Asian RICE Project

UNPLUG

TURN OFF

UNTIE

26~28℃

MAINTAIN

WALK

My friend, Energy

Regional Initiative for Climate Change Education

United Nations Educational, Scientific and Cultural Organization

UNESCO Associated Schools

DECADE OF EDUCATION FOR SUSTAINABLE DEVELOPMENT 2005-2014

Asian RICE Project
Regional Initiative for
Climate Change Education

My friend,
Energy

에너지관리공단
KOREA ENERGY MANAGEMENT CORPORATION

유네스코한국위원회
Korean National Commission for UNESCO

First published in 2010 by the Ministry of Knowledge Economy・Korea Energy Management Corporation
298 Sujidaero, Suji-gu, Yongin-si, Gyeonggi-do, Korea
Tel: (82) 31 260 4114

English edition

My Friend Energy

Publisher Taeck-Soo Chun
Editors Hyun-Sook Seo
Myoung-Shin Kim
Mi-Kyoung Kim
Eun-Young Park
Translator Hwan-Sun Yoon
Published on October 14, 2011
Published by Korean National Commission for UNESCO
26 Myeongdong-gil (UNESCO Road), Jung-gu, Seoul 100-810, Korea
Tel: (82) 02 6958 4139 / Fax: (82) 02 6958 4254
Website: http://unesco.or.kr
Printed by SeoulBooks

This publication is financially supported by Korea Energy Management Corporation.

Additional information
For more information on the Asian RICE Project, please visit the website:
http://asianriceproject.wordpress.com
For more information on UNESCO's work on Climate Change, please visit the website:
http://www.unesco.org/en/climatechange

ISBN 978-89-94307-17-6 03530

My friend,

Energy

에너지관리공단
KOREA ENERGY MANAGEMENT CORPORATION

유네스코한국위원회
Korean National Commission for UNESCO

Preface

“Come on out, let’s play!”
“Let’s have fun!”

Playing with our friends is a fun and happy thing.

Together, we play hide-and-seek,
and paint pretty pictures with crayons and paints.
Sometimes, we also play number-guessing games,
fold paper airplanes together,
and build nice, strong houses with clay.

Energy is also our **good friend**, always around us.

Why don't we invite energy to play with pictures, hide-and-seek, number-guessing games and other fun activities while getting to know more about it?

Table of Contents

01 The Exciting Energy Games

What are some forms of the energy we use everyday?
Can you think of energy that we are wasting?
Let's think of ways to reduce our wasting by playing fun and exciting energy games.

Game 1 The energy we see, hear and feel

Let's explore the different electrical appliances at home and see how energy is all around us.

Exercise 1–1

Why don't we look at electrical appliances that make our lives comfortable?

1. Where can we find electricity? Circle the things that need electricity.

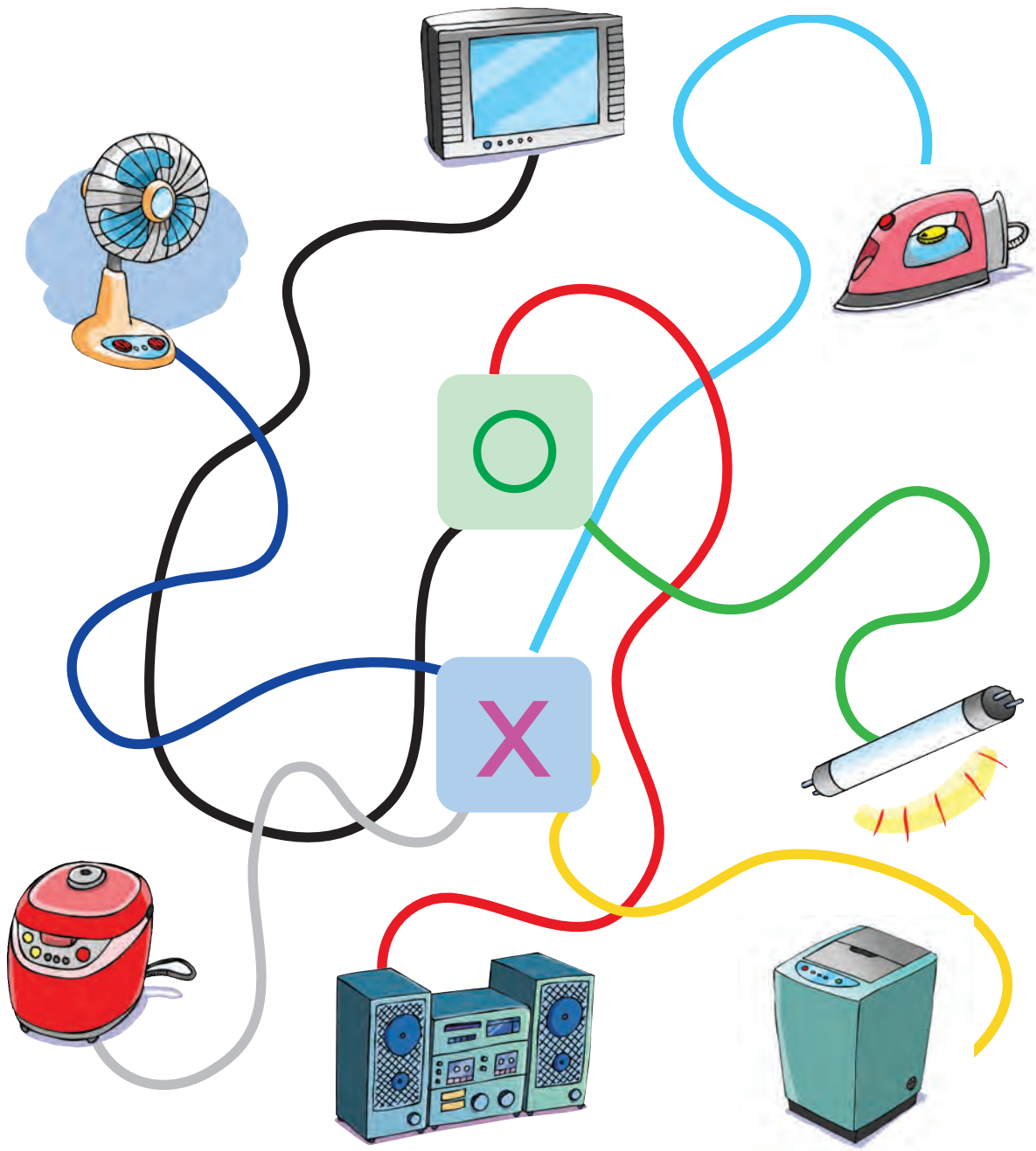
2. When you turn on electrical appliances, you can see them moving or creating light, heat and sounds. What about the ones circled in the picture above?

1. Television – The screen is turned on and making sounds.

2.

3.

3. Among these electrical appliances, which makes **light** and/or **sound** for us to use? Let's find out, by matching each appliance with the line connected.



4. The appliances linked to the circle (○) can make light or sound. We use the **light** or **sound** that these appliances make. Among these, can you find out those that make lights? What about the ones that make sounds? Find out each one according to the kind of energy it makes.

Things that make light :

Things that make sound :

5. Appliances that are linked with a cross (×) are things that create **heat** or **movement**. We can use the heat or movements that appliances make. Can you find out which appliances make which kind of energy?

Things that make heat :

Things that make movement :

6. There are many other appliances that make light or sound, heat, or movement in our homes. Can you guess what kind of energy these appliances are making? Connect each appliance to the kind of energy it makes. You can connect more than one kind of energy.

LIGHT HEAT SOUND MOVEMENT

To do 1–2

Let's play a memory game with electrical appliance cards!

1. There are many electrical appliance cards. What kinds of objects are there? Draw more than one symbol in each appliance card.

Things that make light	Things that make sound
Things that make movement	Things that make heat

Example

※□□ □□□ □□□ □□□ □□□□□.

★★★  Television 3points	★★★★★  Electric Fan 5points	★★★★★  Iron 5points
 		
★★★★★  Fluorescent Light 5points	★★★★★  Stereo 5points	★★★★★  Washing Machine 5points

★★★★★

5points

Desk Lamp

★★★★★

5points

Vacuum Cleane

★★★★★

5points

Mixer

★★★★★

5points

Coffee Pot

★★★★★

5points

Electric Heater

★★★★★

5points

Toaster

★★★★★

5points

Rice Cooker

★★★

3points

Computer

★★★

3points

Hair Dryer

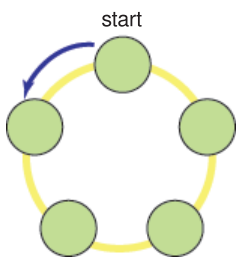
2. This time, let's play a memory game, matching pairs of electric appliance cards that use the same energy. Let's see who has the best memory!

★ How to play ★

① Make a team with five friends.

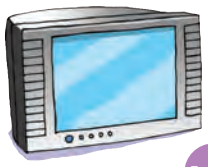
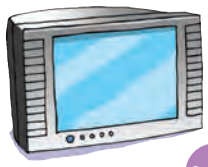
② Cut all the cards in [Appendix 1, Page 129], then flip them over. Spread the cards so they will not overlap.

③ Play a round of rock-paper-scissors and the winner will go first. The next turn goes to the person to the right.



④ When it is your turn to play, flip two cards. If the flipped cards are appliances that use the same energy (light, heat, sound, movement), keep the cards. For example, a television and desk lamp can make a pair since they both use light. The Energy Boy card can be used to make a pair with anything. If you succeed in making a pair, keep going. If two cards of different energies are flipped, the next person gets to flip the cards.

Example) Related objects

Objects that make light	Objects that makes sound	Energy Boy
★★★  5points Television	★★★  3points Television	★★  2points Energy Boy
★★★★★  5points Desk Stand	★★★★★  5points Stereo	★★★★★  5points Iron

⑤ Play the game until there are no cards left to flip.

⑥ Add up all the points written on the card. The person with the highest number of points wins.

- Do not lose these electric appliances cards even if you finish playing the memory game. These cards will be used again in the future chapter, in the Detective Game.

A Step Further

★ Where does electricity come from?

In our houses, we use energy to turn on the  , watch  ,

and clean the rooms with a  everyday.

Then where did this energy come from?

Step 1 Fuel such as  and  are extracted from underground.

Step 2 The extracted fuels are sent to the powerplant, where they are made into fuels to produce electricity. Also,  that has been saved in  or  can also be used to create electricity.

Step 3 The electricity that is created comes into our homes through power cables so that we can use it.

How energy is made and where it goes

Coal

Oil

Dam

Wind power plant

Power plant

Hydroelectric power plant

Wind

Power cables

Our houses

Game2 I am the energy detective

Let's find out how we can catch the energy thieves, who steal our energy.

Detective Energy-boy

Exercise 1–3

Electrical energy keeps on flowing out from a house. Can you help Detective Energy Boy find the energy thief?

1. Put a cross mark(×) on the places the energy thief could be living in (this means places where energy is being wasted).

2. Let's think and write about how energy is being wasted in the crossed places.

3. We've come across a special picture while searching for the energy thief. Could this be a mark that he left? Let's think and talk about what this mark looks like, and what its meaning could be.
(Use the energy saving label of your own country, if any)

1. There is an alphabet "e".
2. _____
3. _____

This mark looks like _____.

4. This time, with your parent's help, let's look for electrical appliances in your house with this mark.

Place	Name of appliance	Number of appliances
Living room		

Detective Energy-Boy has finally discovered the meaning of the mark! The mark was not left by the energy thief, but is an energy saving label. Energy Thief will certainly not be living in appliances with this mark.

Exercise 1–4

Is your house safe from Energy Thief? Let's find out by adding up the energy points for your family.

1. Read the following 10 questions with your parents. Which choice best matches your family? After ✓ each question, calculate the energy points.

① **In my house, the window is….**

- ☐ Made of one layer of glass without any curtains or shades. **(0 points)**
- ☐ Made of one layer of glass with curtains or shades. **(2 points)**
- ☐ Made of two layers of glass or is double glazing windows. **(4 points)**

② **When nobody is in the room, the light**

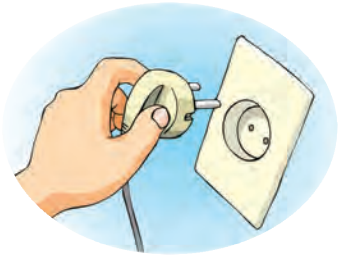
- ☐ Is still left on. **(0 points)**
- ☐ Is sometimes left on. **(2 points)**
- ☐ Is always turned off. **(4 points)**

③ **In my house, we use**

- ☐ More than 3 incandescent light bulbs. **(0 points)**
- ☐ 1~2 incandescent light bulbs. **(2 points)**
- ☐ No incandescent light bulbs. **(4 points)**

④ **When my family does not use an electrical appliance, the plug is**

- ☐ Always plugged in. **(0 points)**
- ☐ Sometimes plugged in. **(2 points)**
- ☐ Always taken out. **(4 points)**



⑤ **When I am not using a computer, I**

- ☐ Leave it on. **(0 points)**
- ☐ Turn off only the monitor. **(2 points)**
- ☐ Put the computer into Sleep Mode, so it will turn off after a while. **(4 points)**

⑥ **When I take out food from the fridge, I**

☐ Choose the food after opening the door. **(0 points)**
☐ Think of what to take out before opening the door, but I leave the door open for a long time. **(2 points)**
☐ Think of what to take out before opening the door and close it right after picking up food. **(4 points)**

⑦ **When my family does laundry, we**

☐ Only use hot water. **(0 points)**
☐ Use both hot and cold water. **(2 points)**
☐ Only use cold water. **(4 points)**

⑧ **Every summer, the air-conditioner in my house**

☐ Is always turned on. **(0 points)**
☐ Is turned down low, and we also use an electric fan. **(2 points)**
☐ Is turned off, but we use the electric fan. **(4 points)**

⑨ **Every winter, my house is**

☐ Warm enough to wear short-sleeved shirts. **(0 points)**
☐ Just warm. **(2 points)**
☐ Warm when I wear long pajamas. **(4 points)**

⑩ **When my family buys a new electrical appliance,**

☐ We don't think about the energy-conserving mark because we don't know what it is. **(0 points)**
☐ We know what the energy saving label is, but don't really care about it. **(2 points)**
☐ We always buy appliances with the energy saving label. **(4 points)**

★ THE ENERGY SCORE OF MY HOUSE IS _____ POINTS.

