

Forces, Motion and Density: Density

Year 7

WC 8th October 2012

Density

WALT: Calculate volume and density of regular and irregular shaped objects

I must be able to calculate density using the equation and include correct units

I should be able to calculate the volume and density of irregular shaped objects

I could conclude what makes things float or sink

Which is heavier – a kilo of
feathers or a kilo of lead?

Density

Density is the amount of a substance that is packed into a certain volume.

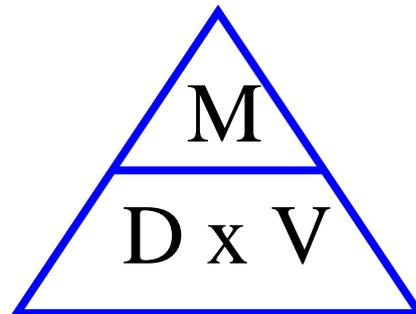
The density of an object can change. Can you think of a situation?

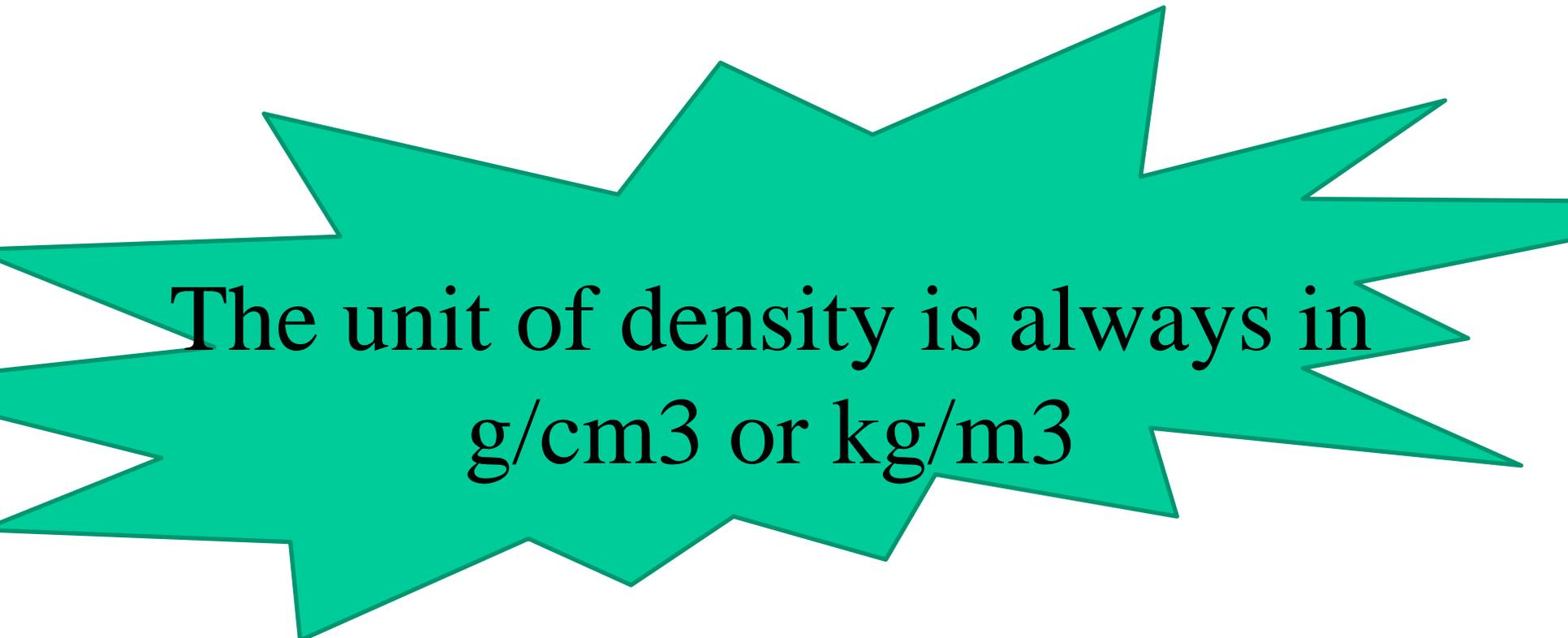
- **Expansion** a hot object expands because its particles get further apart – its density will therefore change.

