

ENERGY CONNECTIONS ASSEMBLY, GRADES 3-5



Concepts, Learning Goals, & Logistics

Energy Must Come From Somewhere

Pinwheels, radios, and flames all need energy to do what they do. Discover the common energy source for most things on Earth. Volunteers pedal a bicycle to power a generator and set the stage for investigating sources of energy.

Power It Up!

Compare how energy from different sources produces electricity and discover the benefits and challenges of obtaining, transferring and using the energy of these resources.

Change It, Reduce It, Choose It

Experience producing energy for light bulbs that use different technologies and compare their energy needs. A human-powered electrical plant provides the energy for a model house and reveals how choices we make affect the amount of energy we consume and the demand we put on energy resources.

Engineering to Make a Difference

Is it possible to store large amounts of energy for later use? How can we use less energy, reducing the effects of energy use and extending the supply of limited resources? Engineers will be working with these and other challenges into the future

Science Learning Goals:

- Energy must come from somewhere, appears in many forms, and can change from one form to another.
- Electrical energy can be generated from renewable and nonrenewable resources.
- Technologies designed for harnessing energy have positive and negative impacts on the natural world as more engineered products are created and used.
- People influence decisions about how energy sources are obtained, transferred, and used.
- Decreasing the use of electrical energy can reduce pollution, save money, and conserve limited resources.
- Engineers design new technologies to solve problems faced by people and society.

Vocabulary Introduced: Energy, Renewable Resource, Non-renewable Resource

Program Length: 50 minutes

Audience Size: Up to 250 students

Preparation: Science Museum instructor brings all needed equipment and materials. School provides two tables for demonstrations and access to electricity. Allow 45 minutes before and after programs for set-up and take-down.

MN Academic Standard Strand: The Nature of Science and Engineering (0.1.1.2.1, 1.1.1.1.1, 1.1.1.1.2)

NGSS Science and Engineering Practices: Analyzing and Interpreting Data (1-ESS1-1), Constructing Explanations and Designing Solutions (1-LS3-1)

NGSS Crosscutting Concepts: Structure and Function (2-LS2-2)

If you have further questions on bringing programming to your school, please contact our Outreach Registration Coordinator at (651) 221-4748 or schooloutreach@smm.org.