2. Which group does my family belong to? Let's look at each group.

25~40 Points : Excellent! There is absolutely no place for Energy Thief to hide himself. Hope you maintain your house just the way it is!
★★★

11~24 Points : You are conserving energy, but you can be more careful because there are still some places for Energy Thief to hide. Let's read over the questions you scored on, and think about ways to stop Energy Thief from hiding in your house.
★★

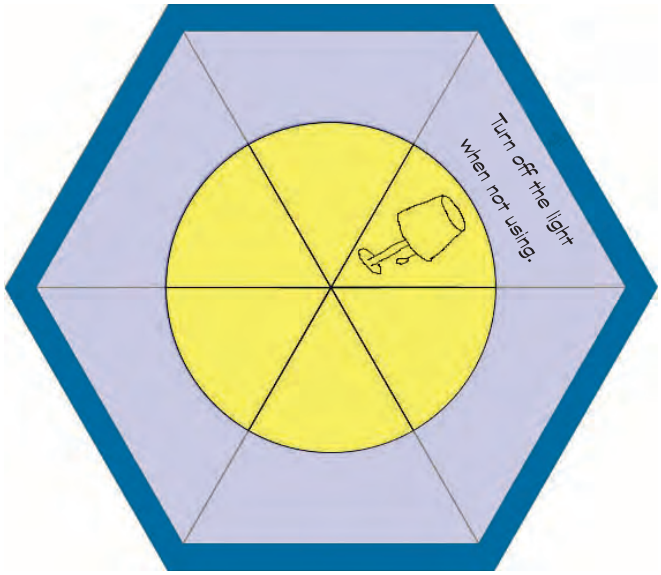
0~11 Points : You should be very alarmed, because Energy Thief is already hiding in many places in your house! Remember to turn off the light when nobody is in the room, and unplug the appliances you are not using. About one-tenth of wasted energy comes from plugged appliances while not using. Let's read again the questions you scored low, and try to catch the Energy Thief one more time!
★

3. Talk about your energy score with your friends, and let's compare how they are different from your family.

Exercise 1–5

Energy Thief can be caught by conserving energy in the house. Can you think of ways to conserve energy?

1. Below is a hexagon-shaped table. In the yellow part, draw ways we can conserve energy, and write the explanation for them in the blue part.



2. Compare what your friends have drawn.

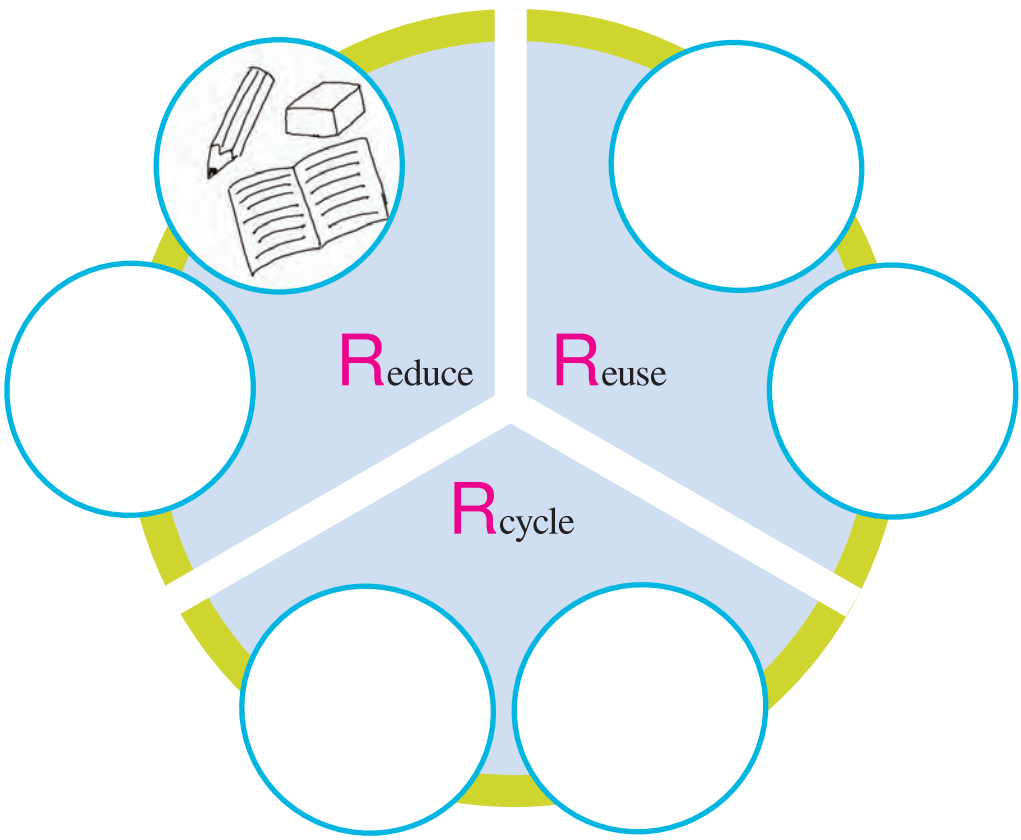
Game3 The 3R flea market

Let's open our own 3R flea market.

Exercise 1–6

Let's find out more about the 3R Principle, which stands for reduce, reuse and recycle.

1. What are some of the things you can reduce, reuse and recycle to follow the 3R Principle? After thinking about them, draw the things in the circles.



2. Compare what your friends have drawn in the circles.

3. What are the benefits of the 3R Principle? Fill in the blanks with the words below, and then read the story aloud.

A total of ( )% of the household waste come from  . When we bury wastes underground, it creates a bad smell and ( )pollution. We can prevent this by separating our food ( ), which can be reused in farms as ( ) feed or ( ).

40% of the materials needed to make  come from  . Therefore, we can protect the ( ) just by using less paper. Because most of the trees used to make paper are ( ) from other countries, it is important to ( ) used notebooks or boxes instead of just throwing them away.

 food waste

 paper

 tree

Words

60, food, environment(al), water, waste, Livestock, fertilizer, forest, import(ed), recycle

Exercise 1–7

Now, let's get ready for the 3R Flea Market!

1. Decide with your classmates the date, time and place to hold the flea market. Think about possible ways to invite as many people as possible.

Date	_____ Day, _____ Month, _____ Day, _____ Year
Time	(AM/PM) _____ Time
Place	

2. This time, let's look for things you could bring to the 3R Flea Market. What are some of the things that are not really used in your home, or that you want to exchange? Complete the [My Item List] in Appendix 2, Page 137.

Object	Price	Sold (○)
1.		
2.		
3.		
4.		
5.		

3. Complete the [Details of the Item] list on Appendix 3, Page 139.

Details of the Item			
Owner			
Name of object	500 piece puzzle		
How long I used the item / condition	3 Months / Almost new		
What I want to do with it	Sell it. (○) Exchange it. ( ) Give it away. ( )		
Sale price	50 Cents	Object I am exchanging for	

Details of the Item			
Owner			
Name of object			
How long I used the item / condition			
What I want to do with it	Sell it. ( ) Exchange it. ( ) Give it away. ( )		
Sale price		Object I am exchanging for	

Details of the Item			
Owner			
Name of object			
How long I used the item / condition			
What I want to do with it	Sell it. ( ) Exchange it. ( ) Give it away. ( )		
Sale price		Object I am exchanging for	

Exercise 1–8

This time, let's make invitation cards for the 3R Flea Market.

1. Create your own invitation card. First, cut the drawing paper and fold it in half. Then, write your invitation and decorate it.

Hello there!

My name is _____. My classmates and I are hosting the 3R Flea Market to encourage people to reduce, reuse and recycle things around us. We hope you will come to our flea market.

♥ Date

___ Day, ___ Month, ___ Date, ___ Year

♥ Time

___ Time (am/pm)

♥ Place

My classroom _____.

2. Design the cover of your invitation too.

We invite you to our

3R Flea Market
Reduce, Reuse, Recycle

3. Send the invitation cards to mom and dad or other people about a week before the flea market.

Exercise 1–9

Let's do a final check before the exciting flea market.

1. What are the things that need to be done before the flea market? Let's check to see if they have all been completed. Check each task by marking ○ on the things completed.

Things to do	Completed
Has our teacher allowed us to have the flea market on the date and place we decided?	
Did we send out the invitation cards?	
Did I complete my [My Item List] and [Details of the Item]?	
Did I bring all the things I wrote on my lists?	
Did we arrange our things neatly for the flea market?	

2. When all the lists are filled in with ○, let's have a happy 3R Flea Market and enjoy it!

A Step Further

★ The 3R Movement in other countries

The 3R Principle which stands for reduce, reuse and recycle is a good way to save our resources. Did you know that other countries have their own ways to follow the 3R Principle? Many countries hold different flea markets and sell their things at a cheap price.

United States of America

Many Americans enjoy selling their things in their own garages or backyards. They usually hold their flea markets between Friday afternoon and Sunday afternoon. When Friday comes, you can see many signs with directions to flea markets in the neighborhood. On the other hand, some people sell their things before vacation or graduating from school, or before moving into a new house.

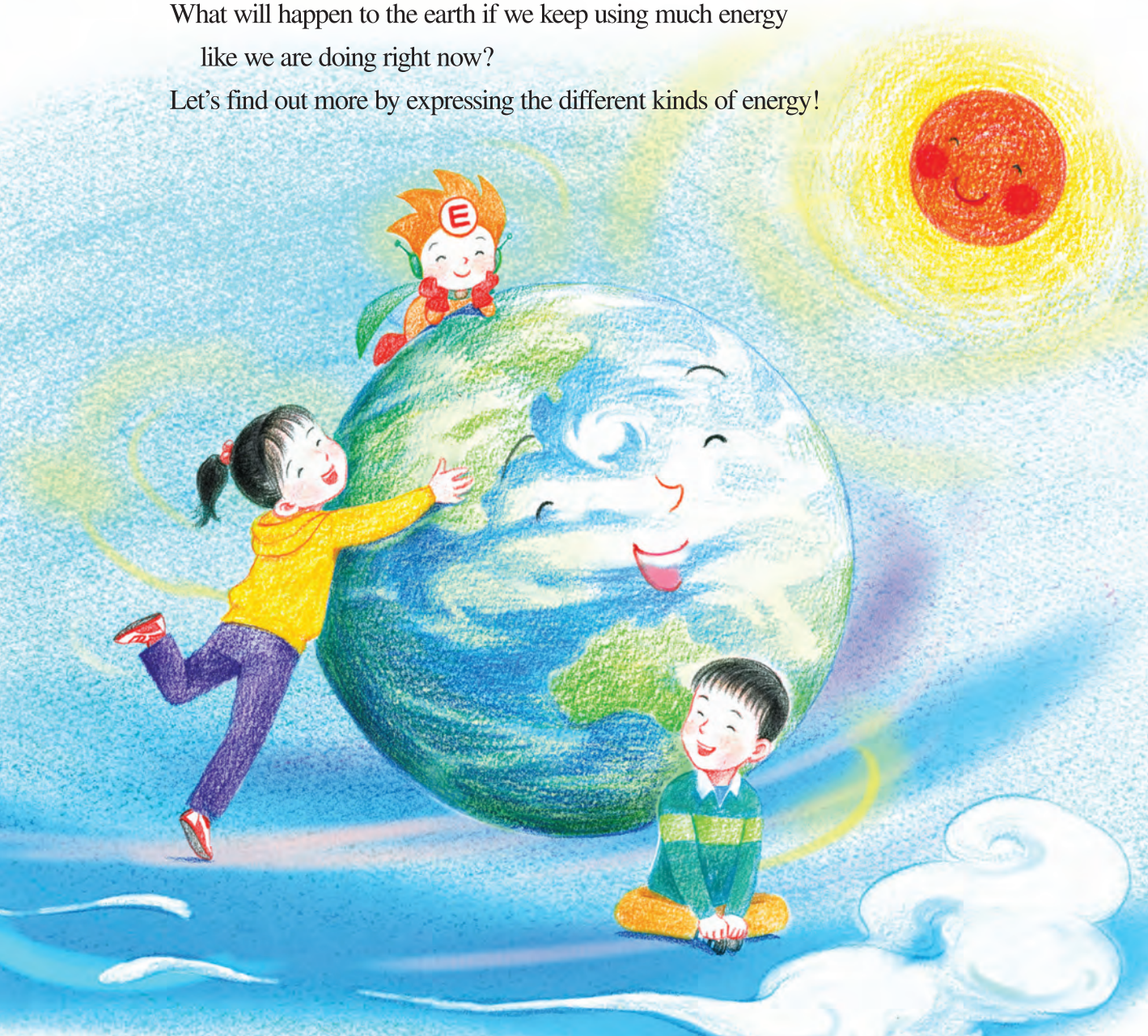
United Kingdom

Many British people hold flea markets in elementary school playgrounds or public lawns. Some people also hold flea markets to sell their school uniforms after graduating from elementary, middle and high school.

