

Energy Detectives



LESSON 5: Testing Our Ideas

OVERVIEW & PURPOSE: This lesson allows students to work out and test their solutions and design they came up with to conserve energy at school in Lesson 4. The detectives will use a variety of equipment including volt meters and infrared heat detectors to collect data and test ideas.

CONTENT STANDARDS

NGSS: MSPS-3 Energy

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

OBJECTIVE:

Students will test their ideas and come up with areas for further research to solve the problem or question they posed.

VOCABULARY: Volt, Watt, Kilowatt, Kilowatt/hour, energy, usage, load, phantom load, conservation.

MATERIALS NEEDED:

Watt meters

Infrared sensors

Various electrical school resources

Spreadsheet and data collection surveys for school staff

TEACHER QUESTIONS

How will you answer your question?

How can you revise it?

What else do you need to know?

What research do you need to do?

What materials will you need?

How can I help you?

ACTIVITY

This is an open-ended activity where groups will start with their engineering design document for school electricity conservation from lesson 4, and test, investigate, revise and draw conclusions. The culmination of this lab should be a report of findings and recommendations. Students can share data with other classes, staff, school boards, parents or on a web site. A follow-up to this activity might be taking another look at the school energy data after a conservation plan or recommendations are put into action at the school.