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Lesson Plans

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Lesson Focus

Lesson focuses on solar panel design, and its application in the standard calculator. It explores how both solar panels and calculators operate and explores simple circuits using solar power.



Lesson Synopsis

The Here Comes the Sun activity explores the concept of how solar energy is gathered by solar panels and adapted to provide power to a variety of machines, from calculators to spacecraft. Students disassemble a solar powered calculator and explore the component parts. Students work in teams to suggest design enhancements to the calculator to improve performance.

Age Levels: 8-18

Objectives

- Learn about solar power and solar panel design and operation.
- Learn about how calculators work and how the product is comprised of many different component parts.
- Learn about teamwork and the engineering problem solving/design process.

Anticipated Learner Outcomes

As a result of this activity, students should develop an understanding of:

- solar power and solar panel engineering

- calculator design and operations
- impact of engineering and technology on society
- engineering problem solving
- teamwork

Lesson Activities

Students learn about how solar energy is gathered and transferred to electrical energy in solar panels. Topics examined include solar panels, simple circuits, and the inner workings of a simple calculator. Students work in teams to disassemble a calculator, evaluate the design and operation of its component parts, recommend changes to improve functionality through redesign and/or material selection, and present to class.

Resources/Materials

Teacher Resource Documents (attached) Student Resource Sheets (attached)
Student Worksheets (attached)

Alignment to Curriculum Frameworks

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

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