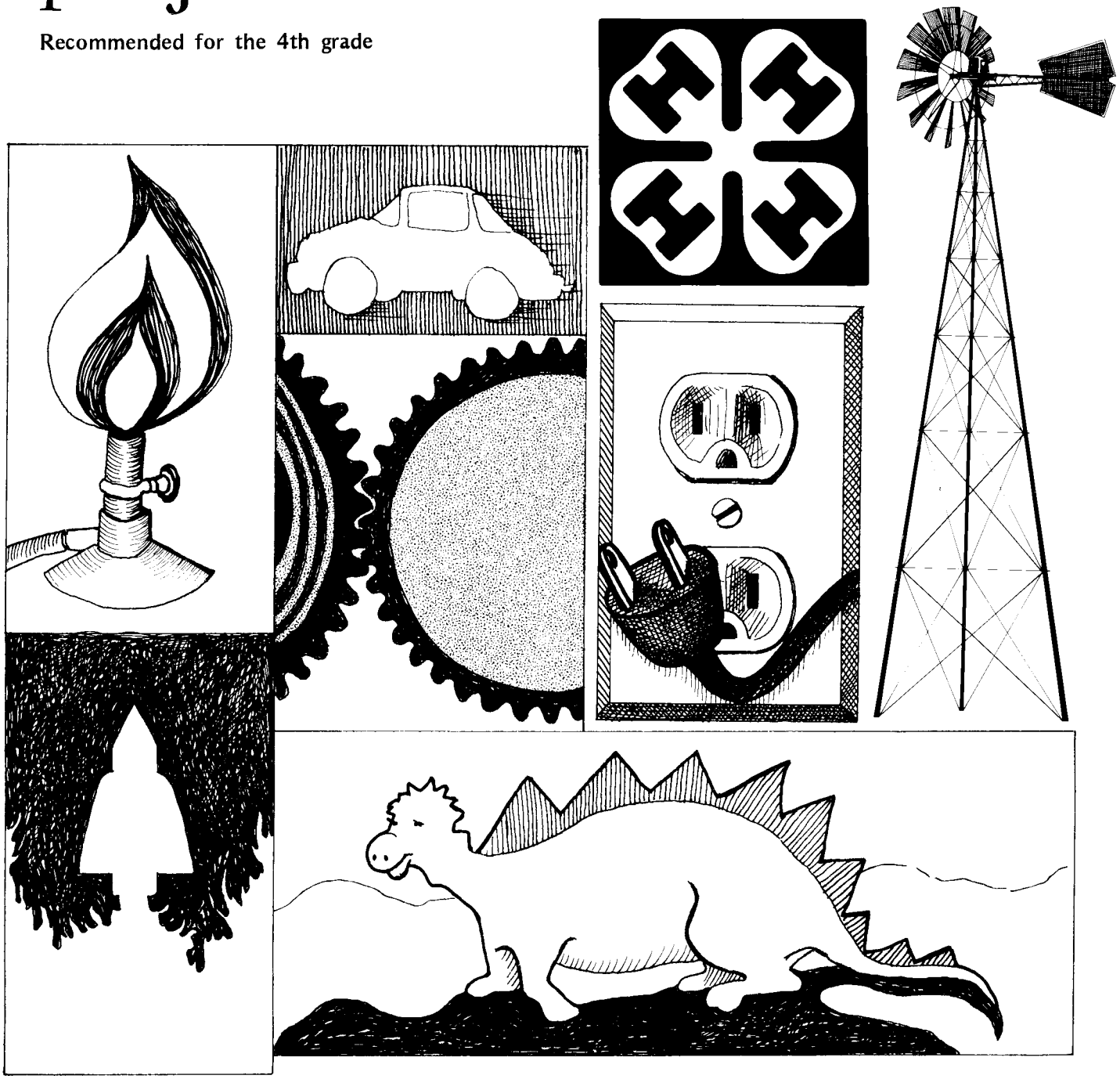
COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY • COLLEGE OF AGRICULTURE

4HA-01PB

# 4H energy

## project 1

Recommended for the 4th grade



# 4H is.....

**.....for all Kentucky young people between the ages of 9 through 18 and offers many activities to help you learn about things you like, or to learn more about them.**
**In 4-H you have fun while you learn.**
**Ask your 4-H leader about the more than 80 projects and activities that you can do.**
**Everything is planned just for you!**

# introduction

*Everyone needs energy. Big people take more energy to move around than little people. Some jobs use more energy than others. In project 1 we will learn what energy is, where it comes from and why it is so important to us.*

*Published by the Kentucky Cooperative Extension Service in cooperation with the Kentucky Department of Energy as a part of the Kentucky Energy Conservation Program.*

**4-H Energy Development Committee:** W.W. Frye, Dennis Goodman, Dariel Rexroat, Paul Teague, Quentin Terry, George Turner, Diana Vahlsing, Ron Williams, and Jo Nelda Cole, Jack Taylor, William Mallory.

