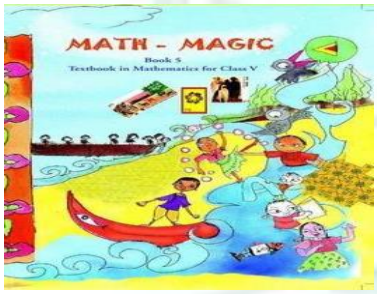
पुष्पना International School
Shree Swaminarayan Gurukul, Zundal

Class -V

Math - magic

Study material

Month-December



Ch-14 How big? How heavy?

❖ **Key points to remember:**

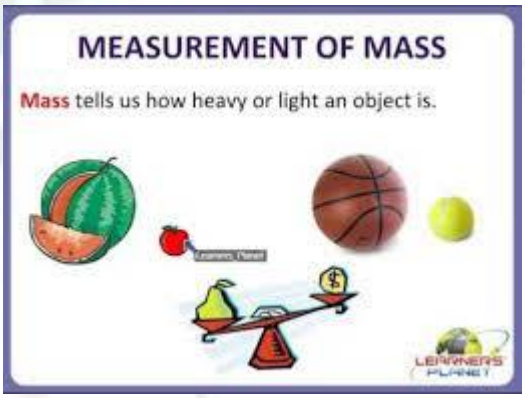
- Introduction
- Fill in the blanks
- Find the volume of cuboid/cube
- Word Problems
- Activity

❖ **Introduction:**

Define:

Mass: Mass is a measure of the amount of matter in an object.

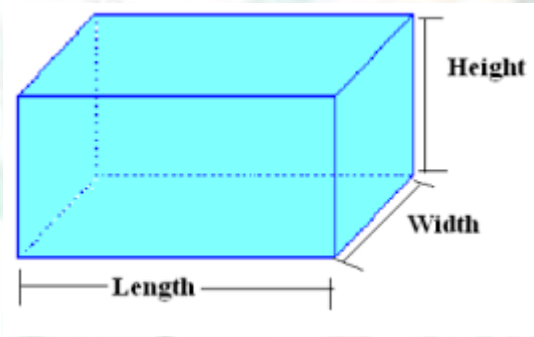
- Mass is measure in kilogram (kg)
- 1 gram = 1000 milligram



Define:

Volume: The Space occupied by the solid it's called Volume.

- Volume of Cube = Side × Side × Side = $(Side)^3$
- Volume of Cuboid = Length × Width × Height
- Volume is measure in terms of cubic unit.



❖ **Fill in the blanks:**

1) The space occupied by a solid is its**Volume.**
2) Two solids of the same shape and same size have **same** volume.
3) Volume is **three** dimensional.
4) Volume is measured in terms of **Cubic** Unit.
5) Volume of liquids is measured in **liters**
6) 1 liter = **1000**cubic cm.
7) 1 cubic meter = **1000**liters

8) **Mass** is a measure of the amount of matter in an object.

❖ **Find the volume of cuboid/Cube:**

Sr No	Cuboid/ Cube			**Volume = l × b × h = l × l × l**
	L	B	H	
1	6 cm	4 cm	3 cm	**= 72 cm^3**
2	12 cm	5 cm	5 cm	**= 300 cm^3**
3	15 cm	15 cm	15 cm	**= 3375 cm^3**
4	8 cm	8 cm	8 cm	**= 512 cm^3**

❖ **Word Problems:**

1) A Match box measure 5 cm × 3 cm × 2 cm find its volume.

Solution:

Volume of match box = length × width × height

= 5 cm × 3 cm × 2 cm

= 30 cm^3

2) The dimensions of a pencil box are 10 cm × 5 cm × 2 cm. Find its volume.
Solution:
Volume of pencil box = 10 cm × 5 cm × 2 cm
= 100 cm^3

3) How many soap cakes of dimensions 10 cm × 8 cm × 6 cm can be packed in a box having dimensions 10 cm × 60 cm × 40 cm?

Solution:
Volume of box = 10 cm × 60 cm × 40 cm
= 24000 cm^3
Volume of Soap = 10 cm × 8 cm × 6 cm
= 480 cm^3

No of soaps = $\frac{volume\ of\ box}{volume\ of\ soap}$

$= \frac{24000}{480}$

= 50 Soaps can be packed in box of given dimensions.

4) How many bricks of length 20 cm, breadth 4 cm and height 6 cm will be needed to build a wall of length 10 cm, thickness 6 cm and height 2 m?
(1m = 100cm)

Solution:

Volume of wall = 10 cm × 6 cm × 200cm (2m = 200 cm)

= 12000 cm^3

Volume of brick = 20 cm × 4 cm × 6 cm

= 480 cm^3

No of bricks = $\frac{Volume\ of\ wall}{volume\ of\ bricks}$

$= \frac{12000}{480}$

= 25bricks needed to build a wall of given dimensions.

❖ **Activity:**

- **With your friends, collect many empty matchboxes of the same size. Measure the sides and write here and find it's volume.**