Integrative STEM Education
Exploring Mechanisms

Highlights

- Explore force, friction, work, and power
- Design a moving plan using simple machines to transport a house
- Apply various mechanisms to determine how to raise a house
- Specify how to safely lift and lower a house by properly configuring a large boom crane

STEM Connections

In the STEM Exploring Mechanisms course, students will discover how the four disciplines connect as they explore mechanics, including experiments in mechanical advantage and mechanism set-ups, and may even conceptualize new lifting and transport solutions.

Once they are familiar with the various types of mechanisms, they'll have the opportunity to explore innovative solutions to real-world problems, challenges, and needs.

Science

- Distance
- Weight and mass
- Force and velocity
- Work

Technology

- Inclined plane and wedges
- Screws
- Levers
- Wheels and axles
- Gears and gear trains
- Belt drives and pulleys

Engineering

- Apply the design process to a lifting and relocation problem
- Design evaluation and design changes to improve products
- Complete standard engineering forms
- Explore mechanical advantage

Math

- Units of measurement
- Adding and subtracting
- Division
- Conversion

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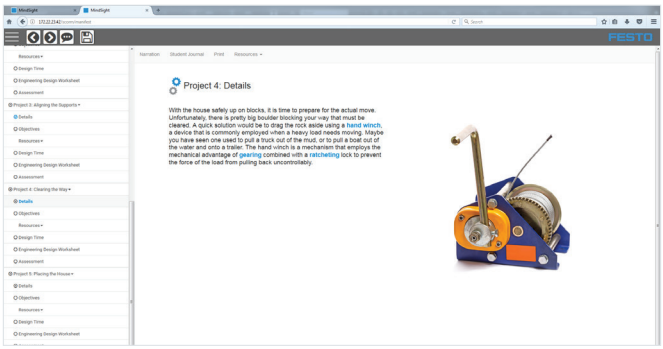
STEM Exploring Mechanisms
The purpose of the STEM Exploring Mechanisms course is to enable students to take on the role of a mechanical engineer in a real-world scenario.

The course explores, educates, and challenges students with the basic skills associated with civil and mechanical engineering.

MindSight LMS



Upon completion of the STEM Exploring Mechanisms course, students will be able to:

- Identify and define mechanisms with mechanical advantages which impact their daily lives.
- Use the basic skills required for the design of a stable moving platform and relocation of large objects.
- Demonstrate how the concepts of force, friction, work, and power can be applied to real life situations.
- Connect, configure, and utilize hardware to demonstrate the mechanical concepts presented.
- Discuss the design problems from the view point of a mechanical engineer and make precise conclusions proven by testing results and calculations.

Equipment and Supplies
- Multimedia Presentation
- MindSight Installation and User Guide
- STEM Exploring Mechanisms Trainer

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