

Chapter 1

Measurement

LESSON PLAN

SPECIFIC OBJECTIVES

Students will learn about

- ❖ Introduction about physical quantities and measurement
- ❖ measurement of area and its SI unit
- ❖ measurement of volume and its SI unit
- ❖ capacity and its unit
- ❖ volume of regular and irregular solids
- ❖ density and its unit
- ❖ finding density of solids
- ❖ speed and its unit

Teaching Aids

Pictures/charts/models/graph papers related to measurement of different physical quantities given in the chapter; measuring instruments used to find the volume of regular and irregular solids.

Teaching Strategy

- ❖ Students should be asked to study definition of physical quantities. They should also be asked to study measurement of surface area and its SI unit.
- ❖ Students should be encouraged to study multiple and submultiple units of area.
- ❖ The teacher should teach the students about area of regular shapes, their related formulae and estimation of area of irregular shape using a graph paper.
- ❖ The teacher should ask the students to perform activity 1 in order to find the area of an irregular shape using a square centimetre grid.
- ❖ Students should be asked to learn measurement of volume, its SI unit and submultiples. They should be asked to study capacity and its unit; volume of regular solids and related formulae and numericals; relation between volume and capacity of a container given in box at page 11.

- ❖ Students should be asked to study the measurement of volume of a liquid using a graduated cylinder or beaker and its related activities 2 and 3 given at page 12.
- ❖ The teacher should ask the students to study the volume of irregular solids and its related activity 4 given at page 12.
- ❖ Students should be asked to study volume of an irregular solid using an overflow can and a measuring (graduated) cylinder and its related activity 5 given at page 13.
- ❖ Students should be encouraged to learn question-answer given at page 13 and numericals also given at page 13. They should be encouraged to solve check point 1 given at page 14.
- ❖ Students should be asked to study density and its units; related question-answer and activities 6 and 7 given at pages 14 and 15. They should also be asked to learn Table 1.1 indicating density of some substances given at page 16.
- ❖ Students should be practiced few numerical questions related to density given at page 16. They should also be asked to learn how to find density of regular solids and its related few numerical problems given at page 17.
- ❖ The teacher should ask the students to study density of irregular solids, i.e., heavier or lighter than water, using activities 8 and 9 respectively given at page 18. He/She should also ask the students to practice few numerical problems related to it.
- ❖ The teacher should encourage the students to solve check point 2 given at page 20.
- ❖ Students should be asked to study speed, its definition, formula and unit, and also its related numerical problems. They should also be asked to solve check point 3 given at page 22.
- ❖ The teacher should encourage the students to recap the whole chapter using wrapping it up and know these terms. He/She should also ask the students to answer the questions given in test yourself and discuss the think zone given in it.

Boost UP

- ❖ The teacher should ask each student of the classroom to tell the definition of surface area and its SI unit. He/She also ask few questions to each student related to multiples and submultiples of area.
- ❖ The teacher should interrogate the students to tell the formulae of area of few regular shapes.
- ❖ Students should be asked to tell the definition of volume, its SI units and submultiples. They should be asked to tell the definition of capacity and its unit.
- ❖ Students should be queried to tell the formulae of volume of regular solids.
- ❖ The teacher should ask the students to tell the definition of density, its formula and SI unit. He/She should also tell the students to solve numerical problems related to it.
- ❖ The teacher should also ask few questions to students related to speed, its unit along with few numerical questions.

Expected Learning Outcomes

Students will be able to know the

- ❖ brief introduction of physical quantities and measurement.
- ❖ measurement of area, its SI unit and multiple and submultiple units.
- ❖ area of regular shapes.

- ❖ estimation of area of irregular shape using a graph paper.
- ❖ measurement of volume, its SI unit and submultiples.
- ❖ capacity and its SI unit.
- ❖ volume of regular and irregular solids.
- ❖ density and its SI unit.
- ❖ finding density of solids.
- ❖ speed and its SI unit.

Evaluative Questions

The teacher should ask the following questions to evaluate the students.

1. Define surface area and write its SI unit.
2. What is the formula of area of a circle?
3. What is the SI unit of volume?
4. Define capacity.
5. Convert the volume of 1 g/cm^3 into kg/m^3 .
6. A piece of iron weighs 320 g and has volume of 40 cm^3 . Find the density of iron.
7. What is called the distance covered by an object in unit time?
8. What is the SI unit of speed?