

The Housatonic Resources Recovery Authority

Wipe Out Waste

Recycle Right

Guide & Activity

Book



Fun Facts · Games · Crafts

The Housatonic Resources Recovery Authority is excited to bring you this recycling guide of facts, games and crafts. If we all pitch in to reduce, reuse and recycle to close the loop, we'll save the earth's natural resources and lots of energy! This guide shows you many fun and simple ways that you can do your part.

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Answer Keys to Puzzles and Games

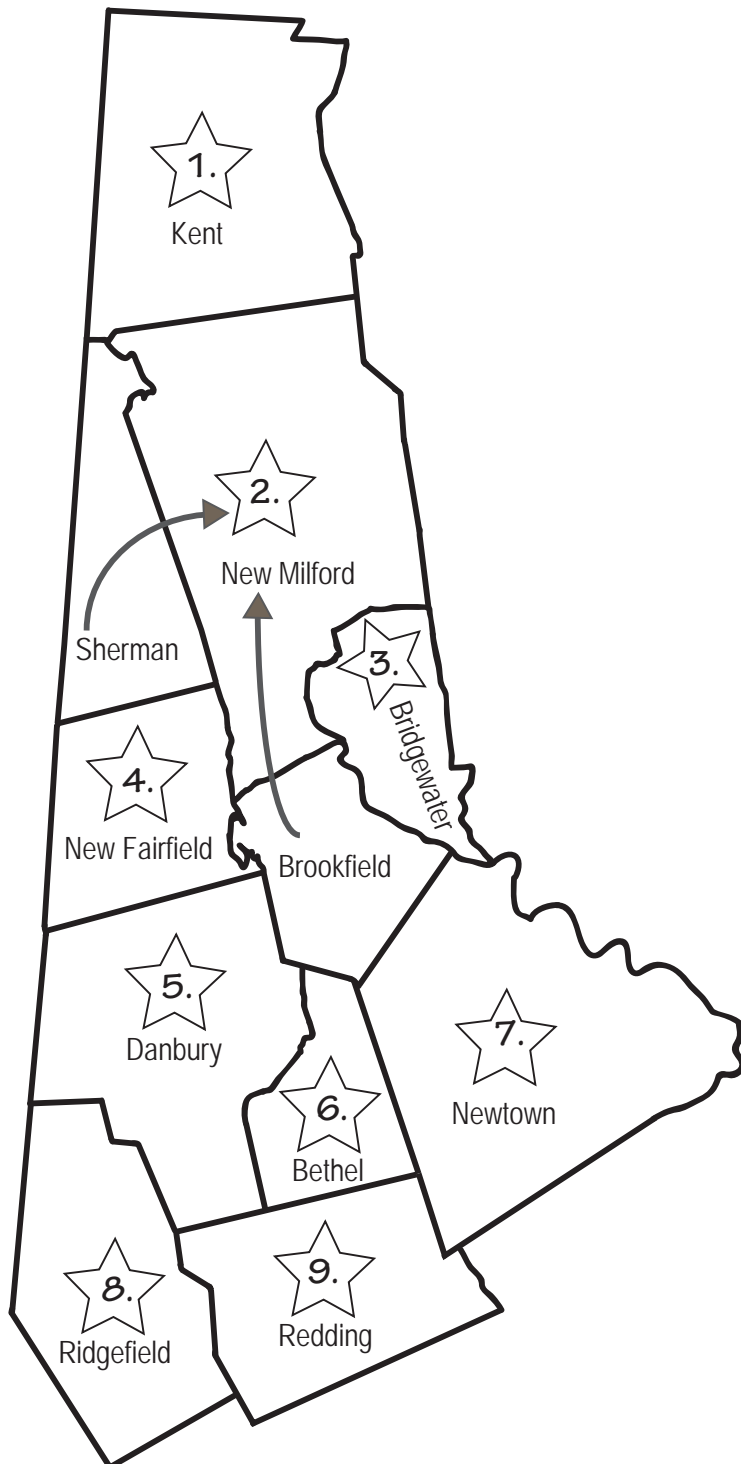
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Find more info on waste and recycling at www.hrra.org
Send emails to info@hrra.org

Created in 1989, the Housatonic Resources Recovery Authority, also known as HRRRA and pronounced "Hurrah", is the regional municipal solid waste (MSW) and recycling management organization for the Housatonic Valley municipalities of Bethel, Bridgewater, Brookfield, Danbury, Kent, New Fairfield, New Milford, Newtown, Redding, Ridgefield, and Sherman.

