



AN ENVIRONMENTAL
PATCH PROGRAM
designed by
Girl Scouts of NE Kansas &
NW Missouri



***The Earth is my home.
I promise to keep it healthy and beautiful.
I will love the land, the air, the water, and all living creatures.
I will be a defender of my planet.
United with friends, I will save the Earth.***

From Clinton Hill's *Kids for Saving the Earth*



Program Age Level:

The *Earth Saver Patch* Program is designed for Junior Girl Scouts and above. Troop groups or individual Girl Scouts can earn this patch.

Purpose:

Girl Scouts can make a difference. By completing the Earth Saver Patch, you will learn how to conserve energy and water, decrease the amount of resources used at home, and participate in activities that will make our planet a better place to live.

Requirements:

The program is divided into four sections: EARTH, ENERGY, WATER, and AIR. Each section has five steps that need to be completed. Once all sections are finished, the patch is complete.



INTRODUCTION

Fossil fuels, precious metals, forests, oceans and rivers, air, and soil are some of the resources found on Earth. Every day, thousands of people do activities that affect the air we breathe, the water we drink, and natural resources we use. Some of these resources are non-renewable meaning that once they are used - they are gone or changed forever.

Many every day items like gasoline, aluminum cans, paper, and pencils come from natural resources. People can reuse or recycle some of these resources; however the average American family throws away over 100 pounds of trash every week. This amount of trash can fill the Louisiana Superdome twice a day. A lot of time, energy, resources, and money is spent on making products people use on a daily basis.

DID YOU KNOW...

- ❖ The United States consumes more than 450 billion gallons of water every day.
- ❖ The average American family uses over 1,300 gallons of oil every year.
- ❖ Every week, it takes approximately 500,000 trees to supply Americans the Sunday paper
- ❖ 500 new landfills are created annually nation-wide to accommodate the amount of trash produced in the United States.
- ❖ About every three months, America throws away enough aluminum to build a commercial air fleet.



EARTH

Sand from the Earth is used to make glass bottles and jars. Newspaper, magazines, cardboard, pencils, and wood furniture are made from trees. Oilrigs take petroleum also known as oil deep from inner Earth to make plastic, clothes, and cleaning detergents. Aluminum and steel are mined to create cans to hold food and drinks. The Earth provides resources that enable engineers, scientists, and manufacturers to create items that are used in our everyday lives. For example, every person that throws away a glass bottle contributes to the 28 billion bottles and jars thrown away every year. People need to use resources wisely in order for natural resources not to be depleted from the Earth. Reducing, reusing, and recycling items in our trash can help resources be used over and over and over again.

Follow the listed steps to complete these activities in the EARTH section.

GARBAGE SURVEY

Circle the items found in your trashcan at home.
Place an **X** on the items that are already recycled at home.



Tin/steel cans



Aluminum cans & foil



Glass containers



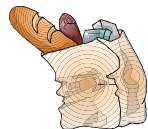
Newspapers & Magazines



Paper



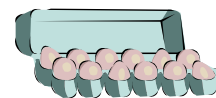
Cardboard boxes



Paper & plastic bags



Plastic #1 & #2 Bottles



Paper egg cartons & paperboard i.e. Kleenex boxes

ASSESSING YOUR GARBAGE



Answer the following questions.

1. Which items circled in the Garbage Survey could have been recycled by you or someone else?
2. Does your community have a place to recycle any of the items in the Garbage Survey? If you do not know, call 816.474.TEAM or go to www.recyclespg.org to find the nearest recycling center to you.
3. Are there any items in your trash that can be substituted with a more "Earth Friendly" product or an item that can be recycled?
4. What are the benefits or drawbacks of recycling to your family?
5. How does it help the Earth to reduce, reuse, and recycle items from your trash at home?



THE MAP OF TRASH

Draw a picture or explain in words where your garbage goes once it leaves your home.



PUT RECYCLING INTO ACTION

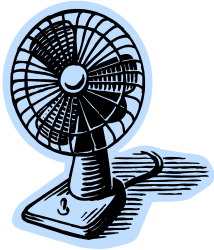
Share with your family or your troop the results of the Garbage Survey. Discuss what changes could be made to reduce, reuse, and recycle items at home.

EARTH SAVER PROJECTS

Choose one of the following projects or create your own Earth Saver Project.



