Engineering

Energy, Structures, Motion\Unit 1

Unit Overview

You will learn about the principles of energy transfer, structure design, and motion as you complete a series of challenges that hone your engineering design skills. You will be given a challenge where you learn about the scientific/engineering principles behind the project, use those principles in your prototype design, and then communicate the process of testing and tweaking their prototype design.

Significant concepts/content/skills

Essential Question:

- How can we use scientific understanding of energy, structure, and motion to develop prototypes to solve a challenge using the engineering design cycle?

Reporting Categories with Learner Outcomes

- **Core Ideas and Concepts** - I can understand the main engineering and science principles of the design problem.
- **Problem Solving and Prototyping** - I can apply science and engineering understandings to the prototype design.
- **Communicating Practice** - I can evaluate, justify, and communicate the results of my design problem.

Assessment & Pacing

You will complete a series of projects throughout the semester. Each project takes about 5 class days (or 2 weeks) to complete. The order of the project follows:

- Glider challenge, Bridge challenge, Mousetrap car challenge, Trebuchet challenge, Egg Drop challenge, Paper flour ball run challenge, Musical instrument challenge, Ping pong ball pickup challenge, Engineering Research Presentation

Should I have any questions or concerns about your child's progress during this unit, I will contact you. Should you have questions or concerns, please email me at lspencer@acsamman.edu.jo