



RECYCLING CHECKLIST

Required for Exhibit

- _____ Fill out the Indiana 4-H Craft Record Sheet (4-H618) turn in to club leader for his or her signature
- _____ Fill out the **4-H Craft Information Card (4-H 618a-W)** turn in with your project.
- _____ Create fair exhibit according to requirements in appropriate Recycling Manual (Levels A/B, C/D)

Suggested Activities

- _____ Complete one new activity or required number of activities for your grade in appropriate Recycling Manual (available on the Elkhart County 4-H website, www.extension.purdue.edu/elkhart). Answer all questions in manual related to chosen activity. Turn in to club leader for his or her review.
Required number of activities per grade level:
 - Grade 3 (one)
 - Grade 4 (two)
 - Grade 5 (three)
 - Grade 6 (four)

Resources available in Extension Office

Elkhart County 4-H Recycling Manual—Green Awareness (grades 3-6 and grades 7-12),
www.extension.purdue.edu/elkhart

Revised 10/2023

4-H Craft Information Card

4-H 618a-W
New 10/2012

4-H Member Name _____ County _____ Grade in School _____

What is the title of your exhibit, or its purpose?

Was this exhibit completed from a purchased kit or an original design?

Describe how this exhibit was constructed/crafted. (What did you do?)



Indiana 4-H CRAFT RECORD

Check area of interest selected

- Fine Arts
- Needlecraft
- Basic Crafts

List specific art or craft. _____

Division _____

NAME _____ GRADE _____

NAME OF CLUB _____ YEAR IN CLUB WORK _____

I have reviewed this record and believe it to be correct.

Signature of Leader _____ Date _____

How have you helped others to learn your selected art or craft? (Give brief description of demonstrations, news articles or other activities)

What experiences did you have in judging this project?

Where did you receive information or Instruction in this project?
(List persons who gave instruction; reference material, etc.)

4-H ARTS AND CRAFTS RECORD

NAME OF ARTICLE _____

MATERIALS PURCHASED	WHERE	COST

Total Cost _____

When was the article started? _____ Total hours spent on article _____

When finished? _____ How is the article to be used? _____

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MATERIALS PURCHASED	WHERE	COST

Total Cost _____

When was the article started? _____ Total hours spent on article _____

When finished? _____ How is the article to be used? _____

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4-H Crafts Scorecard

Name: _____ Level: _____ Grade: _____

Exhibit Requirements	Excellent	Good	Needs to improve	Comments
Usefulness				
Originality				
Choice of material				
Suitability of design				
Structural				
Decorative				
Workmanship				
Finish				
Use of color				

Placing (circle one)

Champion Honor Blue Red White

Project Hints:

- Projects will be judged based on originality, creativity, and the exhibitor's use of discarded, recyclable materials.
- Projects will score higher if recycled into useable items that will remain out of the landfill.

4-H'ers should take note that new items purchased specifically for this exhibit defeats the goal of recycling.

Recycling Project Tips

Revised: February 21, 2020

- Report on the required number of activities for your grade. These activities must be the ones in the manual.
 - a. Grade 3- Minimum 1 activity from the Level 1 manual
 - b. Grade 4- Minimum 2 activities from the Level 1 manual
 - c. Grade 5- Minimum 3 activities from the Level 1 manual
 - d. Grade 6- Minimum 4 activities from the Level 1 manual
 - e. Grade 7- Minimum 1 activity from the Level 2 manual
 - f. Grade 8- Minimum 2 activities from the Level 2 manual
 - g. Grade 9- Minimum 3 activities from the Level 2 manual
 - h. Grade 10- Minimum 4 activities from the Level 2 manual
 - i. Grade 11- Minimum 5 activities from the Level 2 manual
 - j. Grade 12- Minimum 6 activities from the Level 2 manual



- Activities should be written so your report is interesting – charts, graphs or pictures.
- Neatness counts, be sure the records of the activities are complete.

EXHIBIT:

Level A (3rd & 4th Grade) Exhibit one of the following:

1. Recycle an article by making it into something else you can use. Turn in a completed notebook that includes your record sheet, the Solid Waste checklist, a report on the required number of activities completed from the manual (Grade 3 – 1 activity, Grade 4 – 2 activities) and information about the article that you recycled.
OR
2. Prepare a poster (22" x 28") following poster requirements, showing something you learned about Recycling. This may be a topic from the activities you completed or another recycling topic. Turn in a completed notebook that includes your record sheet, the Solid Waste checklist, a report on the required number of activities completed from the manual (Grade 3 – 1 activity, Grade 4 – 2 activities) and information about your poster topic.

Level B (5th & 6th Grade) Exhibit one of the following:

1. Recycle an article by making it into something else you can use. Turn in a completed notebook that includes your record sheet, the Solid Waste checklist, a report on the required number of activities completed from the manual (Grade 5 – 3 activities, Grade 6 – 4 activities) and information about the article that you recycled.

OR

2. Prepare a poster (22" x 28") following poster requirements, showing something you learned about Recycling. This may be a topic from the activities you completed or another recycling topic. Turn in a completed notebook that includes your record sheet, the Solid Waste checklist, a report on the required number of activities completed from the manual (Grade 5 – 3 activities, Grade 6 – 4 activities) and information about your poster topic.

Level C (7th - 9th Grade) Exhibit one of the following:

1. Recycle an article by making it into something else you can use. Turn in a completed notebook that includes your record sheet, the Solid Waste checklist, a report on the required number of activities completed from the manual (Grade 7 – 1 activity, Grade 8 – 2 activities, Grade 9 – 3 activities), and information about the article that you recycled.

OR

2. Prepare a poster (22" x 28") following poster requirements, showing something you learned about recycling. This may be a topic from the activities you completed or another recycling topic. Turn in a completed notebook that includes your record sheet, the Solid Waste checklist, a report on the required number of activities completed from the manual (Grade 7 – 1 activity, Grade 8 – 2 activities, Grade 9 – 3 activities), and information about your poster topic.

Level D (10th - 12th Grade) Exhibit one of the following:

1. Recycle an article by making it into something else you can use. Turn in a completed notebook that includes your record sheet, the Solid Waste checklist, a report on the required number of activities completed from the manual (Grade 10 – 4 activities, Grade 11 – 5 activities, Grade 12 – 6 activities), and information about the article that you recycled.

OR

2. Prepare a poster (22" x 28") following poster requirements, showing something you learned about recycling. This may be a topic from the activities you completed or another recycling topic. Turn in a completed notebook that includes your record sheet, the Solid Waste checklist, a report on the required number of activities completed from the manual (Grade 10 – 4 activities, Grade 11 – 5 activities, Grade 12 – 6 activities), and information about your poster topic.



ELKHART COUNTY 4-H



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Extension - Elkhart County

RECYCLING

GREEN AWARENESS



**PLEASE SAVE THIS BOOK –
USE IT EACH YEAR YOU ARE IN THIS LEVEL**

Level A: Grades 3-4

Level B: Grades 5-6

Some manuals are used more than one year. An additional copy will cost \$1.00.

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**Elkhart County Recycling Project
Revised November 2019**

Adapted from: Elkhart County Recycling Project Manual & the Franklin County
Recycling Project Manual



4-H RECYCLING PROJECT

Green Awareness

Eligible for State Fair in the Arts & Crafts Division

Each year, in all levels, the 4-H'er must complete a different recycled article and additional activities from the manual.

LEVEL A (GRADES 3 & 4)

1. Prior to exhibiting a recycled article at the fair, the 4-H'er is required to submit a completed 4-H Recycling Record Sheet to their 4-H leader, along with the Solid Waste Checklist. List which activities were completed from this manual.
 - The required number of activities per grade level are
 - Grade 3 (one)
 - Grade 4 (two)
2. Exhibit a Recycled article that was made into something else you can use.
3. Using the 4-H Recycling Record Sheet and the Solid Waste Checklist, include information about the article you recycled and include it with the exhibit.

LEVEL B (GRADES 5 & 6)

1. Prior to exhibiting a recycled article at the fair, the 4-H'er is required to submit a completed 4-H Recycling Record Sheet to their 4-H leader, along with the Solid Waste Checklist. List which activities were completed from this manual.
 - The required number of activities per grade level are
 - Grade 5 (three)
 - Grade 6 (four)
2. Exhibit a Recycled article that was made into something else you can use.
3. Using the 4-H Recycling Record Sheet and the Solid Waste Checklist, include information about the article you recycled and include it with the exhibit.

You do not need to do all new activities each year but may include activities that you completed for level A or B in previous years to reach the required number for your grade. All activities must be chosen from this manual. For example, if you entered the recycling project in grade 3 and continued each year, you would do one activity each year. If you entered the recycling project in grade 6, you would complete 4 activities.

RECYCLING

Recycling is frequently in the news. We are told that it is the responsible thing to do.

Recycling conserves natural resources, saves energy and reduces the amount of trash going to landfills. Conserving our natural resources doesn't mean not using them, it means using them wisely and sparingly. Recycling involves collecting reusable materials that have been thrown away, processing and distributing them for reuse. In most cases it takes less energy to prepare materials for reuse than to produce new items. Natural resources, such as trees, water, metal ores and oil are conserved through recycling. Materials from these natural resources are recycled and used again. Almost everything can be recycled in some way. Major groupings include paper, aluminum, glass, organic materials and plastics.

To make it easier on recycling centers, they appreciate separating recyclables before arrival. This is easily done in bags or boxes. The following is a list of accepted recyclables and how to sort and prepare them in Elkhart County.

Cardboard

- Corrugated Cardboard Boxes should be broken down and flattened.

Other Paper Products

- Paperboard (cereal boxes): Boxes should be broken down and flattened.
- Newspaper: Must be dry and bundled. Please do not use paper or plastic bags.
- Mixed Paper: Office, computer paper, junk mail. Keep dry.
- Magazines: Materials including magazines, and unwanted phone books. Must be kept dry and bundled.



Plastic Bottles/ Metals and Aluminum/ Glass

- PETE or #1 Bottles: Soft drink, soda bottles, etc. Please rinse.
- HDPE or #2 Bottles: Milk and Juice jugs, detergent and bleach containers. Please rinse.
- Aluminum: Soft drink and other beverage cans. Please rinse and separate from metal cans.
- Steel/Tin: Cans from food, soup, vegetables, etc. Please wash.
- Scrap Metal: Remove gas tanks, fuels, batteries from appliances. No wire fencing.
- Glass Bottles: All glass food and beverage bottles: clear, green, brown. Please rinse.

Batteries- Considered Hazardous Waste in Elkhart County

- Car Batteries: Must not be cracked. Cells must be capped.
- Rechargeable Batteries: Rechargeable batteries are accepted. Please no alkaline batteries (alkaline batteries can go in the regular trash)

Other Notes

- Pop Tabs: Be sure to collect your pop tabs...different groups collect them and donate them to the Ronald McDonald house to be recycled. The money earned helps families of sick children stay close by while they are hospitalized. Schools, Kiwanis Clubs and Extension Homemakers Clubs are just a few of the groups that support this effort.
- Product Labels: Schools get money for educational supplies from Campbell Soup labels (also found on many other products, check labelsforeducation.com for a complete list) as well as "Box Tops for Education" found on many cereals and other products (check boxtops4education.com for a complete list of participating products.) Save these for your local schools!

These are some items that DO NOT belong in the recycling bin.

- **Pizza Boxes**: The oil from the pizza can contaminate the cardboard, making it impossible to process into clean paper.
- **Napkins & Paper Towels**: It's not the paper but they are often used to clean up food, cleaning products and other hazardous waste.
- **Sticky Notes**: Their size, color and the adhesive tape make them better in the trash.
- **Plastic Caps**: Curbside programs will not recycle them.
- **Wet Paper**: Paper fibers that have been exposed to water are shorter and therefore less valuable to paper mills.

HAZARDOUS WASTE

A **hazardous waste** is waste that poses substantial or potential threats to public health or the environment and generally exhibits one or more of these characteristics:



- Ignitable: Ignitable wastes can create fires under certain conditions, and are spontaneously combustible. Examples include **waste oils and used solvents**.
- Corrosive: Corrosive wastes are acids or bases (pH less than or equal to 2, or greater than or equal to 12.5) that are capable of corroding metal containers. Examples include **Battery acid**.
- Reactive: Reactive wastes are unstable under "normal" conditions. They can cause explosions, toxic fumes, gases, or vapors when heated, compressed, or mixed with water. Examples include **lithium-sulfur batteries, compact fluorescent light bulbs and explosives**.
- Toxic: Toxic wastes are those containing concentrations of certain substances in excess of regulatory thresholds which are expected to cause injury or illness to human health. Examples include **medicine or medications**.

