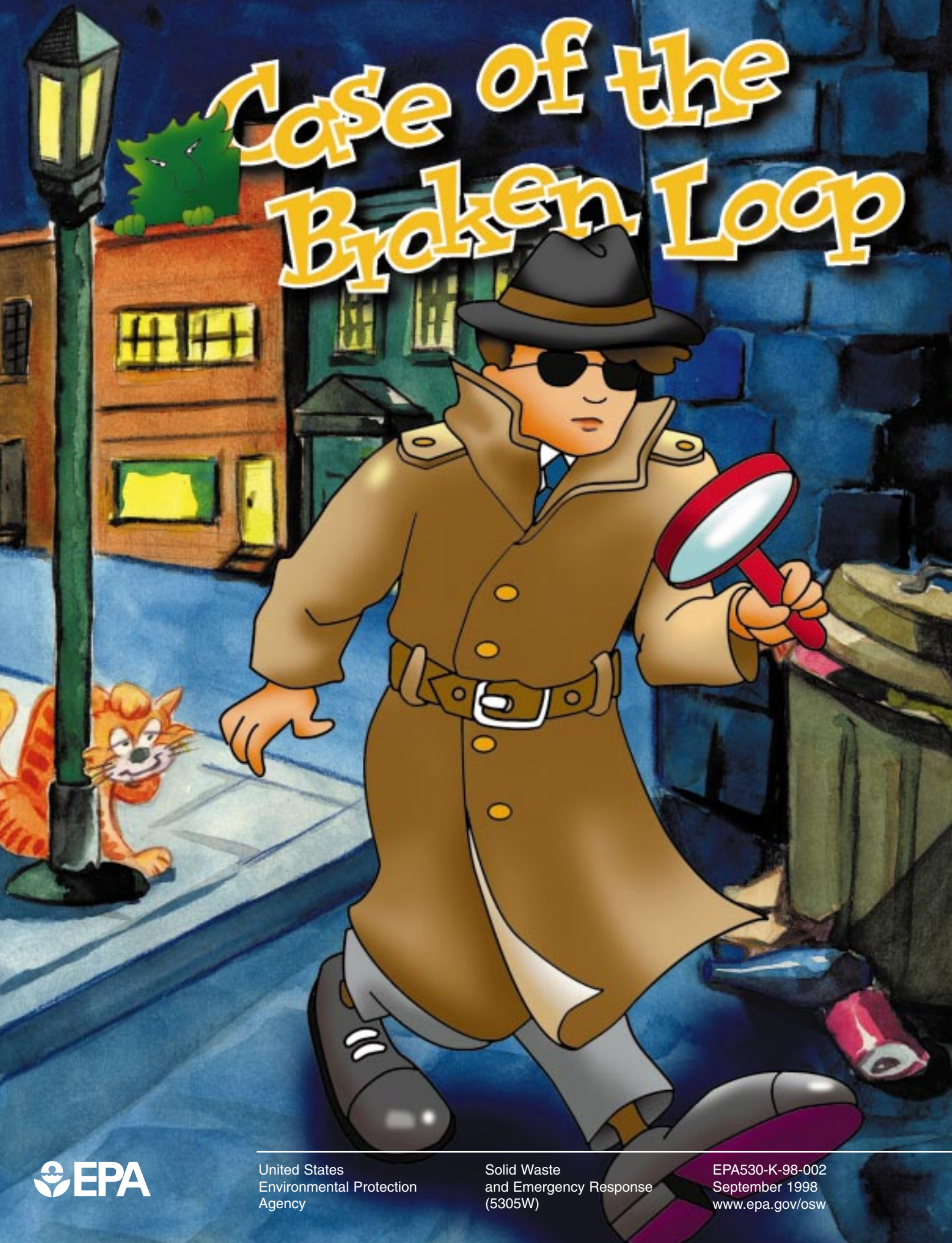


Case of the Broken Loop



United States
Environmental Protection
Agency

Solid Waste
and Emergency Response
(5305W)

EPA530-K-98-002
September 1998
www.epa.gov/osw

Are you ready for your mission?

Follow the detective through each of these activities to learn more about reducing waste and conserving resources.

All you need is a pencil and your ace detective skills to solve the puzzle at the end. If you need help, turn to the answers in the back. Don't let the Garbage Gremlin slip away!





