



Engineer Academy

Week 1 - Teacher One-Pager

Focus: Intro to Engineering & Inclined Planes

Summary: We learn about what engineering is and get started on our first simple machine: the inclined plane.

Resources per group (3-4 chn):

- 1 paper or plastic cup or small pot
- 30cm of string or wool
- Weights e.g. coins, counters, stones, rubbers, felts
- Scissors
- Tape
- A pile of books
- A mini whiteboard or chopping board
- Pencil and paper

Session Outline:

1. Warm Up. Introduce yourself with your favourite invention.
2. Intro: find out what engineering is, some famous engineers and branches of engineering.
3. Session focus: the basic simple machines and specifically inclined plane
4. Practical challenge: build and investigate an inclined plane
5. Recap

Tips & Ideas for Build:



- Use the terms: inclined plane, load, measure, investigate, force, weight, gradient/slope. Make sure groups start the loads from on the inclined plane.
- Make sure they are measuring carefully.

Groups that finish quickly can:

- Change the surface of the inclined plane to investigate the effect of friction on the weights needed to lift the same load.
- Change the height of the books to investigate the effect of changing the gradient.
- Change the object being pulled to investigate the effect of changing the load on the force needed to pull it up.
- Design a table to record their measurements.
- Draw diagrams of their inclined planes.

Extra Time Ideas:

- Tidy up.
- Reflect on what they did well to work as a team this week and what they can do to be better teams next week.
- Play a game to name inventions starting with every letter of the alphabet.
- Play another free choice game to focus on teamwork.