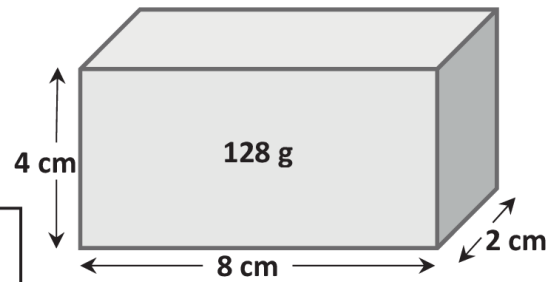


A student was asked to measure the density of a block.

The dimensions of the block are shown in the diagram.

The mass of the block is 128 g.



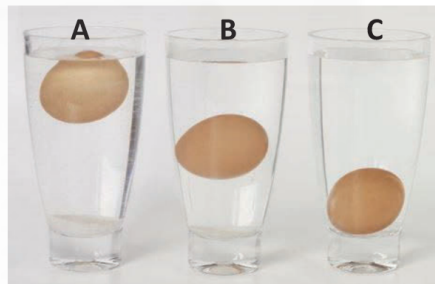
- (a) Calculate the volume of the block.

Calculation

- (b) Calculate the density of the block. Include the unit for your answer.

Calculation

- (c) The photograph below shows three glasses of water labelled **A**, **B** and **C**. An egg was placed into each glass. The photograph was taken when the eggs were stationary.



Which glass (**A**, **B** or **C**) contains the egg with the greatest density?

Give a reason for your answer.

- (a) A solid of mass 12 g has a volume of 1.5 cm^3 .

Calculate the density of the material.

Hence identify the material as either water, granite, basalt or iron.

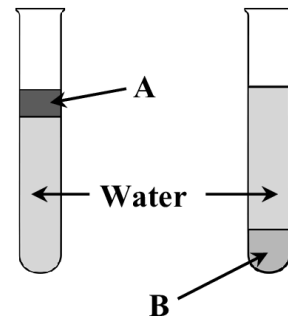
Calculation

Material: _____

- (f) The diagram shows two test tubes each containing water and a liquid that is insoluble in water.

Give the reason why the water sinks *under* liquid A.

Give the reason why water floats on liquid B.



- (d) A cylindrical block of wood has radius 2 cm, height 7 cm and mass 66 g.

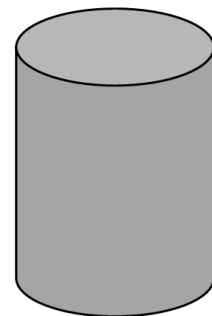
- (i) Calculate the volume of the block.

(You may need to refer to page 10 of the *Formulae and Tables* booklet.)

Calculation

- (ii) Calculate the density of the wood.

Calculation



(a) Bobbing for apples is a traditional Hallowe'en game. A large basin is filled with water and apples are put into the water. Players try to catch the floating apples with their teeth. (18)



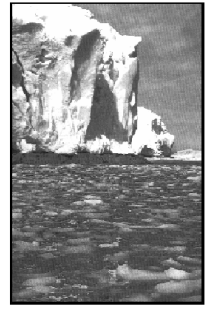
(i) Why do the apples float in the water?

(ii) Describe, with the aid of a labelled diagram, an experiment to measure the density of an apple.

(1) (2)

(b) Why do icebergs *float* on water?

Why? _____

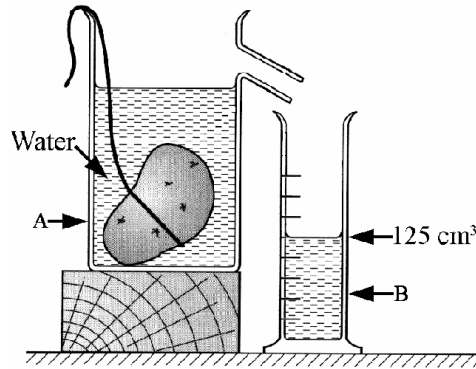


(a) A pupil measured the volume of a potato using the items of laboratory equipment, labelled **A** and **B** as shown in the diagram. (6)

(i) Name *the items labelled A and B*.

A _____

B _____



(ii) The potato had mass 175 g and volume 125 cm³.

Calculate the *density* of the potato.

Give the *units of density* with your answer. (6)

(iii) Why did the potato *sink* in the water? (3)

use only

(1) (2)

