



Why do I need to recycle?

Recycling Benefits Everyone

Lesson 1:

The earth has a limited amount of space with limited resources that must sustain us all. We cannot keep wasting our resources and polluting our land! Recycling is the answer. When we recycle our newspapers, bottles, and cans, we are saving these materials for future use. When you waste these materials, you could be trashing your grandchildren's future!

Recycling conserves energy as well as resources. Recycling one ton of paper saves over 4,000 kilowatt hours of electricity. There are also economical reasons for recycling. Recycling reduces waste disposal costs and creates employment opportunities.

What Can Be Recycled?

These are just a FEW of the many things that can be recycled and/or reused:

Aluminum



Yard waste



Plastic



Glass

Paper



Computers



Used Motor Oil



Tin





Recycling Timeline



Lesson 1:

500 B.C. The city of Athens organizes the first municipal dump in the Western world. Citizens are required to dispose of their waste at least one mile from the city walls.

1690 The first paper recycling mill in the United States using recycled fibers (including waste paper and old rags) is established at the Rittenhouse Mill near Philadelphia.

1757 Benjamin Franklin institutes the first municipal street cleaning service in the United States, in Philadelphia; at the same time, American households begin digging refuse pits instead of throwing garbage out of windows and doors.

1885 The nation's first garbage incinerator is built on Governor's Island, New York.

1895 The New York City Street Cleaning Commissioner sets up the first comprehensive system for public-sector garbage management in the country.

1904 The nation's first major aluminum recycling plants open in Cleveland and Chicago.

1916 Cities begin switching from horse-drawn to motorized refuse collection equipment.

1934 The Supreme Court bans the dumping of municipal waste into the ocean, a common practice until this time.

1942-1945 Americans collect and industry recycles rubber, paper, scrap metal, fats, and tin cans—about 25 percent of the waste stream—to help the war effort. During the war, Army troops bury trash in the ground, providing the initial idea for the “sanitary landfill.”

1954 Olympia, Washington enacts one of the first “pay-per-can” programs.

1968 The U.S. aluminum industry begins recycling discarded aluminum products, from beverage cans to window blinds.

1974 The first city-wide use of curbside bins occurs in University City, Missouri, for collecting newspapers.

1997 EPA increases America's recycling goal to 35 percent by 2005.

2008 During Keep America Beautiful's Great American Cleanup, volunteers recycled 189,000,000 PET bottles that littered highways, waterways and parks.





Enrichment Activities

Recycling Economics



Lesson 1:

We all know that recycling is great for the environment, but it's good for the economy as well. Recycling is essentially a new business but has been done for years only where convenient and economically profitable. We are now facing problems because there is so much garbage. Because recycling laws are now being implemented, recycling is becoming a very popular, cost-avoidance method of disposal.

In this activity, students learn the economics of business, using recycling as an example. Some key words to discuss with your students include: fixed costs, variable costs, and cost avoidance.

Have your students answer the economic questions on the following page and discuss their reasons for some of their answers.

With this activity, students learn a little about how a recycling center does business.

Fixed Cost: Costs that remain unchanged, no matter how much business is done. These costs may include insurance, labor, rent, heat, telephone, taxes and advertising.

Variable Cost: Costs that rise and fall as business increases or decreases. These costs may include labor, electricity, gasoline and repairs.





Recycling Economics

Answer the following questions about the economics of recycling.

Lesson 1:

1. List some examples of fixed costs that a recycling center might have?

2. List some examples of variable costs that a recycling center might have?

3. If a recycling center's fixed costs total \$1,200 a month and 60,000 pounds are being processed, how much is being spent per pound for fixed cost?

How much per pound is left for variable cost and profit out of a 5 cent per pound difference between the amount paid to can collectors and the amount received from an aluminum company?

4. If the center can process 120,000 pounds a month without increasing fixed costs of \$1,200, how much is then being spent per pound for fixed costs?

How much per pound is left for variable costs and profit?

5. Can you explain why a recycling business may earn more money as the number of cans collected increases?





Word Search

Lesson 1:

IRON
TIN CANS
LEAVES
STEEL
ALUMINUM CANS
GLASS
BRASS
CARS
JARS
COPPER
TIRES
RAGS
ZINC

NEWSPAPER
LEAD
CONCRETE
CORRUGATED
METALS
MOTOR OIL
OFFICE PAPER
WOOD
ASPHALT
GOLD
PAPER
PLASTICS

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





Toxic Waste!



Lesson 1:

Take a look around your house, and you'll probably find at least one product that could be considered a household hazardous waste.

Household hazardous waste is any leftover household product that contains corrosive, toxic, ignitable or reactive ingredients. These products include paints, cleaners, oils, batteries and pesticides; and they require special care when you dispose of them.

Improper disposal of household hazardous waste can include pouring them down the drain on the ground, into storm sewers, or even in throwing them out with the trash.

Consider reducing your use of products that contain hazardous ingredients. When you're ready to dispose of the hazardous materials already in your home, check with your local community about the different ways you can dispose of them.

Some communities have permanent collections and exchanges in which these products are often reused. Other communities have special collection days, or you might also be able to drop certain products off at certain businesses for recycling or proper disposal. For example, some garages may accept used motor oil for recycling.

Facts on Household Hazardous Waste

- Americans generate 1.6 million tons of HHW per year.
- The average home can accumulate as much as 100 pounds of HHW.



EASTMAN
GOOD SPORTS ALWAYS RECYCLE.



Graph the Litter in YOUR School

Lesson 1:

1. Discuss with your students how it's possible to track that amount of litter in a set area.
2. Talk about way to promote picking up their rubbish and putting it in the right bin. Your students might like to make posters to put around the school to encourage others.
3. Toward the end of each day, ask your students to form small groups and get them to take a notepad and pen or pencil with them.
4. Assign different sections of the school to each group.
5. Get them to go out to that particular section and have them count and write down how many pieces of glass, paper and litter they can find.
6. When sufficient data is collected after a set period, have them import the data that they have collected into a spreadsheet program.
7. Use column headings such as date, area, paper, plastic, bottles, glass, etc.
8. While they are using the spreadsheet program, get them to graph their results.
9. When your students have finished graphing their results, print out their documents and present them to the class.
10. Discuss the changes and effect of the awareness program. Students might like to suggest ways to increase its effectiveness, e.g. rewards.





Test Your Knowledge!

In this lesson you have learned about some of the basic concepts of recycling. See if you can answer the following questions.

Lesson 1:

1. What do the three arrows in the International Recycling Symbol stand for?

2. Name six things that can be recycled.

3. Define these three terms in your own words: Recycle, Reduce, Reuse

4. What are some good reasons to recycle?

5. How much garbage do we each throw away every day?

6. When was the nation's first garbage incinerator built?

7. In 1934, the Supreme Court banned the dumping of what into the ocean?

8. What is fixed cost? What is variable cost?

