



TEACHER GUIDE

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STUDENT HANDOUTS

- Reading Comprehension

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EASY MARKING™ ANSWER KEY 19

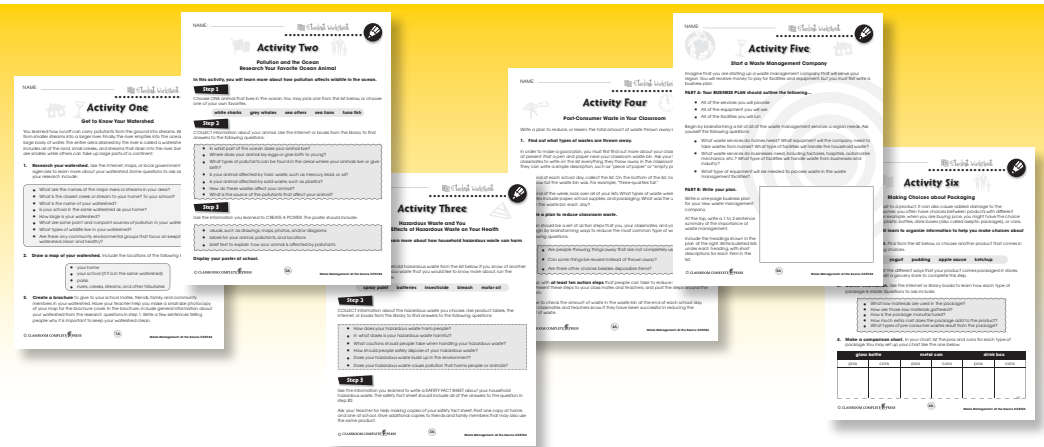
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Pre-Consumer Waste

1. Think about the chair you are sitting in. How was it made? What raw materials went into your chair? What types of wastes were produced when your chair was being made?

2. Draw a line from the word on the left to its definition on the right. You may use a dictionary to help you.

1	raw materials	A person who uses a product	A
2	solid	wood, metal, rock, and other matter from the earth used to make products	B
3	pre-consumer waste	all of the living and nonliving things that surround you	C
4	environment	leftover material from making products	D
5	consumer	a form of matter that has a definite shape and volume	E

3. In the left column, list three products that you use in everyday life. Then, fill in the right column with the raw materials used to make those products.

Product	Raw Materials



Pre-Consumer Waste

What types of manufactured products are around you right now? Perhaps books, pens, desks, a clock. All of these things are made in factories from **raw materials**. During the manufacturing process, some of the raw materials end up as waste. Waste from manufactured products is often called **solid waste**, because it is made up of mostly solids, such as wood and metal scraps.

Many people think of solid waste as parts of a product thrown away after use. However, most solid waste is actually created *before* a product even gets to you! This type of waste is called **pre-consumer waste**. A consumer is simply a person who uses a product. The prefix "pre" is added to mean "before."



Describe the meaning of the word **pre-consumer waste**. Give an example of **pre-consumer waste**.

What happens to pre-consumer waste?

For every ton of waste that people throw away after they buy products, twenty tons of waste was made to make those products. Finding a place to dispose of pre-consumer waste from factories can be a problem. Long ago, factories used to dump large amounts of solid waste into the environment. Now, stricter laws control how this waste must be disposed.



Getting raw materials can be costly and harmful to the environment. For example, metal mines need expensive machinery to operate. Large areas of land must be moved, and the area becomes unsuitable for many plants and animals.

When manufacturing first began, raw materials seemed plentiful. Land and space for wildlife also seemed plentiful. Pre-consumer waste was often simply thrown away. Now, things are changing. Raw materials are harder to find and more expensive to get. More land is used by people, so less land is available to wildlife. People now look for ways to make manufacturing less wasteful, and to save and reuse scraps instead of throwing them away.



Pre-Consumer Waste

1. Fill in each blank with the correct word from the reading passage. Words may be used more than once.

Products are manufactured from _____. During manufacturing, leftover scraps end up as _____. In fact, most waste from products is _____. In the past, most _____ was dumped in the _____. Now, _____ are becoming more difficult to get. People look for ways to _____ scraps instead of just throwing them away.