# 4H energy project 1

## what is energy?

Everything we do requires energy. Have you ever been told to eat your food because you need the energy? You always feel tired or weak after being sick because you haven't eaten very much. Food gives your body energy.

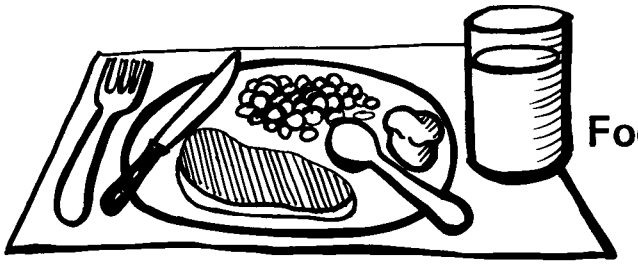
When you have lots of energy you can do lots of things. Energy is what makes us active.

We are going to see that it takes energy to make things move. It makes machines move. It makes plants grow. Energy lets you play and work.

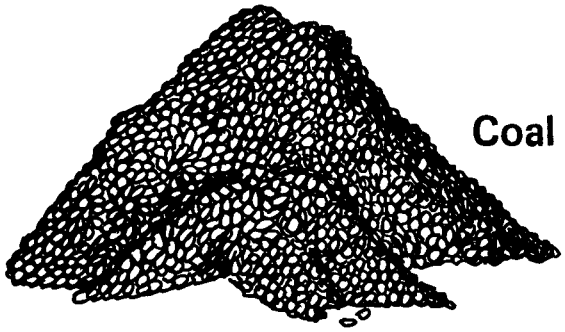
**List 5 things you did today that took energy.**

1. _____
2. _____
3. _____
4. _____
5. _____

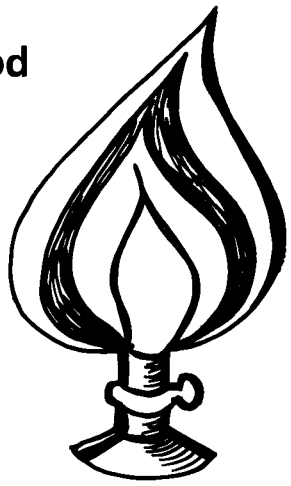
**Which one took the most energy to do?** _____



