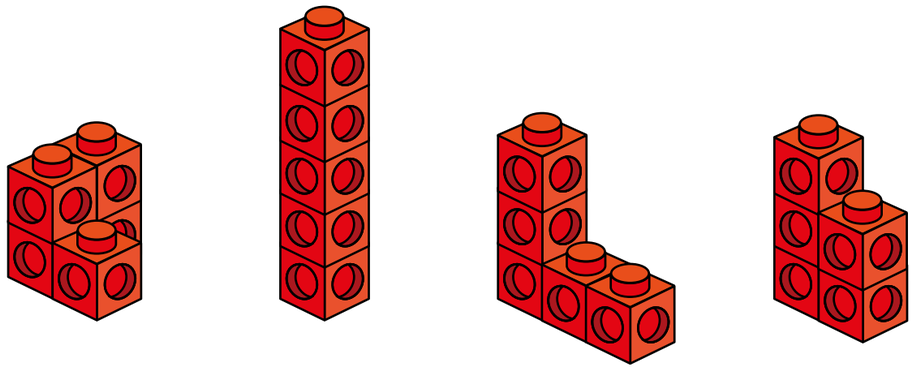
What is volume?

1 Dexter has made some 3D shapes using cubes.



a) What is the same about the 3D shapes he has made?

They are all made using 5 cubes.

Compare answers with a partner.

b) What is different about the 3D shapes he has made?

The way the cubes are arranged.

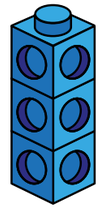
Compare answers with a partner.

c) What is the volume of each of Dexter's 3D shapes?

5 cubes

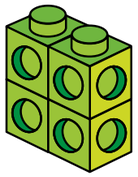
2 What is the volume of each 3D shape?

a)



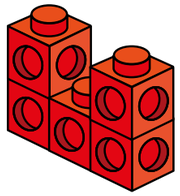
volume = 3 cubes

b)



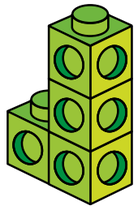
volume = 4 cubes

c)



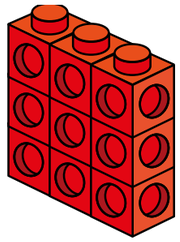
volume = 5 cubes

d)



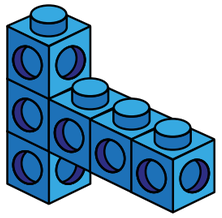
volume = 4 cubes

e)



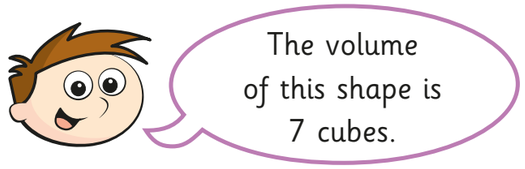
volume = 9 cubes

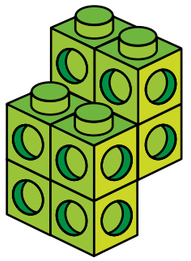
f)



volume = 6 cubes

3





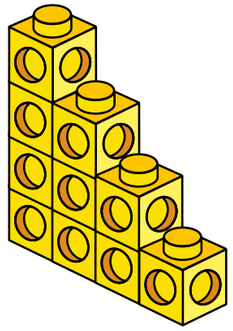
Do you agree with Teddy? No

Explain your answer.

4 Each cube has a volume of 1 cm³

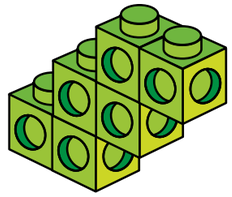
What is the volume of each shape?

a)



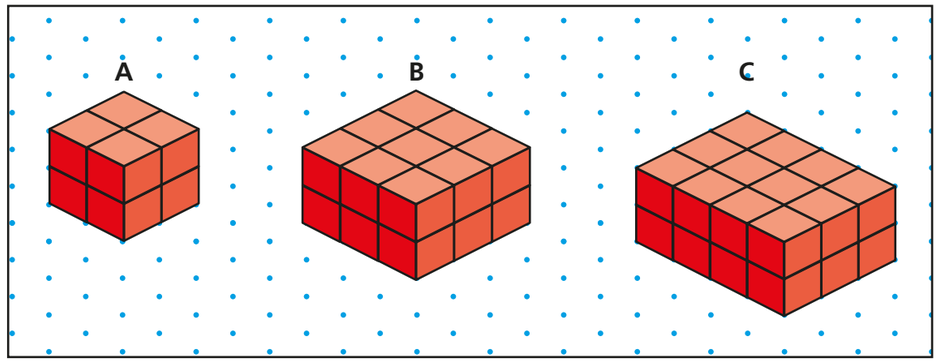
volume = 10 cm³

d)



