OUR ENVIRONMENT

Level - I

(10 to 12 years of age)

Reduce
Reuse
Recycle

Hendricks County

Our Environment
4-H Project Requirements

Level I - 10 to 12 years of age
Level II - 13 to 15 years of age
Level III - 16 to 19 years of age

Level I

- Complete at least two (2) activities each year in the manual
- Read all information sheets in the manual
- Prepare exhibit for 4-H Fair
- Gain knowledge in:
  - Environmental Awareness
  - Natural Resources
  - Basic Recycling Techniques

Level II

- Complete at least two (2) activities each year in the manual
- Read all information sheets and definition pages
- Prepare exhibit for 4-H Fair
- Gain knowledge in:
  - Composting
  - Home and school recycling and purchasing awareness

Level III

- Complete at least two (2) activities each year in the manual
- Prepare exhibit for 4-H Fair
- Gain knowledge in:
  - Community Environmental Awareness
  - Regulations
  - Hazardous Waste

EXHIBIT:

A person may enter an article in one (1) of the following categories:

a. Clothing items (woven or knitted)
b. Furniture items
c. Bottles or cans
d. Discarded mechanical parts and equipment
e. Miscellaneous

Ideas for obtaining recycled articles: magazines, books, stores, friends, neighbors, etc.
Examples for each category:

a. Clothing - hats and purses from blue jeans
b. Furniture - Coke cases made into end tables, etc.
c. Bottles or cans - canister set
d. Discarded mechanical parts and equipment - Model race car from old bolts
e. Miscellaneous - greeting cards as baskets, etc.

Exhibit will be judged by the following guidelines:

Originality of 4-H exhibit
Choice of materials
Workmanship
Usefulness
Creativity of project

OUR ENVIRONMENT
LEVEL I
10 to 12 years of age

Complete at least two (2) activities each year.

1. Natural resources
2. At home garbage
3. What Can you recycle?
4. Litter walk
5. Word scramble with definitions
6. How can I personally conserve natural resources?
7. Landfill vs. dump
8. Mini-landfill/mini-dump

Read all informational sheets on the following topics:

Recycling definitions	Garbage
Environment	Natural resources
Recycle	Waste
Groundwater	Landfill
Refuse	Leachate

WHY RECYCLE?

Recycling saves landfill space and energy, thus reducing acid rain, global warming and air pollution.

- Recycling aluminum uses 95 percent less energy than producing aluminum products from raw materials.
- Recycling paper uses 60 percent less energy than manufacturing paper from virgin timber.
- Recycling a glass jar saves enough energy to light a 100 watt light bulb for four hours.

Recycling conserves valuable natural resources.

- 75,000 trees are used for the Sunday edition of the New York Times each week, yet only 30 percent of newspapers are recycled in the United States.

- Recycling metals minimizes the need for mining new minerals and decreases damage to the wilderness.

HOW TO RECYCLE

- Separate cans, bottles, and newspapers

  Glass: Remove lids from bottles and jars and rinse out well. (Some recycling centers ask that you separate glass by color.)

  Cans: Remove labels and rinse well. (Most recycling centers ask that you separate aluminum from other metals.)

  Newspaper: Tie newspapers into bundles or put them in a paper bag.

- Contact your local or state recycling division to find out if your community has a curbside recycling program. If so, put out your recyclables the night before the scheduled pickup. If no curbside pickup exists, take your cans, bottles and papers to the nearest drop off site.

Purchase and consume according to the 4 R's:
Reduce, Reuse, Reject and Recycle.

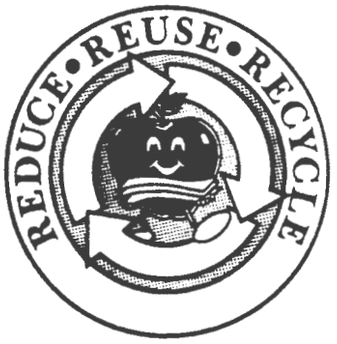
REDUCE

- Buy only what you need
- Look for the recycle symbol, or the words "made from recycled paper".
- Choose boxes with gray interior (recycled paperboard).
- Buy "economy size" or bulk packaging when possible. It not only saves money, but also reduces packaging.
- Avoid disposable products.
- Bring your own paper bags, or better yet, cloth bags, to the supermarket.