02 The World around Us, Expressed by Energy!

- **Expression 1** Where energy comes from
- **Expression 2** We are all different from each other
- **Expression 3** The earth is in pain

Where does energy come from, and where is it being used?
What will happen to the earth if we keep using much energy
like we are doing right now?
Let's find out more by expressing the different kinds of energy!



Expression 1

Where energy comes from

Let's find out where our energy comes from!

Exercise 2–1

Our energy friends are introducing themselves. Let's listen to what they are saying about themselves!

1. Let's fill in the blanks from the given words below, and then read it aloud.

Hi, my name is _____. I can make things warm with my _____. The _____ I create is also very important for plants and animals,

My name is _____. I live underground or in the shallow parts of the sea. Long time ago, I was used as a fuel for _____. Now, I can move the _____.

I am _____. I can make energy from the _____ water and move things like _____.

Choices

water	lamp	sun	falling	heat
car	light	waterwheel	oil	

I am _____. I live deep in the ground. I can make very hot heat by burning myself. I can warm other things with my heat. In the past, I also was used to move the _____.

My name is _____. I am created by moving _____. I am very strong, so I can also move things like _____. I can create energy with this force.

Hi, you can call me _____. If you light me, I can make fire. I am created from _____ and I can warm your house or cook food for you.

Given

shallow	sea	windmill	wind
coal	train	air	natural gas

2. Can you match the different characteristics below with the correct energy?

It creates polluted materials when it is burned.

Since our country doesn't have much of this, we must import it.

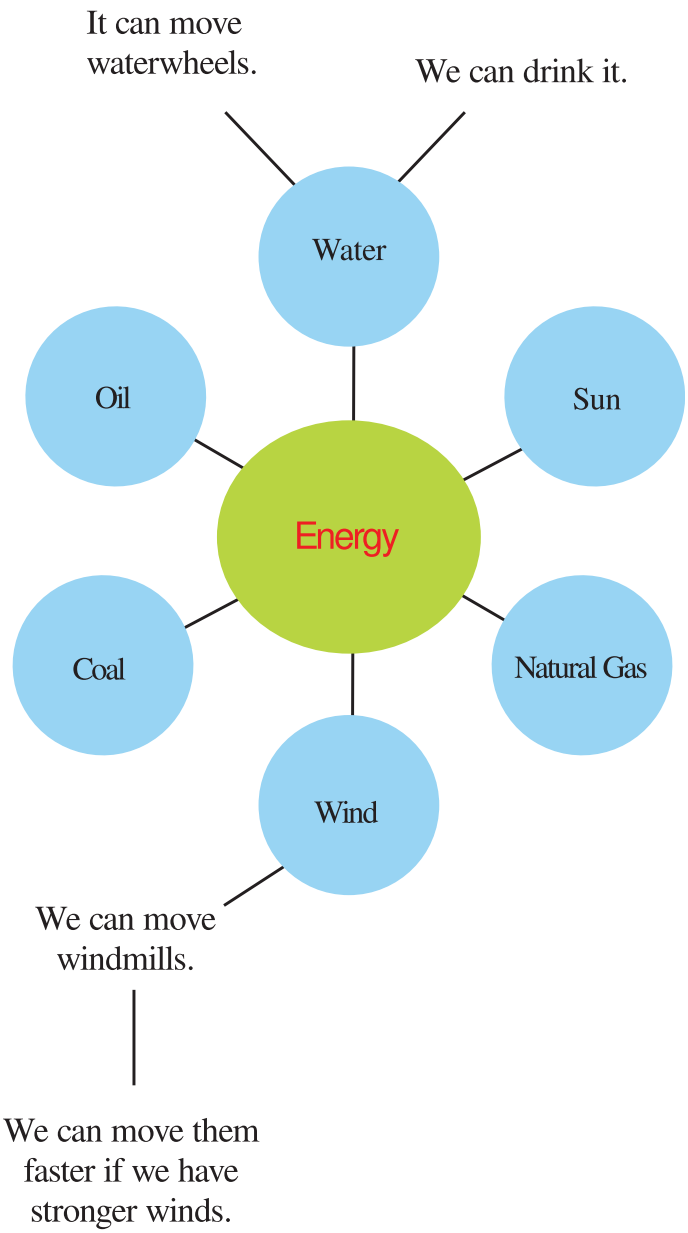
There is only a limited amount that we can use.

It does not create polluted materials even when we use it.

It keeps rene itself, so we can keep using it.

3. Let's review all the energy we have just studied. Write down as many things you know about the different renewing and connect the different ideas.

Example : What do you think about when you hear 'water'? We can drink it. It can move waterwheels.

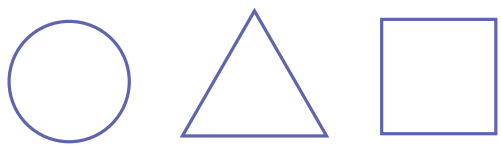


Exercise 2–2

Let's express energy using different shapes.

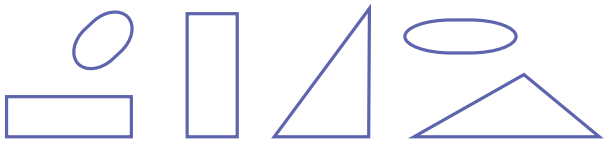
1. Below are three different shapes (circle, triangle, square). Based on the rules below, illustrate each form of energy by using the different shapes.

Shapes

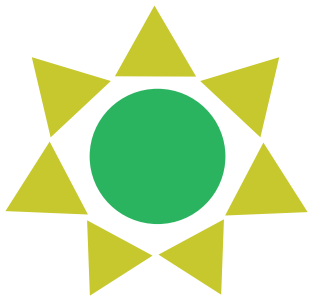


Rules

- You must use more than 2 shapes.
- You can change the size of the shape
- You can change the length of the shape.



Example : Sun (Solar Energy)



Wind

Sun

Water

Natural Gas

Coal

Oil

2. This time, let's make a collage of the energy sources.

A collage is a type of artwork we make by cutting pictures or letters from newspapers and magazines. Let's begin!

First, choose oneform of energy that you like.

♥ The energy I like the most:

Second, after thinking about the characteristics of the energy you chose, make a simple sketch with words and pictures.


Drawing paper


Newspaper


Magazine


Scissors

Glue

Sketch of the energy

Third, let's start making the collage! Look for pictures or words about the energy in newspapers and magazines. Let's try to express it by pasting what you found on the drawing paper.

Fourth, talk about what you made with your friends.

Introduction of My Energy Source Collage

A Step Further

★ Energy resources in different forms

Did you know that there are other sources of energy besides the sun, wind, water, oil, coal and natural gas? A long time ago, humans used to get energy from biological resources. Biological resources are things such as trees, grain, grass, animals and food waste.

Food waste

Corn

Trees

Animal waste

How do you think biotic resources create energy? A long time ago, people used to heat their houses by burning wood or rice straw.

Food or animal wastes create bad smell and can even pollute the soil. However, some countries in Europe have many facilities that can change these wastes into electricity or oil.

Getting rid of garbage and creating energy at the same time, it's killing two birds with one stone.

Expression 2

We are all different from each other

Let us find out the similarities and differencies of the energy around us.

Exercise 2–3

Can you pair similar characteristics of the different forms of energy?

1. Here are six different pictures of energy. Let's make two groups and explain why they have been grouped as such.

Example

Sun Wind Water	Oil Natural Gas Coal
Reason : Energy sources that do not have a smell / Energy sources that have a smell	

After cutting out the energy cards from [Appendix 4, Page 143], let's make two groups. How can we group them? Try grouping them in different ways.

Reason : _____

Exercise 2–4

Energy sources can mostly be divided into fossil fuels and new/renewable energy. Let's first find out more about fossil fuels!

Just like the picture below, fossil fuel refers to things that have been buried deep underground for a long time, which became hard as time passes. Today, we can use them as fuel.

The most popular kinds of fossil fuel are oil, coal and natural gas. Oil is a kind of liquid, coal is a kind of solid, and natural gas is a kind of gas. They can all be easily burned set on fire.

Among these, people use coal the most. As they used lots of coal to operate different machines, they were able to make large development for our society.

In the past, oil was used to light fire for lamps. Today, it is mostly used to move cars. Oil is not buried everywhere, so it is very limited.

Since natural gas is produced on a large scale and delivered through a very long pipe, people living in countries with little natural gas resources can also use it. Natural gas is mostly used to heat homes and cook food.

1. Now, let's try making short sentences using the words given below.

Example : Fossil fuel, the amount buried underground

Because the amount of fossil fuel buried underground is limited, we must use it less.

(1) Oil, cars

(2) Fossil fuels, types

2. Let's find out the kinds of fossil fuel we use.

	My House	My neighborhood
Fossil fuel		
Coal		
Natural Gas		

(1) Compare what you have found with you friends, and then write down the different things.

(2) Draw a simple map of your neighborhood, and mark which places use a lot of fossil fuel.

3. Can you answer these questions about fossil fuels? Choose ○ or × for each of them.

If you get it right

(1) The sun is a kind of fossil fuel. ☐ 10 points

(2) Oil is a solid, and coal is liquid. ☐ 10 points

(3) An unlimited amount of oil is buried underground ☐ 10 points

(4) Oil is buried equally throughout the world. ☐ 10 points

(5) Natural gas is an energy source that has no smell. ☐ 10 points

(6) Oil is the first fossil fuel people started to use. ☐ 10 points

(7) Natural gas is mostly used for cars. ☐ 10 points

(8) Oil is the fuel that is used most for heating and cooking. ☐ 10 points

Your total score points: ☐

Exercise 2–5

Let's find out what new and renewable energy resources are.

1. Read the dialogue below.

Son: Dad, my teacher told me to look for the meaning of new and renewable energy.

Dad: Oh really? What do you think they are?

Son: Hmm… energy that can be recreated?

Dad: Right. Just like the name says, it means energy that does not run out even if we keep on using it, because it can be created over and over again. Can you name some kinds of renewable energy, son?

Son: What about solar energy?

Dad: What else?

Son: I can't think of anything else. What else is there?

Dad: (looks out the window) Do you see those branches swaying in the wind? Why do you think they are moving like that?

Son: Oh I get it, because ① !

Dad: Exactly. Water that falls down from a high place also has energy.

Son: But Dad, why do we have to use new and renewable energy?

Dad: Well son, do you know what a fossil fuel is?

Son: Yes, I've read about it in books. It's something like coal or oil, right?

Dad: Right. But the fossil fuel is ② . Because of this problem, we use renewable energy these days. Not only are they safe from pollution, they can also be made over and over again.

Son: Oh, now I get it.

Dad: But the energy we use these days still mostly comes from fossil fuels. So, how should we use the energy around us?

Son: should try to conserve it, and not waste it!

Dad: Bingo! I am proud of you.

2. What should be filled for ① and ② in the dialogue? Fill in the blanks below.

① _____

② _____

3. Let's try to find out the kinds and characteristics of renewable energy from the conversation we just read.

Kinds of new and renewable energy	
Characteristics of New and renewable energy	

4. Let's make a short poem about new and renewable energy.

Example

The energy around us,
Do you think you know them
well?

Fossil fuel that is
About to run out,
New & renewable energy
That keeps renewing itself.

5. The symbols below are emblems that express new and renewable energy in several countries. What do you think they stand for? Talk about them with your friends.

Example

The long and sharp yellow part represents the sun. The blue partinside the yellow lines represent the wind, and the green in the center represents nature.


MEMO

Expression 3

The earth is in pain

Let's find out how we should use energy to help the earth become healthy.

Exercise 2–6

How are energy and the earth related to each other? Let's find out!

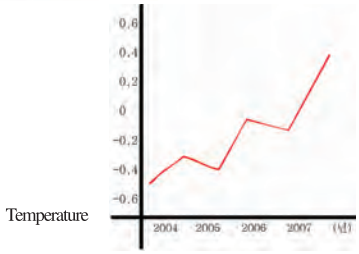
1. This story is about the North Pole Bear, a little girl who lives in a small country called 'Tuvalu,' and a boy who lives in our country . Write about what you felt after reading the story.

