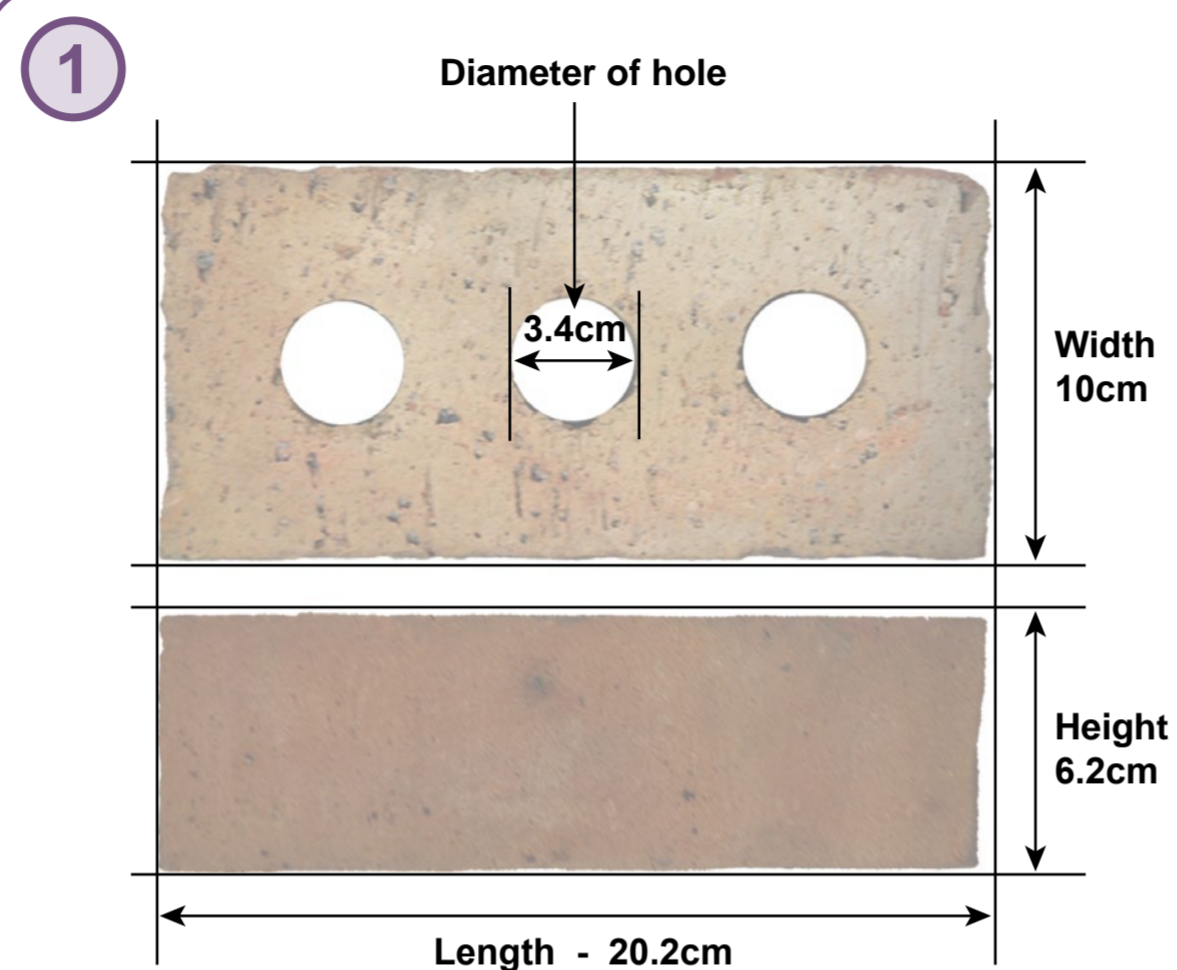# Calculating the volume of a brick

Virtual*maths*

This is a facing brick. Bricks like this are characterised by having holes in the centre.

Although the shape looks quite simple, it's easy to get the volume calculation wrong and get an incorrect answer.

The correct way to calculate the volume of a brick like this is highlighted in this worksheet.