REUSE

- Use products that are made to be used many times, such as cloth diapers, cloth napkins, towels and rags, sponges, dishes and silverware, rechargeable batteries, etc.
- Use the blank back sides of paper to take notes and do scratch work.
- Mend clothes and repair broken appliances.
- Look into purchasing used goods at second hand stores and junk yards to eliminate unnecessary production.

REJECT



- Over-packaged goods
- Non-recyclable packaging
- Non-recyclable containers
- Aerosol containers
- Disposable products

RECYCLE

Recycling begins in the store where we choose products packaged in recycled and/or recyclable materials, such as:

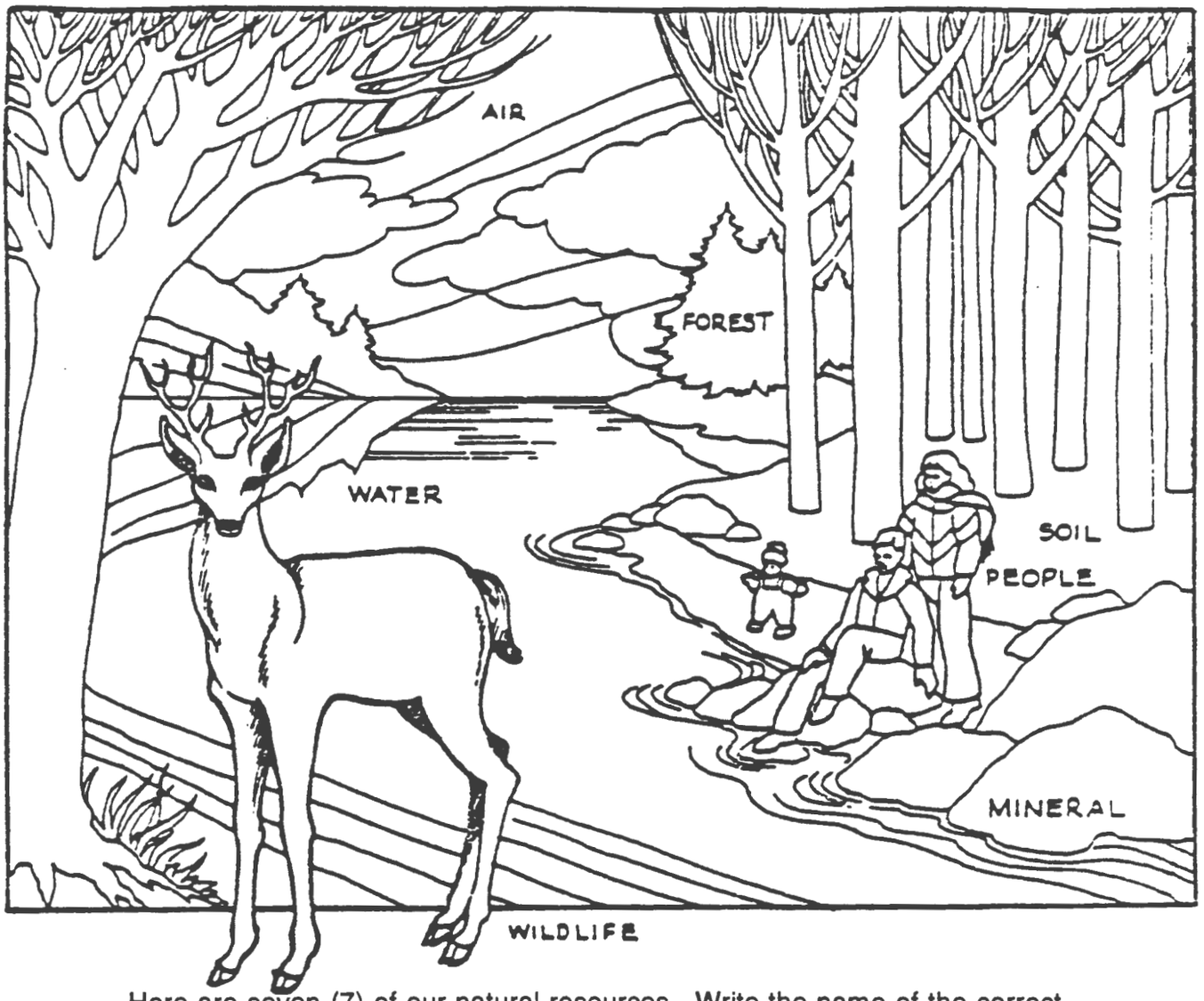
- Glass
- Paperboard
- Aluminum
- Steel
- Some plastics

Learn where to take your recyclables. Glass, paper and aluminum are the three most easily recycled types of packaging. If recycling centers in your area accept plastic soda bottles (PET) and steel cans, also include them in your recyclable packaging list.