These wastes may be found in different physical states such as gaseous, liquids, or solids. Furthermore, a hazardous waste is a special type of waste because it cannot be disposed of by common means like other by-products of our everyday lives. Elkhart County sponsors a Hazardous Waste collection the first Saturday of each month from 8 am-3 pm at the Elkhart County Correctional Facility, 26861 CR 26, Elkhart. Call 574-293-2269 for more information.

REMEMBER THE 5 R'S

Reduce the amount of waste we produce.

- Buy only what you need
- Buy economy size or bulk packaging
- Avoid disposable products
- Bring your own bags to the grocery store
- Choose boxes with gray interior (recycled paperboard)
- Look for recycle symbol or the words "made from recycled materials" when shopping
- Choose products packaged in recyclable materials
- When possible, choose product packaging that is easiest to recycle (such as glass instead of plastic)

Reuse as much as possible.

- Use products that are made to be used many times, such as cloth diapers, cloth napkins, sponges, towels and rags, dishes, rechargeable batteries, etc.
- Use the blank back sides of paper for scratch paper
- Purchase used goods at second hand stores, garage sales, auctions, antique shops and flea markets

Reject over packaging and environmentally hazardous products.

- Avoid over-packaged goods
- Avoid non-recyclable packaging and containers
- Choose non-aerosol spray containers
- Avoid disposable products

Repair broken items instead of replacing them.

- Mend clothes
- Repair broken appliances
- Make repairs promptly, before damage progresses
- Service vehicles regularly to maintain good condition

Recycle the products that are recyclable.

- Identify the recycling centers in your community
- Identify the garages and service stations that will accept and recycle used motor oil
- Identify local businesses (doctors, dentists, nursing homes, libraries, daycares, etc.) that accept used magazines
- Donate used clothing, furniture, etc.
- Have a neighborhood or family garage sale annually to recycle unwanted items
- Trade in old appliances and vehicles when possible
- Be familiar with recyclable materials: glass, aluminum, newspaper, etc.

PRE-CYCLE SHOPPING LIST

When you pre-cycle you choose to buy products that are friendly to the environment.

- Bring reusable shopping bags to the store with you
- Buy large quantities. This uses less packaging
- Buy products with the least amount of packaging. Items in multiple containers waste resources
- Buy products packaged in recycled packaging
- Don't buy disposable items
- Buy less paper napkins or paper towels –or none at all. Use cloth
- Read labels for ingredients. Stay away from harmful chemicals
- Buy long life items (batteries and light bulbs). This saves on packaging
- Don't purchase Styrofoam packaging on meats and such. This takes too long to break down in landfills
- Buy items packaged in cardboard, aluminum, steel, glass or plastic containers stamped 1 or 2. These plastics are easier to recycle

TRUE RECYCLING

If you want to be a “true recycler” it is also important to buy goods that are made from and packaged in recycled materials when possible.

Here are some common recycling symbols to look for:



This symbol indicates that the item is recyclable.



This symbol indicates that the product or packaging is made from recycled materials.



DID YOU KNOW?

By recycling 1 ton of paper you save:

- 17 trees
- 463 gallons of oil
- 3.06 cubic yards of landfill space
- 6953 gallons of water
- 587 pounds of air pollution
- 4077 Kilowatt hours of energy

ACTIVITY 1: THE CAN MAN

Hi! Let me introduce myself. I am an aluminum can. My name is Canbe Recycled, and I'm here to tell you what happens when I meet the Can Man.



If you want to change the way you look, what do you do? Do you change clothes? Do you change makeup? When you want to buy new clothes, where do you go? To a store or the mall?

When we beverage cans want to change our appearance, we do it a little differently—and we depend on people like you to help us. Let me explain by telling you about the first time I met 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 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 lie 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 our 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.

**Franklin County 4-H Recycling Project Manual*

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.

I guess that's all I wanted to tell you today—except that we cans, just like you, really love to get new clothes.

When you see us lying around empty, please recycle us so we can have new clothes to wear. Otherwise, we get buried in landfills or we become ugly litter in yards and streets.

We're counting on you to help clean up the environment, to save landfill space and to save natural resources all at the same time by recycling. So, pick me up the next time you see me.

UNDERSTANDING RECYCLING

Activity: For questions 1-5, put the letter of the correct answer in the blank to the left of each question. There is one best answer for each question. Then write out answers to questions 6-7.

- _____ 1. The Can Man represents:
(a) a recyclable can; (b) the person who saves cans; (c) the person who recycles cans to make them new again; (d) the person who changes clothes.
- _____ 2. Canbe Recycled is:
(a) the narrator of the story; (b) an aluminum can; (c) a recycling machine; (d) both a and b.
- _____ 3. As Canbe Recycled was placed with other cans, they moved up a belt to be separated from steel cans by a:
(a) magnet; (b) shredder; (c) water; (d) both b and c.
- _____ 4. When Canbe Recycled talks about getting new clothes, this is a metaphor for:
(a) shredding cans; (b) the recycling process; (c) saving energy; (d) looking funny.
- _____ 5. When you recycle cans, you:
(a) save landfill space; (b) are littering; (c) save scarce resources; (d) both a and c.
6. What is a “narrator” as mentioned in question 2 above? _____

7. The “metaphor” in this story could be stated as follows: Recycling is compared to: _____
8. What is another metaphor for recycling? _____



ACTIVITY 2: CAN IDENTIFICATION

Here is a quick guide for finding out what material your cans are made from

ALUMINUM CANS:

1. Are **NOT** attracted by magnets.
2. Almost all of these cans say “All Aluminum Can” on the side.
3. No seam.
4. If the bottom of the can is round and shiny, then it is aluminum.
5. Shiny, silver, smooth.
6. Lightweight.
7. Aluminum cans, if you look closely, are finely brushed on the bottom.
8. Printing is usually directly on the can as opposed to a paper label.



BIMETAL CANS:

1. Are attracted by magnets.
2. Bottom has a rim.
3. If you look closely, the bottom is not finely brushed. It is usually spray painted.
4. It may or may not have a seam.

TINNED STEEL CANS:

1. Are attracted by magnets.
2. Have a seam.
3. Heavier weight than aluminum.
4. Usually have rings or ribbing on the can.
5. Normally have a paper label.



EXTRUDED STEEL CANS:

1. Are attracted by magnets. (This is the only reliable test)
2. Have no seam.
3. Are lightweight.
4. Have no bottom rim.

Did You Know?

- A used aluminum can is recycled and back on the grocery shelf as a new can in as little as 60 days!
- More aluminum goes into beverage cans than any other product and we use over 80,000,000,000 aluminum cans every year!

Activity: Look around your home, in places like the kitchen, basement, garage, etc. Collect different cans you find there for the following activity.

What did you find?

Name items you found that were packaged in all aluminum _____

Name items you found that were packaged in bimetal cans? _____

Name items you found that were packaged in tinned steel cans? _____

Name items you found that were packaged in extruded steel cans? _____

ACTIVITY 3: WHAT'S IN OUR GARBAGE?

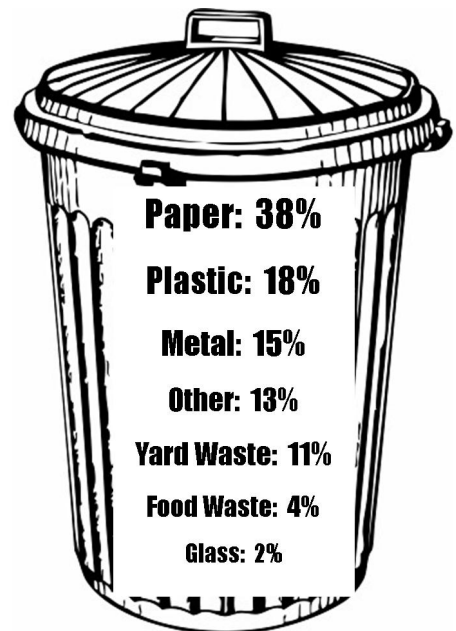
Mostly recyclable materials! Most Americans produce 5 pounds of trash per day. Of those 5 pounds, 87% is recyclable.

Here is the average trash can:

Did You Know?

- Every ton of plastic bottles recycled saves about 3.8 barrels of oil!
- Americans use 2,500,000 plastic bottles every hour!
- Recycling plastic saves twice as much energy as burning it in an incinerator.

(recycling-revolution.com/recycling-facts.html)



Home Garbage Survey

Activity: In this activity you will learn to recognize which items in your garbage are recyclable or reusable, then you can learn to reduce the amount of waste that is thrown away. Recycling is an easy habit to form. By learning what materials can be recycled in your community and changing your buying habits, you and your family can help reduce waste in Indiana.

Here's what to do:

1. Track your family's waste for one week. Include trash from the bedroom, kitchen and family/living room. If you already recycle, keep track of the items in your recycle bin as well.
2. Determine which category each piece of trash would be considered: paper, glass, newspaper, aluminum, plastic, etc.)
3. Count the pieces of garbage or recyclables and record the total number of each item on the table below. After you've counted the garbage, be sure to dispose of it properly; try to recycle what you can!
4. At the end of the week, total each column.
5. How much of your trash was recyclable?



Did You Know?

The Mobro 4000 was a barge made infamous in 1987 for hauling the same load of trash from New York to Belize and back until a way was found to dispose of the garbage.

HOME GARBAGE SURVEY: SURVEY YOUR TRASH

Day	Aluminum	Paper	Newspaper	Glass	Tin Cans	Plastic	Magazines	# Pieces Recyclable
Sunday								
Monday								
Tuesday								
Wednesday								
Thursday								
Friday								
Saturday								
Totals								

Now that you know what is in your trash can, you can be a part of the solution!

ACTIVITY 4: LANDFILLS

Hoosiers produce about 13.5 million tons of garbage each year and bury more than 60% of it in landfills (2004 data, biocycle.com report). As we produce more waste, we run out of places to bury it. There are only about 35 municipal solid waste landfills left in Indiana, with over two million tons of our landfill trash coming from other states each year, causing current landfills to steadily reach capacity (IDEM Data). New facilities are being built, but they are often difficult to establish due to public opposition. There is also one waste-to-energy plant in Indiana that turns garbage into electricity!

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!



Did You Know?

During WWI, recycling straps from corsets created enough metal to build two battle ships!

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 a using your recycling containers a few times, instead of the garbage can, you will be on your way to creating new recycling-conscious habits.

Leaching Landfills

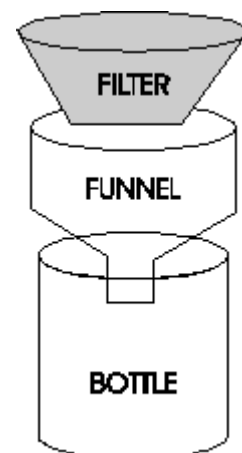
Drinking water comes from lakes, rivers, streams or wells that tap into groundwater supplies can be affected by trash dumped into our landfills. Landfills are built with many layers to protect the water supply. Let's look at what happens to the ground under the landfill and the water supply when we send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

What does buried garbage do to our drinking water?

Materials:

- ___ 2 soda bottles cut in two
- ___ 2 filter papers
- ___ 1 paper towel
- ___ tempera paint, food coloring or Kool-Aid

- ___ 1 cup
- ___ sand
- ___ water



What will you do?

- ___ 1. Put the bottles together as shown in the picture.
- ___ 2. Fill the filters with sand.
- ___ 3. Put paint on the paper towel. This will be our garbage.
- ___ 4. Bury the garbage in the sand in one funnel.
- ___ 5. Let it rain - pour water on top of the sand in both set ups.
- ___ 6. 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 groundwater if harmful chemicals are put into the landfill?

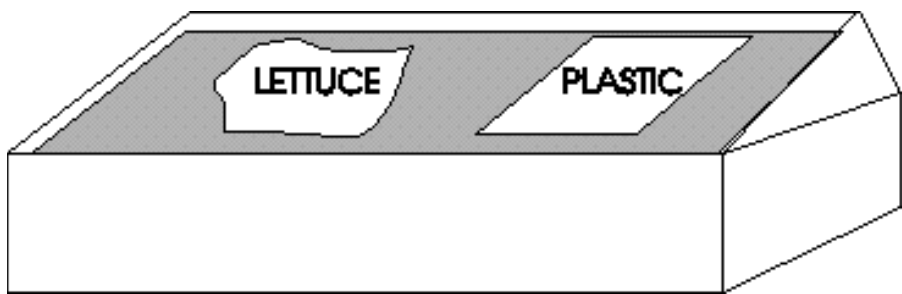
ACTIVITY 5: IS IT BIODEGRADABLE

Items that decompose quickly are referred to as biodegradable. They break down in the landfill. Items that are not biodegradable or that break down slowly can remain intact for a long time and can quickly fill a landfill.