$$\text{Density} = \frac{\text{mass}}{\text{volume}}$$

g/cm^3 (unit for Density)
 g (unit for mass)
 cm^3 (unit for volume)

Or using the formula triangle;

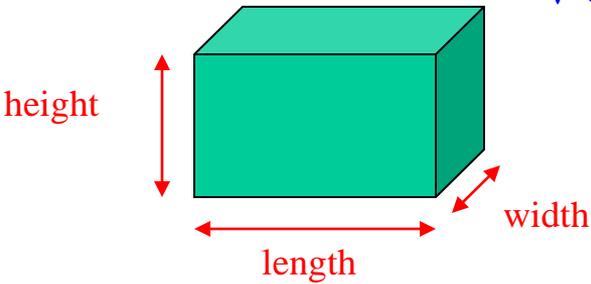




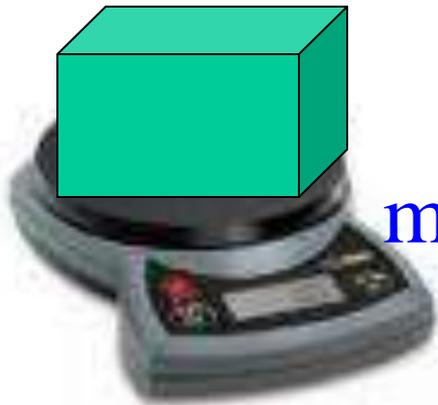
The unit of density is always in
 g/cm^3 or kg/m^3

