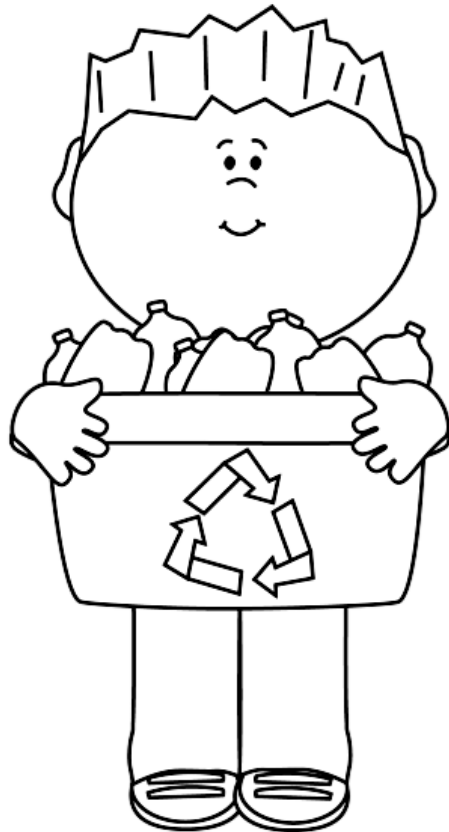


**4-H**

**Recycling**

**Grades 3-5**



## 4-H Recycling Project

No State Fair Exhibit

Each year, in all levels, the 4-H'er must complete a different recycled article or poster and at least 2 activities for their notebook from the county manual.

Exhibit will be judged by the following guidelines:

Exhibit (75%)

- **Originality of 4-H Exhibit**
- **Choice of Materials (subject of poster)**
- **Workmanship**
- **Usefulness (include in poster)**
- **Creativity of Project/Poster**
- **Information Card Attached**

Notebook (25%)

- **This Manual** (three hole punch)
- **This year and all previous year's work**
- **2 Activities from the manual** in your notebook. You are encouraged to add personal and additional supporting materials, such as photographs, news articles, etc. for each activity.
- **A completed record sheet** for each year in project
- **A description of your recycled project.** You are encouraged to add personal and additional supporting materials, such as photographs, news articles, etc.

### ACTIVITIES

1. **Picking the Right Resource**
2. **What Can You Recycle**
3. **Garbage – How Much**
4. **Building a Landfill (Franklin)**
5. **Litter Walk**
6. **Survival to Conserve Natural Resources**

### 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.

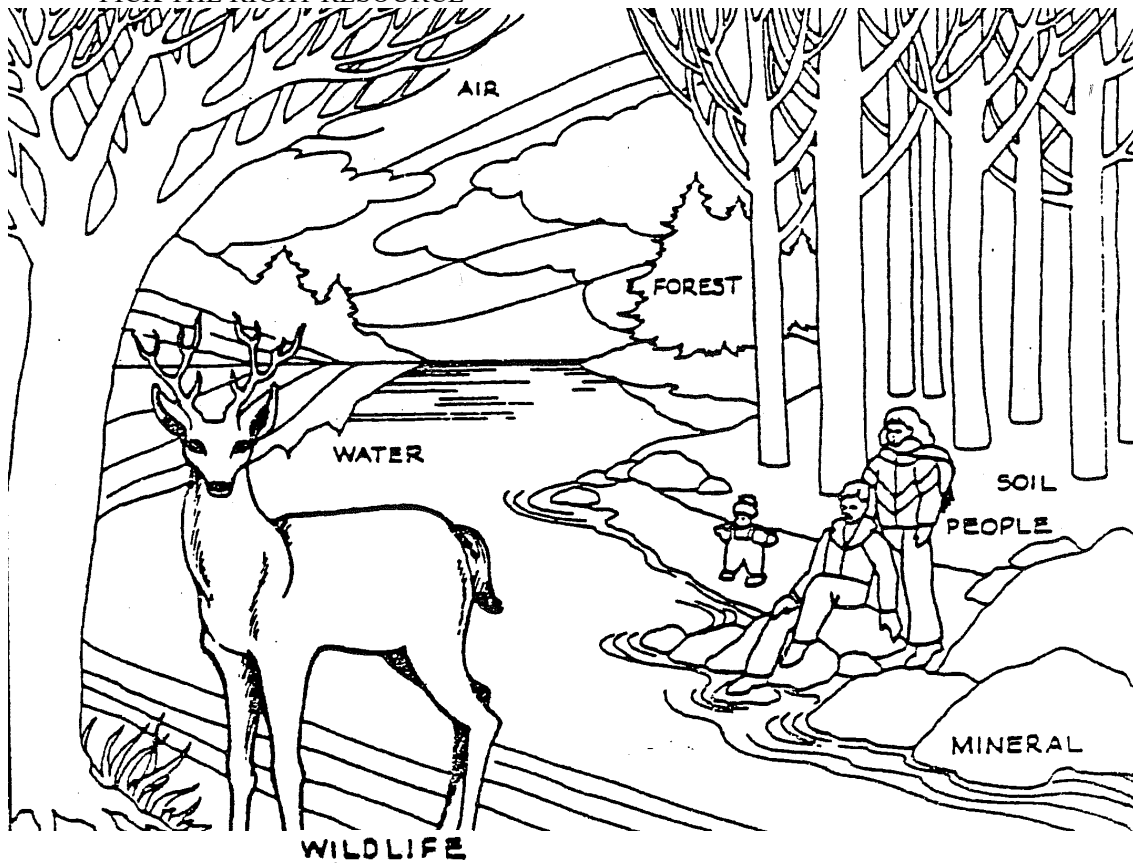
**Purchase and consume according to the 4 R's:**

