



SIMPLE MACHINE - INCLINED PLANE

INTRODUCTION

Simple Machines are devices that make human work easier by providing mechanical advantage. It is essential to understand how simple machines work to get an idea of how most of the mechanical devices around us function.

Learners begin by understanding the mechanical advantage of the inclined plane, wedge and worm gear (screw). They then apply the concepts and skills acquired to solve a real world problem.

Learners exit this module with an understanding of simple machines that are based on the principle of the inclined plane.

This module is a part of "APPLY - SCIENCE FOR A BETTER WORLD" series.

MODULE DETAILS

- **Series 2: Apply - Science For A Better World**
- **Module 1: Simple Machine- Inclined Plane**
- **Student Accomplishment Level: 3**

Grade Group : 6-8 Number of Sessions: 8 Session Duration: 60 min

SESSION EXPERIENCE

1. **Tuning In:** Understand the module structure and goals. Learn the use of the Engineering manipulatives.
2. **Rise over Run:** Build a model of an inclined plane and understand the concepts of rise and run.
3. **Plow The Snow:** Build a model of a snow plow to understand the working of wedges.
4. **Worm Gear:** Build a gear train consisting of a worm gear and understand its uses.
5. **Workshop Vice:** Build a model of workshop vice to explore further uses of the screw.
6. **Who Cut My Cheese?:** Design a machine that serves as a cheese cutter.
7. **Build a Cheese Cutter:** Build, evaluate and display the machine designed.
8. **How Did I Do?:** Reflect the learnings from the module: Inclined plane, Wedges and Screws. Present work to peers.

Learning Objectives:

Learners will:

1. Be able to calculate the mechanical advantage of simple machines that are based on the inclined plane.
2. Apply math concepts such as ratios, proportions and percentages.
3. Follow instructions, think critically, solve problems and create tangible engineering artifacts.
4. Engage in active collaboration, communication and design thinking.