- ❖ Recycle old toys by giving them to a homeless shelter or a day care center.
- ❖ Plan a clothing drive. Donate used clothing to organizations that distribute to those in need.
- ❖ Create and post anti-liter signs in your neighborhood or school. Get permission from owners before posting.
- ❖ Cleanup and maintain a trail or lot to keep free of litter.
- ❖ Develop a public awareness program on recycling to help the Earth.



ASSESSING YOUR ENERGY USE



Answer the following questions.

1. What other items in your home use energy that were not listed (i.e. refrigerator or air conditioner) on the Energy Survey?
2. What are other forms of energy beside gasoline, coal, or electricity?
3. From what source does the human body obtain energy?
4. Look at the Energy Survey. At any time, do you feel that energy was being wasted? If so, how?
5. How can you reduce and use energy more efficiently in your home? How would this affect the Earth?

THE FLOW OF ELECTRICITY

Below is a picture of a house. Draw or explain where the source of your home's energy comes from.



WHICH WAY TO GO

Review the results of the Energy Survey with your family or troop. Is it a lot of energy? Is it necessary? Discuss how energy can be reduced in your home.



EARTH SAVER PROJECTS

Choose from one of the following projects or create your own Earth Saver Energy Project to complete the activities in the Energy section.

- ❖ Gather pamphlets and articles on ways to save energy. From these sources, choose energy saving habits like turning off lights, using dishwasher only when full, etc.
- ❖ Make energy watcher tags for your home. On each tag, write energy saver tips to remind family members to help save energy. Examples: "Turn off the light." or "Turn off the T.V. when no one is watching."
- ❖ Conduct a home energy saver campaign. Have family members keep track of the energy they use and discuss what changes can be made.
- ❖ Share the results of your Energy Survey with a group besides your family or troop. Create posters, write poems, give a speech, or present a skit on how that group can use energy more efficiently.

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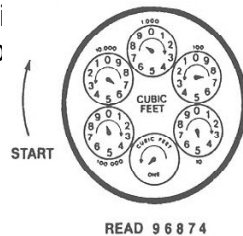
WATER

Since the formation of Earth, every living creature has required water to live. That is hard to believe because the same amount of water exists on the planet since the Earth's creation; however, the amount of water available has decreased. Why? One reason is the world's water usage has tripled since the 1950's resulting in more water being used as well as becoming polluted from household and commercial waste. Just in the United States alone 450 billion gallons of water is used everyday. It is important to use our water wisely. In a house, a slow drip from a kitchen faucet can lose 15 to 20 gallons of water. On the other hand, if a business dumping large quantities of toxic waste into the water, organisms living in the water can be killed. Luckily, there are laws in place to regulate the amount of chemicals dumped into lakes and rivers, yet pollution of water can simply come from a gas leak in a car.

Follow the listed steps to complete the WATER section.

WATER SURVEY

Learn to read a water meter and determine the average water use in your home. (If your water meter is not working, you can obtain usage from your water bill.) Complete this activity by



To read, note dials on the circles in the illustration. When a pointer is between two figures read the lower figure. If a pointer seems directly to be on a number, still read the lower number. If this was your water meter; the reading would be 96874 cubic meters.

Fill out the table below to find out how much water your family uses.

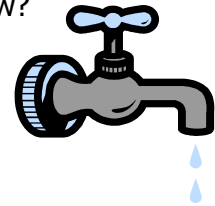
WEEK	READING	TABULATION	AMOUNT OF WATER USED
1.		Divide by 7.48 to convert to gallons.	
2.		Convert to gallons and subtract first week reading to determine average use in one week	

ASSESSING YOUR WATER USAGE

Answer the following questions.

1. How much water did you and your family use in one week? Two weeks?

2. At any point in time, did you feel you were wasting water? How?



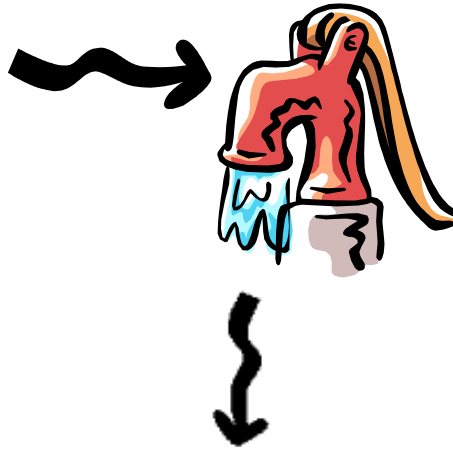
3. Are there any appliances at home like your washing machine or dishwasher that is not using water efficiently?

