

CAIE Physics IGCSE

Topic 1.4 - Density

Flashcards

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State the equation for density. Give appropriate units.



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$$\text{density (kg/m}^3\text{)} = \text{mass (kg)} \div \text{volume (m}^3\text{)}$$

$$\rho = m/v$$



Describe a method to determine the density of a regular solid.



Describe a method to determine the density of a regular solid.

- Take measurements of relevant dimensions using a ruler
- Calculate the volume using an appropriate equation
- Measure mass using a balance and calculate density using $\rho = m/v$



Describe a method to determine the density of an irregular solid.



Describe a method to determine the density of an irregular solid.

- Measure volume by submersion: read the volume of liquid, submerge the solid, then read the change in volume (= volume of object)
- Measure mass using a balance
- Use $\rho = m/v$ to calculate density



Describe a method to determine the density of a liquid.



Describe a method to determine the density of a liquid.

- Place an empty beaker on top of a balance and zero the device
- Pour liquid into the beaker to determine the mass
- Pour the same liquid into a measuring cylinder and read off the volume
- Use $\rho = m/v$ to calculate density



What is the density of water?



What is the density of water?

1g/cm^3



When do objects float in water?



When do objects float in water?

When the object is **less dense** than water.



When do objects sink in water?



When do objects float in water?

When the object is **more dense** than water.



If liquids do not mix, which will sink
below the other?
(supplement)



If liquids do not mix, which will sink below the other?
(supplement)

The liquid which has the **highest density**.

