

Particle model of matter

Past Paper Questions AQA Physics GCSE -Higher

A student investigated the density of different fruits.

Table 1 shows the results.

Table 1

Fruit	Density in g/cm³
Apple	0.68
Kiwi	1.03
Lemon	0.95
Lime	1.05

01.

The student determined the volume of each fruit using a displacement can and a measuring cylinder.

What other piece of equipment would the student need to determine the density of each fruit?

[1 mark]

02.

Write down the equation which links density (ρ), mass (m) and volume (V).

[1 mark]

03.

The mass of the apple was 85 g.

The density of the apple was 0.68 g/cm³.

Calculate the volume of the apple.

Give your answer in cm³.

[3 marks]

Volume = _____ cm³

04.

The student only measured the volume of each fruit once.

The volume measurements **cannot** be used to show that the method to measure volume gives precise readings.

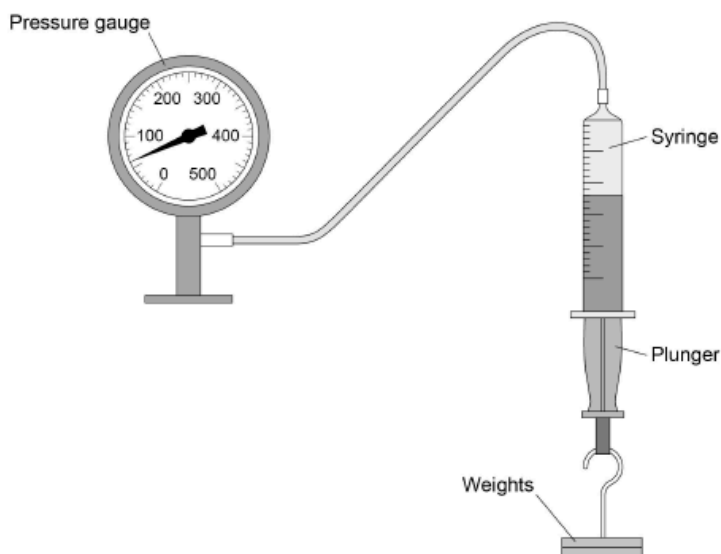
Give the reason why.

[1 mark]

A teacher demonstrated the relationship between the pressure in a gas and the volume of the gas.

Figure shows the equipment used.

Figure



This is the method used.

1. Record the initial volume of gas in the syringe and the pressure reading before any weights are attached.
2. Attach a 2.0 N weight to the syringe.
3. Record the volume of the gas and the reading on the pressure gauge.
4. Repeat steps 2 and 3 until a weight of 12.0 N is attached to the syringe.

05.

What was the range of force used?

[1 mark]

From _____ N to _____ N

06.

Give one control variable in the investigation.

[1 mark]

07.

When the volume of gas in the syringe was 45 cm^3 , the pressure gauge showed a value of 60 kPa .

Calculate the pressure in the gas when the volume of gas in the syringe was 40 cm^3 .
[4 marks]

Pressure = _____ kPa

08.

When the volume of gas in the syringe increased, the pressure on the inside walls of the syringe decreased.

Explain why.

[3 marks]