**Reduce, Reuse, Reject and Recycle  
Learn the 4 R's**

|   |   |
|---|---|
| <p><b>REDUCE</b> – the amount of waste we produce.</p> <ul style="list-style-type: none"> <li>▪ Buy only what you need</li> <li>▪ Look for the recycle symbol, or the works made from recycled material</li> <li>▪ Choose boxes with gray interior (recycled paperboard)</li> <li>▪ Buy economy size or bulk when possible. Saves money and reduces packaging</li> <li>▪ Avoid disposable products</li> <li>▪ Bring your own bags when you go shopping</li> </ul> | <p><b>REUSE</b> – as much as possible.</p> <ul style="list-style-type: none"> <li>▪ Use products that are made to be used many times such as cloth diapers, cloth napkins, towels, rags, sponges, dishes and silverware, rechargeable batteries</li> <li>▪ Use the blank back sides of paper to take notes and do scratch work</li> <li>▪ Mend clothes and repair broken appliances</li> <li>▪ Look into purchasing used goods at second hand stores and junk yards to eliminate unnecessary production</li> </ul>                  |
| <p><b>REJECT</b> – over packaging and products hazardous to the environment.</p> <ul style="list-style-type: none"> <li>▪ Over-packaged goods</li> <li>▪ Non-recyclable packaging</li> <li>▪ Non-recyclable containers</li> <li>▪ Aerosol containers</li> <li>▪ Disposable products</li> </ul>  | <p><b>RECYCLE</b>- the recyclables</p> <ul style="list-style-type: none"> <li>▪ Recycling begins in the store where we choose products packaged in recycled and/or recyclable materials, such as: Glass, Paperboard, Aluminum, Steel, Some plastics</li> <li>▪ Learn where to take your recyclables. Glass, paper and aluminum are the 3 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 packing list.</li> </ul> |