2. Use the words in the list to answer the questions.

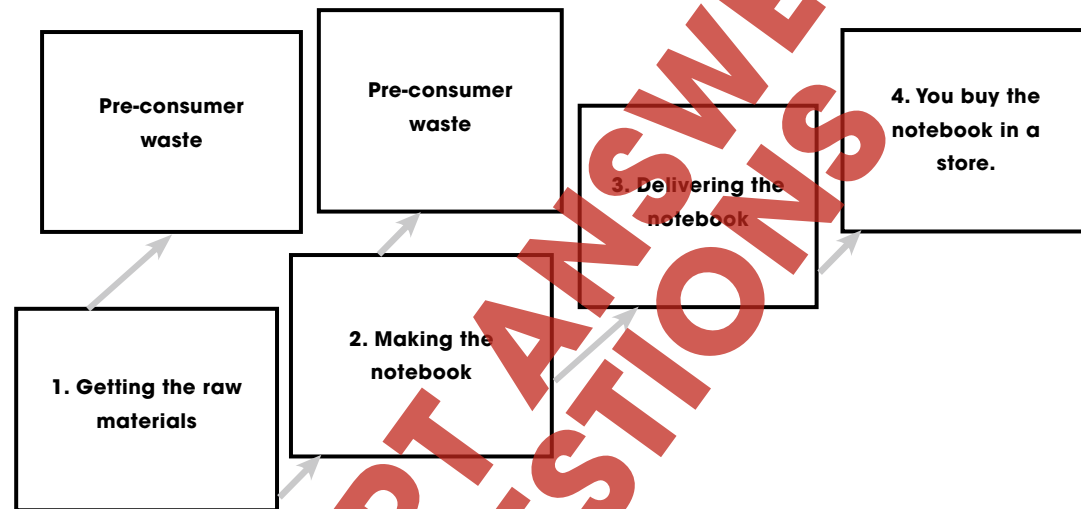
- | | | | |
|---------------|-----------------|----------------------------|------------|
| before mining | factory plastic | manufacturing pre-consumer | metal wood |
|---------------|-----------------|----------------------------|------------|

- Which raw material is used to make a bicycle frame?
- How do people get metals from the earth?
- Which raw material is used to make paper?
- What type of waste is made before you buy a product?
- When water bottles are manufactured, what type of pre-consumer waste is produced?
- What does the prefix "pre" mean when added to a word?
- What is the process by which products are made from many different materials?
- What is the name of a place that manufactures goods?



Pre-Consumer Waste

3. Fill in the flow chart below to show how a notebook is made. Begin by describing how people get the raw materials. Then, describe how the materials are made into the notebook. List the pre-consumer waste that is created during each process. Describe how the notebook gets from the factory to you.



Extension & Application

4. Design a brochure which will convince factories to lessen the amount of pre-consumer waste they produce. Choose any product, and write your brochure to the factory that makes that product.

In your brochure, be sure to include:

- information about the raw materials used in your product
- the benefits to the factory of using fewer raw materials
- ways that they can save raw materials, or use less to make the same amount of product

Toxic Waste

Television News Report

Imagine that you are a news reporter for your local TV news channel. In groups of three or four, you will create a news report on toxic waste in your community.

BEFORE YOU BEGIN

Do you regularly watch the news? If not, spend some time in the evening watching different news programs. Think about how the news reporters are presenting their stories. What tone of voice do they use? What kinds of information do they present? How do they use visuals to help viewers understand the story?

DO YOUR RESEARCH

Together as a team, research one type of toxic waste from the list below. Focus your research on the effects of this toxic waste on living things, including humans and wildlife. Find out where most of this type of toxic waste is produced, and also how to safely dispose of it.

batteries radioactive waste motor oil pesticides

WRITE YOUR NEWS REPORT

Based on your research, put together a 15 to 20 minute news report. Be sure to include the following in your report:

- An introduction, which gives an overview of the information you will present
- Information about why people should be concerned about the toxic waste
- How the toxic waste harms the environment
- The sources of the toxic waste in your community
- Recommendations about what people can do to help
- Photographs, diagrams, and other visual information that will help the viewers understand your presentation