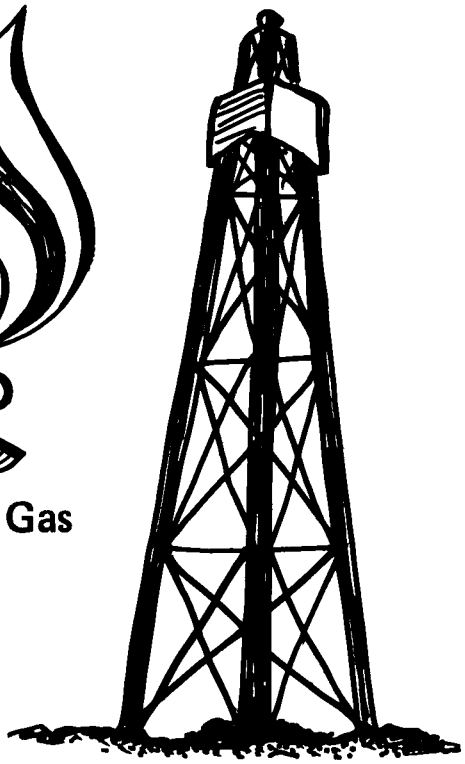
Food



Coal



Natural Gas



Crude Oil

# energy comes from various places

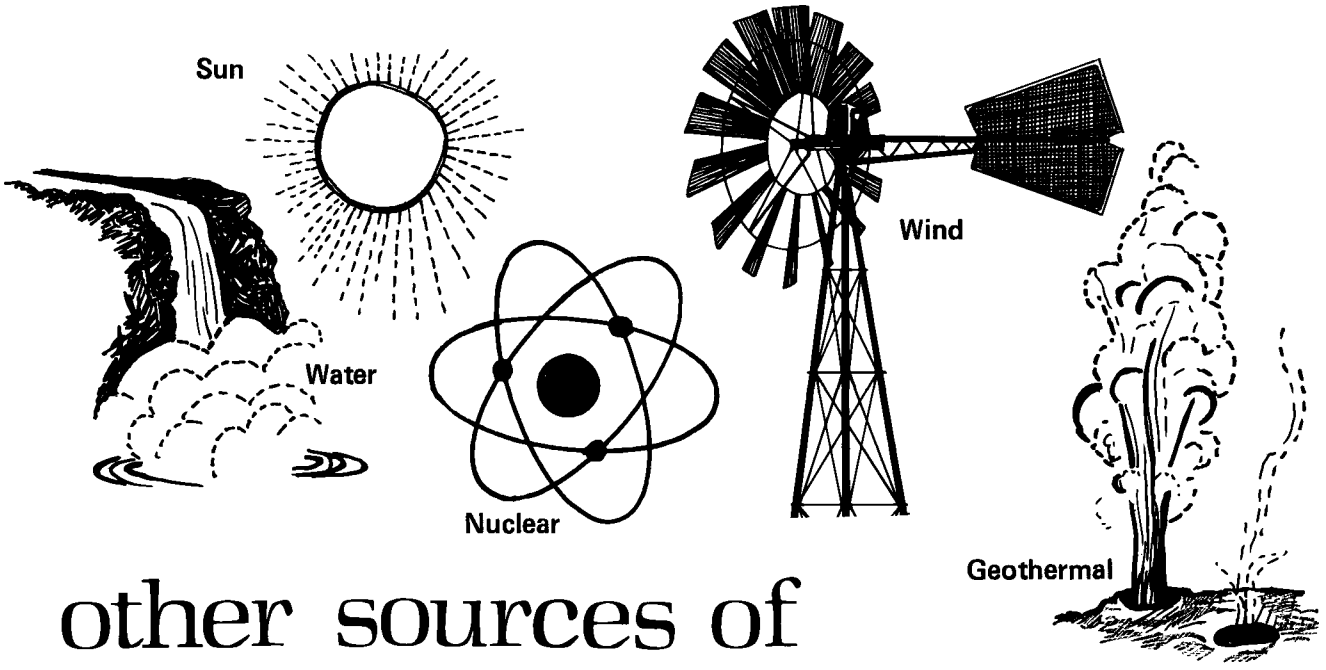
Energy comes from many places and comes in many forms. Energy for your body comes from food. Energy for trucks, cars, tractors, trains and planes comes from fuel made out of crude oil. Energy to heat homes and water for cooking and washing can come from natural gas. Energy for running large power plants can come from coal.

Coal, natural gas and crude oil are found deep in the ground. Our food is grown on the surface of the ground. The amount of food can be increased by using more land surface. The fuels in the ground cannot be increased. We now use so much coal, oil and gas that they could run out in a few years.

**What kind of fuel is used to heat your home?** _____

**Name other kinds of fuel or energy used in your home.** _____

**What kind of energy runs your family car?** _____




# other sources of energy are available

In the near future we need to obtain energy from many other sources if we keep doing all the things we now do. We must cut back on the large use of coal, natural gas and crude oil now so we can have more time to develop these other sources. THIS MEANS CONSERVATION.

**Some ways energy can be conserved:**

1. Walk when you can
2. Vacation close to home
3. Limit refrigerator door openings
4. For winter, set house thermostat at 68° F.
5. Fix leaky faucets

**List other ways you can think of to conserve energy**

# activities to learn more about energy

*Instructions: Select one or more of these activities or other activities you like. After completing the activity report on it using the record sheet, tell about it in your story.*

1 Select any item in your home or school then list all energy associated with it. Does energy make it run? If so what kind? Does it change energy from one form to another? Does it store energy? What kind of energy was used in its manufacturing?

2 To investigate solar energy take a piece of dark metal and a piece of light colored metal and lay them in the direct sun light. After 10 minutes briefly touch them to see which is warmed. Do the same after 20 minutes.

3 Another solar energy inspection is to use a magnifying glass. Adjust the location of the glass so that it directs sunlight to a small point on a piece of paper. It will very soon set the paper on fire.

4 Have a group discussion on how recycling can help energy conservation.

5 Have a group discussion about bicycle safety at your school and on the way to and from school so that more youngsters might ride their bikes.