What happens to buried garbage?

Materials:

- | | |
|----------------------------|----------------------|
| ___ 1 milk carton | ___ 1 cup of water |
| ___ 1 piece of plastic bag | ___ dirt |
| ___ 1 piece of lettuce | ___ fork (next week) |



What will you do?

- ___ 1. Fill the milk carton half way with dirt.
- ___ 2. Lay the lettuce and the plastic on top of the dirt.
- ___ 3. Cover the "trash" with more dirt.
- ___ 4. Water your garbage dumps.
- ___ 5. Wait a week then use a fork to dig out your trash.

What happened?

Has the trash changed?

lettuce ___ yes ___ no

plastic ___ yes ___ no

How? _____

What did you find? _____ decomposes more quickly than _____

You may want to try this with some other items or keep them buried longer to see what kinds of products are biodegradable.

What did you try? _____

What did you find? _____

ACTIVITY 6: JUICE BOXES

Many modern products make it easier for people to carry the items they need every day. Bottled water and juice boxes are convenient for families but are they friendly to our earth?

Are juice boxes easy to recycle?

Materials:

___ 1 juice box ___ 1 small scrap of paper
___ 1 scissors ___ 1 wet paper towel



What will you do?

1. Cut apart the juice box. It is made of many different things.

2. What is the inside layer made of? _____

3. Feel the outside layer. How does it feel? _____

4. Put a drop of water on the paper. What happens?

5. Put a drop of water on the outside of the juice box. What happens?

6. From what you see, can you guess what the outside layer is made of?

7. Now peel apart the inside and outside layers. What is the middle layer made of?

What did you find?

:

Will a juice box be easy to recycle? ___ yes ___ no

Is the juice box biodegradable? _____

What could you use instead of a juice box that is better for the earth?

ACTIVITY 7: JUNK MAIL

What is junk mail and what can we do about it? Every day we get mail with advertizing, offers to open credit accounts, political statements and other items that we may not want. We refer to these unwanted and unsolicited items as junk mail. We get a lot of junk mail.

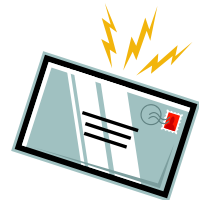
Save your family's junk mail for one week.

At the end of the week, count the number of pieces and write the total here _____

Take one sheet of paper from each piece of junk mail.

Tape them end to end.

Measure how long this stretches _____



Call toll-free numbers in unwanted catalogs and ask to be removed from mailing lists to reduce the amount of junk mail you receive. Can you think of ways to change the way we deal with junk mail?

Reduce: _____

Reuse: _____

Recycle: _____








ACTIVITY 8: IDENTIFYING PLASTICS

There are about 50 different kinds of plastics used to make products that we use every day, such as telephones, plumbing and packaging. The main types of plastic that consumers deal with are PETE (#1) and HDPE (#2). In many cases it is difficult to tell one kind of plastic from another, so the plastics industry introduced a coding system. Look on the bottom of each plastic container you buy for an imprinted recycling symbol with a number from 1-7 in the middle. Each number from 1-6 represents a different plastic; a 7 means it cannot be recycled.



Activity: Find plastic products around your house. Look for the recycling symbol and find the number in the middle. List those products next to the appropriate number below. How many different kinds of plastics can you find?

Easier to Recycle

 PETE	<p>Poly(ethylene terephthalate) soda bottles, water bottles, food packaging</p>	
 HDPE	<p>High-density Polyethylene detergents, bleach, milk, motor oil bottles</p>	
 V	<p>Poly(vinyl chloride) Plastic piping, toys, furnishings</p>	
 LDPE	<p>Low-density Polyethylene plastic wrap, plastic bags, sandwich bags</p>	
 PP	<p>Polypropylene clothing, bottles, tubs, rope</p>	
 PS	<p>Polystyrene cups, foam food trays, packing peanuts</p>	
 OTHER	<p>Other Various applications</p>	

Harder to Recycle



ACTIVITY 9: PACKAGING PRE-CYCLING

When you are shopping, think of packaging as part of the product, you get what you pay for. If the packaging is designed to be thrown away immediately, all you're getting for your money is cleverly-designed garbage.

DID YOU KNOW?
 Nearly \$1 out of every \$10 spent for food and beverages in the United States pays for packaging?

Packaging makes up about 1/3 of what Americans throw away. Pre-cycling is a very important part of any recycling effort.

Activity: The next time you to the grocery story, take a digital camera along. Walk all through the store, select 10 items to take pictures of, then list the items below and complete the chart by placing an "x" in each box that applies to each item.

Item Descriptions:

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

Item #	1	2	3	4	5	6	7	8	9	10
Is the packaging colorful?										
Is the package wrapped in clear plastic?										
Is the product boxed?										
How many layers of packaging does the product appear to have?										
Does the product have either type of recycling symbol?										

Why do we need packaging on the products we buy? _____

List 4 examples of common packaging materials:

- | | |
|----------|----------|
| 1. _____ | 3. _____ |
| 2. _____ | 4. _____ |

ACTIVITY 10: TONS OF TRASH

There are questions on your record sheet that this activity may help you answer.

If the average person throws away about 5 pounds of trash every day, figure this:

1. How much trash do you throw away in one week? $(5 \times 7) =$ A. _____
2. How much trash do you throw away in one year? $(A \times 52) =$ B. _____
3. How many people are in your family $=$ C. _____
4. How much trash does your family throw away in one year? $(B \times C) =$ D. _____
5. If you threw away one less pound of trash each day, how much trash would you throw away in one year? $(B - 365) =$ E. _____
6. If each person in your family threw away one less pound of trash each day, how much trash would your family throw away in one year? $(C \times E) =$ F. _____
7. What difference does 1 pound make in your family? $(D - E) =$ G. _____

There are about 6 million people living in Indiana and over 300 million people in the United States. Just think if each person reduced the amount of trash they throw away each day by 1 pound, what a difference that would make in a day, a week, or a year!



Recycling Resources

Websites

There are many resources on the web that can help you learn about recycling. Here are a few.

<http://www.afn.org>
<http://www.sprintrecycling.com>
<http://www.dosomething.org/tipsandtools>
<http://www.planetpals.com>
<http://www.ecy.wa.gov/programs/swfa/kidspage>
<http://earth911.org/recycling>
<http://www.recycling-guide.org.uk>
<http://www.greenplanet4kids.com>
<http://www.thestoryofstuff.com/>

Books

There are many books that can help you learn about recycling. Here are a few.

50 Simple Things Kids Can Do to Recycle by The Earthworks Group
Loaded with ideas to try at home, school, or anywhere!

Be A Friend to Trees by Patricia Lauber
Explains why trees are a valuable natural resource and what we need to do to protect them. Offers ideas on ways kids can help save trees.

The Big Book for Our Planet by Ann Durell, ed.
Over forty of the best-loved children's authors and illustrators pool their talents in a single volume to honor the Earth.

Captain Eco and the Fate of the Earth by Jonathon Porritt
Captain Eco and friends set off on a mission to save the Earth. Captain Eco explains the environmental dangers facing our planet. Written like a comic strip.

Recycle: A Handbook For Kids by Gail Gibbons
This book provides information for children about how to separate different types of materials and how they are recycled into other products.

Earth Book for Kids: Activities to Help Heal the Environment by Linda Schwartz
Filled with ideas for arts and crafts projects, experiments, and experiences that encourage children to enjoy and heal the environment.

SOLID WASTE CHECKLIST

BRING WITH PROJECT

Complete each year of this project.

How many of these things do you and your family practice? Place an "x" in the appropriate column for those practices you and your family do on a regular basis. There is room to add some of your own.

Date Completed _____

By _____

	I do now	I do some-times	I might do	I don't want to do	I can't do
1. Use paper plates and cups instead of plastic.					
2. Use reusable plates and cups instead of disposable.					
3. Buy glass and aluminum containers instead of plastic.					
4. Write on both sides of paper before recycling it.					
5. Buy paper towels, napkins, and toilet paper made from 100% recycled fibers.					
6. Give used magazines to nursing homes and hospitals.					
7. Say, "Thanks, I don't need a bag," when buying small items.					
8. Purchase items in bulk to cut down on packaging.					
9. Buy eggs in paper rather than foam cartons.					
10. Buy juice in concentrate rather than big plastic containers.					
11. Use canvas bags at the grocery store.					
12. Leave grass clippings on the lawn to reduce yard waste.					
13. Make a compost pile in your yard and turn yard wastes into fertilizer.					
14. Save newspapers for recycling.					
15. Use plastic bags over and over.					
16. Use a lunch box or reusable lunch bag to school.					
17. Plant trees.					
18. Fix or recycle things instead of throwing them out.					
19. Donate outgrown clothes to others.					
20. Share or trade books and games with your friends.					
21. Use old panty hose to tie up tomato, pepper and other plants.					
22. Recycle used motor oil by taking it to a garage, auto parts store or hazardous waste collection.					
23. Turn out lights when leaving a room.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Each of us can do our part in helping to reduce the amount of solid waste going into our landfills. After completing the checklist what habits did you and your family change?



ELKHART COUNTY 4-H



P PURDUE
UNIVERSITY®

Extension - Elkhart County

RECYCLING

GREEN AWARENESS



**PLEASE SAVE THIS BOOK –
USE IT EACH YEAR YOU ARE IN THE
FOLLOWING LEVELS:**

Level C: Grades 7-9

Level D: Grades 10-12

Some manuals are used more than one year. An additional copy will cost \$1.00.

Purdue University is an equal access/equal opportunity institution.

**Elkhart County Recycling Project
Revised November 2019**

Adapted from: Elkhart County Recycling Project Manual and Franklin County
Recycling Manual.



4-H RECYCLING PROJECT

Green Awareness

Eligible for State Fair in the Arts & Crafts Division

Each year, in all levels, the 4-H'er must complete a different recycled article and additional activities from the manual.

LEVEL C (GRADES 7-9)

1. Prior to exhibiting a recycled article at the fair, the 4-H'er is required to submit a completed 4-H Recycling Record Sheet to their 4-H leader, along with the Solid Waste Checklist. List which activities were completed from this manual.
 - The required number of activities per grade level are
 - Grade 7 (one)
 - Grade 8 (two)
 - Grade 9 (three)
2. Exhibit a Recycled article that was made into something else you can use.
3. Using the 4-H Recycling Record Sheet and the Solid Waste Checklist, include information about the article you recycled and include it with the exhibit.

LEVEL D (GRADES 10-12)

1. Prior to exhibiting a recycled article at the fair, the 4-H'er is required to submit a completed 4-H Recycling Record Sheet to their 4-H leader, along with the Solid Waste Checklist. List which activities were completed from this manual.
 - The required number of activities per grade level are
 - Grade 10 (four)
 - Grade 11 (five)
 - Grade 12 (six)
2. Exhibit a Recycled article that was made into something else you can use.
3. Using the 4-H Recycling Record Sheet and the Solid Waste Checklist, include information about the article you recycled and include it with the exhibit.

You do not need to do all new activities each year but may include activities that you completed for level C or D in previous years to reach the required number for your grade. All activities must be chosen from this manual. For example, if you entered the recycling project in grade 7 and continued each year, you would do one activity each year. If you entered the recycling project in grade 12, you would complete 6 activities.

RECYCLING

Recycling is frequently in the news. We are told that it is the responsible thing to do.

Recycling conserves natural resources, saves energy and reduces the amount of trash going to landfills. Conserving our natural resources doesn't mean not using them, it means using them wisely and sparingly. Recycling involves collecting reusable materials that have been thrown away, processing and distributing them for reuse. In most cases it takes less energy to prepare materials for reuse than to produce new items. Natural resources, such as trees, water, metal ores and oil are conserved through recycling. Materials from these natural resources are recycled and used again. Almost everything can be recycled in some way. Major groupings include paper, aluminum, glass, organic materials and plastics.

To make it easier on recycling centers, they appreciate separating recyclables before arrival. This is easily done in bags or boxes. The following is a list of accepted recyclables and how to sort and prepare them in Elkhart County.

Cardboard

- Corrugated Cardboard Boxes should be broken down and flattened.