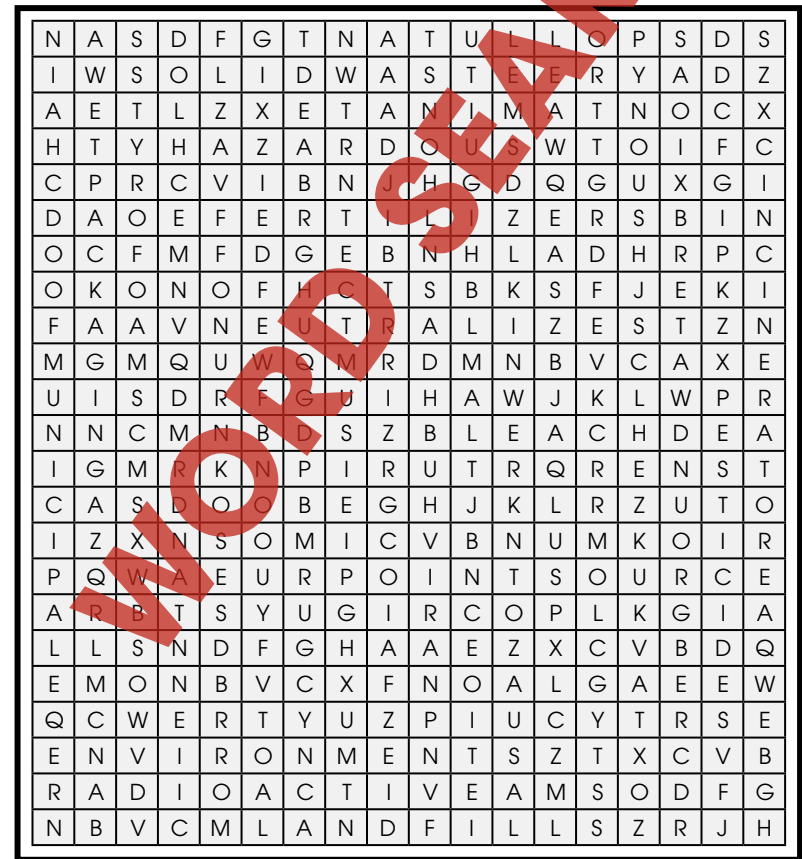
PRESENT YOUR REPORT

If you have access to a video camera, film your news report. Then, show the film in class. If you do not have a video camera, set up a table in your classroom and give your presentation live. Be sure to practice a few times first!

Word Search

Find all of the words in the Word Search. Words are written horizontally, vertically, diagonally, and some are even written backwards.

toxic	pollutant	point source	neutralizes
disposable	fertilizers	radioactive	landfill
algae	raw materials	runoff	bleach
manufactured	consumer	bioreactor	styrofoam
nondurable goods	contaminate	hazardous	ground water
pesticides	packaging	municipal	microorganisms
solid waste	environment	incinerator	food chain



Comprehension Quiz

Part C

Answer each question in complete sentences.

1. What is the difference between **pre-consumer waste** and **post-consumer waste**? Give an example of each.

2. Describe two reasons to choose products with the least amount of **packaging**.

3. Describe what **toxic waste** is. Give two examples of toxic waste that you might find in your home, and tell how to dispose of them safely.

4. What is the difference between **point source** and **nonpoint source** pollution? Give an example of each.

5. Explain how living things in the ocean are harmed by **pollution** made by people on land. Give two examples to support your answer.

