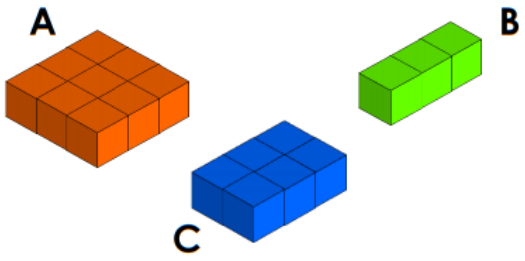
Fluency

Reasoning and Problem solving

Compare Volume

1a. Here are 3 shapes made of 1cm³ cubes.

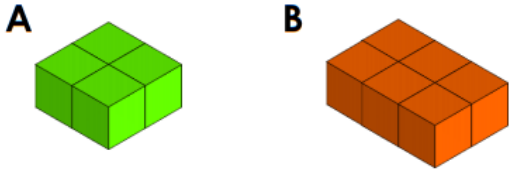


Pair these volumes with the shapes.

3cm³	6cm³	9cm³

D VF

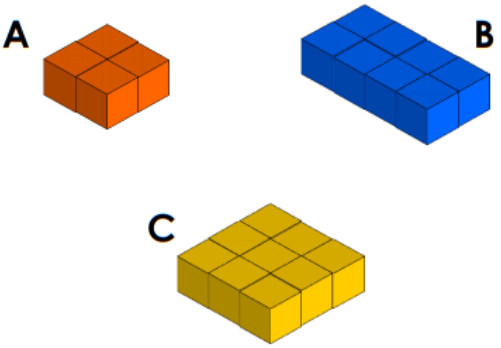
2a. Which shape below has the largest volume?



Write a sentence to compare the volumes of A and B.

D VF

3a. Put these shapes in ascending order according to their volume.



D VF

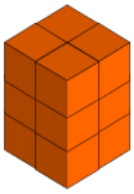
Compare Volume

1b. Tony can use up to twelve 1cm³ cubes to make a shape. This is the side view of the shape he makes:

Give one possible volume Tony's shape could have.
Explain your answer.

D R

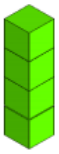
2b. Mia makes this shape from 1cm³ cubes:



Harry makes one shape with a volume of 6cm³ and another shape with a volume of 2cm³. He combines them.
Investigate which child now has a shape with the largest volume.

D PS

3b. Tyler makes this shape:



He makes a new shape with this base:

Can his new shape ever have a larger volume than his first shape? Convince me.

D R

Fluency

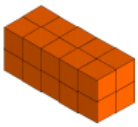
Reasoning and Problem solving

Compare Volume

4a. Here are 4 shapes made of 1cm³ cubes.

A 

 B

C 

 D

Pair these volumes with the shapes.

8cm³	12cm³	15cm³	20cm³

VF

5a. Which shape below has the smallest volume?

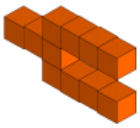
A 

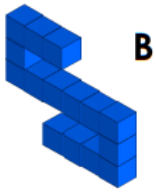
B 

Write a sentence to compare the volumes of A and B.

VF

6a. Put these shapes in descending order according to their volume.

A 

 B

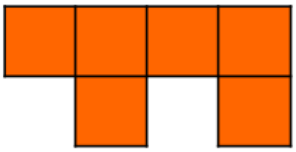
C 

 D

VF

Compare Volume

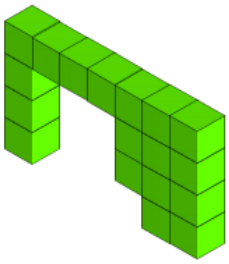
4b. Thierry can use up to eighteen 1cm³ cubes to make a shape. This is the side view of the shape she makes:



Give one possible volume Thierry's shape could have.
Explain your answer.

R

5b. Jay makes this shape from 1cm³ cubes:

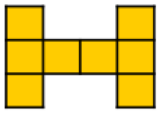


Noah makes one shape with a volume of 14cm³ and another shape with a volume of 7cm³. He combines them.
Investigate which child now has a shape with the smallest volume.

PS

6b. Fleur makes this shape:

She makes a new shape with this base:



Can her new shape ever have a larger volume than her first shape? Convince me.

R

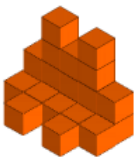
Fluency

Reasoning and Problem solving

Compare Volume

7a. Here are 4 shapes made of 1cm³ cubes.

A 

B 

C 

D 

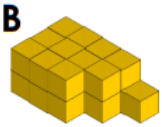
Pair these volumes with the shapes.

19cm³	22cm³	18cm³	24cm³

GD VF

8a. Which shape below has the largest volume?

A 

B 

C 

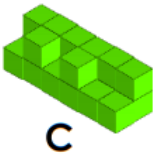
Write a sentence to compare the volumes of A, B and C.

GD VF

9a. Put these shapes in ascending order according to their volume.

A 

B 

C 

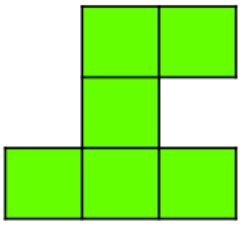
D 

E 

GD VF

Compare Volume

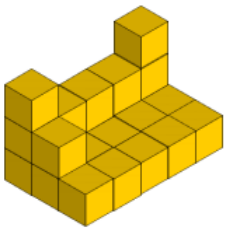
7b. Alfie can use up to twenty four 1cm³ cubes to make a shape. This is the side view of the shape he makes:



Give one possible volume Alfie's shape could have.
Explain your answer.

GD R

8b. Ian makes this shape from 1cm³ cubes:

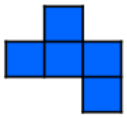


Michelle makes three shapes with volumes of 4cm³, 9cm³ and 11cm³. She combines them.
Investigate which child now has a shape with the smallest volume.

GD PS

9b. Chloe makes this shape:

She makes a new shape with this base:



If her new shape is 4 cubes tall at its highest, can it ever have a larger volume than his first shape? Convince me.

GD R

Varied Fluency
Compare Volume

Developing

1a. A – 9cm³; B – 3cm³; C – 6cm³

2a. Shape B. Shape A has a volume of 4cm³ while Shape B has a volume of 6cm³.

3a. A, B, C

Expected

4a. A – 8cm³; B – 15cm³; C – 20cm³; D – 12cm³

5a. Shape B. Shape A has a volume of 16cm³ while Shape B has a volume of 8cm³.

6a. D, B, C, A

Greater Depth

7a. A – 18cm³; B – 22cm³; C – 19cm³; D – 24cm³

8a. Shape C. Shape A has a volume of 21cm³, Shape B has a volume of 23cm³ and Shape C has a volume of 24cm³.

9a. C, A, D, B, E

Reasoning and Problem Solving
Compare Volume

Developing

1b. Answers should describe a shape which could have the given side view on at least one side and a volume between 2cm³ and 12cm³.

2b. Mia

3b. Yes. The first shape has a volume of 4cm³. 5 layers of cubes arranged in the given base shape would give the new shape a volume of 5cm³.

Expected

4b. Answers should describe a shape which could have the given side view on at least one side and a volume between 6cm³ and 18cm³.

5b. Jay

6b. Yes. The first shape has a volume of 19cm³. 3 layers of cubes arranged in the given base shape would give the new shape a volume of 24cm³.

Greater Depth

7b. Answers should describe shapes which could have the given side view on at least one side and volumes between 6cm³ and 24cm³.

8b. Ian

9b. No. The first shape has a volume of 24cm³. The maximum volume the new shape could have is 20cm³.