

Conservation of Energy

Grade

5

Topic: Energy
Grade: 5
Duration: 45 minutes (ongoing throughout the year)

Students will examine their use of energy over a period of time. They will develop a plan for reducing their overall energy consumption.

Curriculum Expectations

- 5s54: Demonstrate an understanding of the importance of conservation of energy in relation to the wise use of renewable and non-renewable energy sources
- 5s56: Evaluate the reasons for conserving natural resources and identify possible ways of conserving energy
- 5s62: Formulate questions about and identify needs and problems related to protection of the natural environment, and explore possible answers and solutions
- 5s63: Plan investigations for some of these answers and solutions, identifying variables that need to be held constant to ensure a fair test and identifying criteria for assessing solutions
- 5s65: Compile data gathered through investigation in order to record and present results, using tally charts, tables, and labelled graphs produced by hand or with a computer
- 5s66: Communicate the procedures and results of investigations for specific purposes and to specific audiences, using media works, oral presentations, written notes and descriptions, drawings, and charts
- 5s72: Explain ways in which technological innovations affect our use of natural resources and increase or decrease our ability to conserve energy
- 5s75: Identify ways humans use energy, evaluate the economic and environmental costs of each, and describe ways to avoid wasting energy
- 5e1: Communicate ideas and information for a variety of purposes
- 5e2: Use writing for various purposes and in a range of contexts, including school work
- 5e5: Produce pieces of writing using a variety of forms (e.g., stories, poems, reports), narrative techniques (e.g., first- and third-person points of view, dialogue), and materials from other media (e.g., illustrations)
- 5e45: Communicate information, explain a variety of ideas and procedures, and follow the teacher's instructions
- 5e49: Contribute and work constructively in groups
- 5m107: Use computer applications to record the results of data collected
- 5m113: Design surveys, collect data, and record the results on given spreadsheets or tally charts
- 5m114: Display data on graphs (e.g., line graphs, bar graphs, pictographs, and circle graphs) by hand and by using computer applications

Background Information

Energy can be conserved if used efficiently. There are many ways that this can be done. Saving energy through increased efficiency and methods such as insulation are required in order to make sure that there are sufficient energy supplies for the future.

Accountability

Students will appreciate the need to conserve energy.

Teacher Notes

1. Use this scenario approach:

You want to get other people to learn more about the importance of energy conservation – at school, in the community and at home. You decide to investigate how you can make a difference, even in a small way at first.

2. Start the activity with the whole class. On a chart, brainstorm with the students and create a list of all of the things around the classroom and the school that required energy. Get students to note what the *energy* actually does – makes the lights turn on, the radio play, and the furnace work.
3. Divide the class into small groups. Have the groups make a large chart of the different ways that they use energy during one day. Get them to start from the minute they wake up (alarm clock) to the time they go to bed (lights in their bedroom). Divide the list into several columns. Record the event in the first column.
4. In the second column, indicate the form of energy that is being used. – e.g., electric, chemical, solar.
5. In the third column, classify each form of energy as renewable or non-renewable.
6. As a class, go over all of the lists and make one large class list that will be used by students to record conservation strategies that will be carried out by class members.
7. Have each student examine the list and record the activities that could be eliminated for 1 day, 1 week, or longer. Get them to consider how much energy eliminating some items on a regular basis could save. This could also include changing behaviour patterns such as turning off lights when not in use.
8. Ask each student to create their own personal list that demonstrates all of the energy items that they have eliminated from their list. In the last column on the chart, write down their strategies for reducing energy consumption at school and home.
9. Create a spreadsheet to record this information. Conduct this survey with members of your family.
10. These charts can be referred to on a regular basis and as students find more ways to reduce their energy consumption, they can modify their class and personal list.

Home Extension

Investigate how energy consumption is measured in your home and calculate how much energy one household uses over the course of a week, a month and one year. Find out how much it costs to use this amount of energy.

Lesson Comments

Teachers, feel free to add in your own comments for this lesson.