

Level 2 Question – We'd like everyone to attempt this one

Q1.

A student wanted to determine the density of the irregular shaped object shown in **Figure 1**

Figure 1



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

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

(6)

- (b) Another student did a similar experiment.

He determined the density of five common plastic materials.

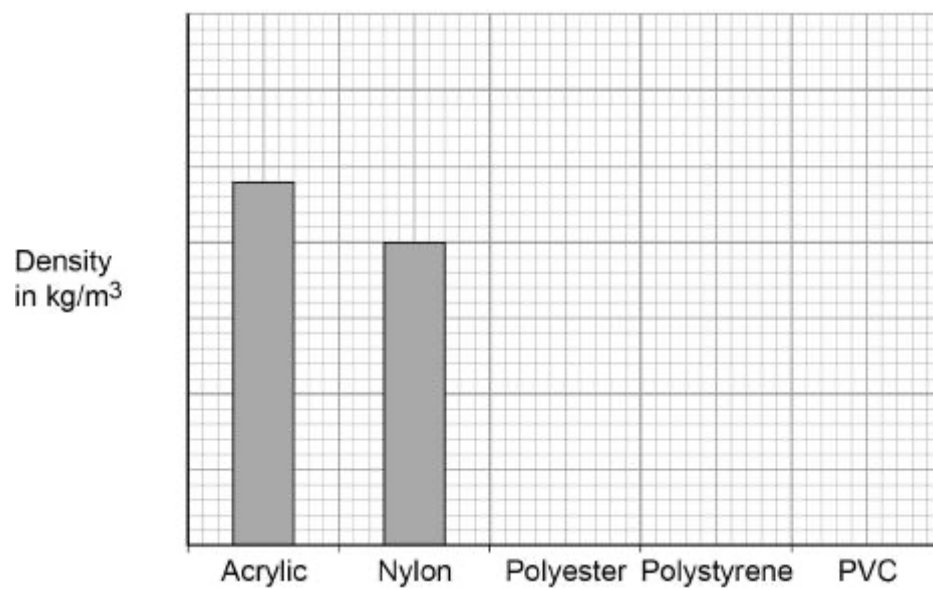
Table 1 shows the results.

Table 1

Plastic material	Density in kg/m ³
Acrylic	1200
Nylon	1000
Polyester	1380
Polystyrene	1040
PVC	1100

Figure 2 shows the results plotted in a bar chart.

Figure 2



Complete **Figure 2**

You should:

- Write the correct scale on the y-axis.
- Draw the bars for polyester, polystyrene and PVC.

(4)

- (c) The student is given a piece of a different plastic material.
- The student determined the density of the material three times.
- Table 2** shows the results.

Table 2

	Density in kg/m ³
1	960
2	1120
3	1040

Determine the uncertainty in the student's results.

Uncertainty = _____ kg/m³

(2)

(Total 12 marks)

