



Lesson Plan 3: Engineering Heights - Rope Course Design

Objective: Learn about engineering principles, design, and testing.

Duration: 2 hours

Materials:

- Miniature rope course model (or images)
- Building materials like ropes, blocks, and connectors (for design activity)
- Safety manuals or guidelines
- Notebooks and pencils

Introduction (15 minutes):

1. Discuss what engineering is and its relevance in everyday life.
2. Introduce the concept of rope course design, emphasizing safety and strength.

Activity (1 hour):

1. Rope Course Exploration:
 - Students traverse an actual ropes course.
 - They observe and note the materials used, design elements, and any safety features.
2. Design Principles:
 - Discuss how certain sections of the course challenge different parts of the body.
 - Discuss the role of balance, weight distribution, and material strength in the design.

Discussion (20 minutes):

1. Share observations about the rope course's design.
2. Dive deeper into why specific materials are chosen and how they are tested for strength.

Application (20 minutes):

1. Design a Mini Rope Course:
 - In groups, students use building materials to create a simple rope course design.
 - They should factor in weight distribution, safety, and user experience.

Conclusion (15 minutes):

1. Review the engineering principles explored during the lesson.
2. Discuss potential careers in engineering and how these principles apply in the real world.