To: Future Detectives
From: Resource Control (R.C.)
Headquarters

Regarding: Your assignment, if you choose to accept it, is to solve the case of the broken loop. To investigate this mystery, you will need to review the background files, decode the clues, and use your powers of investigation. This is an important case—solve it and become an Ace R.C. Sleuth!

Background: Picture a loop. It has no beginning and no end. Parts of nature, like trees, work in loops called life cycles. A sapling springs out of the earth and grows toward the sun, becoming older each year. When it dies, it helps make new trees by crumbling back into the earth and nourishing the soil. Just like trees, the products we use every day have life cycles. Manufacturers turn natural resources, like oil or wood, into products like plastic toys or newspaper. People buy, use, and reuse these items before recycling them. Manufacturers then use recycled materials to make brand new items that people will buy again. The life cycle is broken when an item that could be reused or recycled ends up in the trash.

The Crime: The Garbage Gremlin threw valuable resources in the trash instead of reducing, reusing, and recycling. This broke the loop. He also forgot to dispose of some items, like paint and cleaners, properly. He didn't make a clean getaway, though. He leaked some scrambled information to R.C. Headquarters.

Assignment: Headquarters has given you all of the pieces of the puzzle. To fix the loop, you must decode each piece of evidence. Then use the underlined clues to solve the riddle at the end and accomplish your assignment.

Final note: Begin with the first file, called Detecting Definitions. Then proceed through Waste No Words, Recycled Scramble, Crack the Code, Hidden Hints, and Raw Materials Lineup, decoding along the way. Once you reach the last of the files, you will receive instructions on how to complete your assignment. Without your sleuthing skills, the loop will remain broken—and resources will be wasted. Good luck!



Detecting Definitions



See if you can match the following words with their correct definitions.

_____ Waste

_____ Resources

_____ Conserve

_____ Products

_____ Recyclable

_____ Composting

_____ Landfill

_____ Toxic

_____ Packaging

_____ Ore

A. Materials made by nature that are necessary for life (also called raw materials).

B. A specially constructed site for disposing of garbage. The less garbage we throw away, the less we need this.

C. Made from raw or recycled materials, consumers buy these every day.

D. Although it protects products before they are bought, some products, like fresh produce, don't need any. Look for products with less of this.

E. This can be collected in your community and made into a new product by a manufacturer.

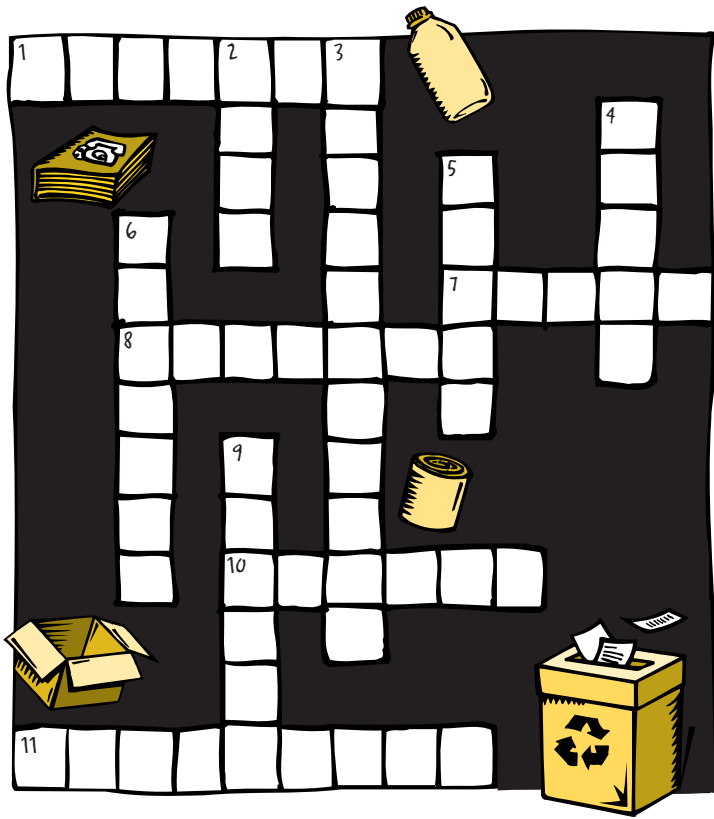
F. Nature's way of recycling food scraps and yard trimmings.

