



MEASUREMENT MATTERS

INTRODUCTION

Matter is all around us, even when we cannot see it! It exists in different states – solids, liquids and gases, depending on different parameters. How is an Iron rod different from water? How is ice different from perfume that is sprayed from a bottle? How can water exist as a solid, a liquid and a gas? Many of the answers to these questions depend on the measurements that are attributed to each substance. A basic understanding of matter and its properties enables learners to observe, classify and understand the different ways of measuring matter.

Learners begin by observing and comparing physical properties of different substances, understanding how particles are arranged in different substances, understand the need for standard measurement, learn standard conventions of measurement, and learn about the relationship of mass, weight, volume with density.

Learners exit this module with an understanding of different states of matter, their properties and how to measure them.

This module is a part of the “UNDERSTAND - THE SCIENCE THAT RUNS THE WORLD” series.

MODULE DETAILS

- **Series 1: Understand - The Science That Runs The World**
- **Module 1: Measurement Matters**
- **Student Accomplishment Level: 2**

Grade Group : 4-5 Number of Sessions: 8 Session Duration: 60 min

SESSION EXPERIENCE

1. **Tuning in:** Understand the module structure and goals. Learn the tools and terminology used in the module.
2. **State your matter:** Identify the three states of matter based on their properties and their measurements.
3. **Measuring Solids – Length:** Understand the need for a standard of measurement. Explore these standards with regards to length.
4. **Measuring Solids – Volume:** Use standard conventions to measure volumes of solids.
5. **Measuring Liquids:** Understand the concept of volume of liquids and use standard conventions to measure the volume of a given liquid.
6. **Density:** Understand how mass, weight and volume are related to the density of a substance.
7. **What’s the Matter:** Use all concepts learnt thus far to classify a given substance and to make all relevant measurements that help define it.
8. **How did I do?:** Reflect on the learnings from the module: Define and measure physical properties of matter, including length, volume and density. Present work done to peers.

Learning Objectives:

Learners will:

1. Understand states and properties of matter.
2. Develop criteria to classify substances into a particular state of matter
3. Apply concepts of math and physics
4. Follow instructions, conduct research, solve problems and create tangible artifacts.
5. Engage in active collaboration and communication.