Glaciers in the North Pole are melting. My home ground is getting smaller. If this goes on, I and the other North Pole bears may disappear completely, forever.

I live in a country called Tuvalu, which is made up of 9 small islands. Do you know the temperature of the earth is rising, which makes the level of the ocean higher? My country keeps on sinking down because of the high temperature. Someday, Tuvalu may no longer be seen on the world map.

There are more typhoons these days and they are getting stronger by the day. I heard this is because of global warming. Isn't this scary?

2. Here are four different pictures. How do you think they are related to each other? Make a short story by using all four pictures.



Title : _____

Exercise 2–7

100 years later, what do you think will happen to the earth?

1. What do you think will happen to the earth if we keep on using only fossil fuel and wasting energy? Let's imagine it.

① People say oil will almost run out after 40 years. If this is true, what will come after that?

② If global warming continues like it is now, spring and fall may be gone forever. What will happen then?

③ If the glaciers in the Polar Regions melt, the lower areas of earth may completely disappear. What do you think will happen?

2. Now, let's make a 3-minute roll playing about one of the three topics below. First, make a script according to the following directions.

(1) What topic did you choose?

(2) What situation do you want to describe?

(3) How many persons are in your play, and what are their characters like?

(4) Make a script using their names.

Example

Dad : (sighing) What should we do? We can't use our car anymore because there is no more oil left.
Daughter : Oh well. Let's just walk.

(5) Decide who will act each character, and speak your part out loud.

3. Show the play you prepared to the classmates.

4. Write about what you felt after watching your friend's plays.

Thinking question

What should we do to stop global warming?

Exercise 2–8

Most of the energy we use is from fossil fuels. So what should we do to protect the future of the earth? Let's think about it together.

1. How should we use the energy to save the earth? Think of the things you can do, and rank them from 1 to 4, 1 being the most important.

(1) Look for things you can do at home.

Topics	What I can do	Rank
Recycling (trash)		
Electrical appliances		
Indoor Temperature		
Lamps		

(2) Look for things you can do in school. Then, fill out the table below.

Topics	What I can do	Rank
Recycling (trash)		
Dest lamp		
Lunch		
School materials		

(3) Share what you wrote with your friends. Then, compare what eachof you chose as the most important thing to do.

Friend A Number 1

Friend B Number 1

Friend C Number 1

2. What do you think the earth wants to say to us? Imagine you are the earth, and think of what you want to say to the people who live on earth.

Hello, my name is Earth.

A Step Further

★ Does carbon dioxide really make the earth warmer?

Our earth is surrounded by the atmosphere, even though we are not aware of it. The atmosphere is like the clothes we wear, which protect us. During the daytime, the atmosphere protects us from the heat and sunlight, protecting the earth from getting too hot. During nighttime, it uses the heat it absorbed during the daytime to maintain its temperature even at night.

However, gases like water vapor, carbon dioxide and methane work like the glasses panels in a greenhouse and block the heat from escaping. This is the greenhouse effect. Because of the greenhouse effect, the earth's average temperature is continuously rising, and leading to global warming.

MEMO

03 Energy Expressed by Numbers

How do people use the different forms of energy around them?
How much energy do you think we are using?
Let's find out more about the precious energy around us,
That makes our lives warmer and happier.

Quest 1

The search for energy

Let's find out how energy is being used around us

And the hidden numbers behind them.

Exercise 3–1

Can you find out how energy is being used in our lives?

1. The picture below has numbers hidden from 1 to 9, which are all related to energy. Find the hidden numbers.

2. Look carefully at the numbers you found, and talk about how energy is being used there.

Exercise 3–2

Let's find out how a frugal girl and a prodigal boy are using the precious energy around them.

Read the story below, which is about a typical day of the girl and the boy. Then, let's compare how they use energy differently.

The frugal girl and the prodigal boy are very close friends. They are in the same class and live in the same neighborhood, so they spend a lot of time together in school and at home. However, their typical day is very different.

The girl takes the bus to school. However, the boy's parents often take him to school by car because he often wakes up late.

After coming back from school, the frugal girl turns on either the light or the desk lamp when studying and always turns it off when leaving the room. However, the prodigal boy leaves both the light and the desk lamp on in his room even though he is watching TV in the living room.

Every summer, the girl uses the electric fan and uses curtains to block the sunlight comes into her house. However, the boy mostly uses the air conditioner, and leaves the door open even when the air conditioner is on because he feels it is annoying to open and close the door every time he goes out.

1. Who do you resemble, the girl or the boy?

I am more like _____ .

Write your reason for it.

2. This story tells us that energy is being used in our daily lives in many different ways. Fill in the blanks, using the words in the story.

- We need energy when we ride the _____ or _____ to go to school.
- We also need energy to make school materials like _____ , which we use to study.
- Energy is also needed when we use _____ or _____ , which are used to make our homes brighter.
- On hot summer days, we need to use energy to use _____ or _____ .

3. The prodigal boy is planning to write a journal to save energy with the frugal girl's help. What should he write in the diary?

My Energy-conservation Checklist Journal

_____

Home

1. Even though I live on the fourth floor, I will take the stairs instead of the elevator.
2. _____
3. _____
4. _____

School

1. I will write my name on my notebooks and pencils so I won't lose them.
2. _____
3. _____
4. _____

Exercise 3–3

How much energy is your family using?

1. Paste your electricity bill in the space below.

Paste your electricity bill here.

2. On your bill, look for the **total amount of electricity** used and write it in the table below.

	Total Amount of Electricity used
Electrical Energy	kWh

The amount of electricity used is expressed in kWh.
1kWh means 1kW of electricity has been used for an hour.

3. For every second Saturday of the month, observe and record the total electricity that your family uses.

	Total electricity used
Month	kWh
Month	kWh
Month	kWh
Month	kWh

4. Observe the amount of electricity recorded every month. In what month did your family use the most electricity? Talk about why the amount of electricity used is different for every month with your parents.

5. Let's think about 3 ways you can reduce using electricity.

1. _____

2. _____

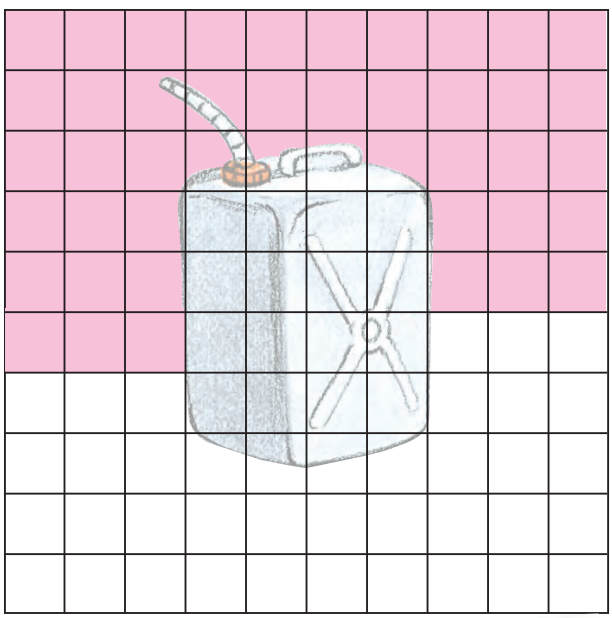
3. _____

Exercise 3–4

How much electricity do you think the whole country is using?

There are a total of 100 squares in the table below. Assuming that the country uses a total of 100 squares of energy, the pink squares ☐ are used by  factories to make new things.

From the uncolored squares, color 18 squares green.



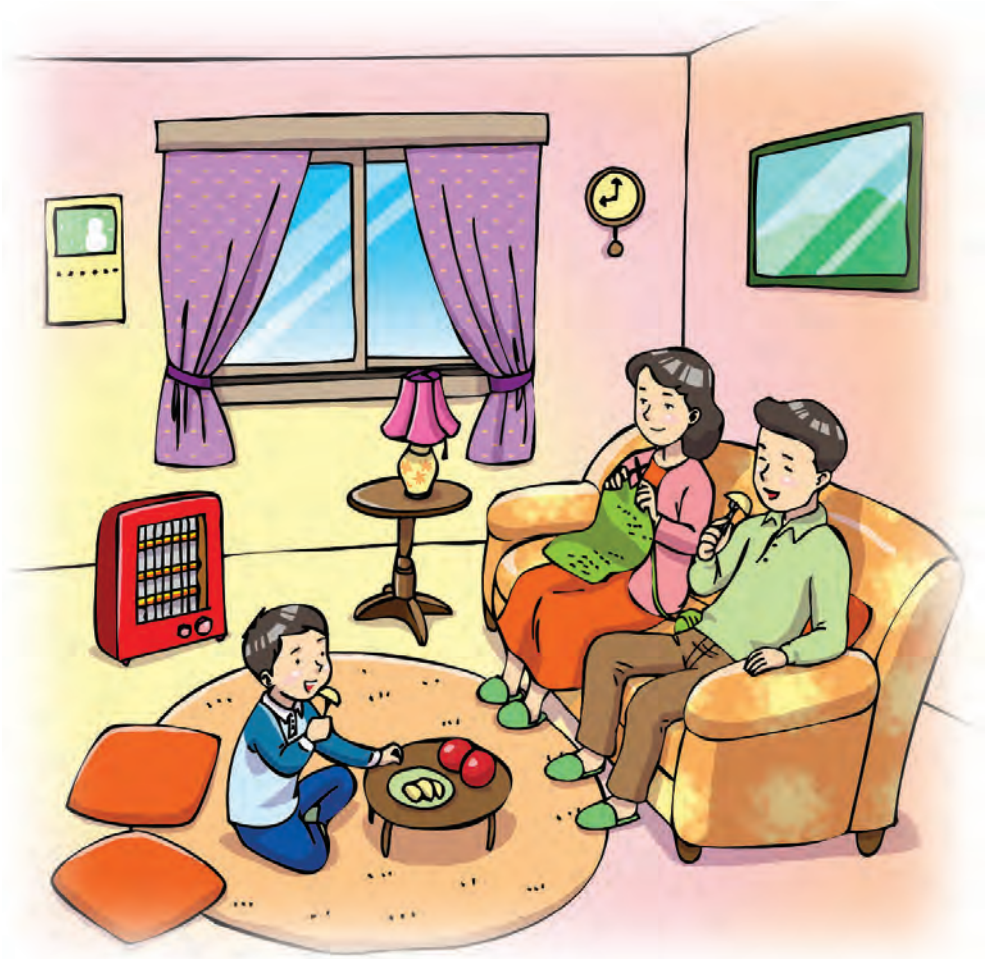
The energy you have just colored is used by  ,  , and  to carry people or things to other places.

Also, the ☐ uncolored squares are used in  ,  , or  to make them  warm.

Here you can see energy is truly being used in various places.

Quest 2

Our sweet and warm home



Let's find out more about the precious energy around us. That makes our houses warm.

Exercise 3–5

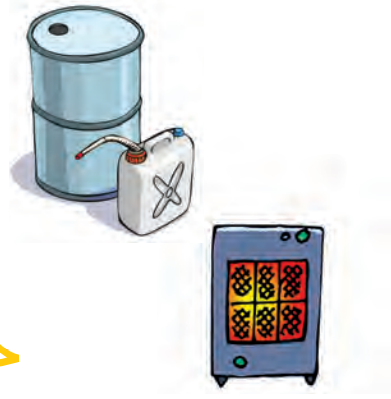
Can you guess how people used to make their houses warm in the past when there were no heating systems?

1. Complete the sentences below by filling in the blanks.

① A long time ago, _____ was very easy to find, so people used this to heat things around them. This was burned to make people's homes warm.

② Afterwards, _____ became an important source of energy. Many people used _____ to make briquettes and warm their houses.

③ As people discovered _____ and natural gas, they started to use more _____ or natural gas than coal. Today, _____ are used to operate heaters instead of briquettes.



Exercise 3–6

Do you think trees, briquettes, oil and natural gas are the only sources of energy? What can you think of other resources that can be used to heat things?

1. We can make energy with the solar heat.

On a warm sunny day, let's go out into the school field and feel the sunlight. How do you feel? Write what you felt.

The sun gives us heat. We use this to make electricity, heat water and warm our houses. Houses that use energy created by the sun are called solar houses.

What are the advantages of using solar energy? Think of two by searching through books or the internet.

2. There is also thermal energy under the ground.

Places with lots of volcanoes are famous for their springs. Why do you think spring water is hot? Write down your thoughts.

Except for the Polar Regions, the temperature underground is mostly between 10 to 20 Degrees Celsius. Places with lots of volcanoes have more heat because of hot water and rocks near them. We can also use thermal energy to take a bath in hot water and heat our houses.

3. We can also make energy from plants and animals.
If we go to farms, we can see a lot of straw piled up with animal waste. / How do you think these are used to make energy? Find out how they are made into energy in books or the internet.

In other countries, people use trees, grains, agricultural waste and animal and food wastes to create new energy.



Energy that is made from biological sources such as plants and animals is called **bio energy**.

