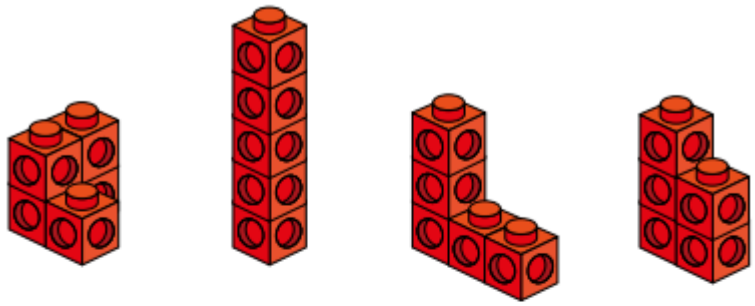
Answers

LO: To explore volume

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

What is the volume of each 3D shape?

a)

volume = 3 cubes

b)

volume = 4 cubes

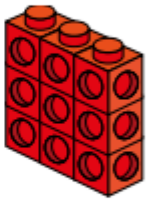
c)

volume = 5 cubes

d)

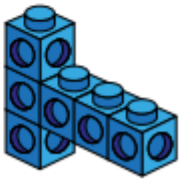
volume = 4 cubes

e)



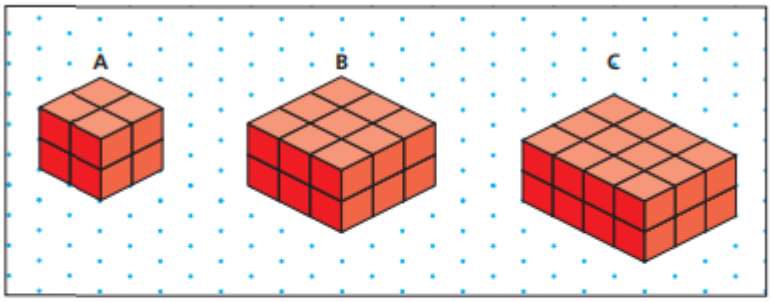
volume = 9 cubes

f)



volume = 6 cubes

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?

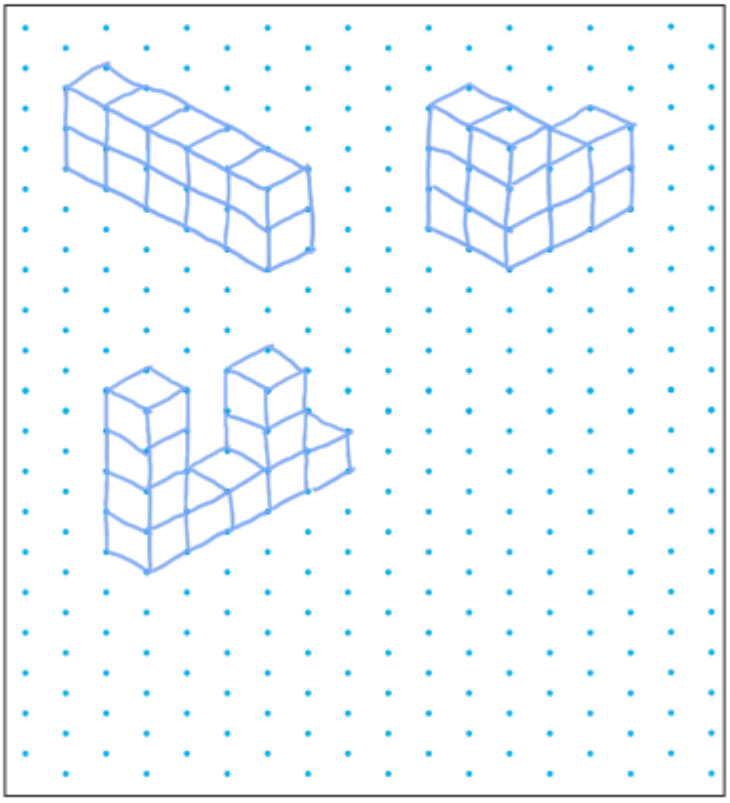
A 8 cm^3 **B** 18 cm^3 **C** 24 cm^3

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

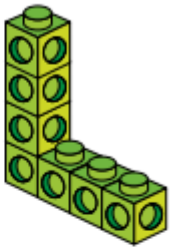
LO: To compare and estimate volumes

Whitney and Tommy have each made a shape using cubes.