LEARN THE 4 R's:

- **REDUCE** the amount of waste we produce.
- **REUSE** as much as possible.
- **REJECT** over packaging and products hazardous to the environment.
- **RECYCLE** the recyclables.
  * The average American throws away four pounds of garbage per day.
  * Almost half of what we throw away is recyclable!
  * Packaging accounts for 33% of municipal waste, 83% of which is landfilled!
  * If we become Environmental Shoppers, we can reduce the amount of trash we discard by as much as 45%!
  * In the near future, half the cities in the U.S. will run out of landfill space.
  * When we buy only the products we need, with the least amount of packaging, especially those with recycled or recyclable packaging, we save landfill space and money!
  * Less trash goes into the landfill, and less pollutants enter our land and water.
  * By recycling it is possible to reduce the waste stream by 80 percent.

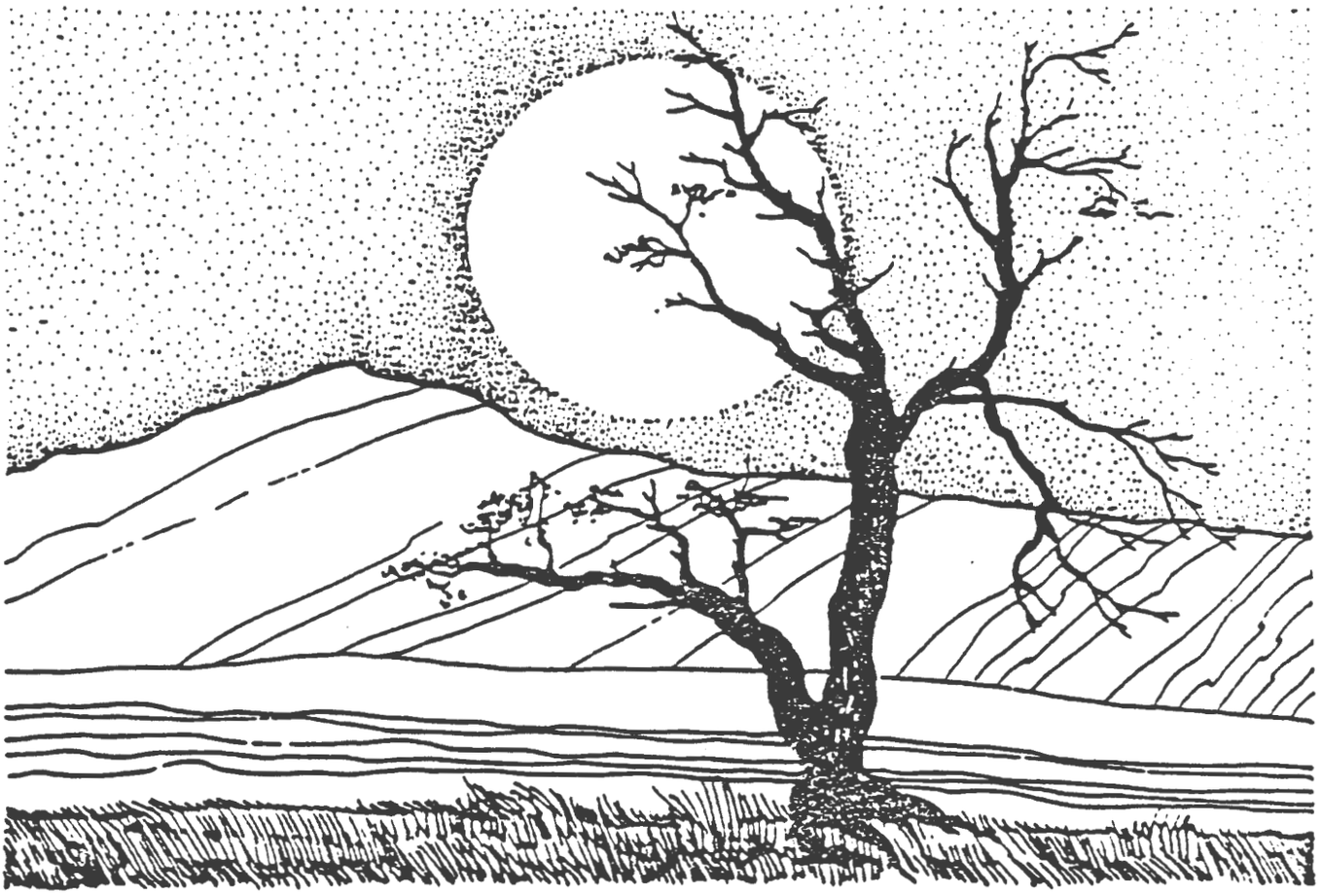
ACTIVITY 1 PICK THE RIGHT RESOURCE



Here are seven (7) of our natural resources. Write the name of the correct natural resource in the blank space in each sentence.

1. We need _____ to drink, to bathe in, and to wash clothes in.
2. Plants, animals, and people need _____ to breathe.
3. We need _____ to grow plants in.
4. Salt, chalk, and silver are some of the _____ we use.
5. _____ need to use other natural resources wisely and to save them for the future.
6. We use our _____ for wood to build houses and furniture.
7. Rabbits, bears, and deer are part of our _____.

ACTIVITY 1 (continued) NATURAL OR NOT?



Natural resources are things we get from nature.
Water is a natural resource. The sun is another natural resource.
Trees and minerals are natural resources, too.
We use our natural resources to make the many things we use everyday. They also give us energy and power.

Write "yes" or "no" after each question.

1. Is a river a natural resource? _____
2. Is sunlight a natural resource? _____
3. Is a plastic cup a natural resource? _____
4. Is wood a natural resource? _____
5. Is a book a natural resource? _____
6. Is gold a natural resource? _____

ACTIVITY 2 — GARBAGE - HOW MUCH?

Ask for your parent's help.

GARBAGE: HOW MUCH AT HOME?

1. Make a guess about how many pounds of trash you throw away each day.

   _____

2. Now guess how may your family discards in a week.