> People in Brazil and U.S.A, they ferment sugar canes to make alcohol that can move cars. In Japan, people extract oil from plants, which is used to heat houses instead of crude oil.

What do you think is the advantage of using bioenergy? Look for the reasons in books or on the internet.

- _____
- _____
- _____
- _____

Exercise 3–7

Let's talk about district heating, which can also help reduce pollution!

In the past, people used to heat their houses using  ,  or  . For example, they would burn tree branches or briquettes to heat their houses, or use oil-fired boiler. Today, a new technology has been created as more apartments and houses are built. This new technology is called district heating. It means that the heat is generated and distributed to houses and buildings through a large heating plant, instead of building heating systems in every house.

1. Read the story below and answer the questions.

My school gives lunch to students. Everyday, we take turns serving the prepared meal to the class. The meal consists of rice, soup and different meat and vegetables.

Some schools on the other hand do not give lunch to their students. Therefore, students bring their own lunch to school.

What do you think is the advantage of schools giving lunch? What about the disadvantages?

Advantage	Disadvantage

2. Just like the school giving lunch to all the students, district heating is a good way to distribute heat and warm water to houses through a large power plant.

What do you think is the advantage of the district heating system? Let's circle the correct words for the sentences below.

Because a district heating system makes lots of energy at once, it uses (more, less) fuel than houses making their own heat.

District heating systems can (increase, decrease) pollution because it uses high-end pollution prevention systems and uses less energy.

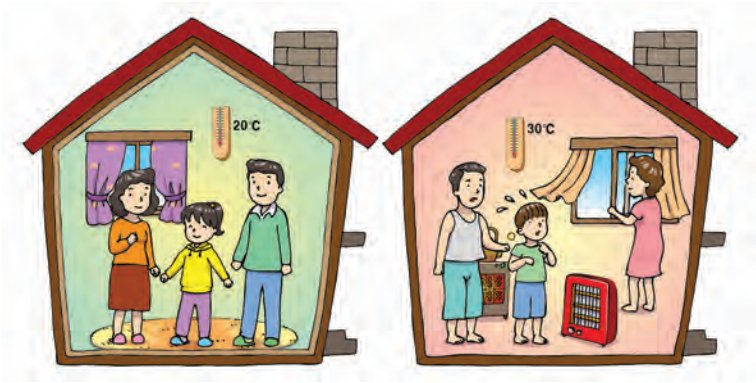
Also, it is (less, more) dangerous than having houses store their own oil and fuel at the same time.

In Iceland, 86% of the entire heat is generated by district heating, while the share accounts for 50% in Finland.. In Korea 10% of the entire heat is made by district heating. Also, it helps conserve energy and protect the environment because it creates heat by recycling and reusing wastes created from the things we use everyday.

Exercise 3–8

Can you think of ways to conserve energy that we use to heat our houses?

1. The picture below explains how two different families get through the cold winter.



How are they different? Explain the different ways these families get through winter.

Family A	Family B
• _____	• _____
• _____	• _____
• _____	• _____
• _____	• _____

2. How does your family get through the winter? Find out more by conducting interviews.

Example

Q1 Do you think the temperature in your house during winter is not too high?

Q1 When it gets colder, do you wear long underwear instead of turning up the heater?

Q1 Do you do anything special to save energy used in heating your home?

Quiz

What is the most suitable indoor temperature during winter?

① 15~17℃ ② 18~20℃ ③ 22~25℃ ④ 25~27℃

3. What do you think is the best way to maintain the appropriate indoor temperature during winter? Let's use the heating index to find out. The heating index tells us how much heat we should use in your house. Let's take a look.

Heating index	How much heating is needed
10~30	It's warm. No heating needed for now.
30~50	Please use heat only in the morning and evening.
50~70	Please use more heat also in the afternoon.
70~100	It is very cold. Please keep use heat continuously

The following table tells us the heating index for two consecutive days in a neighborhood.

	Today	Tomorrow
Daily heating index	 60	 90

After taking a look at the heating index above, how much heat do you think should be used for today and tomorrow? Let's fill in the table after checking the heating indexes.

Today	
Tomorrow	

A Step Further

★ What is the best place for heaters?

Heating machines like electric heaters can make a room very warm, but it largely depends on where it is placed. First, it is best to place the heating machine to turn back against the window.

If we place the heater far from the window, the area near the window will always be cold while the other parts of the house will be warm. Because of the indoor and outdoor temperature difference, the heating becomes useless. Therefore, if we place the heater turning back against the window, warm air will rise above the cold air, spreading itself across the entire room.

In addition, instead of placing the heater in a high place, it should be close to the ground. If we place the heater below eye level, people can feel much warmer than the actual temperature in the room.

Quest 3

Faster and faster we go!

Let's find out the energy hidden in transportations like trains, cars, ships and airplanes

Exercise 3–9

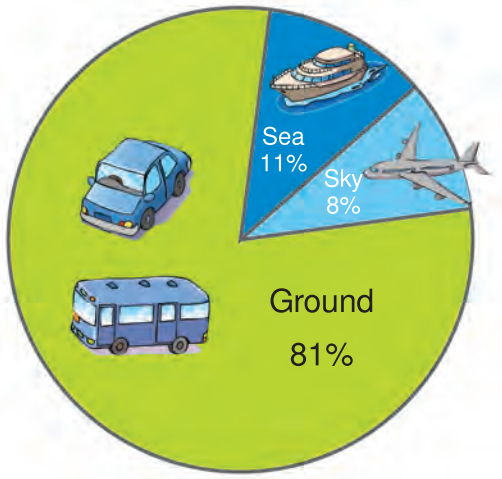
What kinds of energy do you think are needed to move cars, airplanes, trains and ships?

1. In the left column are different forms of transportation such as cars, airplanes, trains and ships. In the right column are energy resources such as electricity, oil, natural gas. What energy resource do you think is needed for each form of transportation to move? Connect the form of transportation and energy resources. Remember, each form of transportation can use many different energy resources.

2. There are airplanes in the sky, ships in the sea and cars, buses and trains on the ground. Which place do you think uses the most energy among the sky, sea and ground?

I think the place that uses the most energy is _____.

3. The graph below shows how much people use each form of transportation in the country. Answer the questions about this graph.



(1) Express the numbers in the graph as fractions.

Ground 81% ➔ $\frac{(\quad)}{100}$ Sea 11% ➔ $\frac{(\quad)}{100}$ Sky 8% ➔ $\frac{(\quad)}{100}$

(2) Which place uses the most energy? Arrange them from largest to smallest.

$\square > \square > \square$

4. Energy that is used on the ground is increasing very fast. What do you think is the reason? Think of 2 possible reasons, and write them in the table below.

- _____
- _____

Exercise 3–10

Why do you think the amount of energy used by transportations on the ground is increasing very fast?

1. Many people these days use cars. How many cars do you think there are in the country? How much do you think the number will increase?

The table below shows the number of cars used since 1994.

Year	Number of cars
1994	740 million cars
1996	960 million cars
1998	1,050 million cars
2000	1,210 million cars
2002	1,400 million cars
2004	1,500 million cars
2006	1,590 million cars

Let's fill in the blanks after looking at the table.

(1) 1Between the years 1994 to 2004, the year that showed biggest increase in the number of cars was from ☐ and ☐ .

(2) How many cars do you think were in 2003 and 2005?

2003 : ☐ cars 2005 : ☐ cars

2. The more cars we have, the more energy we need. How do you think we can conserve energy? Think of things we can do right now to save energy around us.

One! Let's walk to nearby places.

Two! _____

Three! _____

3. A lot of energy is needed to operate big forms of transportation. But right now, we are importing energy from other countries. What other kinds of future energy resources do you think we can use to power transportation aside from coal, oil, and natural gas? Let's talk more after reading the story below.

Many countries around the world are making new cars that can use different energy sources. Among them there are cars that use hydrogen as fuel and powered by electricity that is created from mixing hydrogen and oxygen.

Cars that use hydrogen use water instead of oil or coal, so they do not pollute the air. This means they can protect the earth's environment. However, they are very expensive to make. Therefore, we need to conduct more research.

Exercise 3–11

Let's plan a family trip for the weekend. Make plans by deciding what to ride for the trip.

1. In the map below, trace a route to your travel spot using different colors. Remember, you can use cars, buses, trains, ships, and airplanes to get there.


Airport


Bus stop


Train station

- ♣ All squares equal the same amount of distance
- ♣ You can ride airplanes at airports, ships in wharfs, trains in train stations, and buses at bus stops.
- ♣ Cars and buses can be moved on the road, trains on the railway, ships on the sea, and airplanes in the sky.
- ♣ You can use more than one kind of transportation to get to your travel spot.

2. Can you think of 2 ways you can reach your destination?

First way

Which form of transportation should you take?

Why did you choose that form of transportation?

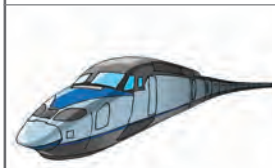
Second way

Which form of transportation should you take?

Why did you choose that form of transportation?

If we have detailed travel plans, we can save money and energy at the same time.

3. We can ride an airplane, train or ship when traveling to far places. Fill in the table below by thinking about the advantages and disadvantages of the various forms of transportations.

Forms of transportation	Advantage	Disadvantage
		
		
		
		
		
		

Now, think again which forms of transportation you want to use when you travel to other places. Won't it be much better if it can save energy at the same time?

04 The Energy-saving Campaign

- Activity 1 Let's tell our friends about saving energy
- Activity 2 The rebirth of the plastic bottle
- Activity 3 Let's go save the trees!


Saving
Energy!
E
Energy, let's save it!

Activity 1 Let's tell our friends about saving energy

Think about the importance of saving energy and how we can save it.

Exercise 4–1

What are some stories in the newspaper?

1. There are many interesting stories and commercials that tell us about new things or new places in the newspaper. They also show us interesting pictures, drawings and cartoons. What do you want to include in your Energy Newspaper, which you can make together with your friends?

1. _____

2. _____

3. _____

4. _____

2. What roles do we need in making the Energy Newspaper? Divide the different roles among your friends.

Exercise 4–2

A reporter is a person who collects new stories and information and tells other people. Why don't we become a reporter for the Energy Newspaper?

1. What would be a good topic to include in the Energy Newspaper? Think about how you can gather information about your topic

2. You are thinking of choosing a friend in your class as "the Best Energy-saver." Who should be chosen for this? Think of a friend and write why he or she should be chosen as the best energy-saver.

3. You are trying to interview the friend you chose. What questions could you ask him/her? Conduct a real interview like an actual reporters.

- Congratulations for being selected as the Best Energy-saver.
- Could you tell us how you feel for being chosen?
- Could you share with us your energy saving tips at school or at home?
- Do you have anything you want to say to your friends about saving energy?

<Interview Questions Related to the Subject>

4. Make a newspaper article with what you have just interviewed.

① Make a title for the newspaper article

(Example: _____, the Best Energy-saver in class)

② Include a picture of him/her in your newspaper article.

③ Decorate the article with color pencils, magic markers and colored papers.

Title

_____

_____

PASTE PICTURE HERE

Article

_____

_____

_____

_____

Exercise 4–3

Cartoons we often enjoy are not only are fun to read, but also full of important lessons. This time, pretend you are a cartoonist who will talk about the importance of saving energy.

1. What is this cartoon about? Let's summarize the story below after reading.

2. Choose one word from the set of words below and make a cartoon about it. What would be a nice topic?

> Wasting energy, How to save energy, Recycling, Fossil fuel energy (like oil and coil), New & Renewable energy (Solar energy, wind energy)

3. Who would be the main character in our cartoon? Think about your characters, and plan how you will draw the cartoon.

Characters	**Main character:** **Other characters:**
Plot	

4. Draw the cartoon strip using crayons and markers.

Exercise 4–4

This time, make an energy commercial, which can tell your friends about the new kinds of energy.

1. Newspapers and magazines have many commercials. Commercials talk about new things or exhibitions. Sometimes, there are also commercials that tell you to be careful of fires during winter. Let's look for different commercials in newspapers.

2. How should you make a commercial to catch many people's attention? Talk about it with your friends.

Example

There should be large drawings or pictures.

There should be a slogan.

3. Fossil fuels such as coal and oil will run out in the future decades. That is why new and renewable energy such as solar energy, wind energy, hydrogen and bio energy are being created these days. Why don't you make a commercial about one kind of new & renewable energy.

❶ What can you include in the commercial? Choose one kind of new and renewable energy you want to put in the commercial, and look for some information you can include by searching through books and the internet.

- Energy I want to talk about :
- Characteristics :
- Advantages :
- Disadvantages :

❷ Slogans in commercials give people a stronger message of what it wants to say. What kind of slogans can we put in our energy commercial?

Example

Save Energy, Save Earth
Food waste can become new energy!

❸ Look for pictures that match your slogans. Then, decorate your commercial using crayons and pictures.