Learn more about HRRRA by visiting www.hrra.org or visiting us on Facebook

Find your town's recycling center, and color it in.



1. Kent Transfer Station

Maple St (Rte 341 East)
860.927.4627

2. New Milford Recycling Center

(For New Milford, Sherman and
Brookfield Residents)
18 Young's Field Rd
860.355.6044

3. Bridgewater Town Garage

324 Hut Hill Rd
860.354.2441

4. New Fairfield Drop off Center

41 Bigelow Rd
203.312.5677

5. Danbury Mom & Pop Recycle Center

307 White St.
203.744.8260

6. Bethel Transfer Station

1 Sympaug Park Rd
203.778.7436

7. Newtown Transfer Station

Ethan Allen Rd
203.270.4307

8. Ridgefield Transfer Station & Recycling Center

55 South St
203.775.4539

9. Redding Transfer & Recycling

84 Hopewell Woods Rd
203.938.3026

How much garbage do we make?

- One person generates 4^{1/2} pounds of trash every day. That's more than 1,600 pounds of trash every year.
- A family of four produces more than 3^{1/4} tons of trash every year.
- In the HRRR region we make about 130,000 tons of trash per year.
- In CT we generate more than 3 million tons of trash each year.

What happens to our garbage?

Did you think it goes to a landfill? Not in Connecticut! We closed all our landfills many years ago. Waste in Connecticut gets burned and is made into energy. That energy powers homes.

Trash disposed of within the HRRR region goes first to one of three transfer stations in the region, located in Danbury, Newtown and Ridgefield. From the transfer station the trash is loaded into large tractor trailer trucks and shipped to the Wheelabrator waste-to-energy plant in Bridgeport, CT.

The Wheelabrator Bridgeport waste-to-energy facility provides dependable, environmentally safe disposal of municipal solid waste for more than two dozen towns and cities in Connecticut, while generating clean, renewable electricity for sale to the local utility. The plant processes up to 2,250 tons per day of garbage. Wheelabrator Bridgeport has an electric generating capacity of 67,000 kilowatts; the equivalent of supplying the electrical needs of 83,000 Connecticut homes.

See how a waste-to-energy plant works.

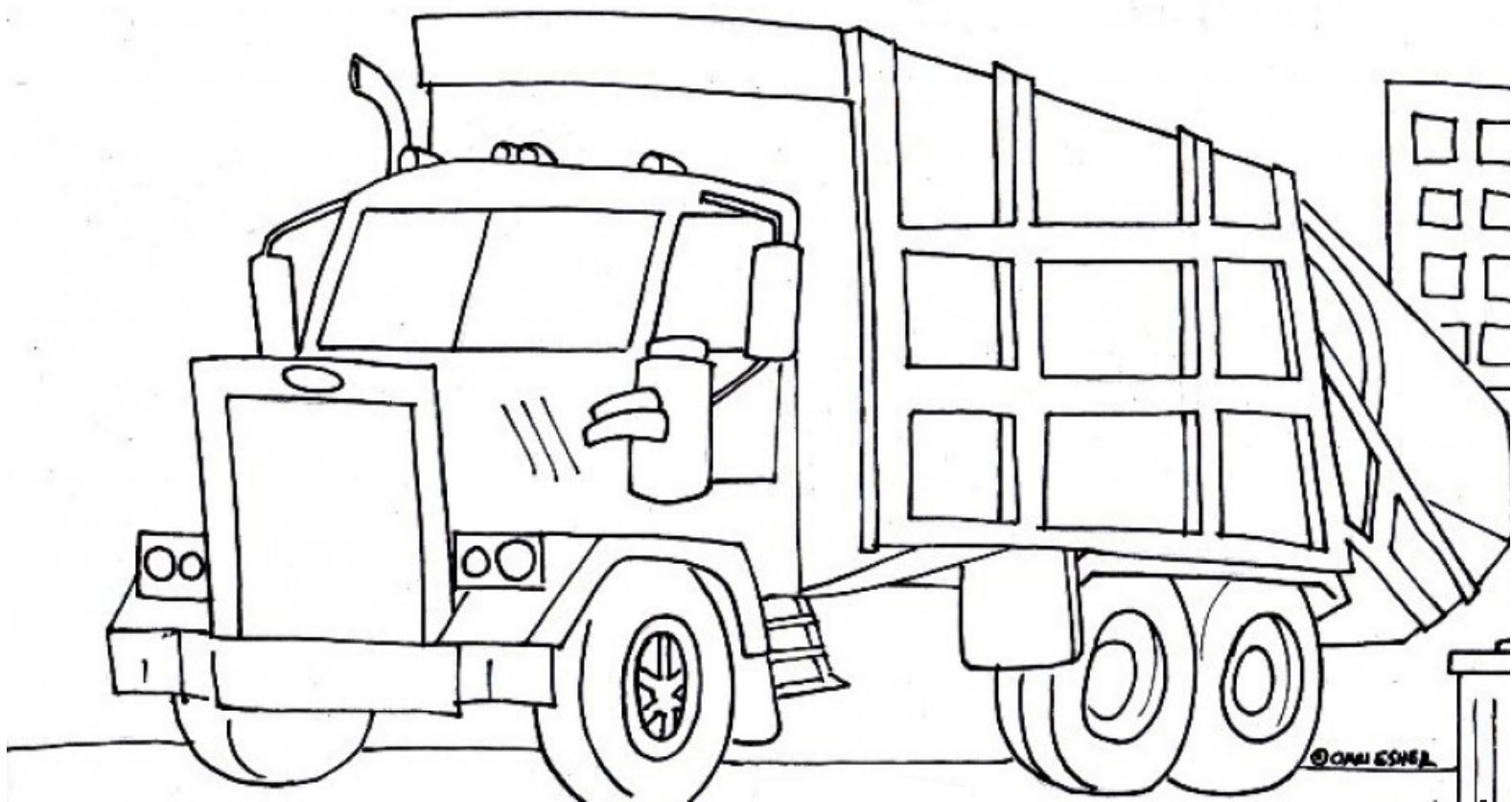
Visit www.hrrr.org to see an animated video.

