WATER WORKS FOR US

K-2

OBJECTIVES

At the end of this lesson, the students shall be able to do the following:

1. Name, orally or in writing, ways that moving water can do work;

2. Act out ways that water is used to perform work; and

3. Give an oral or written definition of kinetic energy.

SUBJECTS:
Science, Music, Creative Drama

TIME:
20 minutes

MATERIALS:
aluminum pie pan
scissors
pencil
ruler
knitting needle with a flat head
liquid dish detergent bottle
teapot
hot plate

BACKGROUND INFORMATION

Water moving from a higher level to a lower level has energy. The energy of moving water is called kinetic energy. The faster the water moves the more energy it has. Moving water turns water wheels that can run machines. One important use of water is for turning water wheels called turbines. Turbines generate electricity for homes and businesses.

Term

kinetic energy: the energy of a body resulting from it's motion.

ADVANCE PREPARATION

A. Gather materials.

B. Make water wheel - cut the round bottom out of an aluminum pie pan. Make a small hole in the center with a nail. From the center divide the circle into eight equal sections. Mark the sections with a pencil. With scissors cut the pencil lines to about 1/2 inch from the center hole. Bend each section at approximately right angles to the circle to form blades. In the center hole, insert a knitting needle that has a flat head on the end.

C. Make charade cards.

PROCEDURE

I. Setting the stage

A. Explain the background information to the students.

II. Activities

A. Working water

Using water from the faucet or from the liquid dishwashing detergent bottle squeezed with a lot of force, direct a stream of water onto the blades of the water wheel causing it to spin.

B. Working steam (water in the gas form)

Using a teapot with a spout, heat water on a hot plate until steam is coming out rapidly. Hold the aluminum water wheel so that the steam hits the blades causing them to turn.

III. Follow-Up

A. Sing the song, "I've Been Watching Water Work" to the tune, "I've Been Working On the Railroad."

I've Been Watching Water Work

(to the tune of "I've Been Working On the Railroad")

I've been watching water work
All the live long day.
It produces electricity
to make life easier each day.

Don't you like to watch the TV
and run your computer too?

Don't you like to cool your house
and heat it when it's cold?

Water works so much
Water works so much
Water works so much for us for us.

Water works so much
Water works so much
Water works so much for us.

IV. Extension

A. Play charades with ways we use water. Make charade cards with the names of ways to put water to work. Examples: cooking, washing clothes, drying clothes, dish washing, heating, cooling, and as a power source for electrical appliances. Let the children draw a card and act it out for the others to guess.

RESOURCES

Victor, Edward, Science for the Elementary School, Fourth Edition, MacMillan Publishing Company, Inc., New York, pp. 339, 376, 377, 1980.

Walpole, Brenda, 175 Science Experiments to Amuse and Amaze Your Friends, Random House, New York, p. 25.