4. What can you do to limit the amount of water you use?

5. What types of chemicals or cleaning agents does your household add to water? Are they good or bad? Why?

THE CYCLE OF WATER

Water that leaves a bathtub or the kitchen sink goes through an intensive purification process. Diagram the journey from where your water comes from (a well or public water system) and what happens to the water after reaching a water treatment plant.



SAVING EVERY DROP



Share your findings from the Water Survey. Take the time to list water saving practices that your family or troop can implement to decrease the amount of water being used. In addition, look at detergents, soaps, and cleaning supply residues that end up going down your drain. Talk about how these chemicals affect the water supply and what other alternatives could be used.

EARTH SAVER PROJECTS

Choose from one of the following projects or create your own Earth Saver Water Project.

- ❖ Contact a local business in your community. Find out what they are doing to reduce their amount of emissions that affect air pollution. Research the Clean Air Act to find out what a business needs to do to stay within the legal limit.
- ❖ Plant a tree. Trees keep our air supply fresh by absorbing the carbon dioxide that we exhale and also pollutants that come from factories and automobiles.
- ❖ Inspect your family's vehicle at home. A well-tuned car uses gas more efficiently. Keep track of the gas mileage for approximately three weeks. If there is a sudden change, you know the car isn't using gas efficiently and the problem needs to be fixed.
- ❖ Visit an old cemetery. Observe tombstones from various time periods to see if there has been any acid rain damage. Find out what is being done to preserve these landmarks.



ASSESSING YOUR AIR

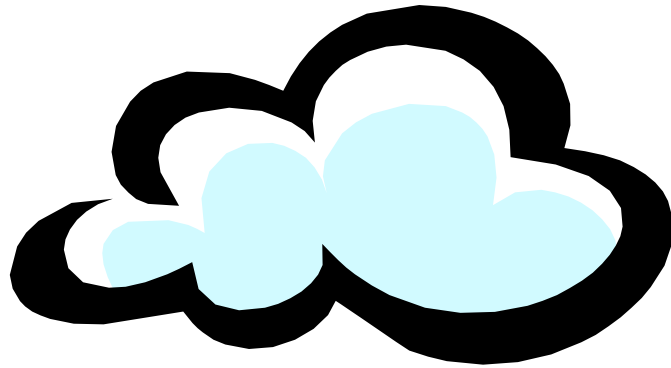
Answer the following questions.

1. Did you find anything in your home or in your neighborhood that was contributing to air pollution?
2. What can you do that would decrease the chemicals emitted into the air?
3. Why are aerosol cans and Freon in refrigerators dangerous to the air?
4. Look at the local weather station or log onto the Internet. What is the ozone reading for today?
5. Do you know someone that has allergies or asthma? Ask them if there are days their allergies are really bad. Are there allergies influenced any by the air they breathe?



WHAT IS IN THE AIR?

Below you will find a picture of a cloud. Diagram how the air becomes polluted and what happens to those chemicals in the air.



CLEAR THE AIR

Talk with your family or troop how the air you breathe is being impacted. Discuss things you feel you can do differently to help the quality of air.

EARTH SAVER PROJECTS

Choose from one of the following projects or create your own Earth Saver Air Project .

- ❖ Contact a local business in your community. Find out what they are doing to reduce their amount of emissions that affect air pollution. Research the Clean Air Act to find out what a business needs to do to stay within the legal limit.
- ❖ Plant a tree. Trees keep our air supply fresh by absorbing the carbon dioxide that we exhale and also pollutants that come from factories and automobiles.
- ❖ Inspect your family's vehicle at home. A well-tuned car uses gas more efficiently. Keep track of the gas mileage for approximately three weeks. If there is a sudden change, you know the car isn't using gas efficiently and the problem needs to be fixed.
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Wonders, Allision and Jami Edelheit. *The Global Kidz Handbook #2.* Global Press Works. 1991.

www.bridgingthegap.org

www.mora.org

The patch can be purchased in the Girl Scout Shop in Topeka, St. Joseph, Kansas City, or on line.

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