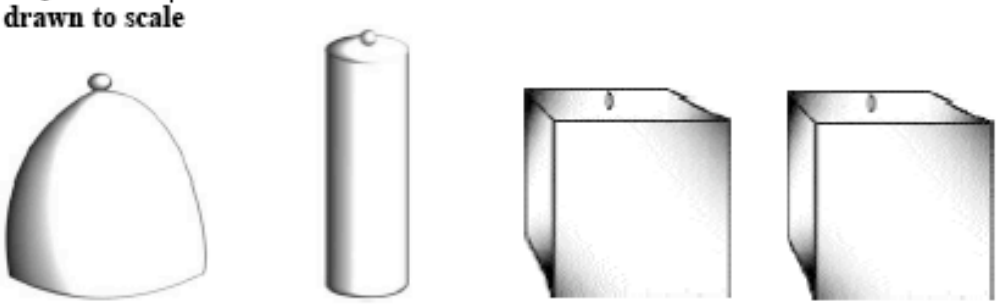
PRACTICE IGCSE QUESTIONS ON DENSITY

A student carried out an experiment to find out the densities of four solid objects, A, B, C and D.

Objects NOT drawn to scale



The student predicted that the two cubes C and D were made of the same material.

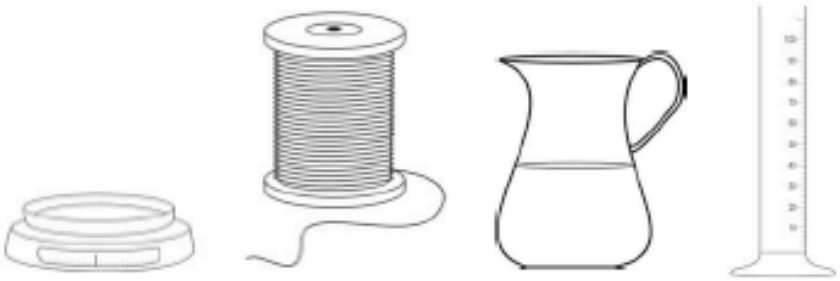
(a) The student was given the apparatus shown below.

Draw diagrams to show how the student may set up this apparatus to measure

(i) the mass of object A;

(ii) the volume of object A.

Write a brief method to describe what he did.



Apparatus NOT drawn to scale

Write your brief method here

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(4)

(b) The student took measurements of the mass and volume for the other three objects. He calculated the density for each object. His results are shown in Table 1.

Table 1

Solid object	Mass / g	Volume / cm^3	Density / g / cm^3
A	75	23	.....
B	40	10	4.0
C	53	16	3.3
D	83	21	4.0

(i) **Complete Table 1** by determining the density of solid object A. Give your answer to an appropriate number of significant figures. You may use the space below for your calculations.

(3)

(ii) Justify the number of significant figures for your calculated values of density in (i).

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(2)

(c) (i) Using Table 1, write a suitable conclusion for the student's experiment.

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(2)

(ii) Relate the results to the student's prediction.

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(1)

(d) Another student points out that the reading for the mass of D in Table 1 is wrong. It should be 86 g.

In the space below show that this error in the mass reading has no effect on your conclusion in (c)(i).

Include a calculation.

(a) Two students record the mass and volume for a small cube of copper and a small cube of iron.

The table shows the results.

	Mass (kg)	Volume (m^3)
copper	1.125	0.000125
iron	1.728	0.000216

(i) Calculate the density in kg/m^3 for copper and iron.

Density of copper = ... kg/m^3

Density of iron = ... kg/m^3

(2)

(ii) Which of the two materials is less dense?

.....

(1)

(iii) Which of the two cubes has less weight?

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(1)

(b) How would you find the volume of the metal cubes?

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(3)