

Where Does It Get Its Energy?

Students classify things they like to do under the source of energy it requires.

Grade Level: K–4

Subject Areas: English
Language Arts, Science

Setting: Classroom

Time:

Preparation: 50 minutes

Activity: Two 50-minute periods

Vocabulary: Battery,
Electricity, Gasoline, Human
energy

Major Concept Areas:

- Definition of energy
- Development of energy resources

Getting Ready:

Students can be requested to bring toys and other items from home. Remove the batteries from one toy and make sure that at least one windup toy is unwound. Post the *Energy Source Illustrations* around the room.

Objectives

Students will be able to match things that happen to a source of energy, such as batteries, electricity, gasoline, or human energy.

Rationale

Being able to identify where nonliving things get their energy introduces students to different forms of energy and helps them appreciate that the world around them depends on a continual supply of energy.

Materials

- Copy of *Energy Source Illustrations* (specifically electricity, human energy, battery, and gasoline)
- Toys and other items that are powered from different sources (e.g., windup, battery-operated, electrical)
- Drawing paper
- Drawing implements
- Old magazines with pictures (optional)
- Masking tape
- Copies of *Energy Source Tally* (5 per student)
- Find additional resources related to this activity on keepprogram.org > Curriculum & Resources

Background

Everything we do depends on energy. In the past, humans accomplished activities by using their own muscle power, animal labor, and resources such as wood and coal. Today, many of our daily chores depend on modern sources of energy such as batteries, gasoline, and electricity. Electricity is generated from other resources such as fossil fuels, nuclear energy, and renewable energy resources (sun, wind, water [hydropower]). Our lifestyles have become so dependent on electricity and other modern sources of energy, it is hard to imagine living without them.

Procedure

Orientation

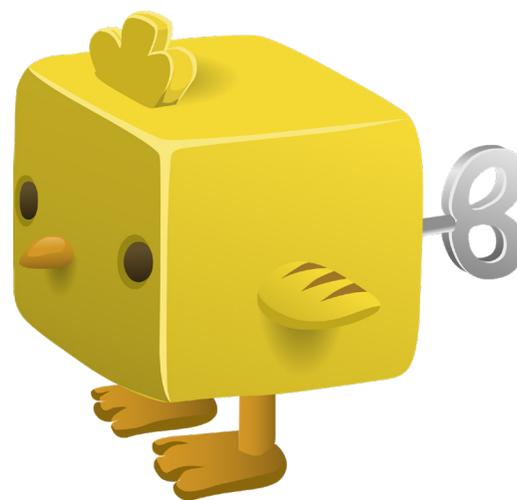
Review the difference between living and nonliving things. Have students list ways they know something is alive. Make sure students understand that living things get their energy to move and grow from food (see the activity “Energy from Food”).

Ask students to generate a list of energy sources. Note their response.

Show students a toy that needs batteries (do not install the batteries), a windup toy (unwound), and an unplugged electrical item. Explain that none of these items works. Ask students what should be done to make each of them work. They should suggest putting in batteries, winding up the toy, and plugging in the item. Do each of these actions and show the students that the items now work. Explain that batteries, electricity, and winding are sources of energy for these objects. If students brought their own toys, ask them to play with them and think about what makes the toys work.

Steps

1. Introduce the **Energy Source Illustrations** that you have posted around the room. Make sure students understand what each illustration represents.
2. Refer students to a windup toy. Challenge them to point out which **Energy Source Illustration** best represents the source of energy used to make the toy work. They should identify the human energy **Energy Source Illustration**. Do the same with a battery-powered toy and an electrical item. For the gasoline illustration, ask how many students have ridden in a car with an adult to a gasoline station. Discuss what else is powered by gasoline (lawn mowers, snowblowers, etc.).
3. Hand out drawing paper and implements and have students draw something they like to do. They can also look through magazines and cut and paste pictures that portray activities they like to do.
4. Ask students to stand up if they drew activities that are human-powered. After students describe their activities, post their drawings under the human energy **Energy Source Illustration**. If necessary, further clarify what constitutes a human-powered activity, so that students who may mistakenly believe their activity is human-powered can change their minds and choose to identify with a different energy source. NOTE: All activities require some human effort (putting in the batteries, inserting the plug, etc.); however, focus students' attention on the primary energy source that keeps the item working.
5. Of the students who still have their drawings, ask one to stand up and describe his or her activity. Challenge the class to identify what energy source powers that



student's activity. Post that student's drawing under the correct **Energy Source Illustration**. Request that any other students whose activities come from the same source describe their drawings, making sure the correct energy source is identified. Add their drawings under that energy source.