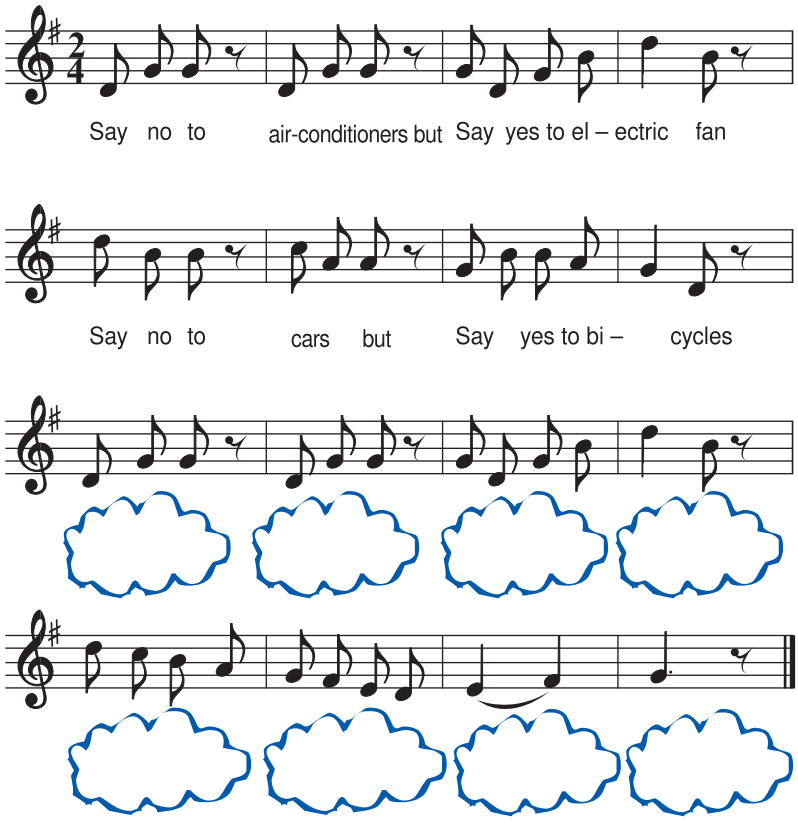
Exercise 4–5

Let's think more about the value of our energy resources by singing a fun energy song.

1. 'Let's all sing the following song .

2. 'Now, create your own lyrics to this song about saving energy. Afterwards, let's sing it together in groups.

Song Title : _____

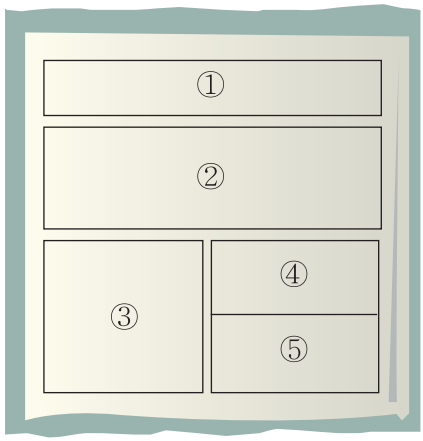


3. Include your song in the Energy Newspaper so other friends can also sing your song together.

Exercise 4–6

Complete your Energy Newspaper by including the article, cartoon, commercial and song.

1. Decide where you want to place each item in your Energy newspaper.



2. Think of the name of your newspaper.

3. How can we effectively promote energy saving? Talk about it with your friends.

The completed Energy Newspaper

Saving Energy

Activity 2

The rebirth of the plastic bottle

Let's think about the things we can make with plastic bottles.

Exercise 4–7

Why don't we find out more about plastic bottles, which can easily store liquid?

1. We need something that can store water and a beverage. There are many kinds of dishes in the kitchen. What kind of dish can we use to store liquid? Write it down below.

Example

They do not break easily.

2. What are the characteristics of the bottles below? What advantages and disadvantages do you think there are when we use them to store liquid? Talk about it with your friends.

Type	Plastic bottle	Can	Milk carton	Glass jar
				
Advantage				
Disadvantage				

3. Find out how many plastic bottles your family uses in a week.

❶ How many plastic bottles does your family use? Go find out.

	Period	Number of plastic bottles used in a week
1		
2		
Average		

❷ There are 52 weeks in a year. How many plastic bottles does your family use every year?

Number of plastic bottles used every week × 52 weeks = Number of plastic bottles used every year

[ ] × 52 weeks = [ ]

Every year, my family uses [ ] plastic bottles.

4. Plastic bottles take more than 500 years to completely rot and disappear from earth. Because of this, bottles we throw away remain underground for a long time, polluting our environment. What do you think will happen if there are many plastic bottles left underground? Let's talk about it.

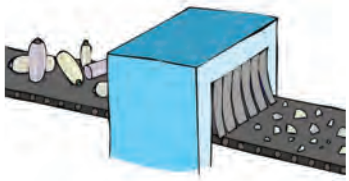
Plastic bottles are made using oil. So, recycling plastic bottles is also recycling our precious oil.
Recycling plastic bottles is another way to save energy and reduce pollution on earth.

Exercise 4–8

How can plastic bottles be recycled?
Look for things you can do.

1. The picture below shows how plastic bottles are recycled. After carefully looking at them, explain the different steps to your friends.

The first step is



The second step is

The third step is

2. Plastic bottles are recycled through many steps. What can we do to help recycle plastic bottles? Among the pictures below, look for things we can do to help recycle plastic bottles and put an ○ mark. Write your reason below.

Reason _____

_____

Reason _____

_____

Reason _____

_____

Reason _____

_____

Exercise 4–9

What can we make with recycled plastic bottles? Look for things around us that have been made by recycled plastic bottles.

1. The picture below is a picture of a classroom. Circle the things that could have been made from recycled plastic bottles.

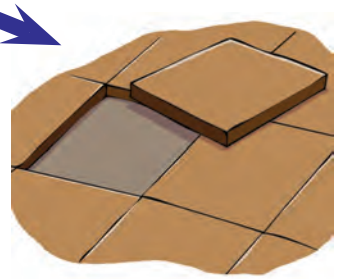
2. Write 3 things that you think have been made from recycled plastic bottles and why you think so.

① ____ ____ because

② ____ ____ because

③ ____ ____ because

Recycled plastic bottles are used to make many different things



Tiles

Rulers, scissors, pens

Hangers

Dustpans and brooms

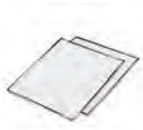
Exercise 4–10

We can save more energy when we recycle plastic bottles if we separate the cap from the bottle. Why don't we use these caps for a fun activity while saving energy?

1. Let's make a letter card using plastic bottle caps.

★ Materials ★


5 Plastic bottle caps


White paper


Markers


Sissors

Glue

★ How to make letter cards ★

① Cut the white paper into the shape of a cap.
② Paste the white paper on the cap.
③ Write any letter on the cap.

★ How to play the game ★

① Collect 20 different letter cards by making a group of four friends.
② Make different words using the letter cards.
③ The team who makes the most words wins.

2. Let's all practice together. Let's make words using the following letters:

EAT

★ Playing the game ★

1. Write down the words you made in the table below.

Words that I made	

I made a total of ( ) words.

2. Let's play this game with team of four friends.

Exercise 4–11

Why don't we also recyclediscarded plastic bottles? Let's make a picture frame and pencil holder using the discarded plastic bottles.

★ Materials ★

Plastic bottles


2 Pictures


Box cutter


Scotch tape

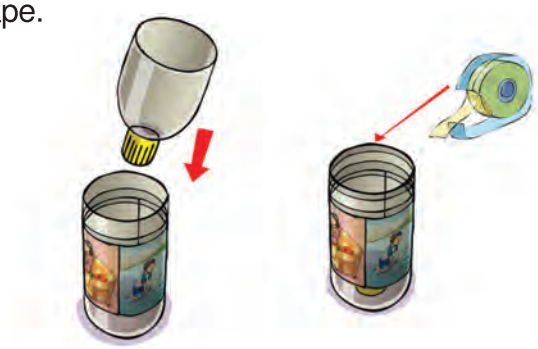

Markers

★ Directions ★

① After cleaning the plastic bottle, draw a line in the midpoint of the bottle using a marker. Use a box cutter and scissors to cut along the line.

② Place two pictures in the bottom of the plastic bottle, then tape it using a scotch tape.

③ Flip the upper half of the plastic bottle upside down and insert it into the lower half of the bottle. Tape the two using a scotch tape.



④ There is a complete pencil holder!

Activity 3

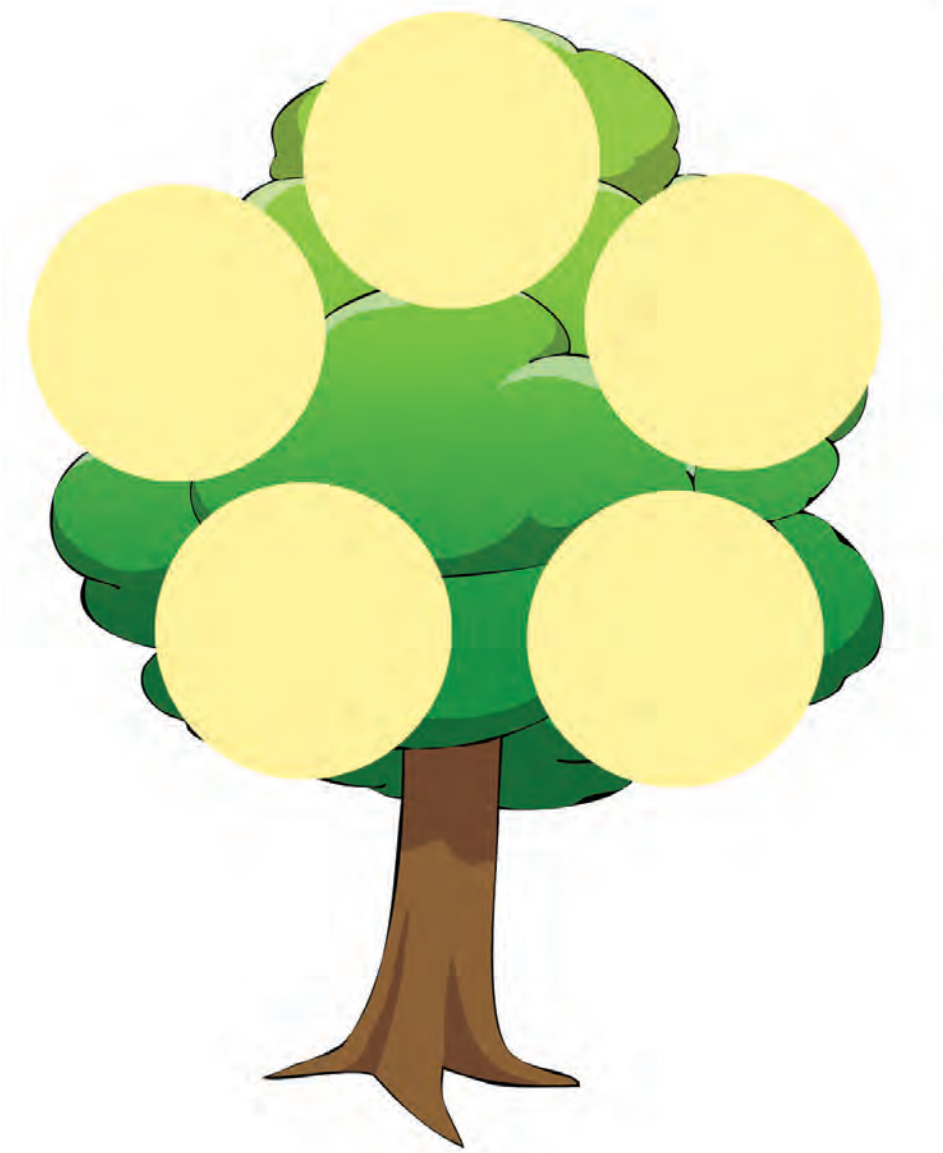
Let's go save the trees!

Let's think of ways we can save and protect trees.

Exercise 4–12

Can you think of benefits we get from the trees?