We'll call the volume of the brick v

①

Diameter of hole
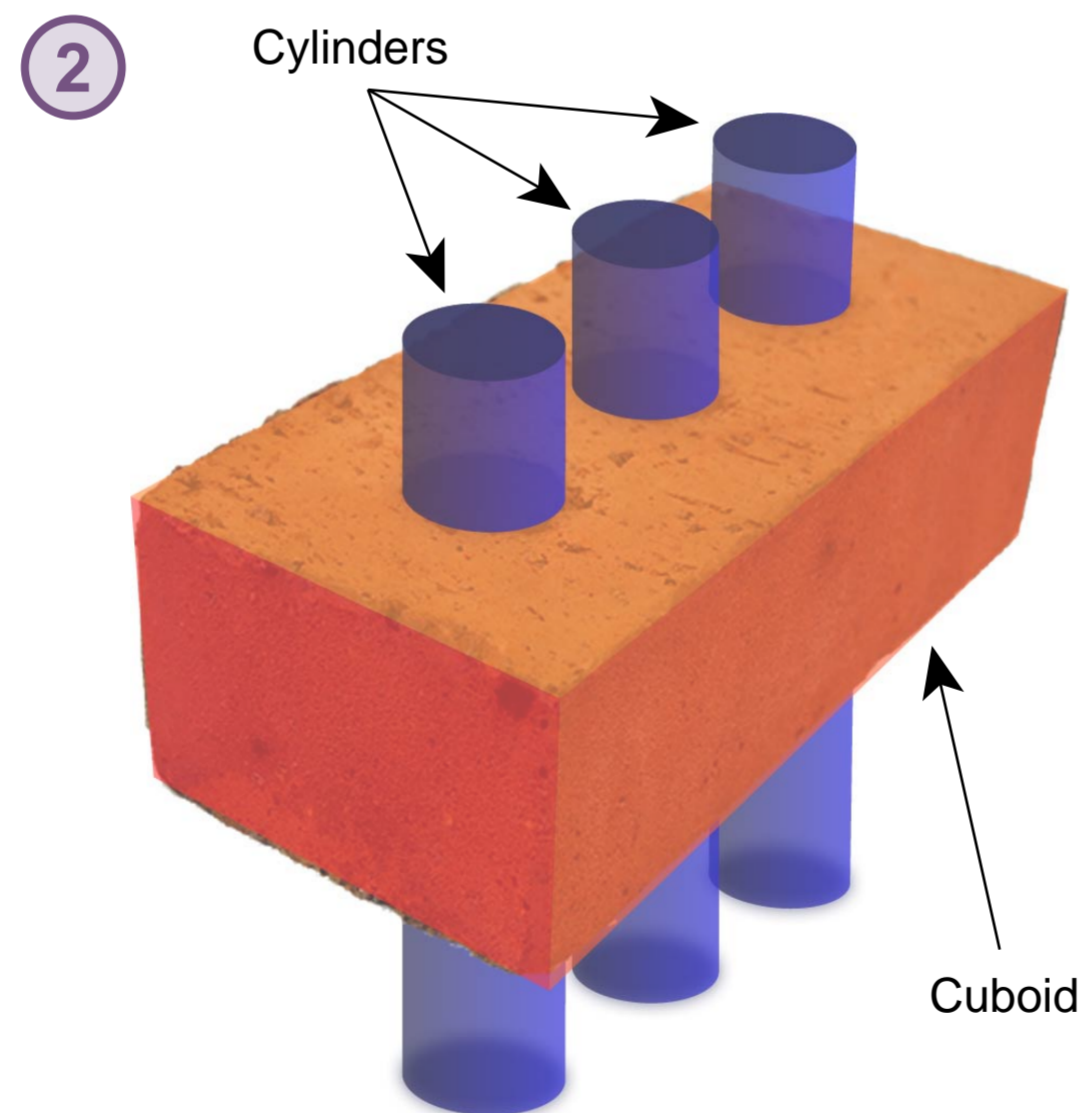
3.4cm

Width 10cm

Height 6.2cm

Length - 20.2cm

Think of this brick as a cuboid, with 3 cylinders deducted from it.

To calculate an accurate volume, we first need to find the volume of the cuboid. Let's call this a

We can calculate the volume of the cuboid by using this simple equation:

$$V = L \times W \times H$$

VOLUME   LENGTH   WIDTH   HEIGHT

②

Cylinders

Cuboid

Now let's calculate the volume of the cylinder shape. We'll call this b

To calculate the volume of a cylinder, we need to use the following equation:

$$V = \pi r^2 \times H$$

VOLUME   PI RADIUS²   HEIGHT

Remember:
• Pi is roughly 3.142
• Radius is half of the diameter

③

What is the volume of the cuboid?

a = ...

What is the volume of one of the cylinder-shaped holes?

b = ...

As there are 3 holes in this brick, we need to multiply the volume of the cylinder by 3, to get the combined volume of the brick's holes.

So let's call this value c

c = ...

To get an accurate volume for the brick, subtract the combined volume of the holes from the volume of the cuboid.

$$v = a - c$$

So what is the volume of the brick?

v = ...