Density of regular shapes

volume = length x width x height

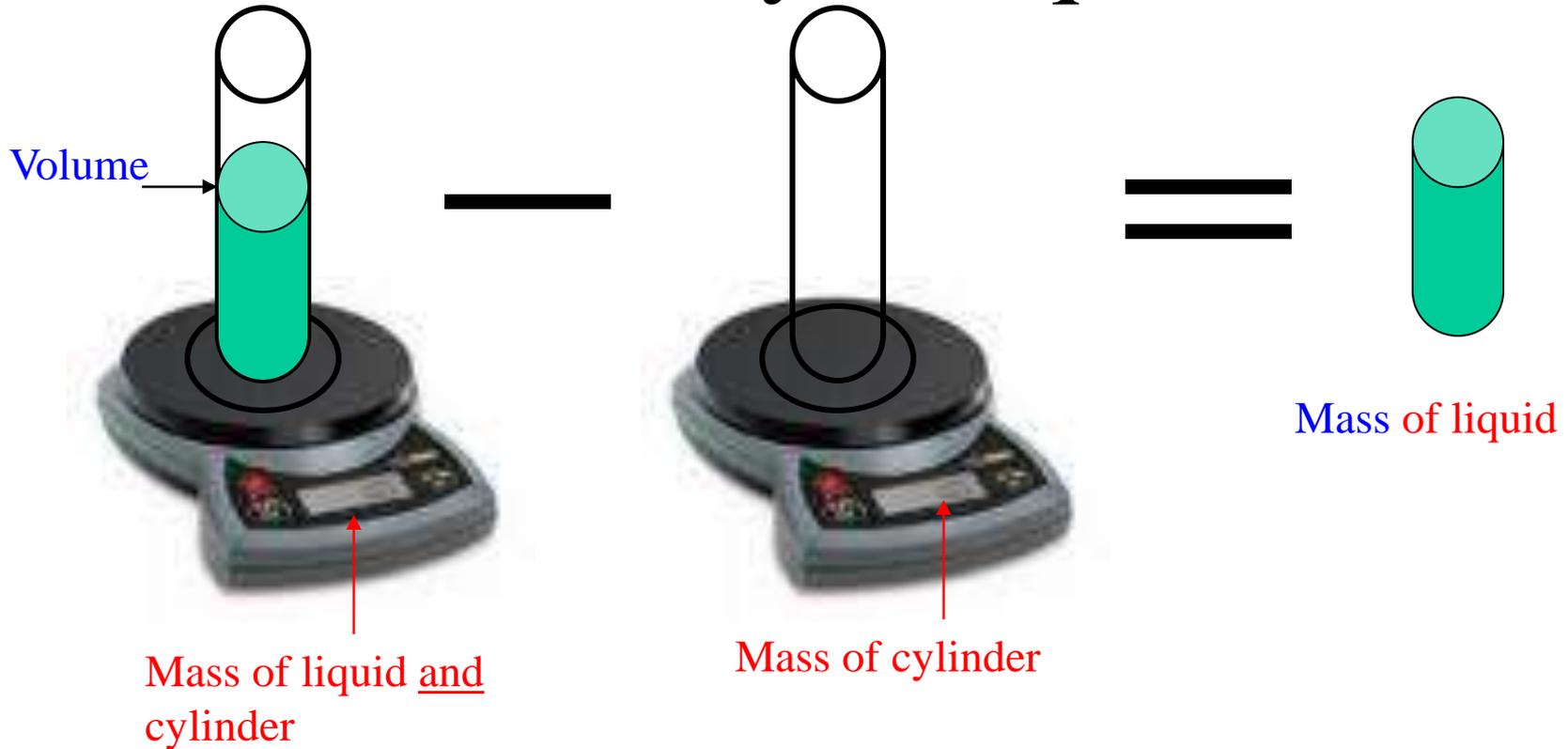


$$\text{density} = \frac{\text{mass}}{\text{volume}}$$



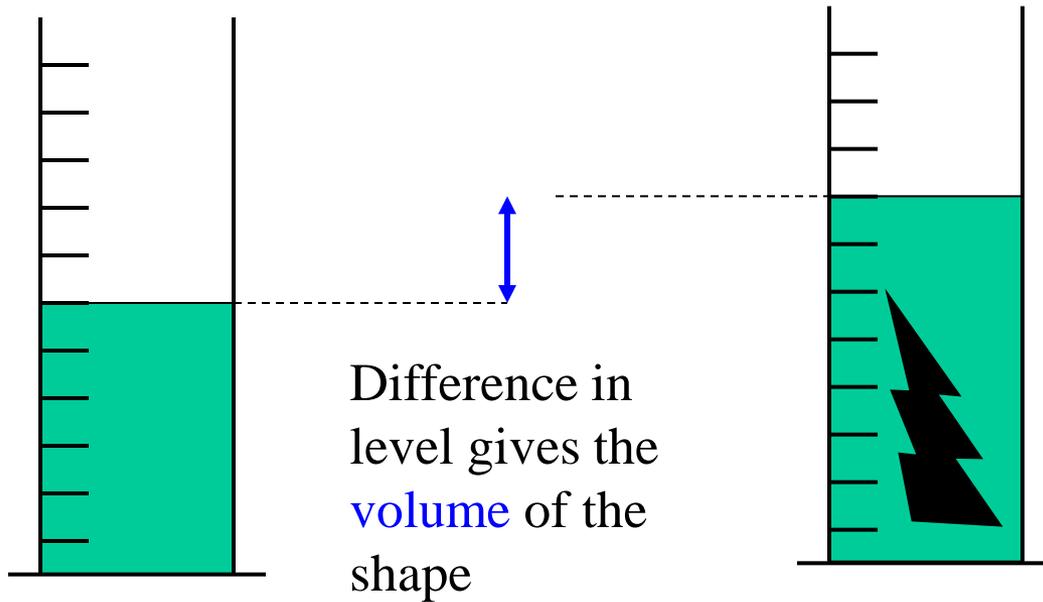
mass using a scale

Density of liquids



$$\text{density} = \frac{\text{mass}}{\text{volume}}$$

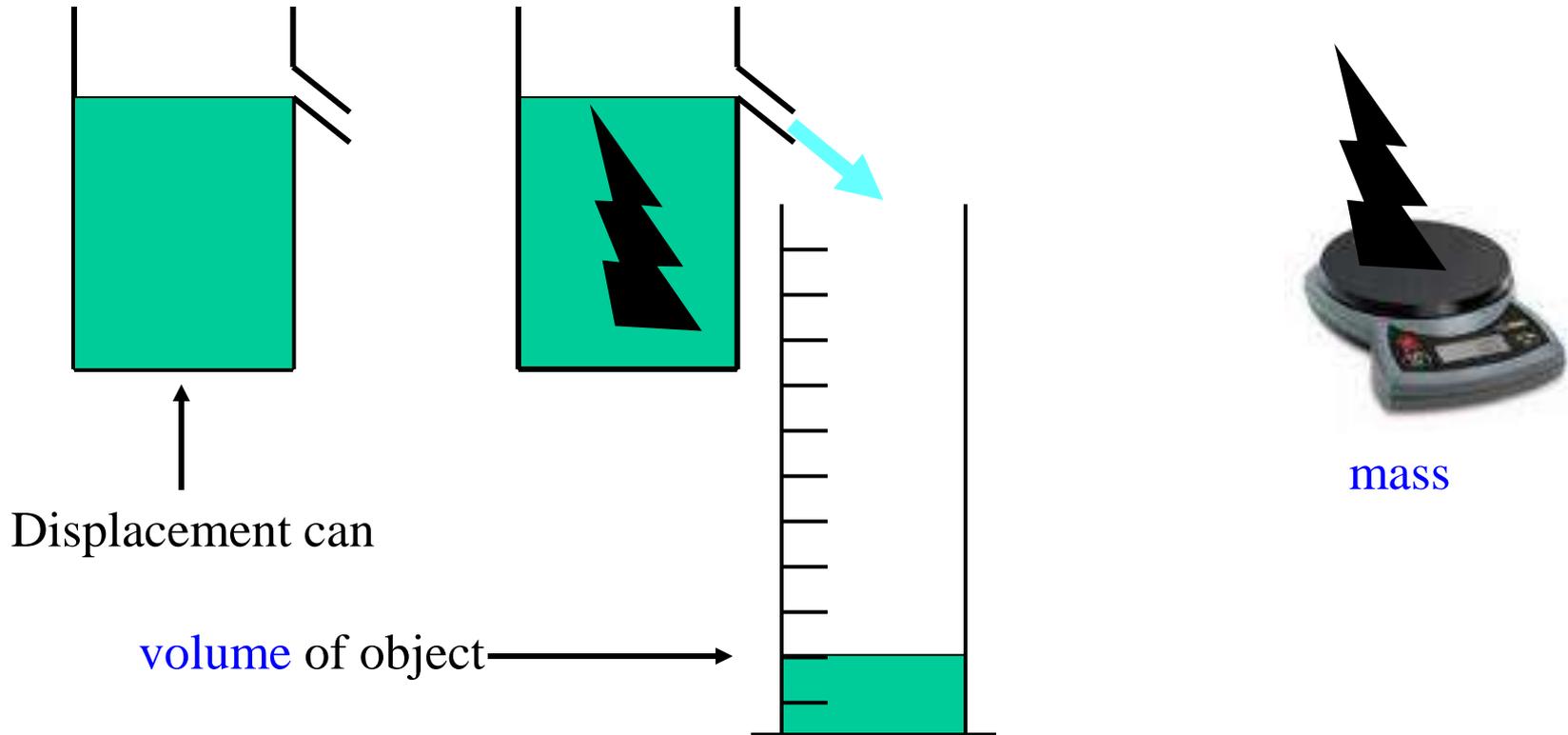
Density of irregular shapes (1)



mass

$$\text{Density} = \text{mass/volume}$$

Density of irregular shapes (2)



$$\text{Density} = \text{mass}/\text{volume}$$

Let's read the examples in the
book on page 146

Now it's your turn

Follow the instructions on the worksheet to calculate the volumes and densities of 3 regular and 3 irregular shaped objects

When you have finished, do question 4 on page 148.

Prep:

P.148, Q.3 You'll need graph paper. No need to copy the whole table...only the Metal and Density columns.

Plenary

- If a salt solution has a density of 1.2g/cm^3 , what volume of the solution would have a mass of 840g .