volume = 6 cm³

5 Three cuboids are drawn on isometric paper.



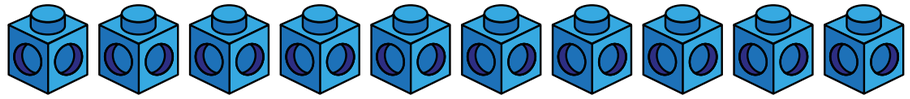
a) How many cubes are needed to make each cuboid?

A 8 cubes **B** 18 cubes **C** 24 cubes

b) If each cube has a side length of 1 cm, what is the volume of each cuboid?

A 8 cm³ **B** 18 cm³ **C** 24 cm³

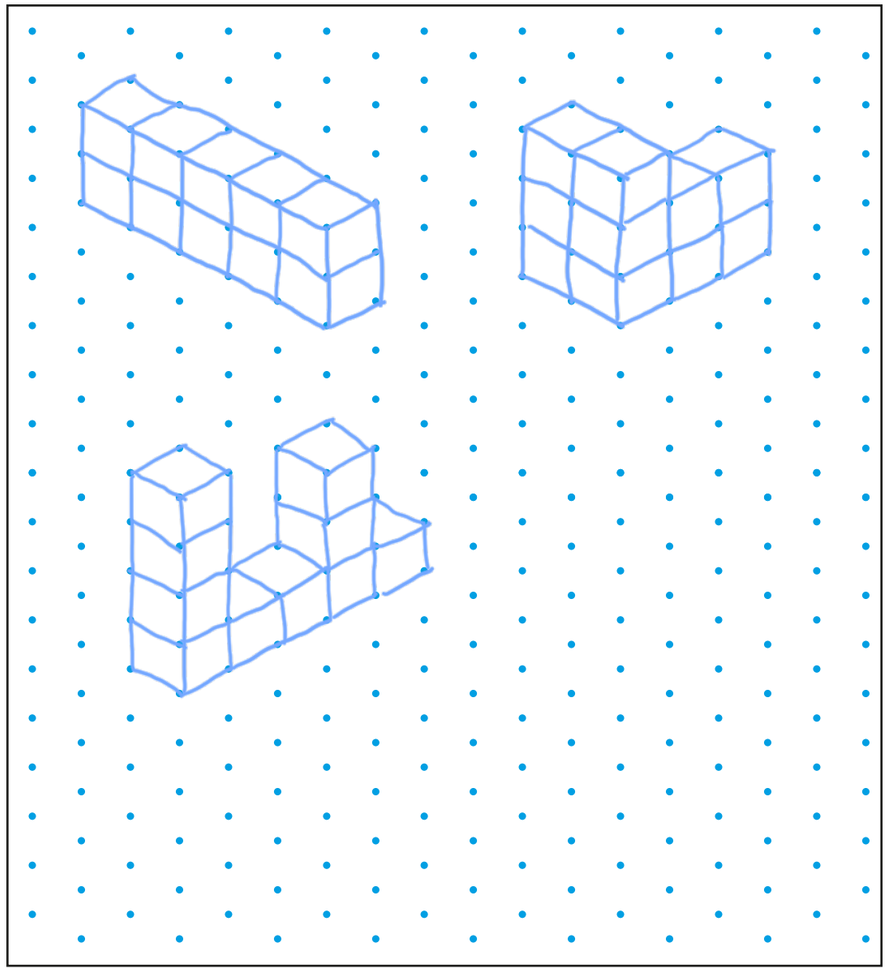
6 Ron is making 3D shapes using 10 cubes.



a) Use cubes to investigate the different shapes Ron can make.

b) Draw three of your shapes on the isometric paper.

Various answers e.g.



c) What is the volume of each of your shapes? 10 cubes

d) Compare answers with a partner.
What is the same and what is different?