Measurement of Length and mass

Measurement of Length

Length measures the distance between two points and indicates how long something is.

It is measured using a metric ruler or an inch ruler.

Units of measuring length:

- Millimetre (mm)
- Centimetre (cm)
- Metre (m)
- Kilometre (km)

Conversion of units:

- 10 mm = 1 cm
- 100 cm = 1 m
- 1000 m = 1 km

Measuring Tools for Length

i. **Ruler:** Used to measure short lengths and draw straight lines.

- Commonly used in schools and colleges.
- Available in sizes: 15 cm, 30 cm, and 1 metre scales.
- Used to measure objects like pencils, chalk pieces, and line segments.

ii. **Measuring Tape:**

- Used to measure longer distances such as the length and breadth of a park or field.
- Comes in different lengths: 50 m, 100 m, or 250 m.
- Tailors use small measuring tapes to measure cloth.

iii. **Metre Rod or Metre Scale:**

- Used for measuring fabric length, room dimensions, or large objects.

Interesting Fact

Height is defined as the distance between the lowest and highest points of a person or object.

Measurement of Mass

Mass is the amount of matter present in an object.

Common units of mass:

- Milligrams (mg)
- Grams (g)
- Kilograms (kg)

Conversion of units:

- 1000 mg = 1 g
- 1000 g = 1 kg

Small masses are measured in grams, while larger masses are measured in kilograms.

Difference Between Mass and Weight

Mass is constant and does not change regardless of location.

Weight depends on gravitational force and varies with location.

Example:

- A person weighing 50 kg on Earth would be weightless in space due to the absence of gravity.

Weighing Tools

i. Common Balance:

- Consists of two pans; one holds standard weights, and the other holds objects to be weighed.
- Used by vegetable vendors to weigh produce.

ii. Weighing Machine:

- Used for measuring body weight and other heavier objects.

Measurement of Capacity

Capacity refers to the amount of liquid a container can hold.

Common units of capacity:

- Millilitre (mL)
- Litre (L)
- Kilolitre (kL)

Conversion of units:

- 1000 mL = 1 L
- 1000 L = 1 kL

Smaller capacities are measured in millilitres and litres.

Larger capacities are measured in kilolitres.

Measuring Tools for Capacity

Measuring Cylinder:

- Used to measure liquid capacity accurately.
- Commonly used in laboratories and industries.

Conclusion

Length, mass, and capacity are fundamental measurements in daily life.

Different tools and units are used depending on the size and nature of the object being measured.

Understanding conversions and using the appropriate measuring instruments ensures accuracy.