SUBTOTAL: /16

Packaging



Canned Packaging



Drink Packaging



Gift Packaging



Water Packaging



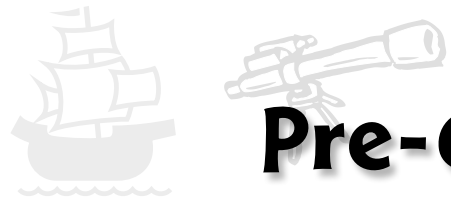
Take-Out Packaging



Transportation Packaging

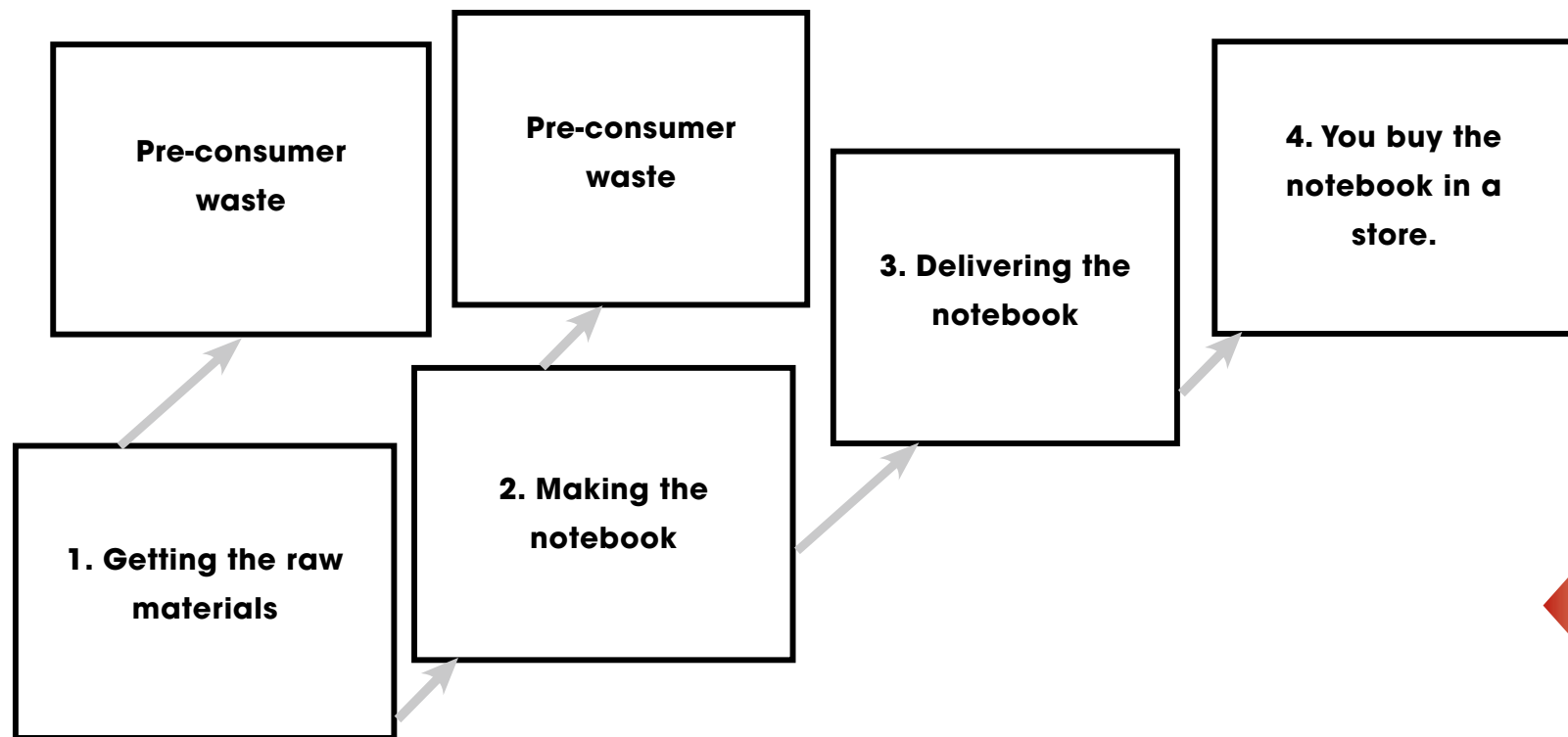
NAME: _____

After You Read 



Pre-Consumer Waste

3. Fill in the flow chart below to show **how a notebook is made**. Begin by describing how people get the raw materials. Then, describe how the materials are made into the notebook. List the pre-consumer waste that is created during each process. Describe how the notebook gets from the factory to you.

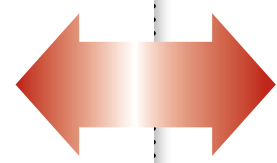


Extension & Application

4. **Design a brochure** which will convince factories to lessen the amount of pre-consumer waste they produce. Choose any product, and write your brochure to the factory that makes that product.

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EASY MARKING

ANSWER KEY

3.

Pre-consumer waste:
tree scraps, paper scraps

- 1) cutting trees
- 2) making paper, binding paper together
- 3) trucking notebook to stores

Answers will vary

11

Answers will vary

12

Answers will vary

13

4.

Answers will vary

Answers will vary

10

14

