Building Community®

Energy For Today And Tomorrow
Teacher's Guide

INTRODUCTION
Energy For Today And Tomorrow uses cartoons and activities to explain energy-related science concepts and present ways to save energy in daily life.

VOCABULARY
Energy - The ability to do work. (Energy makes things work.)
Oil - A liquid taken from the earth and used as a form of energy.
Coal - A black mineral that burns and gives off heat.
Natural Gas - A fuel that comes from deep underground, and which is used to produce heat.
Lightning - A flash of electricity in the sky.
Sun - The source of heat and light that the earth revolves around.
Transportation - A way of getting from one place to another.

LESSON DEVELOPMENT
Cover Page
Discussion Points
- What kind of animal is shown on the cover?
- How many children are pictured?
- What does this picture show? (Point to each circle.)

Tell students that they will be using this booklet to learn about energy. Explain that dinosaurs lived on the earth millions of years ago.

Page 2
Discussion Points
- What are the boy and girl doing in the top left picture?
- What helps the children run?
- What is the man riding on in the bottom left picture?
- Where would you see a tractor?
- What is a tractor used for?
- What makes the tractor go?
- What makes the car run?
- In the bottom right picture what is the man doing?
- What is heating the fuel?

The user notes explain how the pictures show that energy is used in many different ways. Ask the students how they use energy.

Page 3

Discussion Points

- What is the picture on the girl's sweatshirt?
- How does the sun help us?
- What is the picture on the boy's sweatshirt?
- What makes a light bulb work?
- How does electricity help us?

Discuss examples of the different forms of energy mentioned in the user notes.

Page 4

Discussion Points

- What is the picture in the top left box?
- Where do we get oil from? (*Below the ground - it is pumped to the surface using an oil well*.)
- What do we use oil for?
- Do you know what we use coal for?
- Where have you seen the burners in the bottom left picture?
- What is natural gas used for?
- Have you ever seen lightning?

Page 5

Discussion Points

- Where is electricity made?
- How does electricity get from the power plant to the house?

Electricity is produced in a power plant. It then goes through a transformer where the voltage is raised. The voltage pushes electricity over wires. Before it gets to homes, another transformer at the substation lowers the voltage.

Page 6

Discussion Points

- Why does the dinosaur (use the name you have given him) need sunglasses?
- What kind of weather is it?
- What helps the plants and fruit grow?

Page 7

Discussion Points

- What is each of the pictures at the top of the page?
- How does each of these objects help us?
- What would your life be like without these things?

Discuss with students how they stay cool in hot weather. Ask them how they stay warm in cold weather.

Page 8

Discussion Points

- What makes the television work?
- What makes the radio work?

Have students name other things at home and at school that need electricity to work.

Page 9

Discussion Points

- Which one is the penny?
- Which one is the nickel?
- Which one is the dime?
- Which one is the quarter?
- How can you save electricity at home?

Remind students that they can turn off lights, TV, computer, and other devices when they do not need them in order to save both electricity and money.

Page 10

Discussion Points

- What is the largest object in the top row called?
- What is the largest object in the middle row called?
- What is the largest object in the bottom row called?
- Why do we need transportation that carries a lot of people?
- Why would riding a bicycle save money that you would spend riding in a car?

Discuss the different types of vehicles that are pictured on this page. Explain that most of them require fuel which costs money. Talk about how carpooling saves both energy (fuel) and money.

Page 11

Discussion Points

- What is the girl holding in her hand?
- Where is she going?
- What does the girl have in the basket of her bicycle?
- Where is she going on her bicycle?
- What does the boy have in the wagon?
- Where is he going to play?

Talk about what type of transportation each child is using. Explain that it would be cheaper and save energy to use these methods rather than a vehicle that requires fuel.

Page 12

Discussion Points

- Can you count from one to seven?
- What does this picture show?
- What does the light switch turn on and off?
- Why should you turn off a light when you leave a room?

Teach children this song (to the tune of "I'm a Little Teapot")
"I'm a little light bulb, short and stout. When you don't need me, turn me out!"

Page 13

Discussion Points

- Which picture comes first?
- What is the next picture?
- Which is the last picture?

- What helps the boy see his toys?
- How does using sunlight save money?

Have the children make up stories using the correct order of the three pictures. Explain that natural light is sunlight.

Page 14

Discussion Points

- What is the girl holding in her hand?
- What is the boy holding?
- Where are the children going to put these things?
- Why is it important to put milk in the refrigerator?
- What makes the refrigerator work?
- Why should children put these things back at the same time?
- What would happen if the refrigerator door was left open?

Point out that the refrigerator will use more energy the longer the door is kept open and the more frequently it is opened.

Page 15

Discussion Points

- What is pictured in the top row?
- What is coming out of the faucet?
- What is shown in the second row?
- What is in the middle washing machine?
- What is the boy doing in the bottom row?
- What is happening in the first bathtub?
- How can you save water?

Help students make a poster showing the different ways water can be saved at home.

Page 16

Discussion Points

- Can you write your name on the line?
- Tell one way in which energy is important.
- Tell one way in which you can save energy.

Assist students with writing their names on the certificate. Go over the different reasons why saving energy is important and how not to waste it.