G. Something that can harm people or the environment if not disposed of properly is called this.

H. To use wisely, avoiding waste.

I. Metal comes from this mineral or rock in the ground.

J. Food scraps, soiled paper, and other things you throw away.



Across

1. Refrigerators, televisions, hair dryers, carpets, and tires are examples of ----- products. They can last a long time before you dispose of them.
7. To use something again for the same purpose or a new purpose.
8. A mixture of decayed food scraps, leaves, and grass. Can be used in your garden as fertilizer.
10. You can ----- old toys, old furniture, art supplies, and books to schools, community centers, libraries, or friends instead of throwing them away.
11. Come in disposable and rechargeable varieties. Are used in cordless phones, portable radios, cameras, and flashlights.

Down

2. If you buy one large bag of potato chips instead of five small bags, you are buying in ----. Many supermarkets have ---- food sections where you can scoop out the amount you want and therefore reduce waste and packaging.
3. Your world, surroundings, and source of life and health. Made up of air, water, land, plants, animals, and people.
4. Many items found in your ----- can be recycled into valuable new products.
5. Fossil fuels, such as coal, oil, and natural gas, which are used to manufacture products and heat our homes, come from the ----- . Aluminum, iron ore, and other minerals used to make brand new products come from the same place.
6. What more than 3,000 communities do with their newspapers, bottles, cans, and other items.
9. To decrease the amount of trash you throw away.

Answer the clues above and place the correct letter in each box of the puzzle.





Recycled Scramble

Unscramble the following words using the clues provided. What items do you recycle at home? If you don't recycle them, what do you do with them?

PSUO SNCA:

Anything made from the metal used in these already has at least 25 per cent recycled content.

SGARS:

If you leave it on the ground instead of bagging it and throwing it away, it can actually make your lawn greener and healthier.

DOAS TTLBOE:

This plastic product can be ground up into small pieces and made into soft fabric used in sweaters, jackets, long johns, and gloves.

RPPAE:

Many different kinds can be recycled from your parents' offices and your home.

SHCIRA:

These and other pieces of furniture can be given to someone else if you don't want them anymore.

TSELCOH:

When you are through with them, you can tear them up into rags for cleaning, use them for play, or even make a quilt.

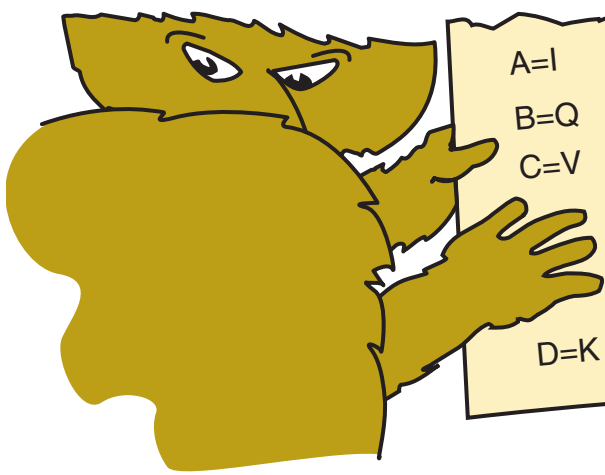
GBSA:

Whether plastic or paper, you can use them again until they fall apart. Then they can often be recycled!



- Don't PQVMX JUUO by taking more than you will XQM.
- Use ZXIVQTWX NWQMXV and KINV at picnics.
- ZXIVX bags instead of MSZUPAYF them QPQL.
- VSQZX your old RQFQEAYXV with friends.
- Try to buy items that are ZXKCLKWQTWX in your KURRIYAML.
- TIL NZUOIKMV that are made with ZXKCLKWXO materials.
- Learn about different types of KURNUVMAYF.

TOP SECRET



A=I	E=Z	K=C	Q=A	W=L
B=Q	F=G	L=Y	R=M	X=E
C=V	G=J	M=T	S=H	Y=N
	H=X	N=P	T=B	Z=R
	I=U	O=D	U=O	
D=K	J=F	P=W	V=S	



Decode these secret messages. These are all helpful hints for things you can do in your home to reduce, reuse, and recycle.