## ACTIVITY 1 NATURAL RESOURCES

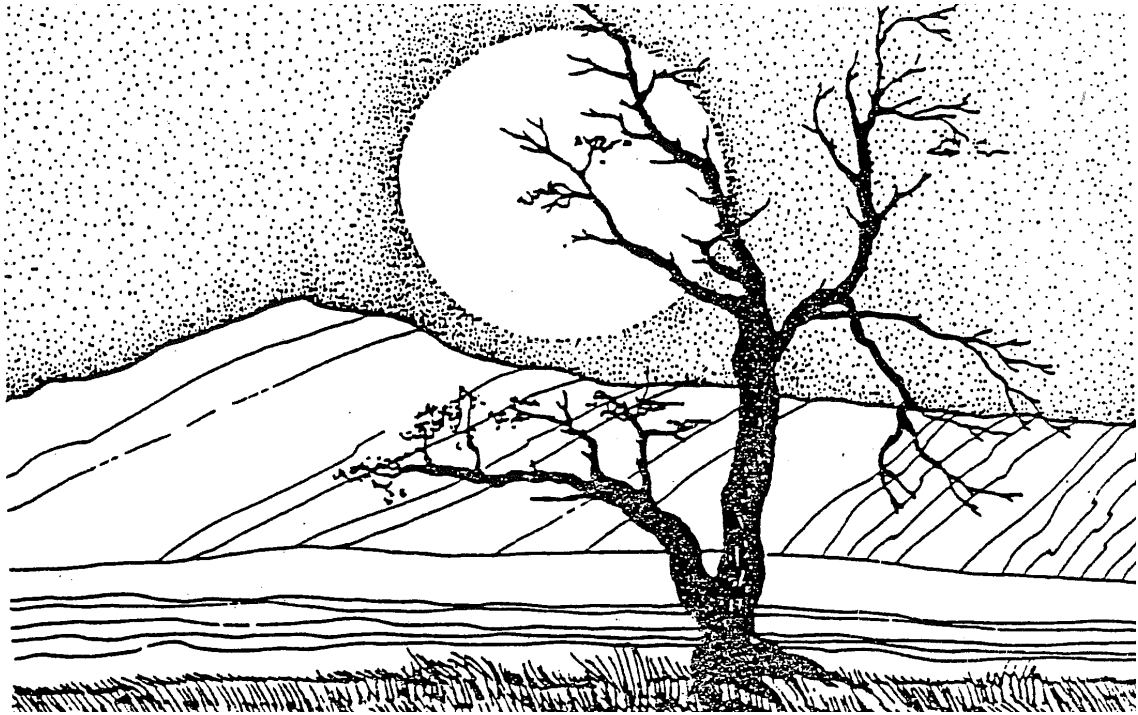
### PICK THE RIGHT RESOURCE



Here are seven (7) of our natural resources. Write the name of the correct natural resource in the blank space in each sentence. Color the picture if you would like.

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 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**    **NATURAL RESOURCES**  
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 every day. 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? \_\_\_\_\_
7. Is a plastic bag a natural resource? \_\_\_\_\_



### The Can Man

It was a warm day, and I was resting in the grass after someone had finished drinking my soda pop and tossed me there. I was getting hot and afraid someone might kick me or throw me in a trash can never to be seen again.

Suddenly my thoughts were interrupted by the voice of a man saying, “What have we here? A throw-away can? You can’t like in my yard!” Then Pete Neat picked me up and took me to his garage where he had a big trash bag sitting in a box. I was plenty scared, I tell you!

“Don’t be afraid, little can,” he said, “I’ll take you to the Can Man and get you some new clothes. We’ll just recycle you. Won’t that be nice?” Then he put me into the bag with a lot of other cans like myself. I didn’t know what recycle meant, but I liked the idea of new clothes. The next day, Mr. Neat took all of us to what he called a recycling center where we met the Can Man. All of us were weighed, and Mr. Neat got some money for taking us there. “Goodbye, cans,” he said, “I hope you like your new clothes.” Away he went.

After he left, we were placed on a big moving belt and we passed under a magnet. All of us aluminum cans moved right over the top, but a few steel cans that were there by mistake were attracted by the magnet and were dropped away from us. At the end of the ride, we all went into a shredder where we were cut up into little pieces so we would take up less space. I felt a little funny, but it didn’t hurt a bit.

Next we went into something called a smelter where we were melted into pure aluminum. Do you know that this process saves 95% of the energy needed to make new aluminum from bauxite ore? And the reused aluminum is just as good as new metal!

Once we were liquid metal, we got out new clothes, that is, we were formed into new products. I became a can again, but some of my friends became aluminum foil, and some became baking pans and TV dinner trays.

Tomorrow I will go to the beverage company to be filled and taken to the store for you to buy, but today I wanted to explain to you about the Can Man and how you can help all of us aluminum products get new clothes. That’s what recycling means --- it means to save natural resources by giving them new clothes and using them again. When we throw away, we waste.

### Can Identification

| Aluminum Cans  | BiMetal Cans   | Tinned Steel Cans  | Extruded Steel Cans   |
|--|--|--|---|
| <ul style="list-style-type: none"> <li>▪ Are NOT attracted by magnets</li> <li>▪ Almost all of these can say “All Aluminum Can” on the side</li> <li>▪ No Seam</li> <li>▪ Shiny, silver, smooth, round bottom</li> <li>▪ Lightweight</li> <li>▪ Finely brushed on the bottom</li> <li>▪ Printing is usually directly on the can as opposed to a paper label</li> </ul> | <ul style="list-style-type: none"> <li>▪ Are attracted by magnets</li> <li>▪ Bottom has a rim</li> <li>▪ Bottom is not finely brushed – spray painted usually</li> <li>▪ May or may not have a seam</li> </ul> | <ul style="list-style-type: none"> <li>▪ Are attracted by magnets</li> <li>▪ Have a seam</li> <li>▪ Are heavier weight than aluminum</li> <li>▪ Usually have rings or ribbing on the can</li> <li>▪ Normally have a paper label</li> </ul> | <ul style="list-style-type: none"> <li>▪ Are attracted by magnets</li> <li>▪ Have no seam</li> <li>▪ Are lightweight</li> <li>▪ Have no bottom rim</li> </ul> |

### ACTIVITY 2 WHAT CAN YOU RECYCLE?

All aluminum is recyclable. It takes only 24 cans to make a pound; if several people work together, you could collect lots of cans and other things made of aluminum.