Each cube has a volume of 1 cm^3

Whitney

Tommy



a) What is the volume of Whitney's shape? 6 cm^3

b) What is the volume of Tommy's shape? 7 cm^3

c) Whitney and Tommy are comparing the volumes of their shapes.

Whitney

My shape has a greater volume because it is taller.

Tommy

My shape has a greater volume because I used more cubes.

Who do you agree with? Tommy

Explain your answer.

More cubes means a greater volume. Whitney's shape is taller but Tommy's is wider.

Each cube has a volume of 1 cm³

What is the volume of each shape?

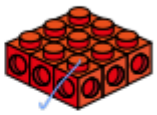
a)

volume = 7 cm³

volume = 6 cm³

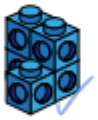
b)

volume = 8 cm³



volume = 9 cm³

c)



volume = 5 cm³

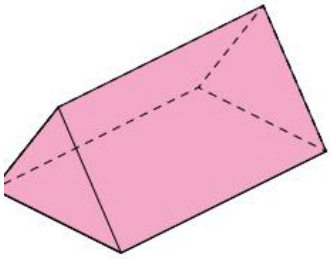
volume = 4 cm³

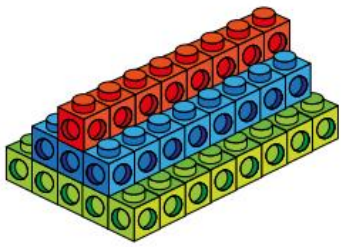
d)

volume = 12 cm³

volume = 27 cm³

Tick the shape with the greater volume in each pair.





a) Why do you think Rosie stacked her cubes like this?

b) The volume of each cube is 1 cm³

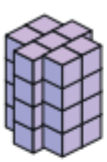
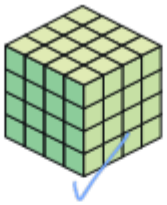
Work out an estimate for the volume of the triangular prism.

Show your workings.

40 + 24 + 8 = 72

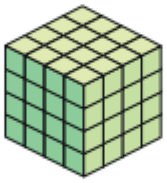
volume ≈ 72 cm³

a) Tick the representation that will give Rosie the best estimate for the volume of the cube.

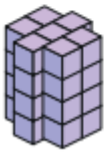

Estimate the volume of the cube. 64 cm^3

b) Tick the representation that will give Rosie the best estimate for the volume of the hexagonal prism.

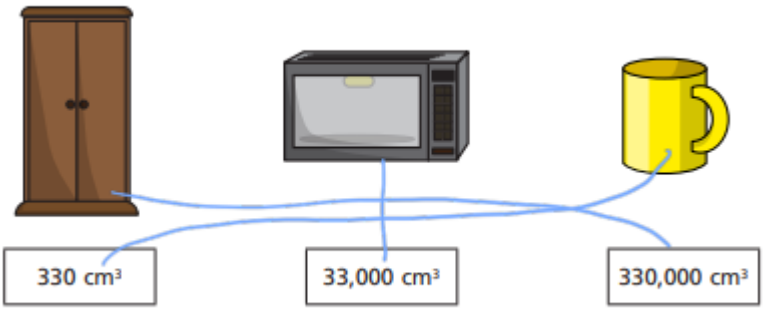

Estimate the volume of the hexagonal prism. 28 cm^3

c) Tick the representation that will give Rosie the best estimate for the volume of the square based pyramid.



Estimate the volume of the square based pyramid. 30 cm^3

Match the object to its approximate volume.



How did you decide?

Lesson 2 Activity answers

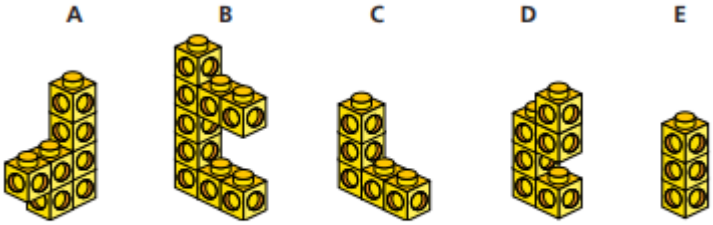
Write <, > or = to compare the volumes of the shapes.

a)  =

b)  >

c)  <

Here are some shapes made from cubes.