Other Paper Products

- Paperboard (cereal boxes): Boxes should be broken down and flattened.
- Newspaper: Must be dry and bundled. Please do not use paper or plastic bags.
- Mixed Paper: Office, computer paper, junk mail. Keep dry.
- Magazines: Materials including magazines, and unwanted phone books. Must be kept dry and bundled.



Plastic Bottles/ Metals and Aluminum/ Glass

- PETE or #1 Bottles: Soft drink, soda bottles, etc. Please rinse.
- HDPE or #2 Bottles: Milk and Juice jugs, detergent and bleach containers. Please rinse.
- Aluminum: Soft drink and other beverage cans. Please rinse and separate from metal cans.
- Steel/Tin: Cans from food, soup, vegetables, etc. Please wash.
- Scrap Metal: Remove gas tanks, fuels, batteries from appliances. No wire fencing.
- Glass Bottles: All glass food and beverage bottles: clear, green brown. Please rinse.

Batteries (Considered Hazardous Waste in Elkhart County)

- Car Batteries: Must not be cracked. Cells must be capped.
- Rechargeable Batteries: Rechargeable batteries are accepted. Please no alkaline batteries (alkaline batteries can go in the regular trash).

Other Notes

- Pop Tabs: Be sure to collect your pop tabs...different groups collect them and donate them to the Ronald McDonald house to be recycled. The money earned helps families of sick children stay close by while they are hospitalized. Schools, Kiwanis Clubs and Extension Homemakers Clubs are just a few of the groups that support this effort.
- Product Labels: Schools get money for educational supplies from Campbell Soup labels (also found on many other products, check labelsforeducation.com for a complete list) as well as "Box Tops for Education" found on many cereals and other products (check boxtops4education.com for a complete list of participating products.) Save these for your local schools!

These are some items that DO NOT belong in the recycling bin.

- **Pizza Boxes**: The oil from the pizza can contaminate the cardboard, making it impossible to process into clean paper.
- **Napkins & Paper Towels**: It's not the paper but they are often used to clean up food, cleaning products and other hazardous waste.
- **Sticky Notes**: Their size, color and the adhesive tape make them better in the trash.
- **Plastic Caps**: Curbside programs will not recycle them.
- **Wet Paper**: Paper fibers that have been exposed to water are shorter and therefore less valuable to paper mills.

HAZARDOUS WASTE

A **hazardous waste** is waste that poses substantial or potential threats to public health or the environment and generally exhibits one or more of these characteristics:



- Ignitable: Ignitable wastes can create fires under certain conditions, and are spontaneously combustible. Examples include **waste oils and used solvents**.
- Corrosive: Corrosive wastes are acids or bases (pH less than or equal to 2, or greater than or equal to 12.5) that are capable of corroding metal containers. Examples include **Battery acid**.
- Reactive: Reactive wastes are unstable under "normal" conditions. They can cause explosions, toxic fumes, gases, or vapors when heated, compressed, or mixed with water. Examples include **lithium-sulfur batteries, compact fluorescent light bulbs and explosives**.
- Toxic: Toxic wastes are those containing concentrations of certain substances in excess of regulatory thresholds which are expected to cause injury or illness to human health. Examples include **medicines**.

These wastes may be found in different physical states such as gaseous, liquids, or solids. Furthermore, a hazardous waste is a special type of waste because it cannot be disposed of by common means like other by-products of our everyday lives. Elkhart County sponsors a Hazardous Waste collection the first Saturday of each month from 8 am-3 pm at the Elkhart County Correctional Facility, 26861 CR 26, Elkhart. Call 574-293-2269 for more information.

REMEMBER THE 5 R'S

Reduce the amount of waste we produce.

- Buy only what you need
- Buy economy size or bulk packaging
- Avoid disposable products
- Bring your own bags to the grocery store
- Choose boxes with gray interior (recycled paperboard)
- Look for recycle symbol or the words "made from recycled materials" when shopping
- Choose products packaged in recyclable materials
- When possible, choose product packaging that is easiest to recycle (such as glass instead of plastic)

Reuse as much as possible.

- Use products that are made to be used many times, such as cloth diapers, cloth napkins, sponges, towels and rags, dishes, rechargeable batteries, etc.
- Use the blank back sides of paper for scratch paper
- Purchase used goods at second hand stores, garage sales, auctions, antique shops and flea markets

Reject over packaging and environmentally hazardous products.

- Avoid over-packaged goods
- Avoid non-recyclable packaging and containers
- Choose non-aerosol spray containers
- Avoid disposable products

Repair broken items instead of replacing them.

- Mend clothes
- Repair broken appliances
- Make repairs promptly, before damage progresses
- Service vehicles regularly to maintain good condition

Recycle the products that are recyclable.

- Identify the recycling centers in your community
- Identify the garages and service stations that will accept and recycle used motor oil
- Identify local businesses (doctors, dentists, nursing homes, libraries daycares, etc.) that accept used magazines
- Donate used clothing, furniture, etc.
- Have a neighborhood or family garage sale annually to recycle unwanted items
- Trade in old appliances and vehicles when possible
- Be familiar with recyclable materials: glass, aluminum, newspaper, etc.

PRE-CYCLE SHOPPING LIST

When you pre-cycle you choose to buy products that are friendly to the environment.

- Bring reusable shopping bags to the store with you
- Buy large quantities. This uses less packaging
- Buy products with the least amount of packaging. Items in multiple containers waste resources
- Buy products packaged in recycled packaging
- Don't buy disposable items
- Buy less paper napkins or paper towels –or none at all. Use cloth
- Read labels for ingredients. Stay away from harmful chemicals
- Buy long life items (batteries and light bulbs). This saves on packaging
- Don't purchase Styrofoam packaging on meats and such. This takes too long to break down in landfills
- Buy items packaged in cardboard, aluminum, steel, glass or plastic containers stamped 1 or 2. These plastics are easier to recycle

TRUE RECYCLING

If you want to be a “true recycler” it is also important to buy goods that are made from and packaged in recycled materials when possible.

Here are some common recycling symbols to look for:



This symbol indicates that the item is recyclable.



This symbol indicates that the product or packaging is made from recycled materials.



DID YOU KNOW?

By recycling 1 ton of paper you save:

- 17 trees
- 463 gallons of oil
- 3.06 cubic yards of landfill space
- 6953 gallons of water
- 587 pounds of air pollution
- 4077 Kilowatt hours of energy

ACTIVITY 1: OIL AND WATER

In our recent past, we have heard many reports about the environmental damage caused by oil spills in our oceans, rivers, and other waterways. Many people do research to try to find new ways to clean up an oil spill. This activity is designed to help you learn about what happens when oil is mixed with water, and to get you to think of ways you might try to get the oil out of the water. You may want to take notes and/or photographs to record what happens in each step of your activity.

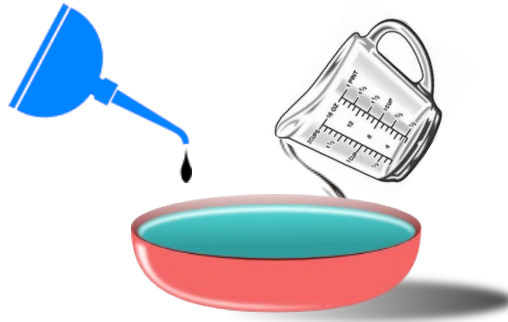
Vegetable oil will give you the same results and simulate what happens when there is an oil spill in the environment. The waste from this activity can be disposed of in the trash. If you used motor oil, it would be a hazardous waste and require special handling.

Materials:

Glass jar or bowl	Water
Vegetable oil	Spoon or stir stick
Other materials of your choice	

What will you do?

1. Fill jar or bowl $\frac{3}{4}$ full with water.
2. Put several drops of oil in the water.
3. Observe what happens.
4. Mix the oil into the water.
5. Observe what happens.
6. Try to get the oil off of and out of the water and jar or bowl. Experiment with different materials of your choice to see what does the best job of removing the oil.



What happened?

Did the oil and water mix together? _____

Describe how it looked. _____

What did you use to remove the oil?
From the water? _____

From the jar or bowl? _____

What do you think would happen to animals caught in an oil spill? _____

ACTIVITY 2: OIL AND PLANTS

Many scientists are concerned about the effects of the oil on the plant life in the areas where there has been an oil spill. This experiment is designed to help you understand what happens when oil is put on plants. You may want to take notes and/or photographs to record what happens during the experiment.

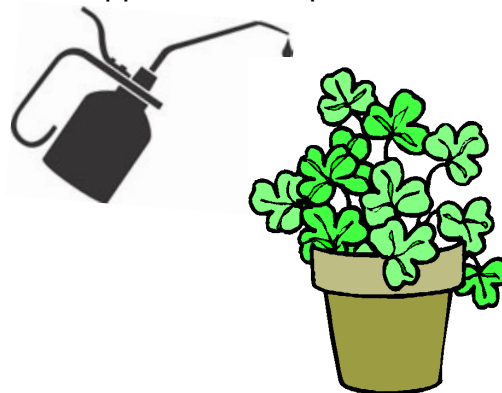
Vegetable oil will give you the same results and simulate what happens when there is an oil spill in the environment. The waste from this activity can be disposed of in the trash. If you used motor oil, it would be a hazardous waste and require special handling.

Materials:

Flower pot
Soil
Growing weed to transplant
Water
Vegetable oil
Camera and film

What will you do?

1. Transplant a weed into flower pot.
2. Water your transplanted weed every few days for about a week or two before continuing with the activity.
3. Take a photograph of the weed.
4. Put several drops of oil on the weed.
5. Observe and photograph what happens.
6. Check the plant again in a few hours.
7. Observe and photograph what has happened to the plant.
8. Check the plant again in a few days.
9. Observe and photograph what has happened to the plant.



What did you find?

Describe what happened to the plant. _____

What did the oil do to the plant to cause the results? _____

ACTIVITY 3: OIL AND SOIL

Recent oil spills and the emphasis on recycling have created interest and concern over ways to clean up spills and properly dispose of oil without hurting our environment. In this activity, you will try to find ways to remove oil from soil. You may want to take notes and/or photographs to record what happens in the different steps of your activity.

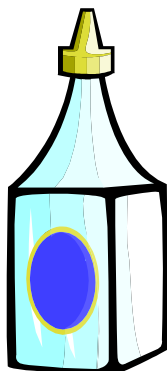
Vegetable oil will give you the same results and simulate what happens when there is an oil spill in the environment. The waste from this activity can be disposed of in the trash. If you used motor oil, it would be a hazardous waste and require special handling.

Materials

- Box or pan
- Dry soil
- Vegetable oil
- Other materials of your choice

What will you do?

1. Fill box or pan $\frac{3}{4}$ full with soil.
2. Put several drops of oil on the soil.
3. Observe what happens.
4. Try to get the oil out and off of the soil. Experiment with different materials of your choice to see what works the best in removing the oil from the soil.



What did you find?

What happened to the oil and the soil? _____

Were you able to remove the oil from the soil? _____ How? _____

ACTIVITY 4: MAKE A MINI LANDFILL

In this activity, you will learn about landfills and how they work. You will also learn about how articles decompose, as well as what types of items decompose faster. You may want to record your results in a notebook and/or take photographs of the activity as it progresses.

Materials:

4 large glass jars or buckets

Soil

Miscellaneous solid waste (examples: lettuce leaf, banana peel, flower petals, glass, paper, foil, plastic bag, etc.)

Crayon or marker

Masking tape or paper label

Water



What you will do:

1. Fill each jar about half full of soil.
2. Place one item of waste in each jar on top of soil.
3. Cover the item with additional soil.
4. Dampen soil with water.
5. Classify each waste item as organic, renewable resource/recyclable, non-renewable resource/recyclable, non-renewable resource/hard to recycle.
6. Label each jar with the date, waste item buried and type of item (organic, etc.).
7. Place jars out of direct sun and away from people.
8. Guess what will happen to the solid waste item in each jar. Write these predictions down.
9. Stir soil occasionally and keep soil damp with water.
10. In three weeks, examine jars for the condition of the buried solid waste item.

What did you find?

Describe what you found when checked the buried items after three weeks?

Describe what you learned from the activity in terms of the importance of recycling some items, the effects on our environment from not recycling, etc.

Describe any other observations you made from this activity _____

ACTIVITY 5: PAPER RECYCLING

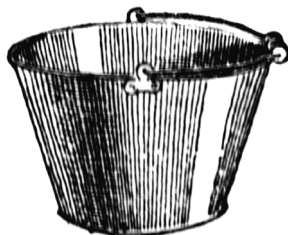
Paper, originally invented by the Chinese, is a thin tissue made of wood or other fiber. The individual fibers are separated by beating or pulping, and put on a mold suspended in water. The water is drained from the paper mold, leaving the interwoven fibers. When these fibers are dried and pressed, they become paper.