Crack the Code

Waste

Resources

Conserve

Products

Recyclable

Composting

Landfill

Toxic

Packaging

Energy

Paper

N P O P W A S H T A M I
P A C K A G I N G M O T
W H O C S A M A S I N G
T E M I T U P W A M R S
J U P B E I R T O X I C
A M O E F L Y I B T U N
R E S O U R C E S P M I
E K T C S W O T R A O C
C M I H P V N U C P A R
Y T N M O G S D U E C K
C O G R D B E N E R G Y
L Y G E J I R G H P I J
A B F W U R V T T W S L
B O L M N S E P L E S T
L A Y F K I C A N S K I
E R S L A N D F I L L B
P R O D U C T S A N P E

Look across, up, and down to find words in the word box.



Hidden Hints

Raw Materials Lineup

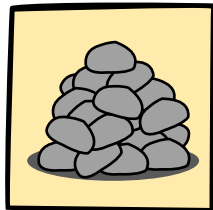


An item used to make something else is called a raw material. Some raw materials are easy to spot, but many require a bit of detective work. For example, leather looks and feels like the animal's skin. But a plastic toy is made from oil, and it doesn't feel slimy! Follow the trail from the raw materials and their clues to the row of possible suspects below. Draw a line from the material to what it becomes.

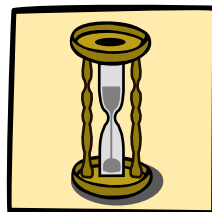
Clue: What once grew in the soil can become new soil, right in your own backyard!



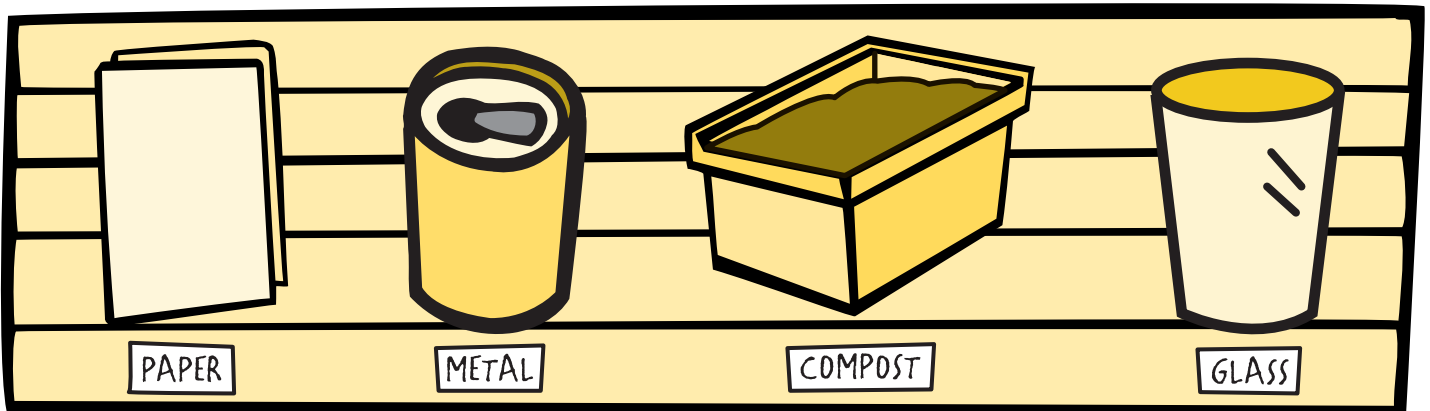
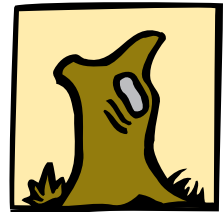
Clue: From rocks in the ground, ore turns into a can in your hand.



Clue: Some people measure seconds of time by pouring sand through an hour — — — — — which itself is made of sand!



Clue: Your pencil is usually made of wood, but you can use this for drawing, too!

