Homework/Extension
Step 2: Compare Volume

National Curriculum Objectives:

Mathematics Year 5: (5M8) Estimate volume [for example, using 1 cm3 blocks to build cuboids (including cubes)] and capacity [for example, using water]
Mathematics Year 5: (5M9a) Use all four operations to solve problems involving measure

Differentiation:

Questions 1, 4 and 7 (Varied Fluency)
Developing Calculate the total volume of the shapes and identify which shapes are greater than the given number. Using cubes and cuboids with volumes up to 12cm^3.
Expected Calculate the total volume of the shapes and identify which shapes are greater than the given number. Using cubes, cuboids and compound shapes with a depth of 1cm^3 up to 24cm^3.
Greater Depth Calculate the total volume of the shapes and identify which shapes are smaller than the given number. Using cubes, cuboids and compound shapes with a depth of up to 3cm^3, and up to 24cm^3 in total volume.

Questions 2, 5 and 8 (Varied Fluency)
Developing Find the total volume of both shapes and identify the correct sign to make the statement correct. Using cubes and cuboids with volumes up to 12cm^3.
Expected Find the total volume of both shapes and identify the correct sign to make the statement correct. Using cubes, cuboids and compound shapes with a depth of 1cm^3 up to 24cm^3.
Greater Depth Find the total volume of each group of shapes and identify the correct sign to make the statement correct. Using cubes, cuboids and compound shapes with a depth of up to 3cm^3, and up to 24cm^3 in total volume.

Questions 3, 6 and 9 (Reasoning and Problem Solving)
Developing Use the clues to determine the possible volume within a shape. Put the values in ascending order and explain your reasoning. Using cubes and cuboids with volumes up to 12cm^3.
Expected Use the clues to determine the possible volume within a shape. Put the values in ascending order and explain your reasoning. Using cubes, cuboids and compound shapes with a depth of 1cm^3 up to 24cm^3.
Greater Depth Use the clues to determine the possible volume within a shape. Put the values in descending order and explain your reasoning. Using cubes, cuboids and compound shapes, with a depth of up to 3cm^3, and up to 24cm^3 in total volume.

More Year 5 Volume resources.

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

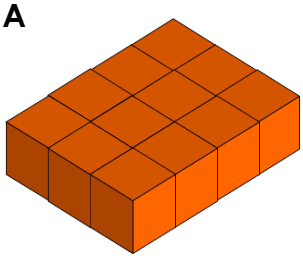
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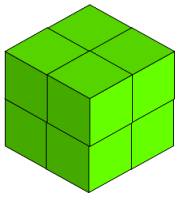
Compare Volume

1. These shapes are all made from 1cm³ cubes. Which shapes have a greater volume than 9cm³?

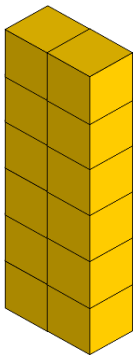
A



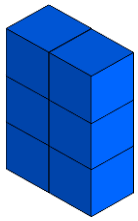
B



C



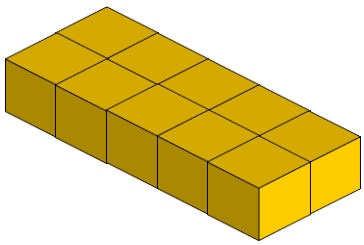
D



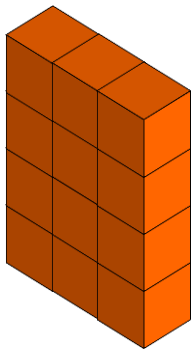
D

VF
HW/Ext

2. These shapes are all made from 1cm³ cubes. Find the total volume of each shape and put the correct sign (<, >, =) in the box to make the statement correct.