Each of us uses a variety of paper products every day. American offices throw away enough paper to build a wall 12 feet high stretching from Los Angeles to New York City. 75,000 trees are used to produce the paper for the Sunday edition of the New York Times, yet only 30% of the newspapers are recycled in the United States. Recycling paper not only saves trees (which help clean our air), but has other benefits as well. Producing one ton of paper from recycled paper instead of virgin pulp uses half as much energy and water, produces three-quarters less air pollution and one-third less water pollution, saves 17 pulp trees, and creates five times as many jobs as producing paper from virgin pulp.

In this activity, you will learn to recycle different types of paper to make your own paper. You may want to take photographs of the different stages in your recycling process.

Materials:

Wire screen pieces (at least 10" x 13")	Cornstarch
Measuring cup	Wooden spoon
Blender	Water
Rolling pin	Felt (optional)
Wax paper	
Bucket, large bowl, or other large container	
Old paper (newspapers, notebook paper, construction paper, etc.)	
Bowl (large enough to hold at least one quart of liquid)	



What you will do:

1. Put some water in the bucket or other container.
2. Cut or tear one type of paper into small pieces and place in container to soak for several hours.

3. Prepare your paper mold (screen) by placing layers of newspaper on a hard, flat surface. Place screen on top of the layers of paper. Tear off a piece of wax paper a little larger than your screen. Set it aside.
4. After paper has soaked, make a starch suspension by combining one cup of cornstarch with two cups of water. Mix thoroughly before using.
5. Drain excess water from the shredded paper.
6. Put three tablespoons of starch suspension in the blender and add the drained, shredded paper.
7. Blend at high speed until the mixture looks like thick soup. You may need to add more starch suspension if it is really thick. You may need to stop the blender and stir the paper mixture often with a wooden spoon.
8. Quickly pour the mixture onto your prepared screen, spreading it quickly and evenly.
9. To remove excess water, place wax paper on top of the spread mixture and roll over it gently with a rolling pin. Repeat this step until paper is relatively thin and smooth (You will not want to make your paper too thin as it will tear easily.).
10. Carefully peel off wax paper. Move screen and replace wet newspapers (underneath screen) with dry ones (saving wet ones to shred and make more paper). Replace screen and allow paper to continue to dry for about an hour (or until you can peel it gently off screen without damaging it).
11. Remove your recycled paper from screen and place it on a dry, flat surface. Allow it to dry overnight.
12. Repeat the activity using different types of paper. You may also want to activity with different proportions of starch.
13. After your recycled paper has dried, experiment with different uses of it (cards, writing paper, making boxes).



What did you find?

What did you observe when doing this activity? _____

Did you have any problems making the paper? _____

How did you use your paper? _____


For a smoother textured paper, allow the mixture to drain on the screen. Remove the wet newspapers from underneath the screen. Then cover the recycled mixture with felt. Turn the screen over (so the felt is on the bottom) and carefully peel screen away from paper. Cover the paper with another piece of screen away from paper. Cover the paper with another piece of felt. Then roll it with a rolling pin. Remove felt carefully and allow paper to dry overnight.

ACTIVITY 6: COMPOST COLUMN

According to epa.gov, yard trimmings and food residuals together make up 23% of the U.S. waste stream. The best way to help this number decrease is by composting.


Composting is how nature recycles. It is the breakdown of organic materials, such as food or yard waste, into soil. Bacteria, yeasts and fungi are the organisms responsible for the decomposition of these materials. Compost is great for your garden or yard, and it's easy to do. There are many different composting bins on the market, or you could build one yourself out of scrap materials (another great way to recycle.)

What to Compost - The IN List

- 
- Animal manure
 - Cardboard rolls
 - Clean paper
 - Coffee grounds and filters
 - Cotton rags
 - Dryer and vacuum cleaner lint
 - Eggshells
 - Fireplace ashes
 - Fruits and vegetables
 - Grass clippings
 - Hair and fur
 - Hay and straw
 - Houseplants
 - Leaves
 - Nut shells
 - Sawdust
 - Shredded newspaper
 - Tea bags
 - Wood chips
 - Wool rags
 - Yard trimmings

What Not to Compost - The OUT List

Leave Out/Reason Why

- 
- Black walnut tree leaves or twigs
Releases substances that might be harmful to other plants
 - Coal or charcoal ash
Might contain substances harmful to plants
 - Dairy products (e.g., butter, egg yolks, milk, sour cream, yogurt)
Create odor problems and attract pests such as rodents and flies
 - Diseased or insect-ridden plants
Diseases or insects might survive and be transferred back to other plants
 - Fats, grease, lard, or oils
Create odor problems and attract pests such as rodents and flies
 - Meat or fish bones and scraps
Create odor problems and attract pests such as rodents and flies
 - Pet wastes (e.g., dog or cat feces, soiled cat litter)
Might contain parasites, bacteria, germs, pathogens, and viruses harmful to humans
 - Yard trimmings treated with chemical pesticides
Might kill beneficial composting organisms

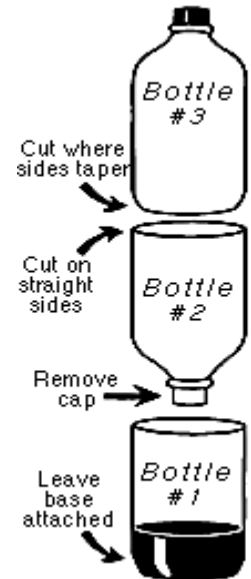
The composting process depends on many different factors, such as the amount of moisture and air, temperature, light, source of bacteria and fungi, and the nature of the rotting material. For example, under ordinary circumstances, a soft banana peel will rot much faster than a piece of wood. However, old banana peels kept in a dark freezer will decompose much slower than a piece of wood in a warm, moist environment.

The presence or absence of air (oxygen) is one of the most important factors in composting. Modern landfills seal garbage deep in the earth, excluding air and moisture and preventing microorganisms from working. Composting allows air and moisture to speed up the natural biodegradation process.

Activity: Make a composting column to see the biodegradation process first hand!

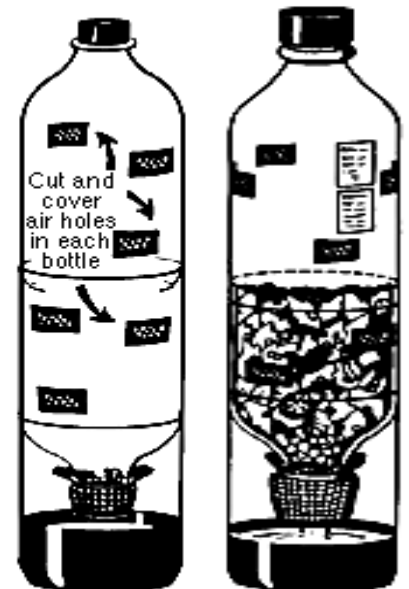
Materials:

- Three 2-liter plastic pop bottles, rinsed with labels removed.
- Permanent Marker
- Craft Knife
- Scissors
- Clear Tape and Electrical or Duct Tape
- Netting, nylon or other mesh fabric
- Rubber Band
- Two Cups Garden Soil plus: Organic material for composting, such as food scraps, leaves, newspapers and grass clippings
- Thermometer
- Measuring Cup
- Microscope



What will you do?

1. Remove the labels from all three bottles. Cut them and assemble as illustrated.
2. Cut out 3-4 windows (air holes) in the top 2 bottles, the approximate diameter of your thumb. Cover windows with nylon stocking or mesh material and tape to hold firmly.
3. Place nylon stocking over middle bottle opening and secure with a rubber band.
4. Place soil in the middle bottle. Bury vegetable or fruit scraps, grass, newspaper, etc. in the soil. (Note: the smaller the pieces, the faster they will decompose.)
5. Add just enough water to moisten the soil and allow a few drops to drain into the bottom of the column.
6. Replace the top bottle making sure the windows remain uncovered to allow air flow in and out of the compost column.
7. During monitoring, keep soil moist by recycling the compost water from the bottom to the top bottle.
8. Occasionally turn the soil with a spoon.
9. Record your observations on the chart on the next page.



ACTIVITY 7: KEEP TRACK OF YOUR TRASH

In this activity, you will learn about ways to reduce the amount of trash your family throws away. You will also learn about what types of things you can recycle. After this activity is over, try to get your family to try some of the recycling you have learned.

Materials:

Your family's trash for one week
Boxes
Bathroom scales

What you will do:

1. Collect and save your family's trash for a period of one week. As you collect it, rinse out the bottles, cans and jars, and put food waste in a sealed container.
2. At the end of the week, use the scales to weigh the trash you have collected.
3. Record the weight in the notebook.
4. Using the boxes, sort the trash by like items --- glass, aluminum cans, plastic containers, metal containers, newspapers and all other trash.
5. Re-weigh the sorted boxes of trash, one at a time.
6. Record these weights.
7. Subtract the weight of the box of "all other trash" from the weight you recorded for the total of all of the trash collected for the week.

Example:	<i>10.8 lbs.</i>	<i>Total</i>
	<u><i>- 2.5 lbs.</i></u>	<i>All other trash</i>
	<i>8.3 lbs.</i>	<i>Recyclable trash</i>

8. Calculate and record the percentages of each type of trash you collected. To do this, divide the weight of each separate type of trash, as sorted in the boxes, by the weight of all of the trash collected.

What did you find?

What type of trash do you have the most of?

How much could your family reduce the amount of trash they throw away if they recycled the glass items _____ aluminum cans _____ plastic containers _____, metal containers _____ newspapers _____

Calculate your answer in pounds and then in percentages. _____

Discuss your findings with your family. Work together to suggest ways to begin some recycling in your home.

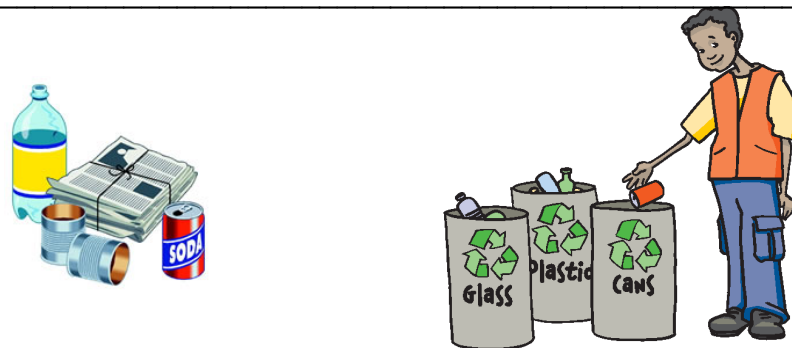
Did you make any changes as a result of this activity? _____

Try the activity again after your family has made some recycling changes.

Try sorting your trash for recycling a second time after your family has made some changes to their recycling habits. Sort your trash for one week again. At the end of the week, weigh the trash that you will not be recycling.

Did you get the same results _____?

Compare this figure to the total of all the trash you collected at the beginning of this activity _____



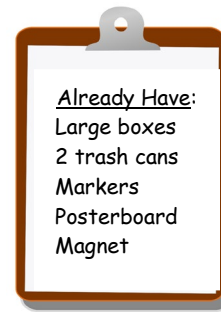
ACTIVITY 8: PLANNING & SET UP A HOME RECYCLING CENTER

Successful recycling requires a workable set-up for sorting recyclables in the home. We have many things to do with the little bit of free time most of us have, so we do not want to spend a lot of time on our recycling each day. We need a home recycling center that is easy to use.

To get a recycling program going at home you need to ask yourself several questions. What kinds of things are recyclable in your community? Where are the recycling centers? What types of things do they accept? What preparation of items needs to be done before items will be accepted?

Once you have answered those questions, you are ready to plan your recycling center. Think of a room at home where you could get permission to set up a recycling center (garage, basement, mudroom, utility room, etc.). Remember, it should be close to the place where cans, bottles and newspapers are used in the first place so it will be easy to use. Discuss your ideas with your family. This will help you to plan an area they will all use. It will also help get them ready to begin recycling.

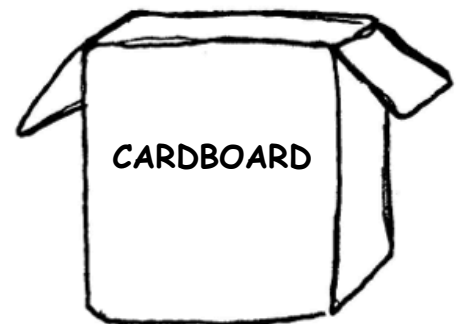
Make a list of all the items you will recycle. This will help you to plan for the space and items you will need. You may use garbage cans, boxes, bags, etc., to sort items. You will need to discuss any planned purchases with your parents (garbage cans, can crusher, etc.).



