



# Royal Rangers

Merit Requirements: **Green-Bordered Merit**

## **ENERGY**

1. Write a 100-word essay defining the term "energy." In this report explain the following statement: "Energy cannot be created or destroyed."
2. Define the following forms of energy and give one example of each:
  - a. Kinetic energy
  - b. Potential energy
  - c. Chemical energy
  - d. Solar energy
  - e. Heat energy
  - f. Atomic energy
3. Draw an energy diagram of a car. Show the initial sources of energy, the different forms that the energy is converted into, devices used in the conversion process, the form in which energy is released, and the energy wasted. Make sure to include the battery, air conditioning, radio, lamps, starter, alternator, wipers, and pumps.
4. Conduct two energy surveys. One survey must be of your home. The other survey may be one of the following: church, workplace, or school. Include sources of energy, devices using energy, energy waste areas, and recommendations to use energy more wisely and minimize waste. Give a copy of your findings to each facility.
5. Perform an energy conversion demonstration. During the demonstration, explain in your own words the different forms that the energy is converted into.
6. Research the different kinds of energy resources of the world and make a table detailing the advantages and disadvantages of each (cost, pollution, safety, etc.). Make sure to at least include wind, coal, wood, natural gas, petroleum, waterpower, and solar.
7. List the nearest power plant facility to your community, including location, size (in terms of energy produced), date established, a photograph, and any other interesting facts you may find. Research the energy resources used in the United States and the relative proportions of energy supplied by each.
8. Explain what cogeneration means and how it conserves energy.
9. Obtain one article from a current newspaper or magazine about the conservation of energy. Explain how it applies to your life. Explain to a group how saving or wasting electrical energy affects the environment.
10. Develop a plan to save energy for a period of two weeks and keep a detailed record of energy savings.