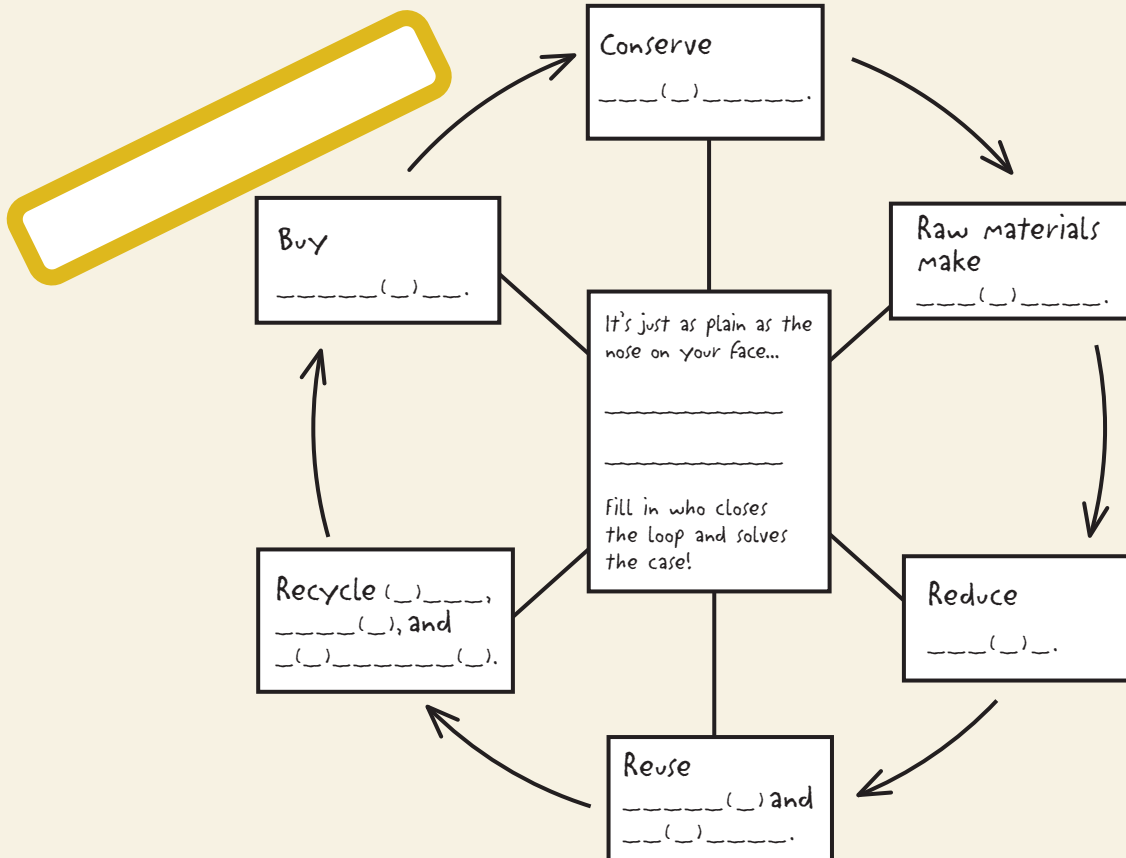




Congratulations!

You have decoded all of the Garbage Gremlin's scrambled files. Now, to complete your mission, use the information you have learned to complete the puzzle. First, return to each activity and find the underlined clues. The answer to each clue fits in one of the boxes below. Can you detect which answer goes in which box to close the loop?

Then use the circled letters from each part of the loop to complete a secret message from the Chief of R.C. Headquarters.



MI()SION AC()OMP()ISHED.

YOU HAVE CLO()ED THE LC()OP AND RE()UCED WAS()E.

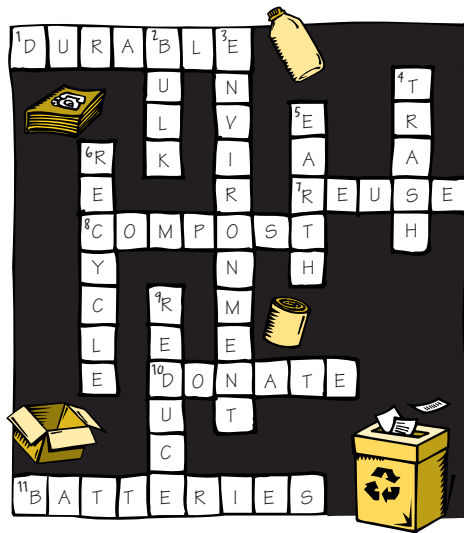
YOU ARE AN ()CE R.C. SLEUTH! G()EAT J()B!

