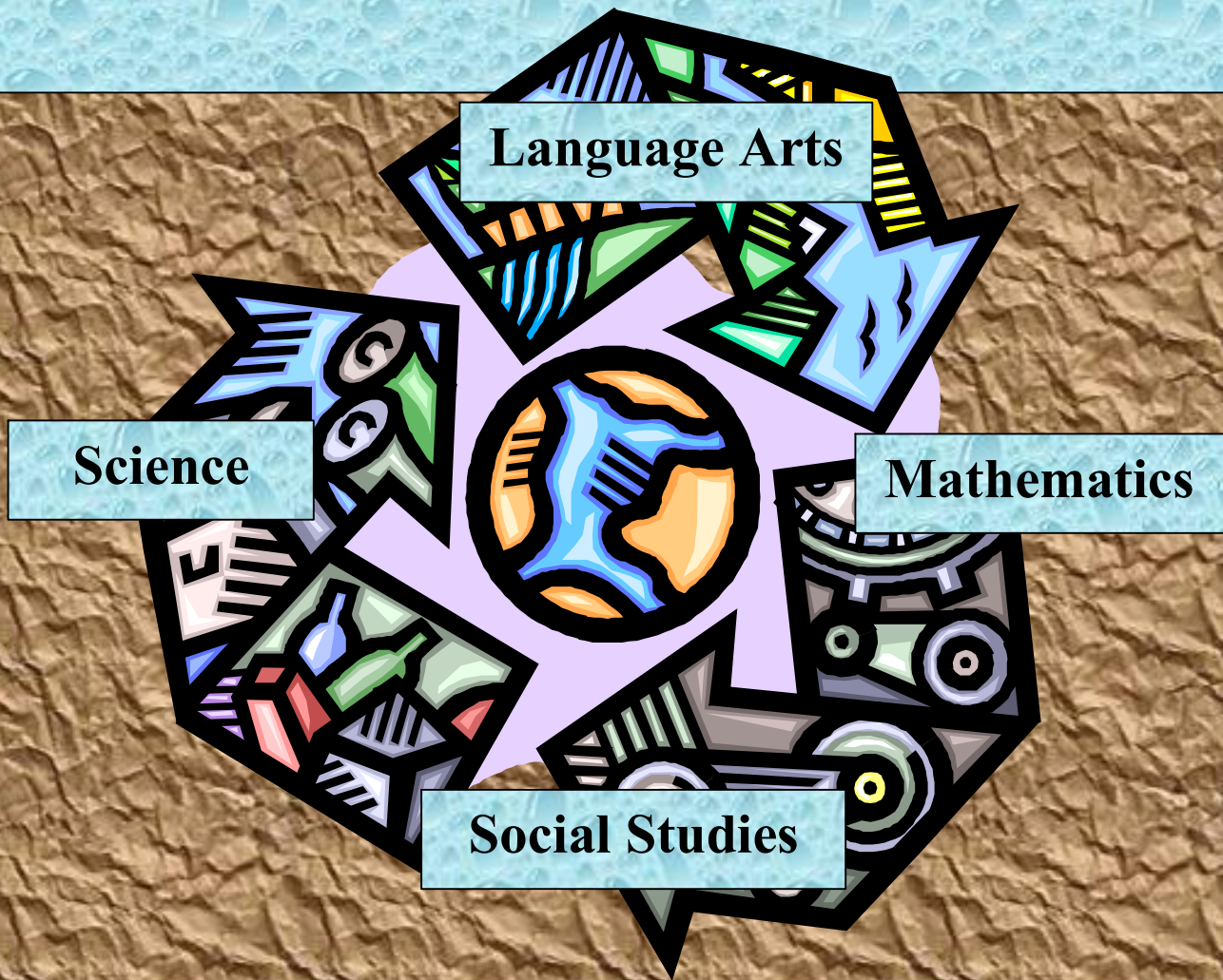


Garbology

A Thematic Unit about Trash

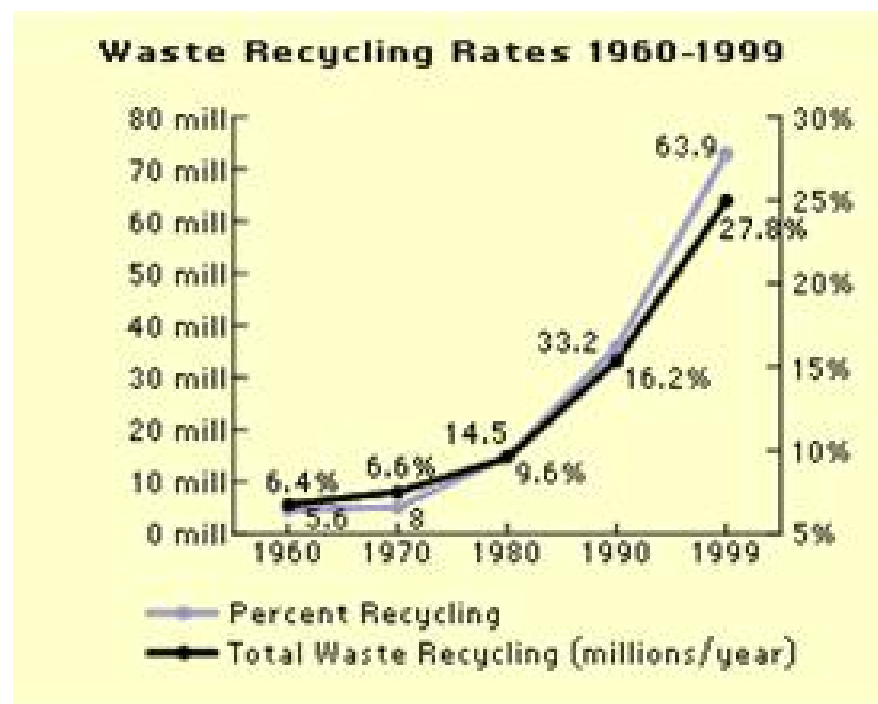
By Nancy L. Wilkinson



Chapter 1

Getting Started

(For use with all disciplines)



Garbology
Getting Started
Lesson 1
Thinking About Trash

Objective:

Students will learn some interesting facts about garbage. They will discuss what these facts mean to them.

Opening:

Give the fact below to the students. Discuss what this fact means. Guess how many of drink containers this might be:

Fact: 42 percent of all aluminum cans are recycled.

Materials:

Worksheet 1 - One for each student or group

Instruction:

- 1) Go over Worksheet 1 with the students.
- 2) Have the students answer each question. It is suggested that the questions should be used as discussion starters.

Closure

Have the students brainstorm on some solutions that have helped reduced the amount of trash over the years.



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Lesson 1, Worksheet 1

Name _____ Period _____

Directions: Read the facts and answer the questions relating to the fact(s).

- | | |
|--|---|
| <p>1) Fact: Almost 2/3 of the nation's landfills closed over the last 10 years.</p> | <p>What fraction remained open?</p> <p>Why do you think the landfills closed?</p> |
| <p>2) Fact: Archeologist from the University of Arizona found landfill debris buried 20 years earlier. They discovered green grass clipping, a T-bone steak and 5 hot dogs all in excellent condition. Also, long-buried newspapers could be accurately dated from their perfectly preserved pages.</p> | <p>What reasons can you give to explain why the garbage did not decompose (disintegrate)?</p> |
