

Energy Detectives



LESSON 3: Engineering Design Process

OVERVIEW & PURPOSE:

Students will learn about and use the engineering design process to solve a problem.

CONTENT STANDARDS

NGSS: MS-ETS1-1. Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

CCSS Math: MP3:Construct viable arguments and critique the reasoning of others.

OBJECTIVE:

Students will identify the steps of the engineering design process and use the process to design a solution to a fictitious problem posed .

VOCABULARY: Identify, design, create, revise, model.

MATERIALS NEEDED:

Engineering Design Process activity from The WORKS Museum.

HISI 7-8 Fortuna Elementary School District

Lacey Bigalke, Ellen Osten, Jana Reveles and Cathy Sinnen

Link

<http://teachers.egfi-k12.org/wp-content/uploads/2010/05/Post-lesson-Student-Activities-Engineers-and-the-Engineering-Design-Process.pdf>

TEACHER QUESTIONS

What are some possible solutions?

Is your solution viable?

What materials will you need?

ACTIVITY

Discussion about the engineering design process. Groups work cooperatively to match descriptions to the steps. Students then choose and solve one of three problems using the engineering design process. Closure: Have students share and critique solutions.