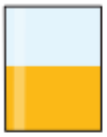
Put the shapes in ascending order of volume.

E C D A B

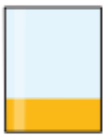
LO: To investigate capacity

Each glass contains 200 ml of juice.

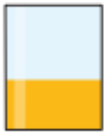
Estimate the capacity of each glass.

a) 

capacity ≈ 400 ml

b) 

capacity ≈ 700 ml

c) 

capacity ≈ 500 ml

d) 

capacity ≈ 250 ml

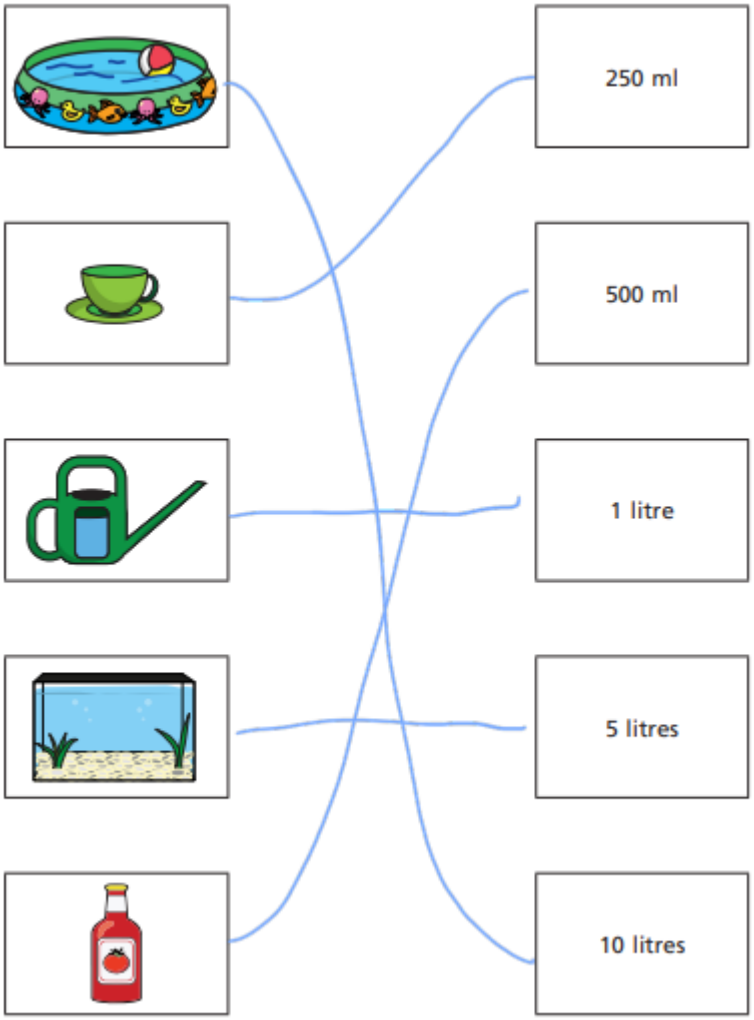
e) 

capacity ≈ 800 ml

f) 

capacity ≈ 250 ml

Match the container to its approximate capacity. e.g.



Dora has a small carton of juice.

She pours the full carton of juice into a glass.

Estimate the capacity of the glass.

capacity ≈ 500 ml

Teddy has a bottle of water.

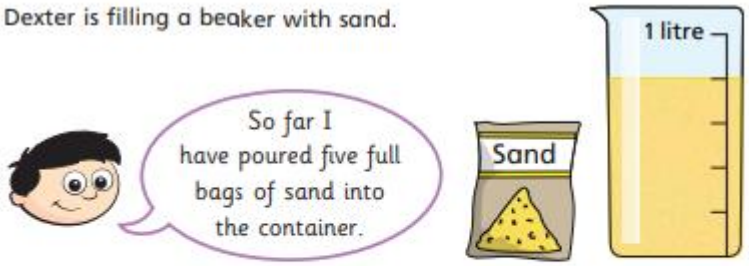
He pours the full bottle of water into a jug.

Estimate the capacity of the jug.

Give your answer in both millilitres and litres.

capacity ≈ 2,000 ml capacity ≈ 2 l

Dexter is filling a beaker with sand.



Estimate the capacity of one of the bags.

capacity ≈ 160 ml