Year 5: (5N6) Solve number problems and practical problems that involve all of the above**
**Mathematics Year 5: (5M8) Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]**

## Differentiation:

**Questions 1, 4 and 7 (Varied Fluency)**
**Developing Estimate the number of cubes to complete each cube with only external cubes missing.**
**Expected Estimate the number of cubes to complete cubes and cuboids with only external cubes missing.**
**Greater Depth Estimate the number of cubes to complete the model when the missing cubes are central.**

**Questions 2, 5 and 8 (Varied Fluency)**
**Developing Using the volume of one object to calculate the volume required of one other object (using approximately halves only).**
**Expected Using the volume of one object to calculate the volume of other objects smaller or larger than the size of a given volume (using approximately quarters or halves).**
**Greater Depth Using the volume of one object to calculate the volume of other objects smaller or larger than the given volume (using various fractions).**

**Questions 3, 6 and 9 (Reasoning/Problem Solving)**
**Developing Explain which statement is correct when estimating the number of objects to fill a box when the box is approximately double the size of the given object.**
**Expected Explain which statement is correct when estimating the number of objects to fill a box when the box is approximately eight times the size of the given object.**
**Greater Depth Explain which statement is correct when estimating the number of objects to fill a box when the box is multiple times the size of the given object, and includes space to add a second layer of objects.**

## More Year 5 Volume resources.

## Did you like this resource? Don't forget to review it on our website.

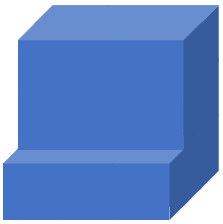
# Estimate Volume

**1. Aliya is trying to create cubes. Estimate the number of cubes to complete each model.**

1cm³

a.

b.



c.

D

VF
HW/Ext

**2. The children have mixed up the objects they were estimating using cm³. Match the children to the object you think they were estimating.**

Adam

My object is between 700 and 800cm³

Tara

My object was half the volume of the can.

glue stick

carton of juice

A can of coke is 350cm³

microwave

D

VF
HW/Ext

**3. Sasha and Abdul are packing presents to send to their family abroad.**

Sasha

We can fit approximately 4 presents in this box.

We can fit approximately 2 presents in this box.

Abdul

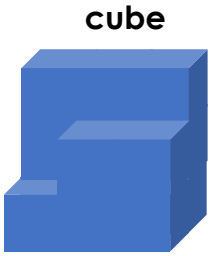
Who do you agree with? Explain your answer.

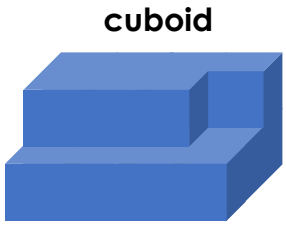
D

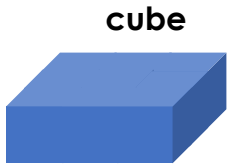
RPS
HW/Ext

# Estimate Volume

**4. Nadia is trying to create cubes and cuboids. Estimate the number of cubes to complete each model.**


a.

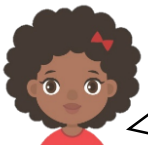
b.

c.

E

VF
HW/Ext

**5. The children have mixed up the objects they were estimating using cm³. Match the children to the object you think they were estimating.**



Lola

My object is between 300 and 400cm³

Seth

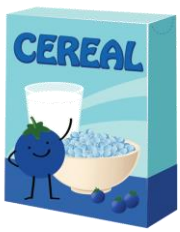
My object is approximately 40,000cm³

Lizzie

My object is half the volume of Seth's.

can

briefcase




A cereal box is 6,000cm³

microwave

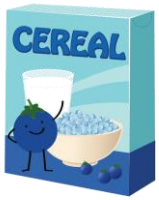
E

VF
HW/Ext

**6. Alisha and Alek are packing breakfast cereal into boxes to send to supermarkets.**

Alisha

We will need 8 cereal boxes to fill the box.




We will need 4 cereal boxes to fill the box.

Alek

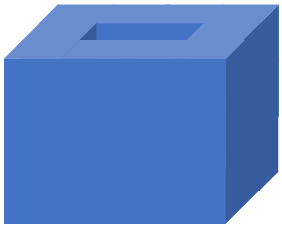
**Who do you agree with? Explain your answer.**

E

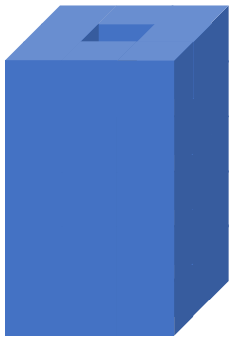
RPS
HW/Ext

# Estimate Volume

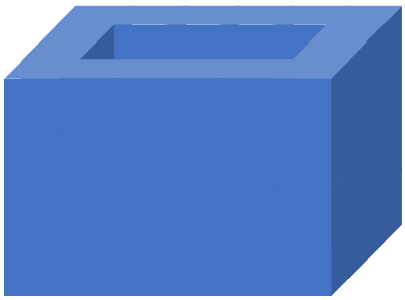
**7. Nadia is trying to create cubes and cuboids with a hollow centre. Estimate the number of cubes to fill the centre and complete the model.**

a.



b.



c.

GD

VF
HW/Ext

**8. The children have mixed up the objects they were estimating using cm³. Match the children to the object you think they were estimating.**

Ned

My object is double the size of a cereal box.

Steph

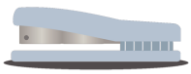
My object is between 5,000 and 6,000cm³.

Max

My object is a third of the volume of the cereal box.

pencil case

briefcase



A stapler is 150cm³


cereal box

Rubik's cube

GD

VF
HW/Ext

**9. Tom and Jade are packing tins into hampers for the elderly.**

Tom

We will need 30 tins to fill the hamper.

We will need 15 tins to fill the hamper.

Jade

**Who do you agree with? Explain your answer.**

GD

RPS
HW/Ext

# Homework/Extension
# Estimate Volume

## Developing

1. a – 4 cubes; b – 3 cubes; c – 6 cubes
2. Adam's object is the orange juice and Tara's object is the glue stick.
3. Abdul is correct because the height of the present is approximately the same as the box and the width of the present is approximately half the size of the box.

## Expected

4. a – 13 cubes; b – 5 cubes (if not creating the shape any higher); c – 18 cubes
5. Lola's object is the can; Seth's object is the microwave; Lizzie's object is the briefcase.
6. Alisha is correct because the height of the cereal box is the same as the packing box and approximately 8 cereal boxes will fit in the box.

## Greater Depth

7. a – 6 cubes; b – 5 cubes; c – 32 cubes
8. Ned's object is the briefcase; Steph's object is the cereal box; Max's object is the pencil case.
9. Tom is correct because you can add a second layer of cans as the height of the tin is approximately half the height of the box.