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.

In addition to cans what other things could be recycled?

---

The library will have books that can help you. Look under “crafts” or “trash” or ask the librarian for help.

Make one of the crafts below or devise one of your own.

- Create a canister set from coffee tins
- Make a bank from a tin can and plastic lid
- Make a Tin Can Man for your garden
- Make a flower pot and plant a plant in it.

Tell what you did to make it and a picture of it in use.

When you recycle cans, you: (Circle correct answer)

- (a) save landfill space   (b) are littering   (c) save natural resources   (d) both a and c

## **What's In Your Garbage?**

Mostly recyclable materials! Most American produce 5 pounds of trash per day. Of those 5 pounds, 87% is recyclable.

### **Did You know?**

- An estimated 80,000,000 Hershey's Kisses are wrapped each day, using enough aluminum foil to cover over 50 acres of space -- that's almost 40 football fields. All that foil is recyclable, but not many people realize it
- A typical family consumes 182 gallons of soda, 29 gallons of juice, 104 gallons of milk, and 26 gallons of bottled water a year. That's a lot of containers -- make sure they're recycled!
- Every year, each American throws out about 1,200 pounds of organic garbage that can be composted
- Plastic bags and other plastic garbage thrown into the ocean kill as many as 1,000,000 sea creatures every year

These recycling facts have been compiled from: [recycling-revolution.com/recycling-facts.html](http://recycling-revolution.com/recycling-facts.html)

## **ACTIVITY 3 HOME GARBAGE – HOW MUCH?**

|   |   |
|---|---|
| <b><u>Guess:</u></b> How many pounds of trash you throw away daily? | <b><u>Guess:</u></b> How many pounds of trash you throw away in a week? |
|---|---|

**Now lets track your families trash and see how close you are to your guess'**

| Days of the Week | Number of Bags | Weight |
|------------------|----------------|--------|
| Sunday           |                |        |
| Monday           |                |        |
| Tuesday          |                |        |
| Wednesday        |                |        |
| Thursday         |                |        |
| Friday           |                |        |
| Saturday         |                |        |
| TOTALS           |                |        |

**So were you close?**

**Why do you have more some days?**

**What are the most common items in your family wastebaskets?**

**How can your family have less weekly?**



## **NATURAL RESOURCES – Energy Past & Future Generations**

Ever wondered how much “nature” your lifestyle requires? We use natural resources when we consume, pollute, and discard garbage. It is very important for all of us on the Earth to live a sustainable lifestyle in order to leave the planet in good shape for future generations to enjoy and prosper! We can do this by conserving Energy.

Energy figures into almost every human activity: it heats our homes, fuels our cars, ploughs our soil, and powers our machinery. For the past 150 year we have become so accustomed to energy use that most people cannot imagine surviving at a time before it existed.

### **ACTIVITY 4 – SURVIVAL TO CONSERVE NATURAL RESOURCES**

|   |  |
|---|--|
| List 5 ways you use energy in your daily activities |  |
|---|--|

**How did your ancestors live without these devices 150 years ago?**

**Draw a line from what you use today to what they would have used.**

|                  |                    |
|------------------|--------------------|
| Light Bulbs      | Open windows       |
| Heaters          | Books              |
| Air Conditioners | Candles            |
| Microwaves       | Horse & Buggies    |
| Television       | Letters            |
| Movies           | Outdoor games      |
| Cars             | Fire places        |
| Xbox, Wii        | Live entertainment |

**Now you know how they survived let’s see if you can survive a day. Turn out the lights, turn off the TV, and turn off the Xbox or Wii. Great!**

**Take a photo of you doing the following activities:**

- Having dinner by candle light**
- Playing a board game with your family**
- Reading books**

|                                    |  |
|------------------------------------|--|
| <b>Tell What is was Like</b>       |  |
| <b>Will you Do It Again</b>        |  |
| <b>Did You Enjoy this activity</b> |  |

## **Landfills 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. A sanitary landfill is licensed by the government. It operates under certain rules and regulation 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.

