



Kids Inspiring Change: Conservation of Energy and Resources Curriculum Expectations for Grade 5

Science and Technology
Energy and Control: Conservation of Energy

Overall Expectations:

- Demonstrate an understanding of the importance of conservation of energy in relation to the wise use of renewable and non-renewable energy sources.
- Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy.

Specific Expectations:

Understanding Basic Concepts

- Distinguish between a renewable and a non-renewable source of energy.
- Describe how energy is stored and transferred in a given device or system (e.g., in an automobile, chemical energy stored in the gasoline is transformed into mechanical energy upon combustion, enabling the vehicle to move and releasing thermal energy as heat).
- Recognize that energy cannot be created or destroyed but can only be changed from one form into another (e.g., chemical energy in a battery becomes electrical energy).

Developing Skills of Inquiry, Design, and Communication

- Formulate questions about and identify needs and problems related to protection of the natural environment, and explore possible answers and solutions (e.g., investigate how local recycling efforts help conserve energy and natural resources).
- Use appropriate vocabulary, including correct science and technology terminology, in describing their investigations and observations (e.g., use terms such as heat, light, sound, electrical, mechanical, magnetic, chemical when describing forms of energy).
- Compile data gathered through investigation in order to record and present results, using tally charts, tables, and labeled graphs produced by hand or with a computer (e.g., list the names of some devices used in the home that change energy from one form into another, and record in a table the types of energy transformations for each device).

Relating Science and Technology to the World Outside the School

- List various sources of energy and identify them as renewable (e.g., sun, wind, tides, wood) or non-renewable (e.g., coal, natural gas, oil).
- Describe the advantages and disadvantages of using renewable energy sources as opposed to non-renewable sources.

- Identify the forms of energy (e.g., mechanical, electrical) used in the home, school, and community and identify the energy source for each (e.g., wood, coal, moving water).
- Identify ways humans use energy, evaluate the economic and environmental costs of each, and describe ways to avoid wasting energy (e.g., lowering the thermostat during the night).