

# Density required practical Worksheet



# Exam question



# Exam question

1. A block of material is in the shape of a cuboid. It has sides of length 3.0 cm, 4.5 cm and 6.0 cm, and a total mass of 0.405 kg. Find the density of the block.



# Answers



# Exam question

## Review

- Volume of block = length X width X height
- Volume of block =  $3.0 \times 4.5 \times 6.0 = \mathbf{81 \text{ cm}^3}$  (1)
- Mass of block =  $0.405 \text{ kg} = \mathbf{405 \text{ g}}$  (1)
- Density of block = mass / volume
- Density of block =  $405 / 81 = \mathbf{5 \text{ g/cm}^3}$  (1)



# In lesson questions



# Pause the video to complete your task

## Independent Practice

**Describe the steps required to determine the density of a regular solid (4)**

Points to consider:

- The equipment you will use?
- How you will measure the mass of the object.
- How will you measure the volume of the object?
- How will you calculate the density of the object?

## Resume once you're finished



# Pause the video to complete your task

## Independent Practice

**Describe the steps required to determine the density of an irregular solid (4)**

Points to consider:

- The equipment you will use?
- How you will measure the mass of the object.
- How will you measure the volume of the object?
- How will you calculate the density of the object?

## **Resume once you're finished**





# Pause the video to complete your task

## Applying to an exam question

Below is a picture of an irregular solid object. A student wants to find the density of the object.

Plan an experiment that would allow the student to determine the density of the object. (6)

## Resume once you're finished



# Answers



# Review

1. Use a ruler to measure the length, width and height of the block and record the values.
2. Calculate the volume using  $V = l \times w \times h$ .
3. Measure the mass of the block in grams using a digital top-pan balance.
4. Then use  $\text{density} = \text{mass} / \text{volume}$  to calculate the density.



# Review

1. Measure the mass of the object in grams using a balance and record the value.
2. Fill a Eureka can with water until it is full to underneath the spout.
3. Place a measuring cylinder beneath the spout. Then place your object into the Eureka can and collect the water that runs off to measure the volume.
4. Finally use  $\text{density} = \text{mass} / \text{volume}$  to calculate the density



# Analysing a response

Firstly, Density is the mass of the object divided by the volume of the object. Therefore, you measure the mass of this object on a top pan balance. To find out the volume of an irregular shape you get a eureka can and fill it up with water up to the spout. You then get a measuring cylinder and place it under the spout. After that, you place the object in the eureka can and measure how much water is now in the measuring cylinder to give you the volume of the object. You then divide the mass by the volume to give you the density of the object.

