



Subject Area(s) Science and Technology

Lesson Title Wind Energy

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Grade Level 6 (5-6)

Lesson # 1 of 1

Lesson Dependency

Time required Two 60 minute sessions

Summary

Students may not be aware of energy in the wind. Wind energy is quickly becoming a more usable resource. It is both clean and renewable. Wind energy is harvested by wind turbines. Students will learn about how wind turbines convert mechanical energy into wind energy. They will also learn about the advantages of using wind energy over conventional forms of energy.

Engineering Connection

Clean sources of energy are constantly being sought by engineers. The use of petroleum and coal for energy has long been used by engineers to power everything from cars to lawn mowers as well as to produce electricity.

Keywords: Wind energy, wind turbines, energy conservation, renewable resources

Educational Standards

Science: • Science: A.1, A.2, E.8, F.3, F.4, F.5, G.1, G.3, E.2, E.1

Pre-Requisite Knowledge

There are no pre requisites for this lesson.

Learning Objectives

Students will be expected to:

- Learn what energy conservation is.
- Describe ways in which wind energy can be used to produce electricity.
- Talk about the disadvantages of using petroleum and other non renewable resources.
- Tell the difference between renewable and non renewable resources

Introduction / Motivation

Clean sources of energy are constantly being sought by engineers. The use of petroleum and coal for energy has long been used by engineers to power everything from cars to lawn mowers as well as to produce electricity. This lesson will allow students to get a first hand look at how energy is converted from one form to another.

Lesson Background & Concepts for Teachers

It is recommended that teachers get familiar with the use of wind turbines as a means of energy conversions. There are many videos available through the discovery network that deals with wind turbines. This lesson will deal with non renewable and renewable resources and the advantages and disadvantages associated with each, as a result the teacher should be very familiar with this.

Vocabulary / Definitions

Word	Definition
Renewable resource	A natural resource qualifies as a renewable resource if it is replenished by natural processes at a rate comparable to its rate of consumption by humans or other users.
Non renewable resource	A natural resource qualifies as a non renewable resource if it is not replenished by natural processes at a rate comparable to its rate of consumption by humans or other users.
Energy Conservation	Energy conservation is the practice of decreasing the quantity of energy used while achieving a similar outcome.

Associated Activities

Wind Turbine Activity

Lesson Closure

The lesson can be closed by asking students to think about other ways of conserving natural resources, and summarizing what was done in the class today.

Assessment

To assess this lesson have students write in their log books about the lesson, you can also have the students make a connection between wind turbines and electric fans.

Pre-Lesson Assessment

As a warm-up and to assess prior knowledge, hand out 4 x 6 index cards, one per student, and ask students to each describe, in writing or as a diagram or drawing, an example of “energy,” taking no more than 5 minutes to do so. Then ask each student to succinctly present his or her answer to the class and to give you the index card.

Lesson Summary Assessment

Have students write in their log books what they thought of the lesson, as well as how they think using wind energy is good for the environment.

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