   _____

3. Choose any day. From the moment you wake until you go to bed, don't throw anything away. Instead, carry a bag with you and discard everything into it. At the end of the day, weigh it. How much does it weigh? _____

   Was this a typical day? _____

   Are there days you might create more trash? _____

   Doing what? _____

   Are there days you might create less trash? _____

   Why? _____

4. For a week, weigh all the trash your family discards at home. How many pounds? _____

5. What are the most common items in your family's wastebaskets?

   _____

   _____

   _____

   _____

ACTIVITY 3 WHAT CAN YOU RECYCLE?

Recycling saves our natural resources. It is a way of using things and materials over again. When we recycle things, we don't need to use more of our natural resources.

What other things could be recycled? (Glass jar as flower vase, cereal box as magazine holder, 2 liter bottles as decorations, door stop, etc.) Your library will have books that can help you. Look under "crafts" or "trash" or ask the librarian for help.

Choose one (or devise one of your own) and tell what you did to make it useful.

* Create a canister set from coffee tins
* Using an orange juice container or tin can, make a pencil holder
* Make a bank out of a margarine tub or baking powder can
* Design a magazine holder from a laundry detergent box
* Make some crafts from trash

_____

_____

_____

_____

_____

ACTIVITY 4 LITTER WALK

Not all our refuse makes it to the landfill. We'll explore some good places it can go later, but first, let's look at some places that aren't so good. Waste, refuse, or trash out of place anywhere has a special name: ***Litter.*** Litter is a fast food bag tossed along a highway. Litter is a piece of paper that fell out of your books on the way home. Litter is the contents of an illegal dump. Litter is any waste out of the proper waste-stream.

Litter is a problem throughout much of the United States. The increase of disposable items and convenience packaging over the last 20 years or so has greatly contributed to an increase in solid waste and an increase in litter.

Now that we know what litter is, who is responsible for making it? Most of us think of litter as coming primarily from pedestrians (people walking, running, having picnics, etc.) and motorists (drivers of cars, bikes, motorcycles), but litter from these sources is actually less than 20% of the total litter on the ground.