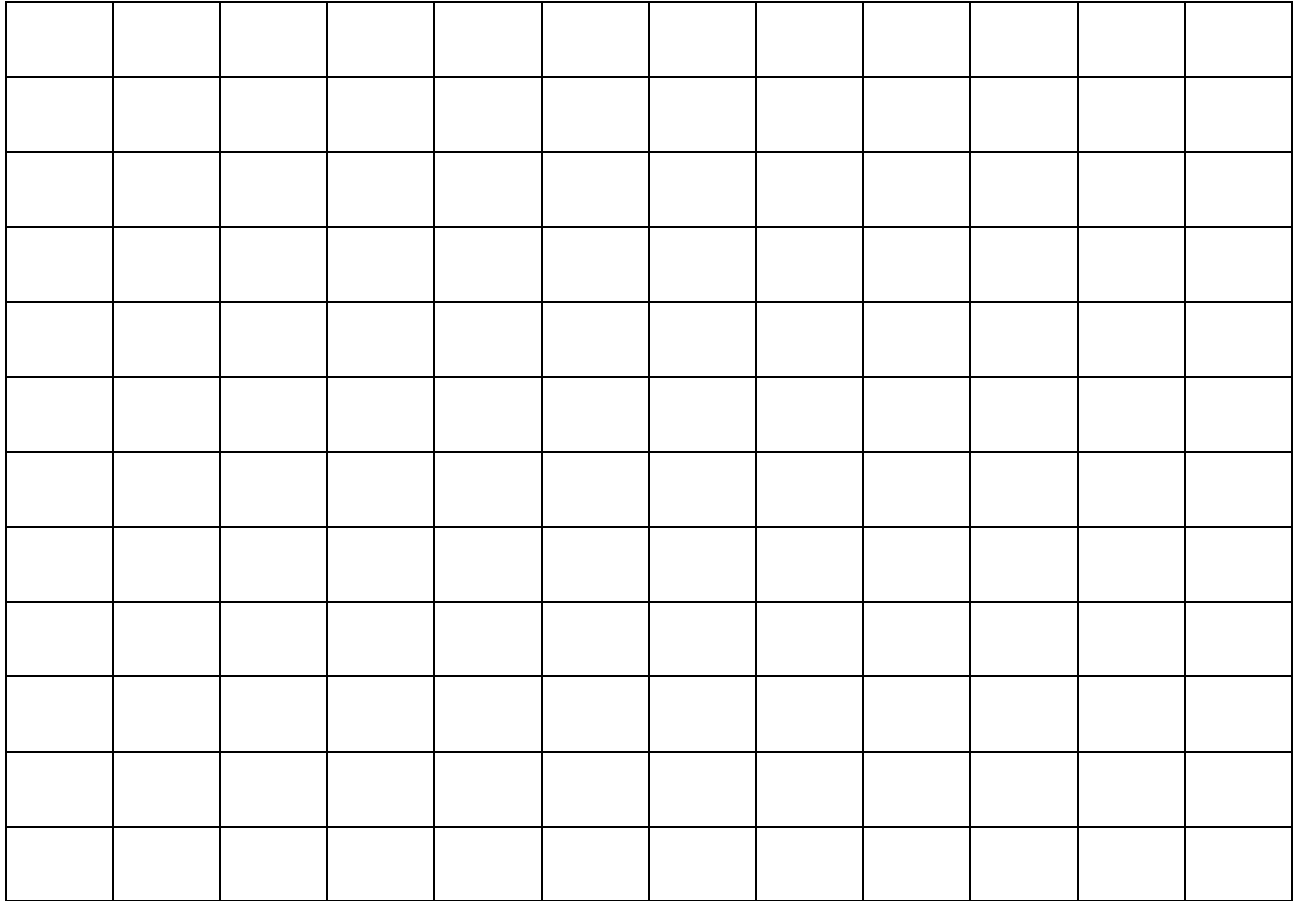
Use the grid on the following page (or one of your own) to make a floor plan for the “recycling center.” Measure the room or area, your sorting bins or boxes, etc., to get your plans to scale. You can cut out construction paper templates (small scale representations) of the items to be located in your center. Be sure to include items already in the area (furniture, tools, appliances, etc.). Tape or place these templates on the grid to check for fit, and experiment with moving them around to create the simplest floor plan. Discuss your finished floor plan with your family. Make any revisions that are needed.

Label the items in your floor plan. You may want to include wall space for mounting instructions for preparing materials, your local recycling collection sites, hours of operation, etc.

Show how you planned your home recycling center, your completed floor plan, problems, etc. Be sure to label all items in your center.



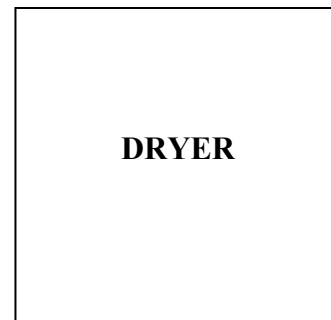
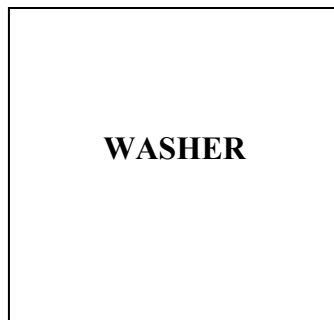
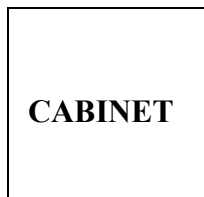
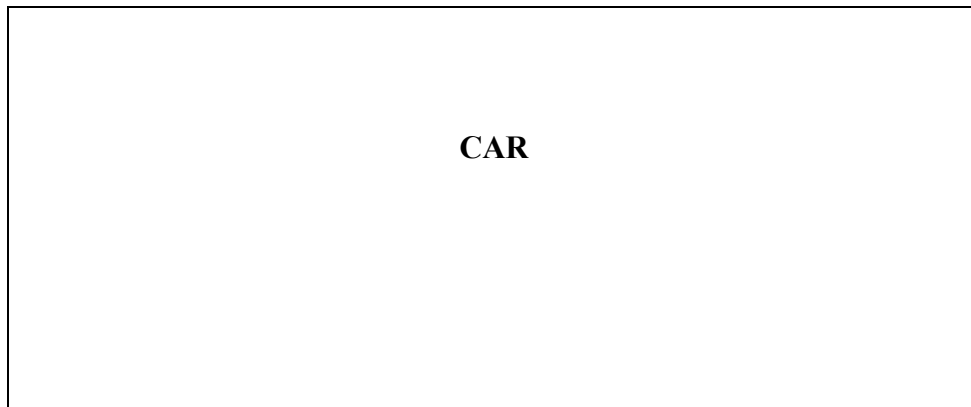
Set up a recycling center in your garage, basement, mudroom, utility room, etc. Use the graph below and the drafting objects on the following page to make a floor plan. Arrange the things in the room to make your recycling center easy to work in. The graph may be adjusted to fit the size of room you are using, or the scale may be changed. This graph is for a 12 foot by 12 foot room. Scale is $\frac{1}{2}$ inch = 1 foot.



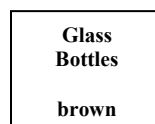
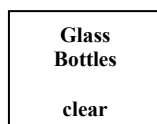
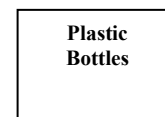
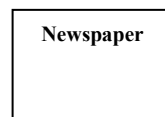
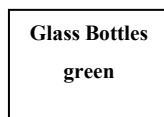
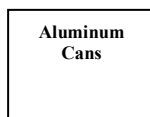
Recycling one ton (about 2,000 pounds) of paper saves 17 trees, two barrels of oil (enough to run the average car 1,260 miles) , 4.100 kilowatts of energy (enough power for the average home for 6 months), 3.2 cubic yards of landfill space, and 60 pounds of pollution.

DRAFTING OBJECTS (Scale: ½ inch = 1 foot)

Here are a few objects to cut out and use in your floor plan. Create other objects to fit the particular room that you are using. Remember to keep to scale. For example, if your family car measures 10 feet by 5 feet, it would measure 5 inches by 2 ½ inches on the floor plan; 10 x ½ inch = 5 inches. 5 x ½ inch = 2 ½ inches. After playing with the floor plan, paste the objects onto the graph. Now put it into reality!



Recycling Containers:



ACTIVITY 9: WHAT IS YOUR CARBON FOOTPRINT?

Your Carbon Footprint is your impact on the environment. This is measured in the units of carbon dioxide you release through your activities. Increased emissions of CO₂ into the air leads to global warming, acid rain and other negative effects on the earth. Calculate your family's carbon footprint.

1. Does your family drive a traditional gas powered car?

If your family has a car or cars that use traditional gasoline and are not considered energy efficient, then your family car or cars will have an average gas mileage of 13 - 20 miles per gallon of gasoline. If your family car is an energy-efficient car or a hybrid, on average it can travel longer distances per tank of gas. Most energy-efficient cars or hybrids can travel 30 - 40 miles per gallon of gasoline.

$$\frac{\text{_____}}{\# \text{ of cars}} \times \frac{\text{_____}}{\text{miles driven per month}} \times 12 \text{ months} \div \frac{\text{_____}}{\text{miles per gallon}} \times 22 \text{ lbs. CO}_2 \text{ per gallon} = \text{_____}$$

2. Does your family ride the bus or use the metro/train to travel?

$$\frac{\text{_____}}{\# \text{ of family Members}} \times \frac{\text{_____}}{\text{miles traveled per day}} \times \frac{\text{_____}}{\text{days travelled per week}} \times \frac{52}{\text{weeks per year}} \times 0.5 \text{ lbs. CO}_2 \text{ per mile} = \text{_____}$$

3. Did your family travel by airplane this year?

$$\frac{\text{_____}}{\text{miles traveled per year}} \times 0.9 \text{ lbs. CO}_2 \text{ per mile} = \text{_____}$$

4. Electricity

If you look at your family's electricity bill you will find the amount of kWh of electricity your family used during the month. The average U.S. family uses between 500 and 900 kWh of electricity per month.

$$\frac{\text{_____}}{\text{kWh used one month}} \times 12 \frac{\text{month}}{\text{per year}} \times 0.5 \text{ lbs. CO}_2 \text{ per kWh} = \text{_____}$$

6. Using Gas or Electricity for Heat

Most people use gas or electricity to heat their homes. If your family uses gas to heat your home, looking at your family's gas bill will help you determine the exact number of Therms your family used during the month. The average US family that uses gas in their home uses 20-30 Therms during the summer and 50-80 Therms during the winter per month. Choose a number for either summer or winter gas use.

$$\frac{\text{_____}}{\text{Therms Per month}} \times 12 \frac{\text{months}}{\text{per year}} \times 0.5 \text{ lbs. CO}_2 \text{ per Therm} = \text{_____}$$

There are other activities that also release CO₂ into the air such as using propane gas for heat or to barbeque. Weather and length of days also affects the amount of heat and energy you use so this varies from month to month. This activity gives you an idea of your carbon footprint.

Add up all your numbers.