1. Write down the benefits of trees in the circles below.

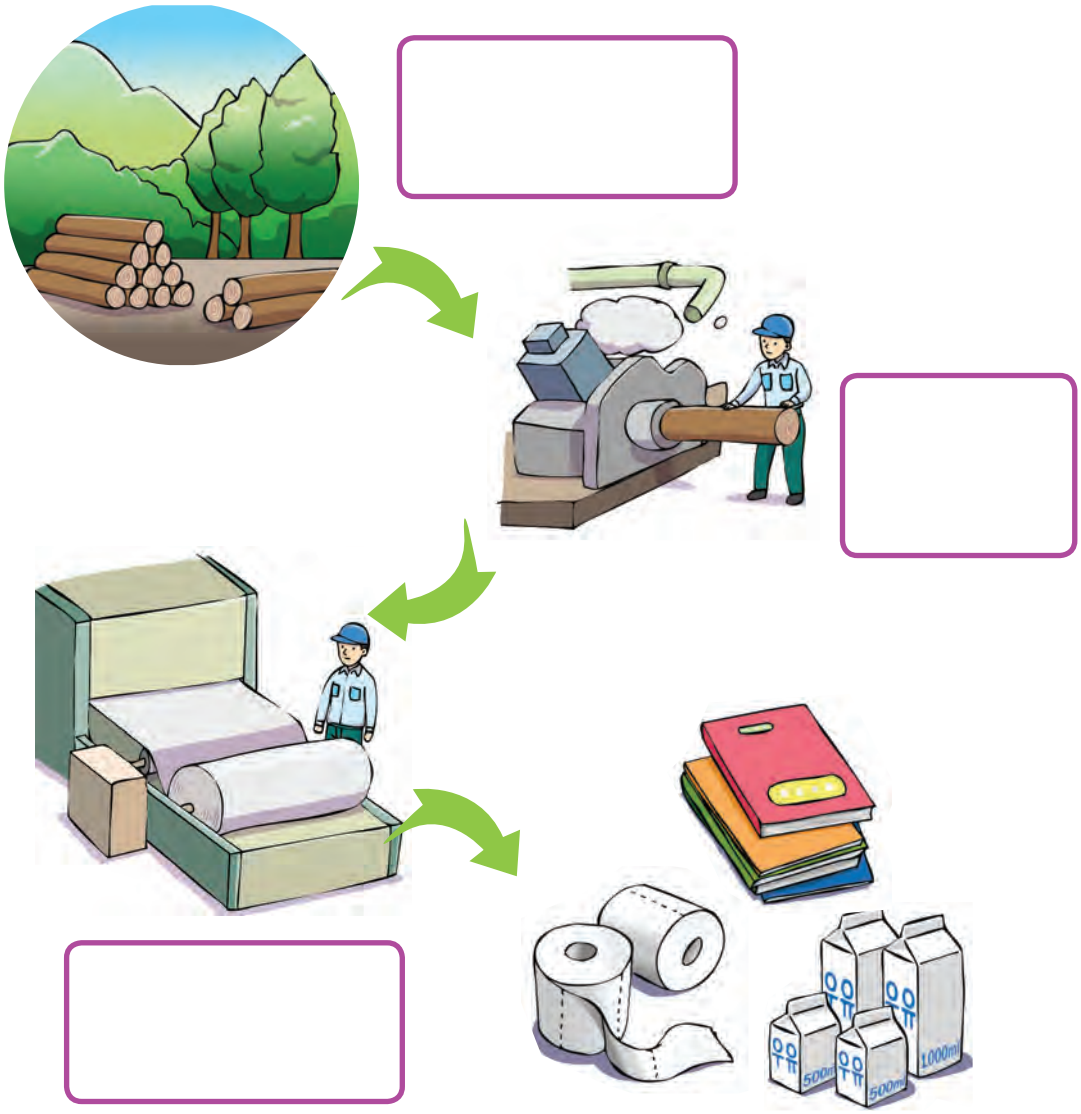


2. Compare your answers with your friends, and talk about how precious trees are.

Exercise 4–13

How is paper made?

1. The picture below tells us how a paper is made. What do you think each stepshows? Fill in the blanks.



2. What should we do with the paper in notebooks, milk cartons, magazines, books, and other paper products when we are done using them?

-
-
-
-

3. We can recycle the papers we use up. Why do you think we recycle them? Think about the reasons.

Recycling paper means we don't have to cut down more trees and we can save energy. Recycling a ton of paper is equal to saving 17 trees, 28 tons of water, and 4,200kW/h of energy. Don't you think we can have more trees around us if we recycle more paper?

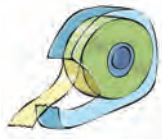
Exercise 4–14

Let's make a recycling bin for newspapers.

★ Materials ★


Box


Scissors


Scotch tape

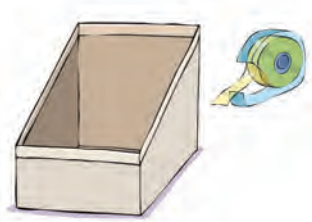
Glue


Newspaper

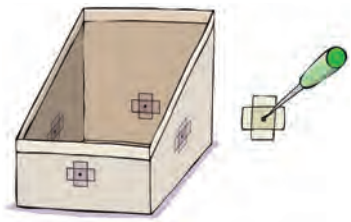
★ How to make ★

① Find a box that is big enough to fit newspapers. Cut off the top of the box according to the lines in the picture.

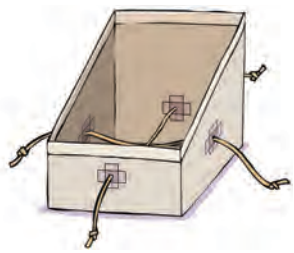
② After cutting the top off, connect the remaining sides by taping them together with the scotch tape.



③ Put a piece of tape on each side of the box, and poke a hole through each tape mark using a screwdriver.

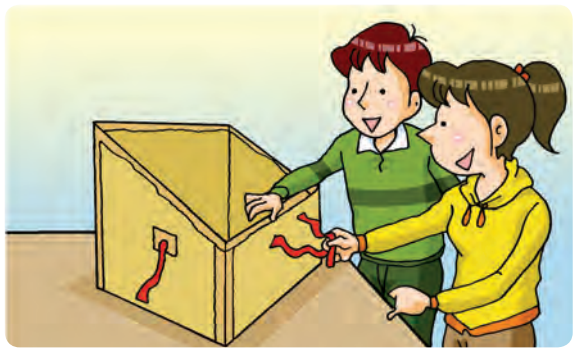


④ Tie a knot in the middle of the rope or string, slide it through all four holes, and tie a knot at thee end of each.



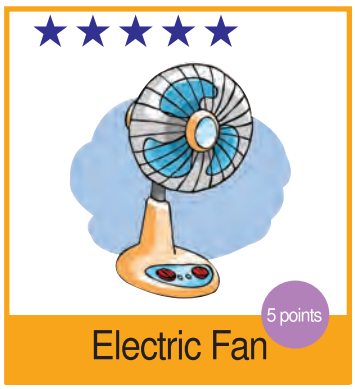
⑤ Use the box to collect newspaper. When enough newspapers are gathered, tie the newspapers with a rope or string.

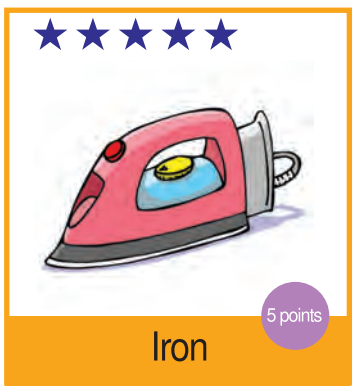
⑥ This is what the completed bin looks like:

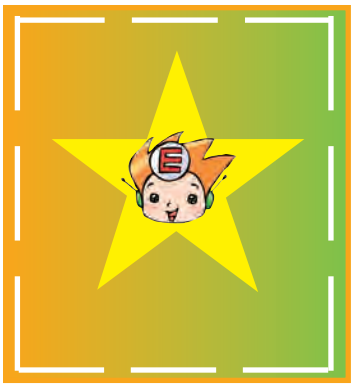
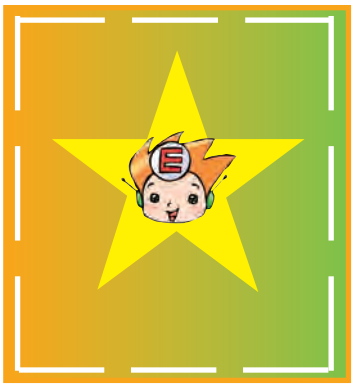
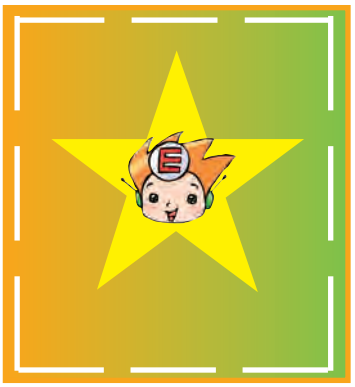
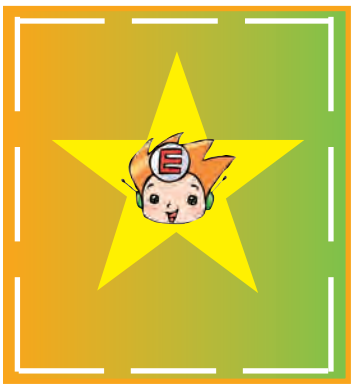
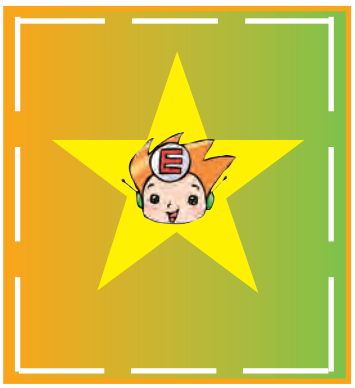
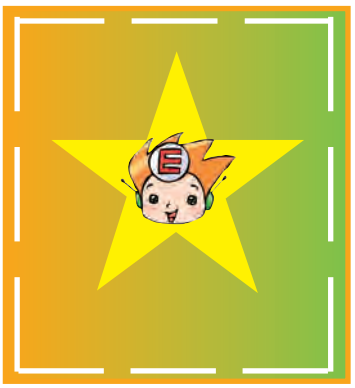
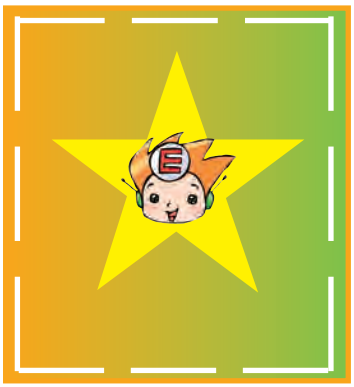
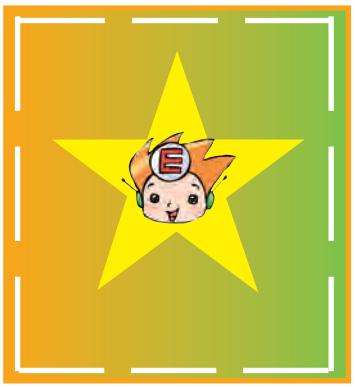
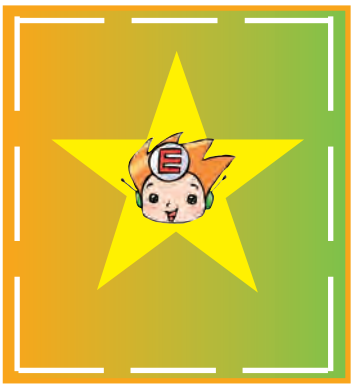


Appendix

Appendix 1 _ Electrical appliances (Page 14 of the book)






5 points
Fluorescent Light


5 points
Fluorescent Light


5 points
Fluorescent Light


5 points
Stereo

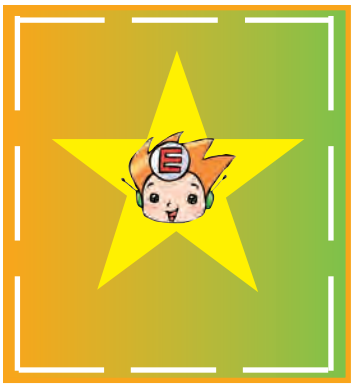
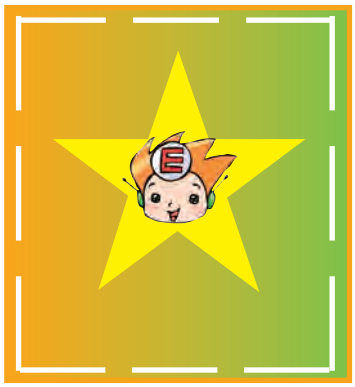
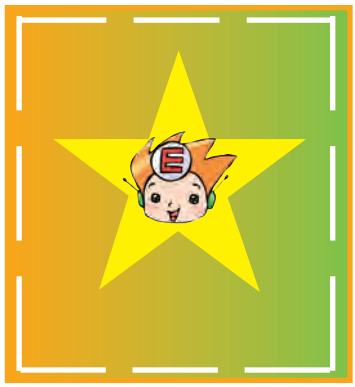
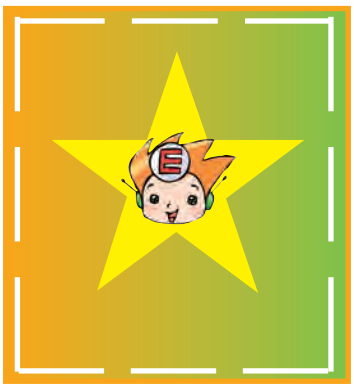
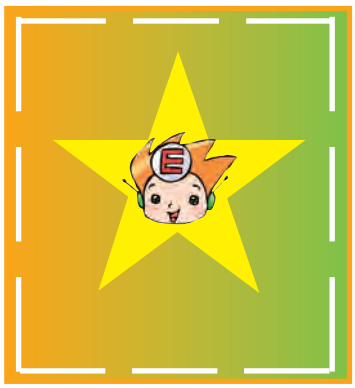
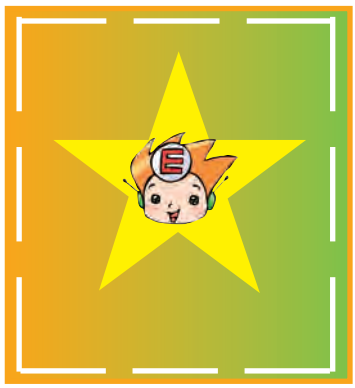
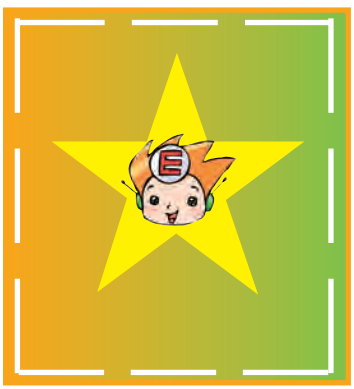
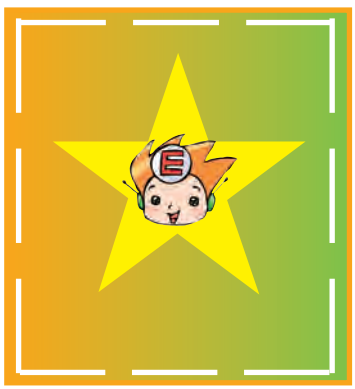
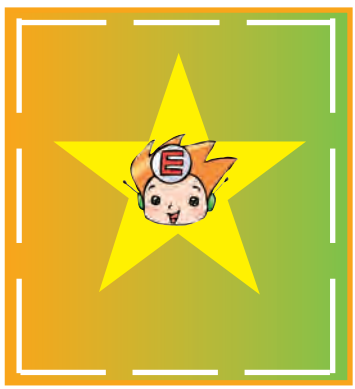

