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Adaptive Device Design

Download Full Lesson Plan

(Full teacher resource documents are included)

Lesson Focus

Lesson focuses on the engineering of adaptive or assistive devices, such as prosthetic devices, wheelchairs, eyeglasses, grab bars, hearing aids, lifts, or braces.

Lesson Synopsis

The Adaptive Device Design activity explores the concept of how engineering has made possible the development of -- and ongoing improvements to -- adaptive devices that serve to help individuals with a wide range of physical challenges adapt to the world and participate fully in society. Students learn about the engineering process to solve problems, and work in teams to improve the design of a current or proposed adaptive device. Students start with eyeglasses, disassembling, examining component design and shape, and reassembling... then re-engineer the product seeking improvements to the current product.



Age Levels: 8-18

Objectives

- Learn about adaptive devices.
- Learn about how ongoing changes to adaptive devices have impacted everyday life.
- Learn about teamwork and the engineering problem solving/design process.

Anticipated Learner Outcomes

- adaptive devices
- impact of engineering and technology on society

- engineering problem solving
- teamwork

Lesson Activities

Students learn about how the engineering behind adaptive devices has impacted everyday life. Topics examined include problem solving, teamwork, and the engineering design process. Students work in teams to disassemble a product, evaluate the component parts, and recommend changes to improve functionality through redesign and material selection.

Resources/Materials

- Teacher Resource Documents (attached)
- Student Resource Sheet (attached)
- Student Worksheets (attached)

Alignment to Curriculum Frameworks

Curriculum alignment sheet is included in [PDF](#).

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