

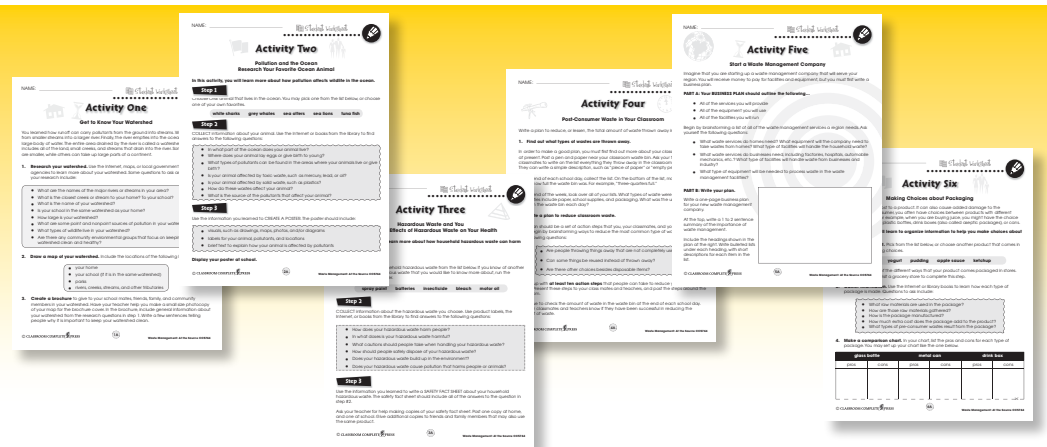
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Packaging

1. Write a definition for the word packaging on the lines below. You may use a dictionary to help you.

2. Draw a line to match the products on the left to their usual packaging on the right.

1	milk	bubble wrap and a cardboard box	A
2	cereal	hard plastic case with a plastic wrapper	B
3	DVD	waxed paper carton	C
4	picture frame	thin metal tube with a plastic cap inside of a cardboard box	D
5	toothpaste	glass jar with a metal lid and paper label	E
6	jam	plastic bag inside of a cardboard box	F

3. On the lines below, describe five examples of packaging waste that you threw away in the past couple days.

Packaging

Think about walking down the aisles of a store. What do you see? Usually, you see boxes, cans, and other types of packages. Materials that contain or protect products are called **packaging**. A product's packaging may be as simple as a label or a wrapper. Some products have very large packages made of many different types of materials, such as plastic, Styrofoam, and cardboard.



Packages have many purposes. Labels advertise a brand and provide information about contents. Labels let you tell one type of milk from another, for example; Boxes and bags contain loose materials, such as cereal and flour. Bottles keep liquid products contained. Electronics like video games often have packages that are much larger than the actual product. These packages protect easily breakable products.

STOP What is packaging? Describe different ways juices are packaged.

Why does packaging cause problems?

Like products themselves, packaging must be manufactured from raw materials. Trees must be cut to make paper labels and cardboard boxes. Tin must be mined to make cans. **Plastics**, made from **petroleum oil**, must be produced for many types of packaging materials.

The manufacturing of packaging has the same problems as the manufacturing of goods. Getting raw materials is costly and can be harmful to the environment. More pre-consumer waste is created during the manufacturing process. Packaging also creates more post-consumer waste, because it is simply thrown away when a product is purchased. Heavy or bulky packaging is more difficult to transport to stores. It requires more trucks to transport products with larger packages. More trucks create more pollution, and more cost for the product.



Packaging

1. Use the words from the list to label each type of packaging.

- glass jar
- plastic bottle
- tin can
- Styrofoam
- plastic wrapper
- cardboard box



a) _____ b) _____ c) _____



d) _____ e) _____ f) _____

2. Write the raw material next to the packaging that was made from it. You may use each raw material more than once.

- glass
- metal
- petroleum oil
- trees

_____ a) cardboard box _____ b) plastic wrapper
 _____ c) can _____ d) Styrofoam
 _____ e) paper label _____ f) jar

Packaging

3. Explain two reasons why packaging adds cost to a product.

1) _____

2) _____

4. Explain two ways in which too much packaging can harm the environment.

1) _____

2) _____

Extension & Application

5. Design new packaging.

Think of five products that come in a lot of packaging. List those products below, and briefly describe their packaging.

1) _____
2) _____
3) _____
4) _____
5) _____

For each item on your list, draw a design for new packaging that uses fewer raw materials.

Product Life Cycles

Create a Diorama

You learned that products begin with raw materials. These materials are manufactured, packaged, and delivered to stores. Consumers then buy and use the products. When the products are no longer useful, they become waste. This whole process is sometimes called a product's "life cycle." In this activity, you will create a diorama to show a product's life cycle.

1. Choose any product that you use in your everyday life, from school supplies to games to packaged foods.

2. Collect the following information about your product:

- What raw materials are used in your product and its packaging?
- How do people get those raw materials?
- How and where is your product manufactured?
- What types of pre-consumer wastes are produced?
- How is your product packaged?
- How is your product used by consumers?
- What types of post-consumer wastes are produced?