| <p>3) Fact: Up to 50% of waste that every person produces per day on average could be recycled, but only 13% is currently recycled.</p> | <p>According to the 1990 census, there are 248,709,873 people living in the United States. How many pounds of trash are being thrown away each day?</p> |
| <p>Fact each of us generates on average 4.4 pounds of waste per day per person.</p> | <p>How many pounds could be saved by recycling?</p> <p>How many pounds are being recycled?</p> <p>How do you think this change will help the environment?</p> |
| <p>4) Fact Recycled newspapers use only 20 to 30 percent of the energy required to manufacture newsprint from new pulp.</p> | <p>Do you think we should required people to recycle their newspapers and aluminum cans? Why?</p> |
| <p>Fact: Each recycled aluminum can saves the energy equivalent to 6 ounces of gasoline. It takes 95 percent less energy to make a new can from recycled aluminum.</p> | <p>If so, what are some ways you think we should encourage people to recycle their newspapers and aluminum cans?</p> |
| <p>Fact: Every Sunday, the united States wastes nearly 90% of the recyclable newspapers. This wastes about 500,000 Trees.</p> | <p>What are some things that your city does to encourage recycling?</p> |
| <p>Fact; In 1989, 61 percent of the aluminum cans</p> | |

used in the United States were recycled.

Fact: Recycling an aluminum can saves enough energy to run a television set for 3 hours.

5) Fact: Recycling and composting recovered 24% of our municipal solid waste in 1994. That's around 49 million tons!

What is composting?

What benefits do you think composting has?

How would you use compost?

6) Fact: Recycling all of your home's newsprint, cardboard, glass, and metal cans reduces carbon dioxide emissions by 850 pounds a year.

If carbon dioxide is something that we exhale (breath out), why do you think it would be necessary to reduce its emissions?