6. Repeat the procedure in Step 5 until all of the students' drawings are under one of the **Energy Source Illustrations**. If one or more energy sources has very few or no drawings under it, help students identify activities that apply. NOTE: There are other **Energy Source Illustrations**, such as wind and sun, that can be posted as well.

Closure

Hand out five copies of the **Energy Source Tally** to each student (one for each day of the week). For each day, tell students they should draw or describe at least three things they do each day and match each action to its correct energy source. Students can also add drawings or pictures from magazines under the posted **Energy Source Illustrations**. Have students identify items around the school that use energy and name their energy source. This kind of naming activity can also be conducted as a guessing game (see **Assessment**).

Assessment

Formative

- Were students able to discriminate between activities that use human energy and those that use energy from another source?
- Are students able to match a nonliving item that uses energy to its source?

Summative

- Have students share and discuss their *Energy Resource Tallies*.
- Involve students in a guessing game where they describe a nonliving thing that uses energy and other students guess what that object is. (You may want to precede this activity with a tour of the school during which students identify in each room two nonliving objects that use energy). Students can work in groups of two or three to develop a riddle (they should avoid using any words that are in the name of the object). Each group presents their riddle to the other groups. The presenting group can provide a few hints, and supply the answer if no one can guess after several minutes. Following are examples of riddles.
 - You use your fingers to make this work, but it is also powered with electricity and/or batteries. It is used by people to search the Internet. (Computer/Phone/Tablet)
 - You have to turn a crank to make this work. It is human-powered, and it helps us write better. (Pencil sharpener)
 - Outside the window, we saw something yellow that makes a lot of noise, uses gasoline to move down the road, and carries students to and from school. (Bus)

Related KEEP Activities

This activity could be preceded with “Evidence of Energy” to help students gain an awareness of the energy around them. Also students should appreciate how much of their energy comes from electricity; see K-5 “Energy Sparks for Theme II: Electricity in Our Lives.” In “Energy From Food” students identify food as their source of energy. “Fueling Around” and other teaching ideas in K-5 Energy Sparks for Theme II complement this activity. Students may be interested in investigating how everything they buy involves the use of energy (see related concepts in “Don’t Throw Energy Away”).

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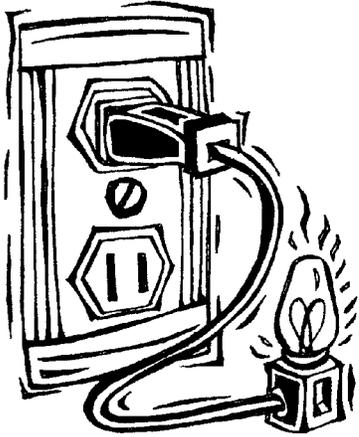
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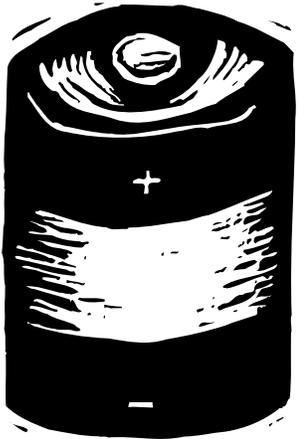
Energy Source Illustrations



ELECTRICITY



HUMAN ENERGY



BATTERY

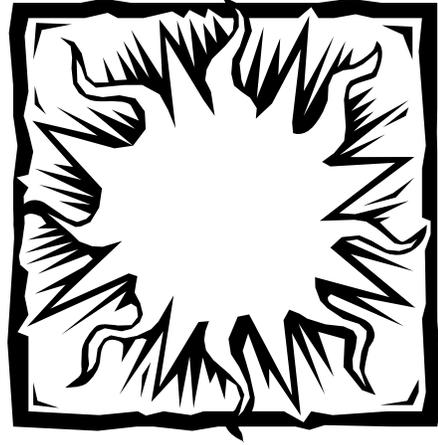


GASOLINE

Additional Energy Source Illustrations



WIND



SUN



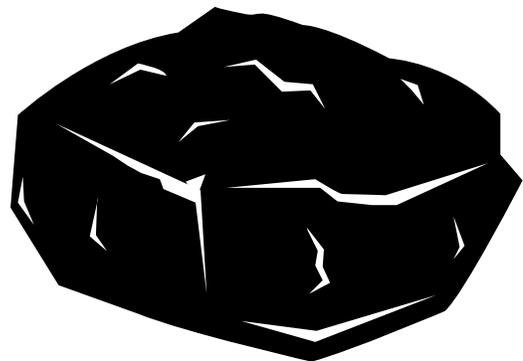
FOOD ENERGY



WOOD



OIL



COAL

Energy Source Tally

Name _____ Date _____

Draw three (3) things you did today in the boxes on the left.
Then draw a line from what you did to the correct energy source on the right.

Things I Did Today

Energy Source