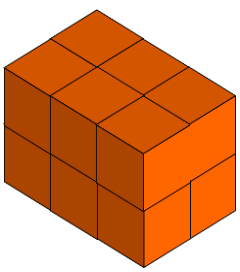
D

VF
HW/Ext

3. Jade and Chris both make shapes using 1cm³ cubes. Jasper has at least 2 more cubes than Chris but fewer cubes than Jade. How many cubes could Jasper have? Put the characters' volumes in ascending order and explain your reasoning.

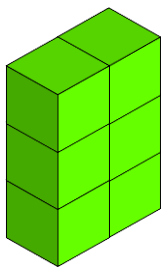


Jade





Chris



D

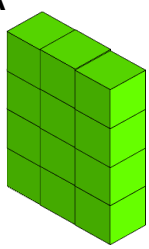
RPS
HW/Ext

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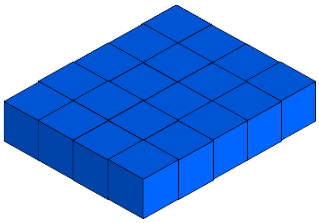
Compare Volume

4. These shapes are all made from 1cm^3 cubes. Which shapes have a greater volume than 15cm^3?

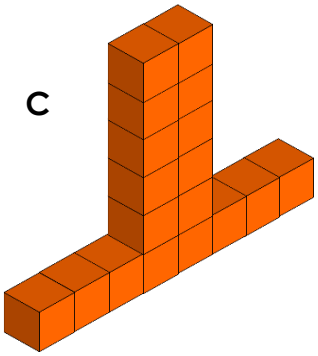
A



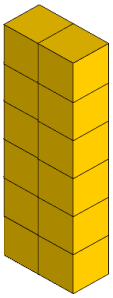
B



C



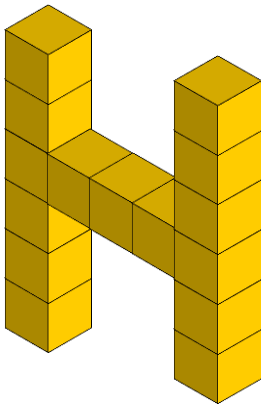
D



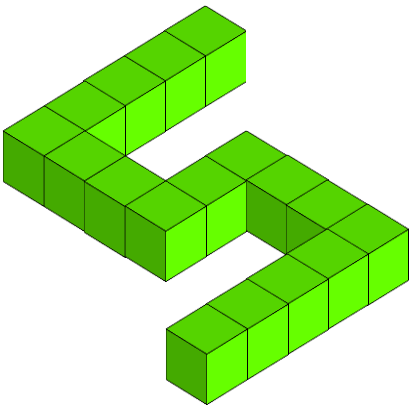
E

VF
HW/Ext

5. These shapes are all made from 1cm^3 cubes. Find the total volume of each shape and put the correct sign (<, >, =) in the box to make the statement correct.







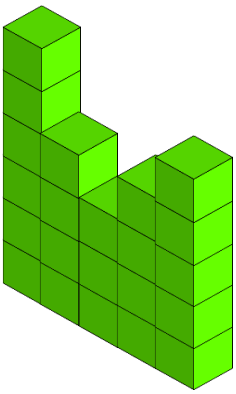
E

VF
HW/Ext

6. Helen and Qasim both make shapes using 1cm^3 cubes. Evie has at least 3 more cubes than Helen but fewer cubes than Qasim. How many cubes could Evie have? Put the characters' volumes in ascending order and explain your reasoning.

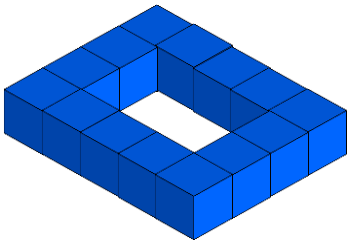


Qasim





Helen



E

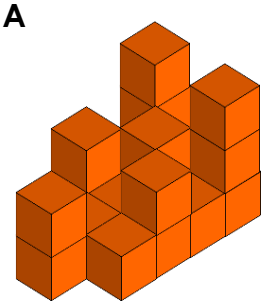
RPS
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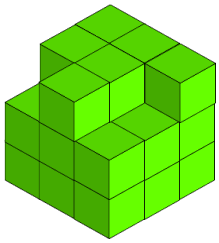
Compare Volume