5 points
Stereo


5 points
Stereo


5 points
Washing Machine


5 points
Washing Machine


2 points
Energy Boy


5 points
Desk Lamp


5 points
Desk Lamp


5 points
Vacuum Cleaner


5 points
Vacuum Cleaner

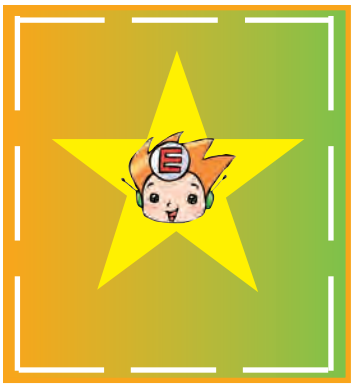

5 points
Mixer

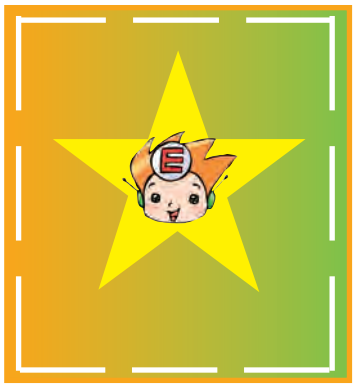

5 points
Mixer

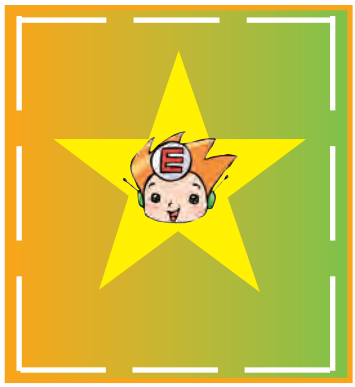

5 points
Coffee Pot

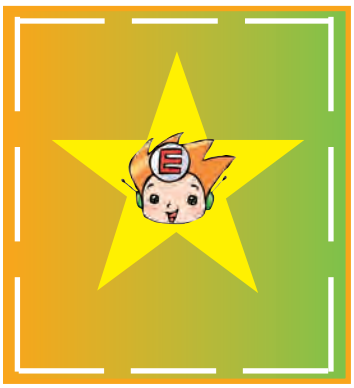

5 points
Coffee Pot

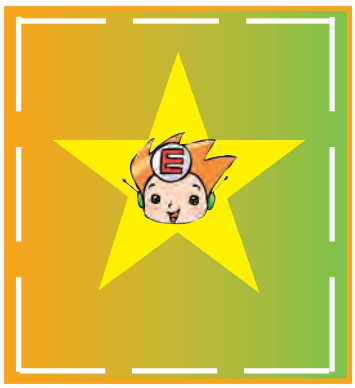

5 points
Electric Heater

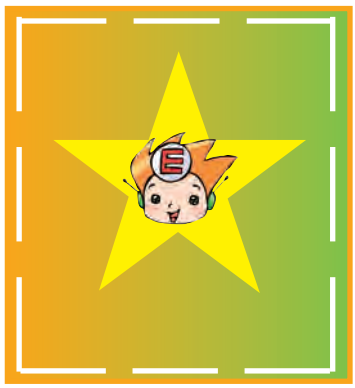


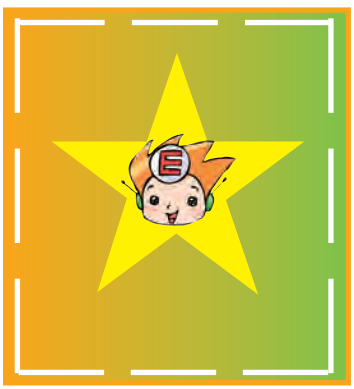


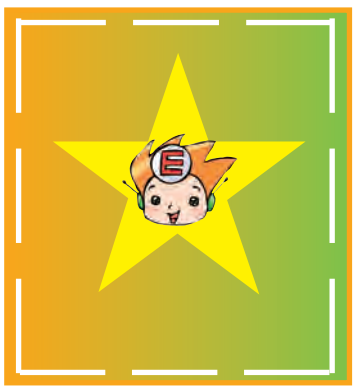


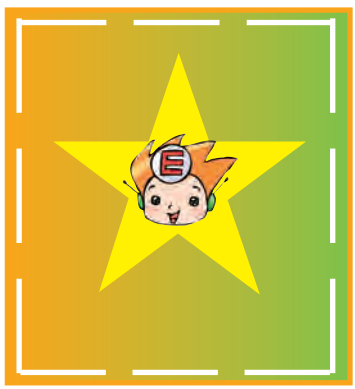













5 points
Electric Heater


5 points
Toaster


5 points
Toaster


5 points
Computer

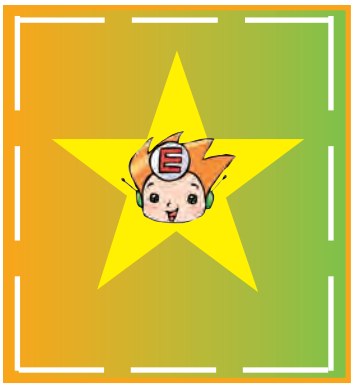
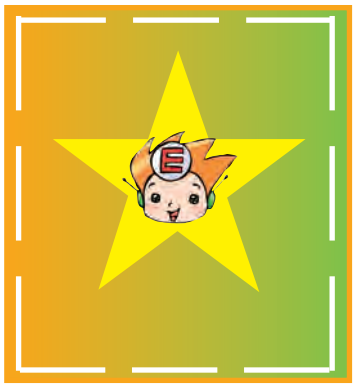
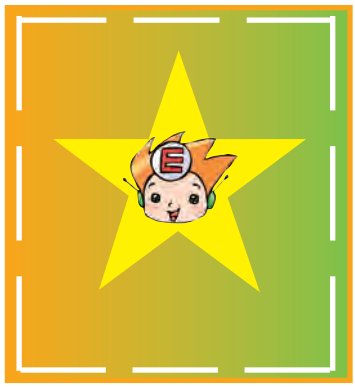
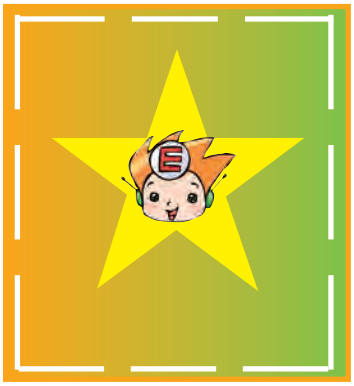
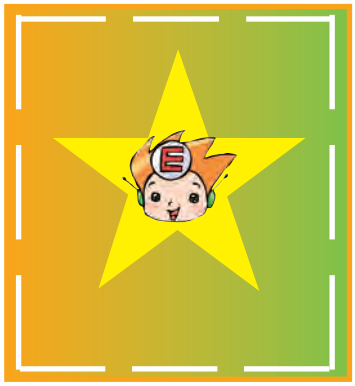
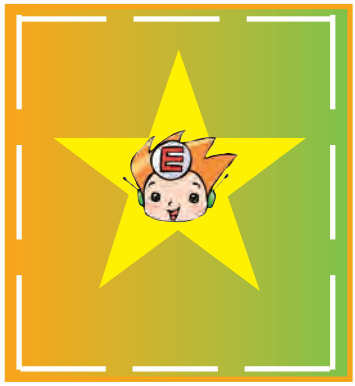
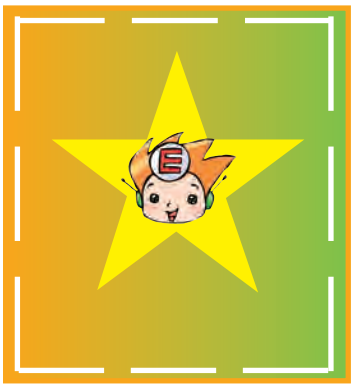
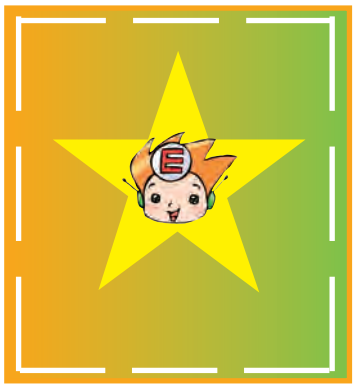
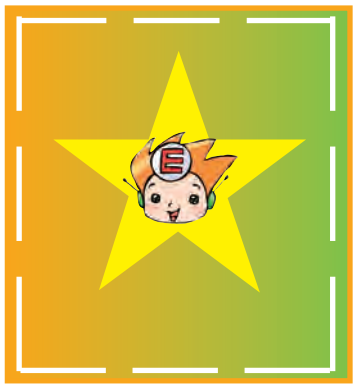

5 points
Computer


5 points
Hair Dryer


5 points
Hair Dryer


5 points
Television


5 points
Television

Appendix 2 _ My Item List (Page 29 of the book)

Object	Price	Sold (O)
1.		
2.		
3.		
4.		
5.		

Object	Price	Sold (O)
1.		
2.		
3.		
4.		
5.		

Object	Price	Sold (O)
1.		
2.		
3.		
4.		
5.		

Appendix 3 _ Details of the the Item (Page 30)

Details of the Item	
Owner	
Name of objec	
How long I used the object / condition	
What I want to do with it	
Sale Price	
Object I am exchanging for	

Details of the Item	
Owner	
Name of objec	
How long I used the object / condition	
What I want to do with it	
Sale Price	
Object I am exchanging for	

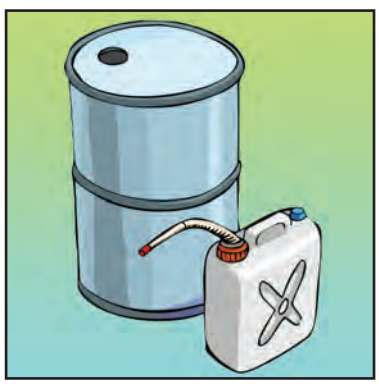
Details of the Item	
Owner	
Name of objec	
How long I used the object / condition	
What I want to do with it	
Sale Price	
Object I am exchanging for	

Details of the Item	
Owner	
Name of objec	
How long I used the object / condition	
What I want to do with it	
Sale Price	
Object I am exchanging for	

Details of the Item	
Owner	
Name of objec	
How long I used the object / condition	
What I want to do with it	
Sale Price	
Object I am exchanging for	

Details of the Item	
Owner	
Name of objec	
How long I used the object / condition	
What I want to do with it	
Sale Price	
Object I am exchanging for	

Appendix 4 _ Energy Card (Page 47 of the book)



Asian RICE Project

Regional **I**nitiative for **C**limate **C**hange **E**ducation

The Asian RICE Project is designed to develop small-scale community-based Climate Change Education (CCE) projects of local communities and schools that are able to benefit from small grants, technical assistance, and capacity building programmes.

The Asian RICE Project aims to form a volunteer network of local communities and schools so that they can work together to develop and implement innovative educational activities based on real-life issues related to climate change in different local contexts. The ultimate objective is to put Asian local communities on a more sustainable development path and to nurture a new generation of citizens that are aware of climate change.

More information: http://asianriceproject.wordpress.com

Why RICE?

Rice, as a common staple food of Asia, symbolizes that poverty is inextricably linked to climate change vulnerability. It is a symbol of hope that brings together developmental and environmental concerns and agendas in order to reduce poverty and promote sustainable development in the regional and local context of Asia.

Contact

KIM Myoung-Shin
Partnership & Network Team
Korean National Commission for UNESCO
rice@unesco.or.kr


UNPLUG

TURN OFF


UNTIE

MAINTAIN


WALK