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.

**Where is there a landfill in your County?** \_\_\_\_\_

Once a landfill reaches its capacity, they are revegetated with grass. Often the land is reclaimed and used for parks, golf courses, and sports fields. Buildings can also be built on old landfills as long as proper precautions are in place for methane capture. For example Sydney Olympic Park the primary venue for the 2000 Summer Olympic Games was built atop an industrial wasteland that included landfills.

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. Other (and most rural areas) leave it up to the individual citizens to dispose of their trash correctly. When waste is taken to a landfill a "tipping" or dumping fee is usually charged. This is determined by weighing the truck both on the way in and the way out of the landfill and then charging so many dollars per ton for the difference.

**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?**

**How much does it cost your family to get rid of their refuse?**

## Activity 5 – Edible Landfill

In this activity you will learn the important parts and functions of a modern landfill, while making an edible product

| Ingredient                               | Represents                |
|--|---------------------------|
| 1 Chocolate Pie Crust                    | Clay Liner                |
| 2 Ounces Red Licorice Whips or Laces     | Leachate Collection Tubes |
| 1 Cup Graham Cracker Crumbs              | Sand and Gravel Liners    |
| 1 Cup Prepared Instant Vanilla Pudding   | Garbage                   |
| ½ Cup Chocolate Chips                    | Garbage                   |
| ½ Cup Peanuts                            | Garbage                   |
| ½ Cup Raisins                            | Garbage                   |
| 1 Cup prepared Instant Chocolate Pudding | Soil                      |
| Coconut (Dyed with green food coloring)  | Grass                     |

Directions for building a safe and tasty landfill:

1. Start with the chocolate pie crust. It represents the clay liner at the bottom of the landfill. The clay is used to keep leaching liquids from percolating down rapidly into the water table.
2. Lay the red licorice whips across the bottom and sides of the pie crust. The licorice represents the lines or tubes that collect the leachate and carry it to a water treatment plant.
3. Press graham cracker crumbs around and over the licorice pipes. This represents the sand and gravel layer that lets the leachate flow into the licorice pipes.
4. Mix the raisins, chocolate chips, and peanuts into the vanilla pudding and spread a thin layer of this garbage mixture into the bottom of the pie.
5. Spread a thin layer of chocolate pudding over the vanilla garbage layer. Every day, landfill operators cover the garbage with a layer of soil.
6. Spread another layer of vanilla garbage, topped with chocolate soil. Finish layering with the chocolate layer.
7. Top the whole pie with the coconut grass to represent a landfill that has been revegetated.
8. Now your safe and tasty landfill is ready to eat!

Many feel that recycling is a hassle and not worth the time. Some think that it's easier to throw garbage away and let it be hauled to a landfill. But many of the things we throw away can be recycled, and recycling is one way to reduce our dependency on landfills. If each of us recycled household generated newspaper, glass, aluminum and plastics, we could reduce the amount of material going into landfills significantly!

Recycling requires only a small amount of space and a few minutes per day. Reserve some space under the sink or in the corner of the garage as a home recycling center. Use a cardboard box or grocery bag for cans, another for glass, one for plastics and one for newspapers. Old habits can be hard to break. At first you may have to remind yourself not to throw away recyclables, but after using your recycling containers a few times, instead of the garbage can, you will be on your way to creating new recycling-conscious habits.

## Activity 6 – Leaching Landfills

Drinking water comes from lakes, rivers, streams or wells that tap into ground water supplies can be affected by trash dumped into our landfills. Landfills are built with many layers to protect the water supply. Let's look at what happens to the ground under the landfill and the water supply when we send trash to the landfill.

What does buried garbage do to our drinking water?

### Materials

2 soda bottles cut into two (have parent help with this)

2 coffee filter papers

1 paper towel

Tempra paint, food coloring or kool-aid

1 cup sand

1 cup water

Put the bottles together as shown in the picture – You will have two set ups

Label bottle 1 – Clean

Label bottle 2 - Garbage

Fill the filters with sand on each one.

Put paint on the paper towel. This will be our garbage.

Bury the garbage in the sand in bottle 2 – labeled garbage

Let it rain – pour water on top fo the sand in both set ups

Look at the water that falls into the bottles

What did you find?

|   |  |
|---|--|
| Describe the water in the bottle  |  |
| Why does the water in the garbage bottle turn color                                   |  |
| What would happen to the ground water if harmful chemicals are put into the landfill? |  |