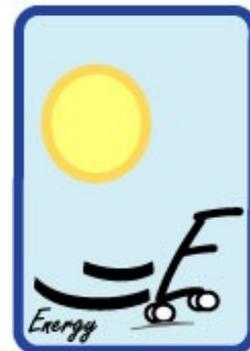


Connecting to Energy IP

Connecting to Energy The Connecting to Energy IP is an interest project from the Girl Scouts of Eastern Massachusetts.

Skill Builders

1. *Complete Activity 1, Types of Energy, from the Connecting to Energy Module. Through the use of drawing, writing, or drama, present the various types of energy, and the process by which energy is converted from one form to another. Include in your presentation a discussion of renewable vs. nonrenewable sources of energy.
2. Complete Activity 2, The Swing and the Pendulum: Kinetic and Potential Energy, from the Connecting to Energy Module. With the pendulum created in the activity, demonstrate the effects that the different lengths of string and weights have on the swing of the pendulum. Identify potential and kinetic energy in a swing, and the points at which one is converted to the other in the swing's motion.
3. Complete two additional activities from the Connecting to Energy Module. These can include the use of Dominoes, Slinkys or elastic-powered vehicles to demonstrate forms of energy. Describe how the selected activities use energy to create motion, and identify both potential and kinetic energy in your demonstrations. What allows an elastic band to power a vehicle? How can energy be stored for future use?
4. Explain, through a drawing or diagram, the concept of the law of conservation of energy. Describe what happens to energy when it does work. How is one form of energy converted to another form, and what is created in the process of conversion?
5. Complete one of the math exercises for one of the activities in the Connecting to Energy Module. Describe how the math is related to the science concepts described in the energy activity.
6. Build a rubber-powered vehicle, as described in the Connecting to Energy Module. This vehicle can be created from balsa wood, other materials, or from a building set such as LEGOS or KNEX. Demonstrate when the stored energy is released, and when potential energy is converted to kinetic energy. Is there a relationship between the number of times the propeller is wound or the rubber band is stretched and the distance the vehicle travels?



Technology

1. Explore one of the web sites listed in the Resources for the Connecting to Energy Module, or another related site that describes energy. If possible, find an experiment from the web site that uses energy to create motion or work.
2. Visit a hands-on exhibit at a science or children's museum that explores energy. Describe the ways in which this exhibit relates to the science concepts introduced in the Connecting to Energy Module activities.
3. Visit a computer center or a Computer Learning Center and create something on the computer using simulation software.

4. Identify the way in which increasing technological demands and the resulting need for more energy is affecting the available energy resources. What is our society doing to meet these increased demands? What are some of the difficulties involved in exploring new energy resources?

Service Projects

1. Select one of the activities in the Connecting to Energy Module and adapt it to present to a younger group of girls. Describe what you would like them to learn from the activity. Ask a troop of younger Brownies or Juniors if you can come to a meeting to present your activity.
2. Create a display, exhibit, or project on energy for a science fair, a school exhibit, or to present to a younger science class. Include in your display information on the various forms of energy, both renewable and non-renewable, and examples of potential and kinetic energy.
3. Create an energy-powered vehicle that can be used in a soapbox derby or equivalent competitive event. Enter your vehicle in the competition. Evaluate your design and explore ways in which your design could be improved. Share your design with a younger group of girls at one of their meetings and if possible, help them to create their own energy-powered vehicles.
4. Using playground equipment, teach younger children a few science concepts involving energy and motion. This can include such concepts as a pendulum swing, potential and kinetic energy, gravity, and energy conversion with heat production as a result of the conversion process. Identify ways in which these concepts can be explained to their age group to enable them to understand them.

Career Exploration

1. Invite a woman who is a professional energy engineer to your meeting or classroom. Make a list of questions to ask her about her career and work, her science interests, and her academic training. How does she use knowledge about energy in her work? Identify the science and math courses that would help you to be prepared for a career in this field.
2. Take part in an engineering or science day at a college or science museum. What aspects of the day did you enjoy the most? What did you like the least about the day? Identify any activities or events that involved the study of energy.
3. Obtain a college catalogue from a school of engineering. Make a list of those courses that you have taken and that you need to take to be considered for acceptance to this school. Identify the courses in the engineering school that focus on energy in their course descriptions.
4. Correspond, using e-mail, with a woman scientist or engineer, or with a college student who is majoring in science or engineering. Ask her questions about her life, her career, her course of study, and her interest in math and science. Share with her what you are taking in school, and what your science interests include.

See also

[List of Council's Own Interest Projects](#)

[Electricity IP](#)

[Engineering IP](#)

[Engineering \(Society of Women Engineers\) IP](#)

External Links

Girl Scouts of Patriots' Trail Council Badges, Patches, and Recognitions
Connecting to Energy IP

