

P.5 Science class work Notes Week one(3/June/2020)

TOPIC:WEIGHT ,MASS AND CAPACITY.

CAPACITY.

Capacity is the amount of a liquid a container can hold.

Capacity is measured in **litres**.

WEIGHT

Weight is the gravitational force acting on an object.

The basic units for measuring weight is **Newtons**.

Factors that determine weight.

- size of an object.

-pull of gravity.

-the material from which its made.

The instrument used to measure weight is a **spring balance or beam balance**.

The earth pulls all objects with a force called **gravity**.

GRAVITY

Gravity is the force that pulls objects towards the earth.

If you throw anything up,it will be pulled down by the force of gravity.

Weight = mass × force of gravity.

Example

Find the weight of a boy whose mass is 30kg.

Weight =mass × force of gravity.

= (30×10) N.

=300N.

Note.

To change Kilograms to Newtons , you multiply by 10.

Example

Change 8kg to Newtons.

$$1\text{kg} = 10\text{N}.$$

$$8\text{kg}=(8\times 10)\text{N}.$$

$$=80\text{N}.$$

Activity.

- 1.Explain the term capacity.
- 2.In which units is capacity measured?
- 3.What is weight?
- 4.Identify one factor that determines weight.
- 5.Name the basic units for measuring weight.
- 6.Change the following to Newtons.
 - a. 12kg.
 - b.46kg.

LESSON II

Mass is the quantity of matter contained in an object.

Mass is constant .ie ,it does not change and it does not depend on gravity.

The unit for measuring mass are kilograms or grams.

Instruments for measuring mass and weight

* beam balance.

*spring balance.

*set of scales.

scale balance.

Difference between Mass and weight

Mass is constant. -weight changes on different planets.

Mass is measured in grams. - weight is measured in Newtons.

Mass is the amount of matter in an object. weight is the force due to gravity.

Activity.

What is gravity?

What causes weight?

Name the units in which mass is measured.

Give one difference between mass and weight.

Which force enables raindrops to fall from the sky to the ground?

LESSON III

DENSITY.

Density is the ratio of mass to volume.

Density is mass per unit volume.

The density of an object is determined after knowing its mass and its volume.

Formula for finding density.

Density = mass /volume.

The units for measuring density are grams per cubic centimetres. (g/cc).

The density of liquids is measured by an instrument called a **hydrometer**.

FINDING DENSITY.

Example 1.

Find the density of an object with mass 150g and volume 30cc.

*Density = mass /volume.

$$=150\text{g}/30\text{cc}.$$

$$=\underline{5\text{g}/\text{cc}}.$$

Example 2.

If a cuboid has a volume of 240g and mass of 20cc ,work out its density.

Density =mass ÷volume.

$$=240\text{g}\div 20\text{cc}$$

$$=\underline{12\text{g}/\text{cc}}$$

EXERCISE.

- 1.Work out the density of an object whose mass is 35g and volume 7cc.
- 2.Find the density of a stone whose Mass is 180g and volume 60cc.

LESSON IV.

Finding volume when given mass and density.

Example 1.

Find the volume of an object whose mass is 210g and density 7g/cc.

Volume = Mass ÷ density.

$$=210\text{g}\div 7\text{g}/\text{cc}$$

$$=\underline{30\text{cc}}.$$

Example 2.

If an object has a mass of 480g and density of 10g /cc,find its volume.

Finding mass when Density and volume are given.

Example 1.

Find the mass of an object of density 7g /cc and volume 30cc.

Mass = Density x volume.

=30cc x7g/cc.

=210g.

Example 2.

Work out the mass of a stone whose volume is 20cc and density 6g/cc.

Mass =Density x volume.

=6g x20 cc

=120g.

ACTIVITY.

- 1.Find the volume of an object whose mass is 150g and density of 30cc.
- 2.Work out the mass of an object whose density is3g /cc and 40cc.