3. Use your answers to the questions above to design your diorama. Think about how to fit all of the steps in your product's life cycle into a shoebox-sized container. You may wish to use separate boxes for different steps. Be sure to include all of the following:

- getting raw materials
- manufacturing the product
- using the product
- pre- and post-consumer waste from the product and its packaging

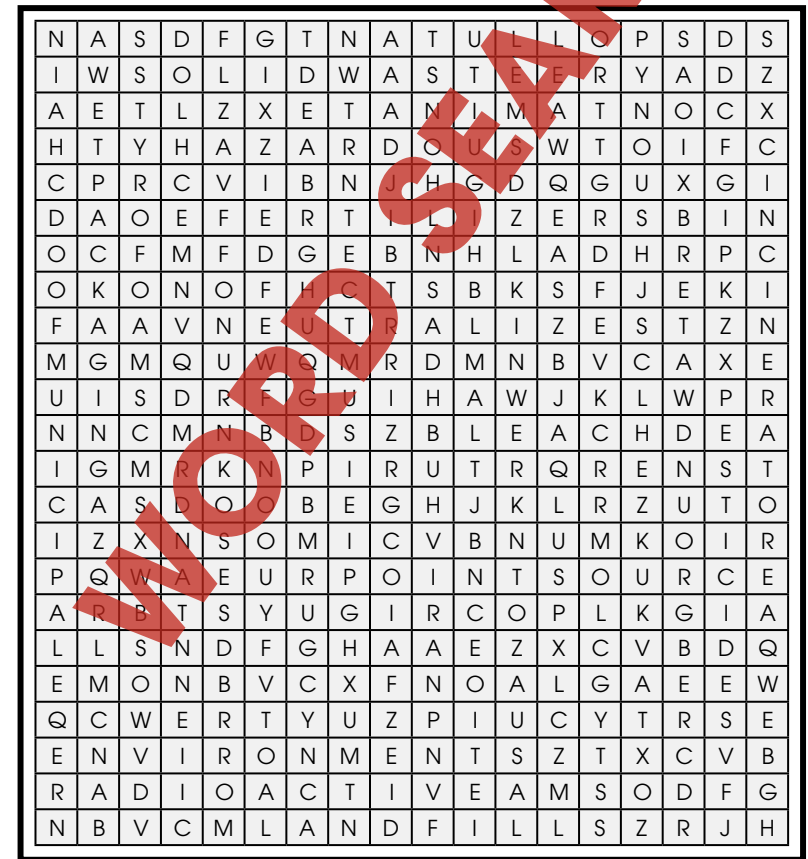
4. Construct your diorama. You can use any materials you like. You might use foil, wood, clay, construction paper, glue, figurines, paint, etc. Be creative!

Present your diorama to your class. Be sure to discuss each of the questions in #2 during your presentation.

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

30

Part A

Circle the word True if the statement is true. Circle the word False if it is false.

- Parts of a product that you throw away are waste.
True False
- Pre-consumer waste is not as much of a problem as post-consumer waste.
True False
- Post-consumer waste is any waste made during the manufacturing of goods and products.
True False
- The usual packaging of toothpaste includes a metal tube, plastic cap, and cardboard box.
True False
- A landfill is a facility where solid waste is burned to produce fuel for energy.
True False
- The best way to dispose of paint, bleach, and other liquid hazardous waste is to pour it down a drain and run hot water for at least ten minutes.
True False
- Fertilizers used on farms are an example of nonpoint source pollution.
True False
- Oceans are so large that they cannot be harmed by human waste; therefore, they are a good place for dumping.
True False

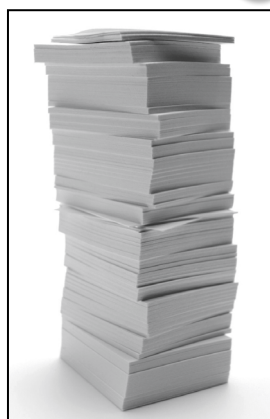
Part B

Look at the package of loose paper to the right.

In the boxes below, describe each type of waste made by the package of paper.

a) pre-consumer

b) post-consumer



SUBTOTAL: /14

Waste in Our Oceans



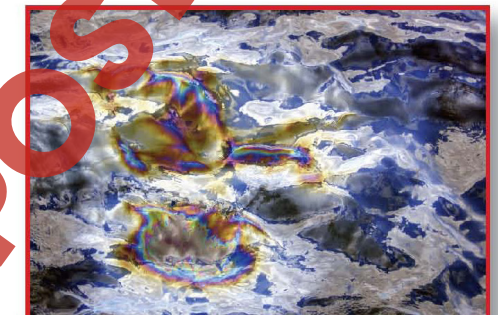
Fertilizer Leaching



Beach Pollution



Shipwreck



Leak from Oil Barge



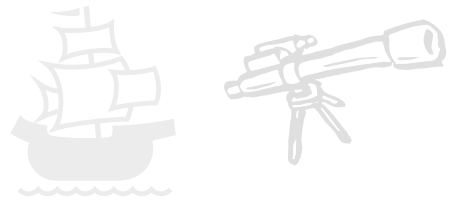
Chemical Waste



Pollution Control Barrier

NAME: _____

After You Read 



Packaging



3. Explain **two** reasons why packaging adds cost to a product.

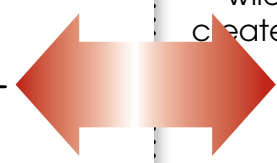
- 1) _____

- 2) _____

4. Explain **two** ways in which too much packaging can harm the environment.

- 1) _____

- 2) _____



Extension & Application

5. Design new packaging.

Think of **five products** that come in a lot of packaging. List those products below, and briefly describe their packaging.

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____

For each item on your list, draw a design for new packaging that uses fewer raw materials.

3.

Uses more raw materials, adds to transportation cost

Answers will vary

11

4.

Getting raw materials can cause pollution and take away wildlife habitat, creates more waste

Answers will vary

12

Answers will vary

13

5.

Answers will vary

Answers will vary

10

14



EASY MARKING ANSWER KEY