Total Pounds CO₂ from your family in one year _____

Things to Think About

How can you reduce your family's carbon footprint? _____

What are things you can do to help reduce CO₂ or your carbon footprint? _____

If we do not reduce CO₂ levels, what will happen to the weather, people, plants, and water on earth? _____

**The following activities allow you to learn about recycling different things.
Report in your notebook or prepare a poster on what you learned.**

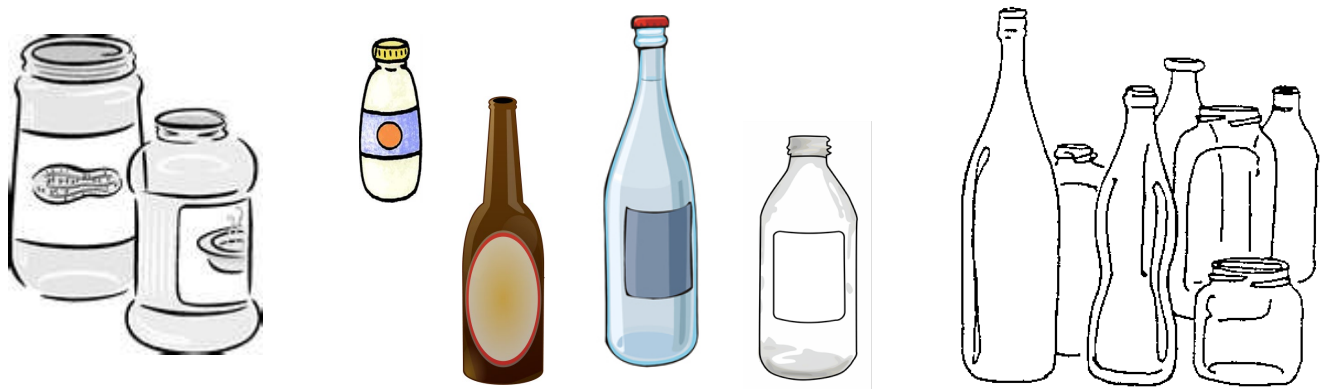
ACTIVITY 10: GLASS RECYCLING

Glass is used for many purposes in our homes, such as window panes, mirrors, jars, drinking glasses, eyeglasses and light bulbs. At the present time, the only glass we recycle is the type of glass used for bottles and jars. This is called container glass. We should not take broken mirrors or window panes to be recycled. If these non-container types of glass are mixed in with bottles and jars, it could cause an accident at the glass factory. This is because different kinds of glass have different melting characteristics.

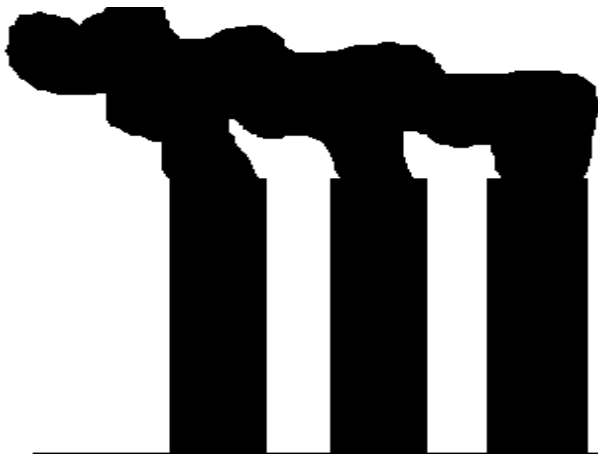
Glass is made of the elements silicon and oxygen, the two most common elements in the Earth's crust. Sand is melted to produce glass. The different colors of glass are caused by small amounts of elements other than silicon and oxygen.

Container glass is 100% recyclable. It can be used over and over again. Each bottle that is recycled means one less shovelful of sand that must be mined, transported to a factory and heated at high temperatures to melt and mold. Glass factories in the Midwest use approximately 30% recycled glass to manufacture new bottles and jars. There are at least five of these glass manufacturing plants in Indiana.

Containers with deposits, like some beverage containers, are even more environmentally sound than recyclable glass. They don't have to be re-melted each time around, which uses up energy. They are washed and reused until they get broken or chipped. Then they can be recycled by the glass manufacturers. Check your local supermarket concerning what reusable products they offer and what recycling or reuse procedures they have.



Glass Manufacturing Plants in Indiana



Recycling Works, Inc.
 605 Mason Street
 P O Box 1492
 Elkhart, IN 46515
 (574) 293-3751

Anchor Glass Container
 603 East North Street
 Winchester, IN 47394
 (765) 584-6101

Anchor Glass Container
 Foster-Forbes Glass Division
 200 W Belleview Dr
 Lawrenceburg, IN 47025
 (812) 537-1655

Owens-Brockway Glass, Inc.
 2481 South Brookside Road
 Lapel, IN 46051
 (765) 534-3121

Verallia US Glass Corporation
 524 East Center Street
 P O Box 205
 Dunkirk, IN 47336
 (765) 768-7891

Report on something you have learned about glass recycling and manufacturing.

Suggestions (You may use these or your own ideas.):

- Contact one (or more) of the glass manufacturing plants in the state and request information on glass recycling, how much recycled glass they use, the cost or savings to them for using the recycled materials, etc. You may even be able to arrange a tour of their facility. Show what your investigations turned up.
- Report on how to prepare glass for recycling, and/or the glass recycling process from store shelf back to store shelf.

ACTIVITY 11: RECYCLING PLASTICS

Think of all of the plastic products you use each day. Plastic is everywhere and in many different forms and types. There are at least 49 different types of plastic that we use in this country. Recycling technology is slowly catching up with this number, but currently only a few types of plastic can be recycled easily. Since the majority of plastics will not decompose naturally (current research has produced some corn and soy-based plastics that are biodegradable), it is very important that we learn to recycle the plastics we use.

One major problem with recycling plastics is the correct separation of different types. To help meet this need, the Society for Plastics Industry came up with a numbering system. The numbers range from 1 to 7 and are enclosed in a triangle by three arrows. The symbol can usually be found embossed on the bottom of a plastic container. The lower the number, the more recyclable the material. The most recyclable are 1's and 2's. The type of plastic found in two-liter bottles is a 1, and plastic milk jugs are 2's. The least recyclable of all are the 7's, which are usually multi-layered materials like those found in squeezable ketchup bottles. An Indiana law went into effect in January 1990 requiring this numbering system on all plastics in the state.

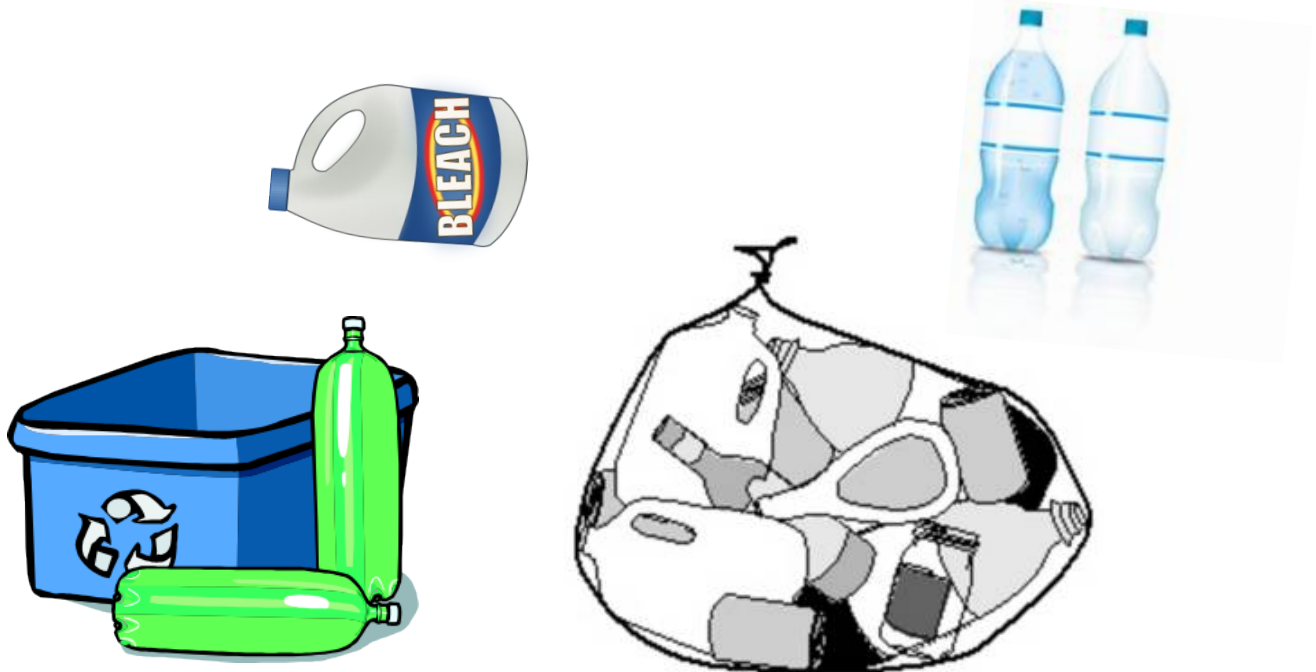


Recycling plastic is very important, but there are other things we can do to reduce the amount of plastic going into our landfills. Even plastic that is recycled can only be reused and recycled very few times, especially if it is a more difficult type to recycle. Then it becomes non-recyclable and probably goes into a landfill. Future technology may change this. To help decrease this, you should choose lower numbered plastic products whenever possible. An even better choice would be to choose glass packaging (for food items, etc.). Glass containers can be recycled over and over again. If you do not want to give up the convenience of your squeeze bottles or other plastic items, keep the ones you have now and refill them. You will be able to purchase your products in glass containers and still have the convenience of plastic.

Report on something you have learned about recycling plastics. Identify items that are packaged in each number category. Many recycling centers only accept number 1 or 2 for recycling.

Suggestions (You may use these or your own ideas.):

- Locate recycling centers or collection sites in your area, or in the county. Make a list of these, the hours of operation and any requirements for preparing the materials to be recycled. Identify how to properly identify and sort different types of plastic.
- Trace the recycling process of plastics from store shelf back to store shelf.
- Show some alternatives to some plastic use. You may want to include cost comparisons, savings (money, resources, etc.) and product life.



The average family consumes 182 gallons of soda, 29 gallons of juice, 104 gallons of milk and 26 gallons of bottled water a year. That is a lot of containers that can all be recycled.

It takes 250 years for one plastic cup to decompose.

Americans use 2.5 million plastic bottles every hour.

If there is no symbol on a plastic item, it is considered recyclable generically.

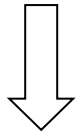
Plastic bags and other plastic garbage thrown into the ocean kill as many as 1,000,000 sea creatures a year. The Great Pacific Garbage Patch is twice the size of Texas and is floating somewhere between San Francisco and Hawaii. It is 80% plastic and weighs 3.5 million tons.

EASIER TO RECYCLE



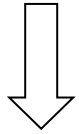
PETE

Soft drink bottles
Oven safe trays



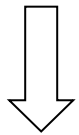
HDPE

Milk jugs
Heavy duty trash bags



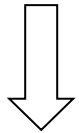
V

Credit cards
Garden hoses
Food wrap
Cooking oil bottles



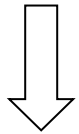
LDPE

Diaper backing
Milk jug lids



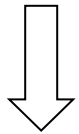
PP

Straws
Dairy tubs

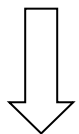


PS

Fast food packaging
Plastic silverware
Compact disc (CD) cases



Layered multi-material: Squeezable
containers



HARDER TO RECYCLE

ACTIVITY 12: RECYCLING USED MOTOR OIL



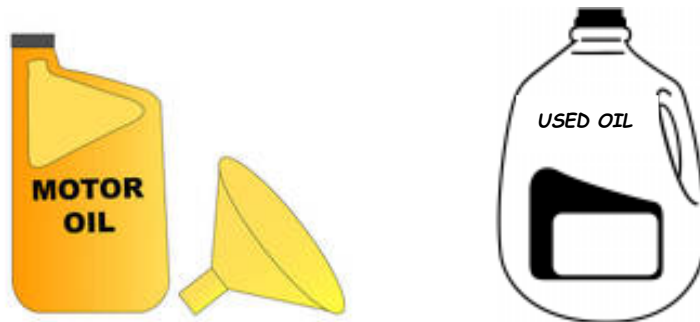
About 60% of all Americans change their automobile's motor oil themselves. In the past, most people would dump it on the ground or put oil in containers along with other trash for the landfill. They didn't know that putting oil into the ground could be harmful later.

Now we know that oil dumped on the ground or put into a landfill is forced by gravity to seep slowly into the soil and rock. Eventually the oil may pollute the groundwater. Since oil contains benzene, lead and other heavy metals that can be harmful to our health, we need to do all we can to prevent oil from seeping into our wells.

Recycling used oil has other benefits, aside from keeping our water safer. Recycling and refining (cleaning up) one gallon of used oil gives us 2 ½ quarts of clean lubricating oil. It takes 42 gallons of crude oil to give us the same 2 ½ quarts of useable oil.

How to recycle oil:

- Thoroughly clean a closed, rigid container such as a plastic milk bottle. Be sure to get all of the old liquid out and the container well rinsed.
- Put used oil into cleaned container.
- Call local gas stations and lubrication shops until you find one that will take your used oil. (They usually put it into a storage tank until another company pumps it into a truck and takes it to a refinery.)



Did you know...?

The Exxon Valdez oil spill poured approximately 12 million gallons of oil (enough oil for 9.6 million cars) into Prince William Sound in Alaska. Each year Americans pour 35 times that amount (more than 400 million gallons, or enough for 320 million cars) of used oil on the ground and into landfills.