There are eight (8) basic types of litter:

TYPE	EXAMPLES	
1. Paper	newspaper boxes diapers	bags wrappers cups
2. Glass	bottles	broken glass
3. Metal	cans auto parts	nails old appliances
4. Cloth	rags	old clothes
5. Plastics	jugs	bottles
6. Polystyrene (often called styrofoam)	cups	foam boxes
7. Rubber	tires	
8. Miscellaneous	wood any other	food

A good way to apply your knowledge of litter sources and types and help you realize the size of the litter problem is to take a ***Litter Walk.***

ACTIVITY 4 (continued):

Make a list of the things gathered from your walk:

CAN BE RECYCLED	CAN'T BE RECYCLED

ACTIVITY 5 SOLID WASTE

Use definitions:

Solid waste is a big problem in our environment. Unscramble the words to complete each sentence. Write the words on the spaces.

1. Solid waste is another word for BARGGEA. _ _ _ _ _ _ _
   5
2. Sometimes solid waste is piled in open SPUMD. _ _ _ _ _
   2 8 7 4
3. Another word for waste materials is SARHT. _ _ _ _ _
   1 3
4. Getting rid of solid waste is called POSDALIS. _ _ _ _ _ _ _ _
   2 4 6
5. Some companies are burning garbage to make GYEERN._ _ _ _ _ _
   5 5

Use the letters in the numbered spaces to find out:

"Where does the Lone Ranger take his trash?"

_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
1	6	1	3	5	2	8	7	4	1	6	1	3	5	2	8	7	4

_	_	_	_	_	_	_	_	_	_	_	_	_	_	_	_
1	6	1	3	5	2	8	7	4	2	8	7	4	2	8	7	4

ACTIVITY 6 **CONSERVE RESOURCES**

How I personally can conserve my natural resources:

* Recycling
* Water usage (shower, brushing teeth, etc.)
* Cloth/paper towels, tissues, etc.

Suggestions:

1.. Keep a container of cold water in the refrigerator. If you need a cold drink, you will not need to run the water from the faucet until it gets cold.

2. Combat litter. When you are at a park, on a picnic or taking a walk, put trash in bins provided or take it with you. Leave things as clean as you found them ... or **cleaner.**

3. Plant a tree as a gift to the future.

4. In washing the car, use the soap and bucket technique. A hose continually running is very wasteful. Rinse the car once, wash from the bucket of soapy water and rinse quickly again. Re-use the soapy water for the chrome, hubcaps and wheels.

5. Store food in reusable containers in the refrigerator instead of aluminum foil or plastic wrap.

6. The average American consumes about 120 pounds of newsprint annually. Recycle your newspapers and save our trees!

ACTIVITY 7 LANDFILL VS DUMP

Do you know the difference between a dump and a landfill? Many people think they are the same thing, but one is legal and one is illegal. Let's figure out the difference. A sanitary landfill is licensed by the government. It operates under certain rules and regulations to keep it as clean and healthful as possible. A landfill usually involves a carefully selected depression, trench, or low spot in the land that is filled with compacted trash and covered daily with soil. Also, a landfill is lined with either natural clay or a plastic liner to collect "run-off" water going through the trash - that could pollute the ground and the water below ground level (called ground water). What do you think a dump is?"

_____

_____

A dump on the other hand, is simply a place where people have begun and continue dumping their garbage. Unlike a landfill, a dump is not kept sanitary; nor is it structured in such a way that the environment around it is protected. That's why - for these reasons and others - a dump is illegal.

Is there a landfill in or near your community or county? _____

Where?_____
(You might call your local or county health or sanitation department.)

Have you ever seen any dumps?_____

Try to arrange a visit to a sanitary landfill. The complexity of it may surprise you! You may want to take pictures of the landfill. If you go to one, tell about it here:

_____

_____

_____

_____

Where is it located?_____

Who operates it?_____

What goes on?_____

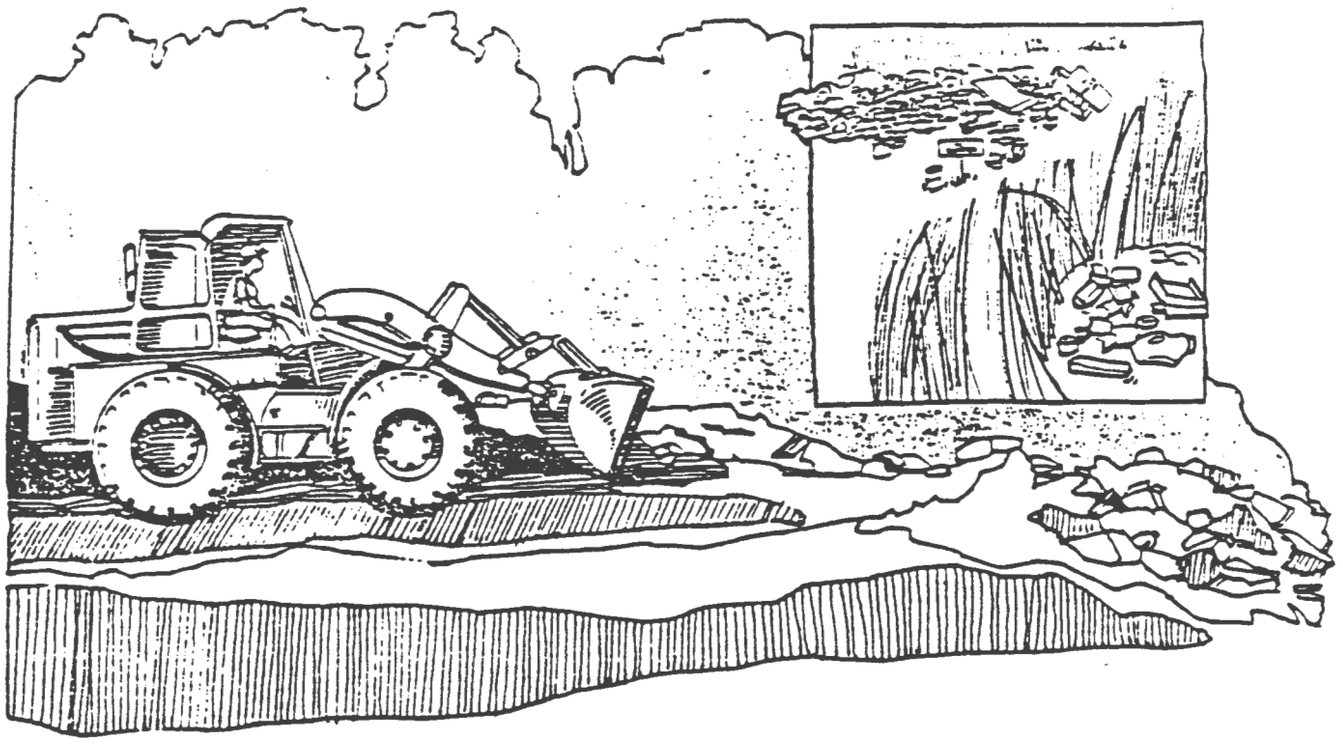
_____

A landfill is the most common means of waste disposal. In rural areas, open burning is sometimes allowed. What happens to metals and glass in an open fire?

_____

ACTIVITY 7 (continued)

Landfills are lined with either natural clay or plastic liner. When full, a landfill is seeded or sodded. Some old fills are used as parks, golf courses, or just pasture. Because the decaying materials shift as they deteriorate, landfills are not good locations for buildings. Closed landfills must be marked as such to prevent someone from digging and opening the fill. Why might opening one be bad?

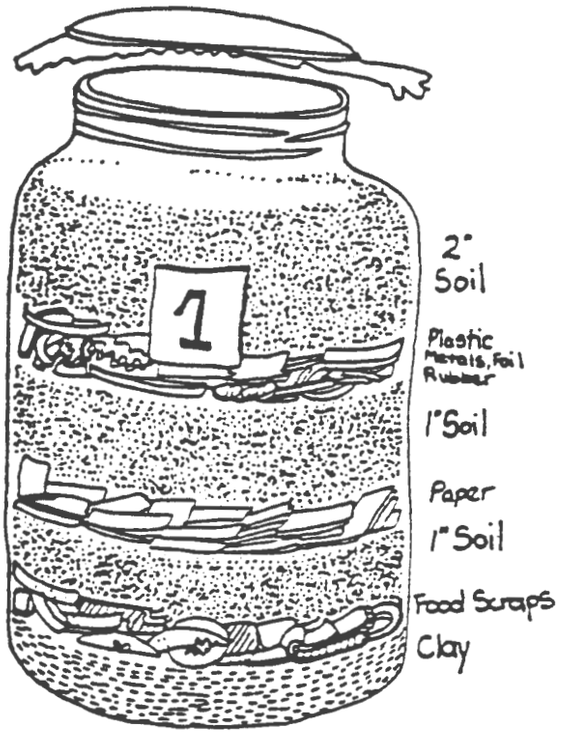


ACTIVITY 8 — MINI LANDFILL/MINI DUMP

GARBAGE:

Time length: 4 weeks

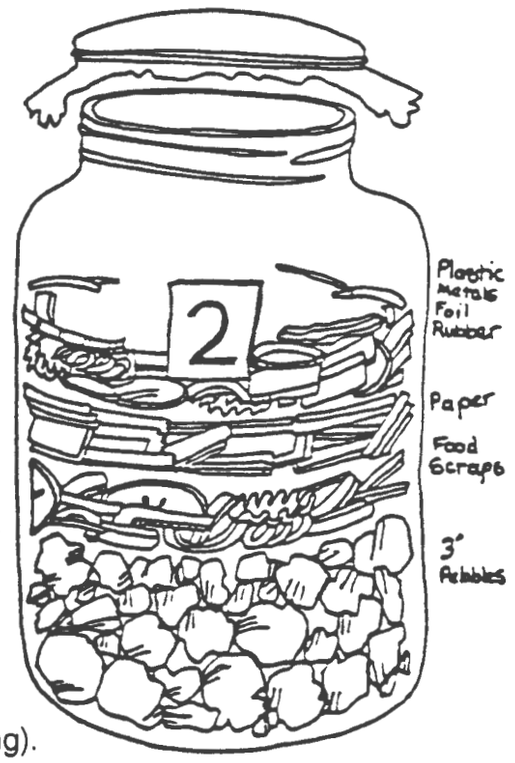
For this experiment you will need:
- Pebbles or stones
- Clay
- 2 large glass jars (gallon jars work best)
- Soil (not potting soil)
- Food scraps (apple peels, orange rind, fat from meat)
- Facial tissue
- Newspaper
- Writing paper
- Aluminum foil
- Plastic
- Rubber
- Water



1. Label the jars - Jar 1 and Jar 2

2. Line the bottom of one jar with 1 inch of clay. (Landfills use natural clay or plastic liners.)
   Place a layer of food scraps in your jar. Cover and pack with about 1 inch of soil.
   Now place a layer of the different kinds of paper (torn) and cover and pack with 1 inch of soil.
   Make another layer of plastics, metals, foil and rubber.
   Cover with 2 inches of soil.

   This is your mini-landfill.



3. Place about 3 inches of pebbles into the second jar.
   Put in the same amount of food scraps, paper, plastic, metals, foil and rubber. DO NOT LAYER WITH SOIL.

   This is your mini-dump.

4. Every other day add equal amounts of water to the two jars (about 1/4 cup maximum per watering).

   YOU NEED TO KEEP THE JARS COVERED.

5. Watch the progress. After 3 or 4 weeks, answer these questions.

Question:	**Jar 1**	**Jar 2**
Which materials decomposed?		
Which materials have changed some?		
Which materials have not changed?		

Is there any liquid collected in the jar?_____

If there was water in the bottom of the jar, this would represent ground water. If there were a hole in the bottom of the jar, what would happen (as the definition for ground water indicates)?

_____

_____

_____

What are the advantages to landfills?_____

_____

_____

What are the disadvantages?_____

_____

_____

What is the difference between a dump and a landfill?_____

_____

_____

Is one better?_____

Why?_____

_____

_____

ACTIVITY 8 (continued)

How does trash get to the landfill? Every community handles its refuse (another word for trash) in different ways. Many cities have their own departments to collect trash from the curbside or alleys. Some communities require their citizens to contract with local refuse collection companies. Others (and most rural areas) leave it up to the individual citizens to dispose of their trash correctly. This could mean hiring a private hauler or taking waste to the landfill themselves. When waste is taken to a landfill, a "tipping" or dumping fee is usually charged. The cost is often determined by tonnage, or weight, or truck size. This is determined by weighing the truck both on the way in and out of the landfill and then charging so many dollars per ton for the difference. What is the cost per ton for tipping at the landfill nearest you?

_____

How does your refuse get to the landfill?_____

_____

If your family takes the household refuse to the landfill themselves, how often do they need to go?

_____

A different kind of landfill is the *demolition fill.* This is different from a sanitary landfill in that a demolition fill accepts only the kind of refuse that comes from construction and demolition projects. Because there is no food or garbage waste, the requirements for a demolition fill are less strict.