7. These shapes are all made from 1cm^3 cubes. Which shapes have a smaller volume than 24cm^3?

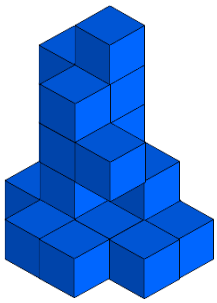
A



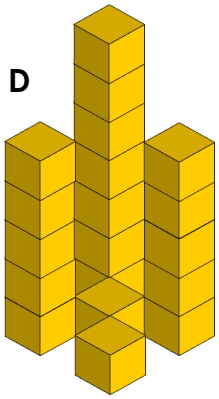
B



C



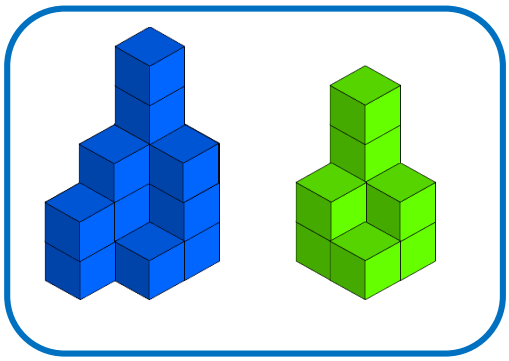
D

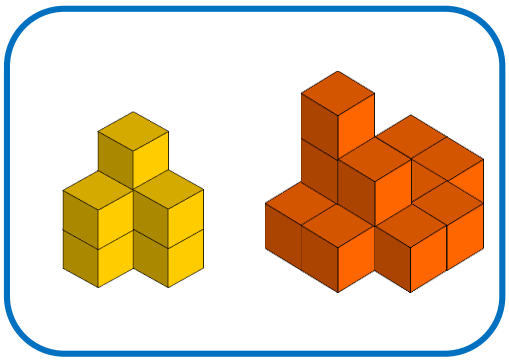


GD

VF
HW/Ext

8. These shapes are all made from 1cm^3 cubes. Find the total volume of each group and put the correct sign (<, >, =) in the box to make the statement correct.





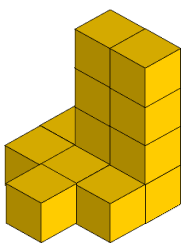
GD

VF
HW/Ext

9. Mark, Lucy and Charlie make shapes using 1cm^3 cubes. Amelia has no more than Lucy but has more cubes than both Mark and Charlie. How many cubes could Amelia have? Put the characters' volumes in descending order and explain your reasoning.

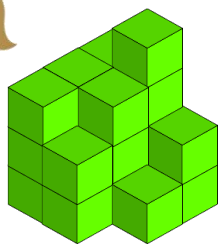


Mark



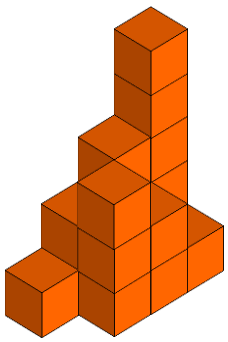


Lucy





Charlie



GD

RPS
HW/Ext

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Homework/Extension
Compare Volume

Developing

1. A and C
2. <
3. Jasper could have 8 to 11 cubes because Chris has 6 and Jade has 12. Chris (6cm^3), Jasper (8cm^3 to 11cm^3), Jade (12cm^3).

Expected

4. B and C
5. <
6. Evie could have 17 to 21 cubes because Helen has 14 and Qasim has 22. Helen (14 cm^3), Evie (17 cm^3 to 21cm^3), Qasim (22cm^3).

Greater Depth

7. A, C and D
8. >
9. Amelia could have 18 to 21 cubes. Lucy (21cm^3), Amelia (18cm^3 to 21cm^3), Charlie, (17cm^3), Mark (13cm^3).

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