Showing something you have learned about recycling used motor oil.

Suggestions (You may use these or your own ideas):

- Locate the gas stations and lubrication shops in your community or in the entire county that will accept used motor oil for recycling. Prepare a list including any special requirements each has for accepting the oil. Report on your findings, including the list, how to recycle oil, benefits of recycling, etc.
- Prepare a report detailing how to recycle oil, benefits of recycling and a comparison of savings or costs in recycling oil in terms of natural resources, time, money, etc.



OTHER THINGS TO THINK ABOUT

Electronic Waste has become a growing problem with the increasing number of electronic devices. What do we do with the old televisions, computers, ipods and cell phones as we trade up to newer devices?

Recycling just one million cell phones saves enough energy to power over 1,940 U.S. households with electricity for one year.

It takes 500 years for an aluminum can to decay. Aluminum cans are not the only aluminum that can be recycled. Try recycling storm door and window frames as well as car components and lawn furniture.

In addition to keeping our water supply clean and safe, what things can you do to reduce the amount of water you use? Why is this important?

Americans have dumped over 9 million tons of just about anything made of cloth into landfills nationwide. Try donating your old clothes to a charitable organization instead of sending them to the landfill.

GLOSSARY

Acid Rain – When harmful gases from cars and power plants are released into the air and fall back to the Earth with rain or snow.

Adverse Impact – Unfavorable effect.

Air Pollution- The existence in the air of substances in concentrations that are determined unacceptable. Contaminants in the air we breathe come mainly from manufacturing industries, electric power plants, automobiles, buses, and trucks.

Alternate Energy- Usually environmentally friendly, this is energy from uncommon sources such as wind power, or solar energy, not fossil fuels.

Alternate Fuels- Similar to alternative energy. Not fossil fuels, but different transportation fuels like natural gas, methanol, bio fuels and electricity.

Annual Consumption-Refers to the amount of electricity used by a consumer in one year and is typically measured in kilowatt hours (kWh). The information is available on your electric bill.

Atmosphere – The layer of gases surrounding the Earth; another word for air.

Biodegradable – Anything that eventually decomposes and becomes part of the Earth again, like paper or apple cores.

Blackwater- The wastewater generated by toilets. Not suitable for consumption.

Boycott – To refuse to buy something that was produced or caught in a harmful way.

Buyback Centers- Locations where consumers can drop off recyclables and receive payment for them.

Carbon Dioxide – A gas produced when animals (including people) breathe out, or any material containing carbon is burned.

Carbon Footprint- A measure of your impact on the environment in terms of the greenhouse gasses produced, measured in units of carbon dioxide.

Chlorofluorocarbons (CFC's) – Gases used in refrigerators, fire extinguishers, air conditioners and plastic foam, that cause damage to the ozone layer.

Climate Change- A change in the temperature and weather patterns due to human activity like burning fossil fuels.

Compact Fluorescent Lamp (CFL) – Also known as compact fluorescent light bulb it's a type of fluorescent lamp designed to replace an incandescent lamp. Compared to incandescent lights of the same luminous flux, CFL's use less energy and have a longer rated life.

Compost – A natural soil fertilizer and conditioner made from a mixture of plant and other organic wastes, decomposed under controlled conditions.

Conservation – The wise use of the resources of the environment.

Contaminant-Any item or material that reduces the quality of paper for recycling or makes it unrecyclable, such as metal, foil, glass, plastic, stickiness, food, hazardous waste, carbon paper, waxed boxes and synthetic fabrics. Collecting paper co-mingled with other recyclables may increase contaminants.

Conventional Fuels- Finite resources that cannot be replenished once they are extracted and used.

Consumer – One who purchases goods and/or services; a customer.

Decompose – To rot or decay; to break down matter through chemical change (by bacteria or fungi) into natural substances.

Ecology – The study of organisms and their environments.

Ecosystem – A community of plants and animals living together.

Endangered Species – Animals and plants in danger of becoming extinct.

Energy – Usable power such as heat or electricity and the resources for producing such power.

Environment – All the surroundings of an organism, including other living things, climate, air, water and soil.

Extinct – When animals and plants die out and are gone from the Earth forever.

Fertilizer – Any material put on or in the soil that improves plant growth.

Fossil Fuels – Fuels like coal, oil and natural gas that were formed from plants and animals buried millions of years ago.

Garbage – Food waste.

Geothermal The use of the energy from natural steam (from the natural heat of the Earth) to produce electricity.

Global Warming – An increase in the Earth's temperature, caused by a buildup of "greenhouse gases" in the atmosphere.

Green Power- Renewable energy resources such as solar, wind, geothermal, biogas, and low impact hydro generate green power.

Greenhouse Effect – When gases from factories, electric power plants and cars trap the sun's heat and warm up the Earth.

Groundwater – The supply of fresh water found beneath the Earth’s surface often used for supplying wells and springs; water that has seeped into the soil and collected in underground spaces; 90% of the world’s drinkable water.

Habitat – An area that provides an animal or plant with food, water, shelter and living space.

Hazardous Waste – Discarded material (trash) that is harmful to health and/or dangerous.

Incineration – Destruction of certain types of solid or liquid waste by controlled burning at high temperatures.

Kilowatt-hour- A kilowatt hour is a standard metric measurement for electricity.

Landfill – Disposal sites for non-hazardous solid waste which is spread in layers, compacted to the smallest practical volume and covered with material at the end of each operating day; a place where garbage is compacted and buried underground.

Leachate – A liquid that results from water collecting contaminants as it trickles through wastes, agricultural pesticides or fertilizers.

Methane – A colorless, nonpoisonous, flammable gas created by rotting of certain organic compounds when oxygen is not present.

Natural – What occurs in nature, such as trees, water, air and soil.

Non-renewable Resource – A natural resource that, because of its scarcity and the great length of time it takes to form or its rapid depletion, is considered limited in amount (examples: coal, copper, petroleum).

Organic – Made up of plant or animal materials.

Organism – Any living thing.

Oxygen – A gas that makes up about 21% of the Earth’s atmosphere; all living things need it to survive.

Oxygen Cycle- The recycling of oxygen-containing gasses between plants and animals.

Ozone Layer – A layer of gas high in the sky which protects us from the harmful ultraviolet (UV) rays of the sun that cause skin cancer and crop damage.

Packaging – The sealed wrapping of a product, covering wrapper or container.

- **Essential Packaging** – The product wrapping and sealing necessary for safe and sanitary consumption.
- **Modern Packaging** – The excessive use of plastic and/or shrink wrap to improve the appearance in order to promote the sale to the consumer.
- **Natural Packaging** – The product covering provided by nature (examples: banana peel, eggshell, nutshell).
- **Older Packaging** – The minimum packaging of a product or buying in bulk.

Pollution – The impure condition caused by contamination.

Pollutants – Man-made wastes that lower the quality of the environment by contaminating it.

Post Consumer Material- Any household or commercial product which has served its original, intended use.

Precycle – To refuse to buy things that can't be reused or recycled (such as polystyrene foam cups, containers, etc.) or things that are over packaged.

Recycle – To use over and over again.

Recycling – A system which includes the separation, collection, processing, remanufacture and the eventual resale or reuse of materials which would otherwise be disposed of as municipal waste.

Reforestation-Planting of forests on lands that have previously contained forests but had been converted to some other use.

Renewable Resource – A naturally occurring supply of something that does not get used up, like wind power or solar energy.

Repair- To fix.

Resource – A supply of something that meets a need.

Resource Recovery - Producing energy from solid waste through burning, with the removal of some recyclable materials as a result.

Reuse- Use something another time.

Sanitary Landfill- A solid waste disposal site that protects the environment from leachate.

Sewage – Solid and liquid wastes from bathtubs, toilets and sinks.

Solar Energy – Energy that comes from the sun.

Smog – Air pollution (often seen as a dark brown haze) that comes from cars and factories.

Solid Waste – Unwanted, discarded material that doesn't contain enough liquid to flow freely.

Sustainability- Environmental sustainability is the ability to maintain the qualities that are valued in the physical environment.

Synthetic – Man-made from other sources; not found in nature (example: plastic).

Threatened Species – Plants and animals that still exist in some places, but have died out elsewhere.

Thriftcycle- This term means to shop at a thrift store, buying used items.

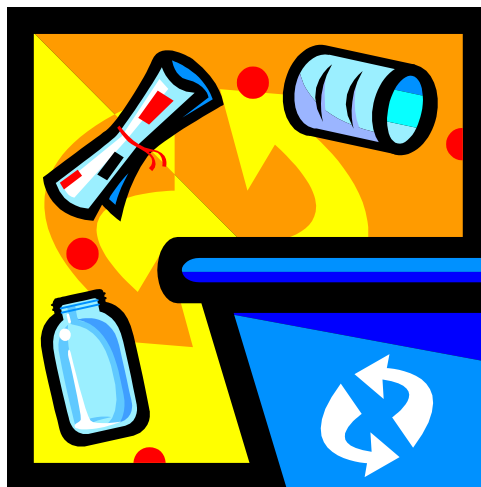
Toxic – Poisonous; dangerous to health or environment.

Toxic Waste – Discarded materials, such as some chemicals or mixtures that may produce a risk or danger to health or the environment.

Trash – Discarded items.

Water Cycle- The recycling of water between the earth and the atmosphere.

Waste Water – Discarded water carrying dissolved or floating solids from homes, farms, businesses or industries.



Recycling Resources

Websites

There are many resources on the web that can help you learn about recycling. Here are a few.

<http://www.afn.org>
<http://www.sprintrecycling.com>
<http://www.dosomething.org/tipsandtools>
<http://www.planetpals.com>
<http://www.ecy.wa.gov/programs/swfa/kidspage>
<http://earth911.org/recycling>
<http://www.recycling-guide.org.uk>
<http://www.greenplanet4kids.com>
<http://www.thestoryofstuff.com>

Books

There are many books that can help you learn about recycling. Here are a few.

50 Simple Things Kids Can Do to Recycle by The Earthworks Group
Loaded with ideas to try at home, school, or anywhere!

Be A Friend to Trees by Patricia Lauber
Explains why trees are a valuable natural resource and what we need to do to protect them. Offers ideas on ways kids can help save trees.

The Big Book for Our Planet by Ann Durell, ed.
Over forty of the best-loved children's authors and illustrators pool their talents in a single volume to honor the Earth.

Captain Eco and the Fate of the Earth by Jonathon Porritt
Captain Eco and friends set off on a mission to save the Earth. Caption Eco explains the environmental dangers facing our planet. Written like a comic strip.

Recycle: A Handbook For Kids by Gail Gibbons
This book provides information for children about how to separate different types of materials and how they are recycled into other products.

Earth Book for Kids: Activities to Help Heal the Environment by Linda Schwartz
Filled with ideas for arts and crafts projects, experiments, and experiences that encourage children to enjoy and heal the environment.

SOLID WASTE CHECKLIST

Complete each year of this project.

BRING WITH PROJECT

How many of these things do you and your family practice? Place an "x" in the appropriate column for those practices you and your family do on a regular basis. There is room to add some of your own.

Date Completed _____

By _____

	I do now	I do some-times	I might do	I don't want to do	I can't do
1. Use paper plates and cups instead of plastic.					
2. Use reusable plates and cups instead of disposable.					
3. Buy glass and aluminum containers instead of plastic.					
4. Write on both sides of paper before recycling it.					
5. Buy paper towels, napkins, and toilet paper made from 100% recycled fibers.					
6. Give used magazines to nursing homes and hospitals.					
7. Say, "Thanks, I don't need a bag," when buying small items.					
8. Purchase items in bulk to cut down on packaging.					
9. Buy eggs in paper rather than foam cartons.					
10. Buy juice in concentrate rather than big plastic containers.					
11. Use canvas bags at the grocery store.					
12. Leave grass clippings on the lawn to reduce yard waste.					
13. Make a compost pile in your yard and turn yard wastes into fertilizer.					
14. Save newspapers for recycling.					
15. Use plastic bags over and over.					
16. Use a lunch box or reusable lunch bag to school.					
17. Plant trees.					
18. Fix or recycle things instead of throwing them out.					
19. Donate outgrown clothes to others.					
20. Share or trade books and games with your friends.					
21. Use old panty hose to tie up tomato, pepper and other plants.					
22. Recycle used motor oil by taking it to a garage, auto parts store or hazardous waste collection.					
23. Turn out lights when leaving a room.					
24.					
25.					
26.					
27.					
28.					
29.					
30.					

Each of us can do our part in helping to reduce the amount of solid waste going into our landfills. After completing the checklist what habits did you and your family change?