Answers

Detecting Definitions, Page 2

Waste	J
Resources	A
Conserve	H
Products	C
Recyclable	E
Composting	F
Landfill	B
Toxic	G
Packaging	D
Ore	I

Waste No Words, Page 3



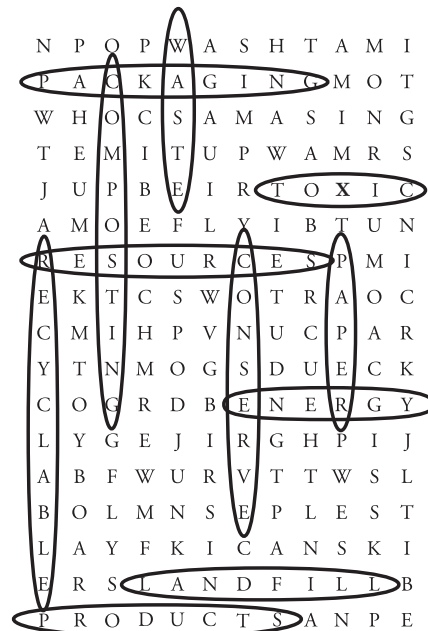
Recycled Scramble, Page 4

- soup cans
- grass
- soda bottles
- paper
- chairs
- clothes
- bags

Crack the Code, Page 5

- Don't waste food by taking more than you will eat.
- Use reusable plates and cups at picnics.
- Reuse bags instead of throwing them away.
- Share your old magazines with friends.
- Try to buy items that are recyclable in your community.
- Buy products that are made with recycled materials.
- Learn about different types of composting.

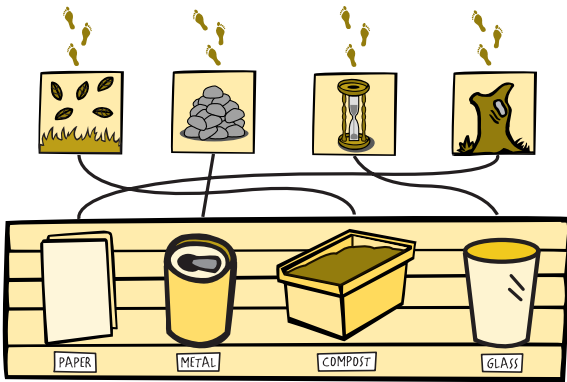
Hidden Hints, Page 6



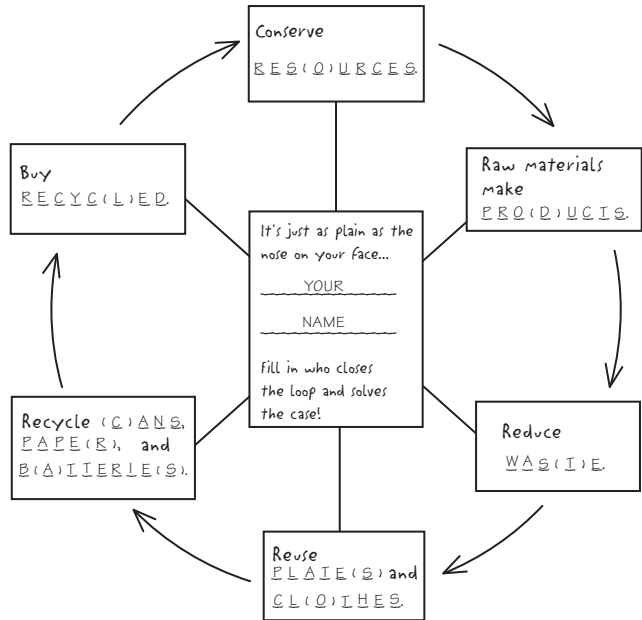
Continued on back...

Answers, continued

Raw Materials Lineup, Page 7



Loop, Page 8



MISSSION ACCOMPLISHED.

YOU HAVE CLOSED THE LOOP AND REDDUCED WASTE.

YOU ARE AN (A)E R.C. SLEUTH! GREAT JOB!