6 Have each person in your group find out how the thermostat is set in his home. Have a group discussion on how and why setting a thermostat at 65° F or 68° F saves heat compared to 70° F or 72° F .

7 Have a group discussion and make a list of all the activities you do during a week that require energy. Opposite each activity list the type of energy required.

8 See if your group can add to the list of things to do to conserve energy.

9 Cut from magazines pictures showing energy usage.

10 Arrange for a representative of a power supply to visit your group and tell about their business.

# record of activities

**For each of the activities you or your club decides to do, make a report following this form. These records of activities and your story will be judged if you decide to enter your project books in competition.**

## A. PLANNING:

1. Activity that will be done (example: Field Trips to the Water Company):

   _____

   _____

   _____

2. Things that will be learned from this activity:

   a. _____

   _____

   b. _____

   _____

   c. _____

   _____

   d. _____

   _____

3. Steps that will be taken to do this activity:

   a. _____

   b. _____

   c. _____

   d. _____

   e. _____

   f. _____

## B. DOING:

1. Things I learned from this activity:

   a. _____

   _____

   b. _____

   _____

   c. _____

   _____

   d. _____

   _____

2. People who helped with this activity:

a. _____

b. _____

c. _____

d. _____

e. _____

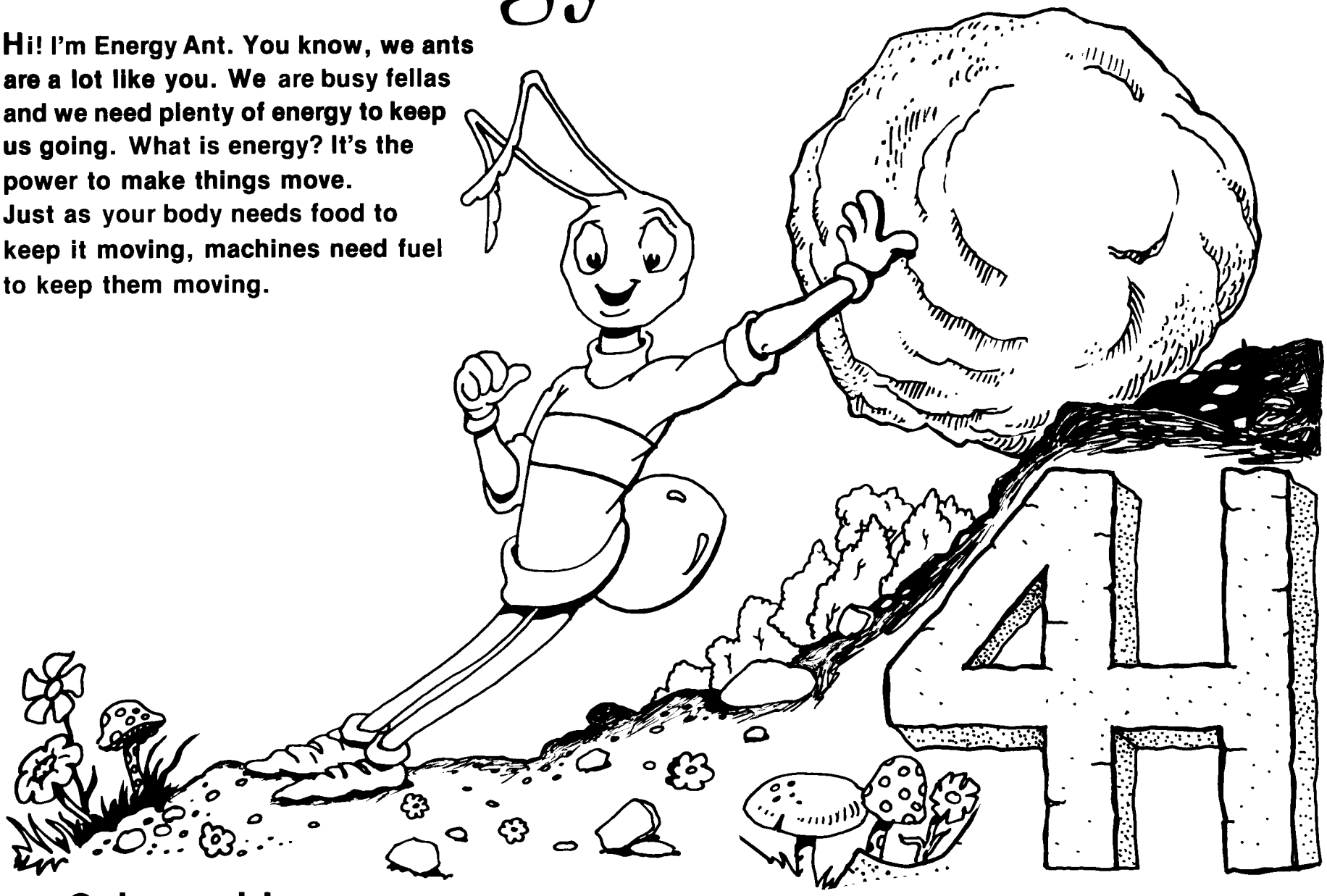
**C. ATTACH PICTURES OR CLIPPINGS THAT RELATE TO THIS ACTIVITY.**

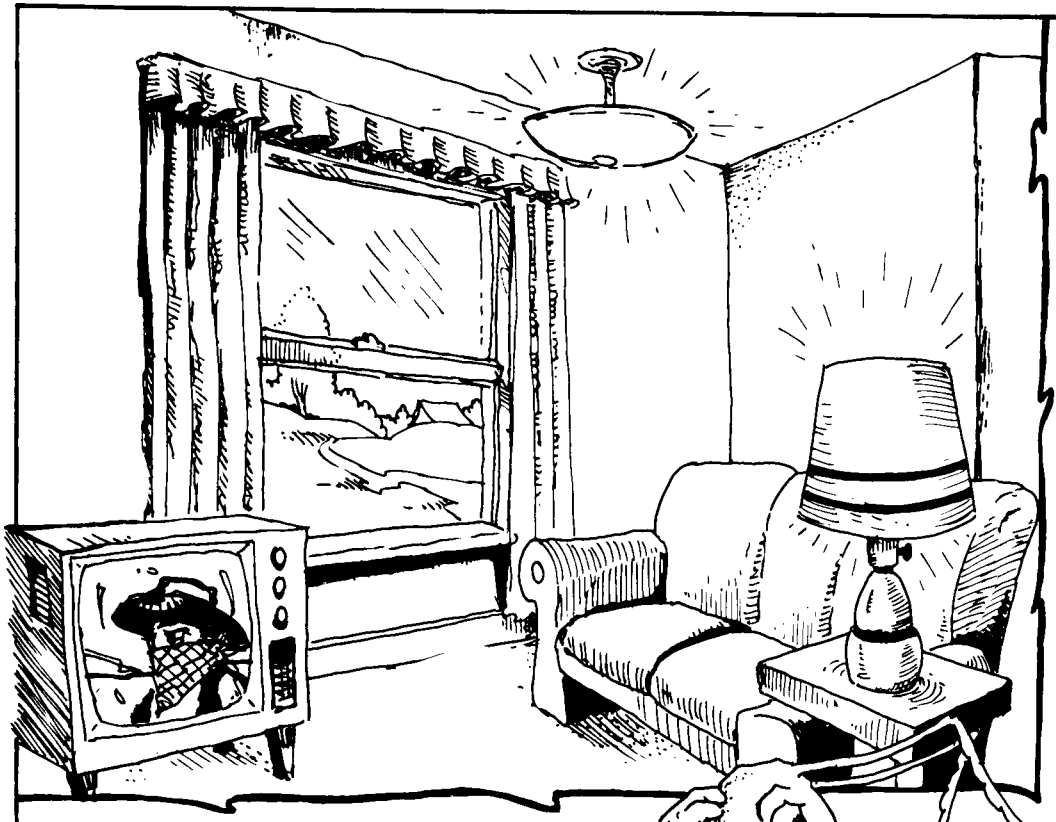
# my first unit story

Tell on this page what you did in the project and some things you learned.

# meet energy ant

**Hi! I'm Energy Ant. You know, we ants are a lot like you. We are busy fellas and we need plenty of energy to keep us going. What is energy? It's the power to make things move. Just as your body needs food to keep it moving, machines need fuel to keep them moving.**





What's wrong with this picture?

Answer:

*The T.V. and lights are on and there is nobody in the room.*

# UNSCRAMBLE THE WORDS

1. Instead of going fast in a car. . .

   DREVI SOLWER

2. When you leave the room be sure to. . .

   URNT FFO LITGHS

3. Instead of asking someone to drive you there every day, why not. . .

   ALKW OT SHOCOL

1. _____

2. _____

3. _____