7) Fact: It is estimated that 150 million computers will be discarded in the United States alone, enough to fill a hole 1 acre in area and 3.5 miles deep.

What other suggestions do you have for old computers besides discarding them?

8) Fact: Every year, Americans throw out 24 million tons of grass clippings, leaves, and other yard waste.

Do grass clippings, leaves and other yard waste decompose easily?

If so, why it is a big deal if we just throw them away?

If not, what should be done with the grass clippings, leaves, and other yard waste?

9) Fact: Each year, Americans throw away 1.6 million pens, 2 million razors and blades, and 200 million tires.

There is plenty of land left in the United States that is not being used. Why can't we use it for dumping our trash?



Garbology
Lesson 1, Worksheet 1
Suggested Answers (In Italics)

Directions: Read the facts and answer the questions relating to the fact(s).

- 1) Fact: Almost 2/3 of the nation's landfills closed over the last 10 years.** What fraction remained open? - *1/3*
- Why do you think the landfills closed? - *Most landfills closed because they were full. You might also discuss if this is really a problem? Could it be because new landfills are larger?*
-
- 2) Fact: Archeologist from the University of Arizona found landfill debris buried 20 years earlier. They discovered green grass clipping, a T-bone steak and 5 hot dogs all in excellent condition. Also, long-buried newspapers could be accurately dated from their perfectly preserved pages.** What reasons can you give to explain why the garbage did not decompose (disintegrate)? - *Three things are needed to decompose trash; light, air and water. If one of these is minimal, decomposition is very slow.*
-
- 3) Fact: Up to 50% of waste that every person produces per day on average could be recycled, but only 13% is currently recycled.** According to the 1990 census, there are 248,709,873 people living in the United States. How many pounds of trash are being thrown away each day? - *1,094,323,441*
- Fact each of us generates on average 4.4 pounds of waste per day per person.**
- How many pounds could be saved by recycling? - *\$47,161,720.6*
- How many pounds are being recycled? - *142,262,047.3*
- How do you think this change will help the environment? - *Answers will vary*
-
- 4) Fact Recycled newspapers use only 20 to 30 percent of the energy required to manufacture newsprint from new pulp.** Do you think we should required people to recycle their newspapers and aluminum cans? Why? - *Answers will vary*
- Fact: each recycled aluminum can saves the energy equivalent to 6 ounces of gasoline. It takes 95 percent less energy to make a new can from recycled aluminum.** If so, what are some ways you think we should encourage people to recycle their newspapers and aluminum cans? - *Some example answers may be new laws or a rebate on the sanitation bill.*

Fact: Every Sunday, the united States wastes nearly 90% of the recyclable newspapers. This wastes about 500,000 Trees.

What are some things that your city does to encourage recycling? - *Answers will vary.*

Fact; In 1989, 61 percent of the aluminum cans used in the United States were recycled.

Fact: Recycling an aluminum can saves enough energy to run a television set for 3 hours.

5) Fact: Recycling and composting recovered 24 percent of our municipal solid waste in 1994. That's around 49 million tons!

What is composting? - *When material is broken down and mixed with soil to encourage decomposition.*
What benefits do you think composting has? - *It recycles waste.*

How would you use compost? - *Many times compost is used to fertilize the land.*

6) Fact: Recycling all of your home's newsprint, cardboard, glass, and metal cans reduces carbon dioxide emissions by 850 pounds a year.

If carbon dioxide is something that we exhale (breath out), why do you think it would be necessary to reduce its emissions? - *Too much carbon dioxide is bad for the environment. The plants would not be able to consume all of the carbon dioxide.*

7) Fact: It is estimated that 150 million computers will be discarded in the United States alone, enough to fill a hole 1 acre in area and 3.5 miles deep.

What other suggestions do you have for old computers besides discarding them? - *Answers will vary. Example: Reusing the parts to build new computers.*

8) Fact: Every year, Americans throw out 24 million tons of grass clippings, leaves, and other yard waste.

Do grass clippings, leaves and other yard waste decompose easily? - *Yes, compared to other materials.*

If so, why it is a big deal if we just throw them away? - *Unless you have water, air and sunlight, even grass clippings won't decompose.*

If not, what should be done with the grass clippings, leaves, and other yard waste? - *Answers will vary.*

9) Fact: Each year, Americans throw away 1.6 million pens, 2 million razors and blades, and 200 million tires.

There is plenty of land left in the United States that is not being used. Why can't we use it for dumping our trash? - *Answers will vary. Example: We can't use all of the land for trash, as some of it is too close to ground water, houses, recreational areas and other valid reasons.*

