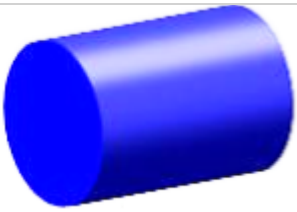
Chapter- 21

Surface Area, Volume and Capacity

Lateral or Curved Surface Area

If we leave the top and bottom faces of the solid shape then the area of the rest of the figure is the lateral surface of the shape. The unit of lateral surface area is a square unit.

Surface Area of Cube, Cuboid and Cylinder

Name	Figure	Lateral or Curved Surface Area	Total Surface Area	Nomenclature
Cube		$4l^2$	$6l^2$	l = Edge of the cube
Cuboid		$2h(l + b)$	$2(lb + bh + lh)$	l = Length, b = Breadth, h = Height
Cylinder		$2\pi rh$	$2\pi r^2 + 2\pi rh = 2\pi r(r + h)$	r = Radius, h = Height

Volume

Volume is the space occupied by any solid figure i.e. the amount of capacity to carry something is the volume of that solid shape. The unit of volume is a cubic unit.

Volume of Cube, Cuboid and Cylinder

Name	Volume	Nomenclature
Cube	l^3	l = Edge of the cube
Cuboid	lbh	l = Length, b = Breadth, h = Height
Cylinder	$\pi r^2 h$	r = Radius, h = Height

Volume and Capacity

Volume and capacity are one and the same thing.

Volume is the amount of space occupied by a shape.

Capacity is the quantity that a container can hold.

Capacity can be measured in form of liters.

We can see the relation between liter and cm^3 as,

1 L = 1000 mL

1 mL = 1 cm^3,

1 L = 1000 cm^3.

Thus, 1 m^3 = 1000000 cm^3 = 1000 L.