How do we make less garbage?

It's simple, we can all Re-think what we throw away everyday by practicing the 3-R's Reduce - Reuse - Recycle!



How much
Garbage
do you
make?



Reduce

Reduce means finding ways to decrease, or lessen, the amount of garbage we throw away!

Ways your family can reduce trash:

- Pack a reuseable lunch box instead of a paper bag. You won't have to throw away a paper bag every day.
- When you make a purchase don't take a bag unless you need one. (Be sure you get the receipt!)
- Rent items you use infrequently, rather than purchase them.
- Wrap your gifts in a cloth bag so it can be used over again. (Wrapping paper is often only used once).
- Use cloth napkins instead of paper napkins.
- Use a sponge or cloth rag instead of paper towels.
- Always look for items with little or no packaging.
- Use reusable plastic containers for food instead of plastic zipbags.
- Use rechargeable batteries instead of disposable ones.
- Go to the library to read your favorite magazine, book or newspaper, or read them online rather than purchase new ones.
- Use plates, cups and utensils you can wash instead of paper plates, cups and plastic utensils that you throw away.
- Purchase items in concentrate (such as juice and detergent) when possible.
- Choose products in recyclable or refillable containers.
- Buy food items in bulk, not in single serve packaging.

ReThink

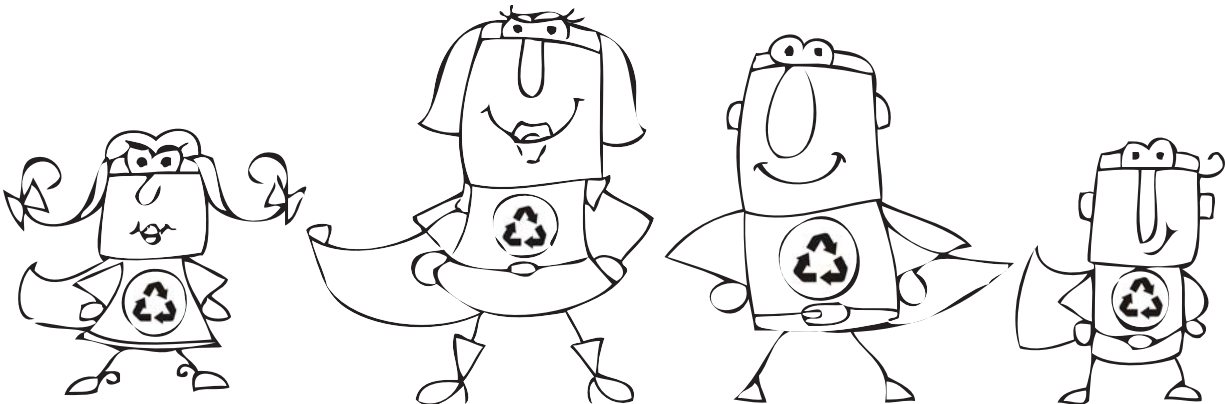
Write the name of the family with the GROCERY LIST that is better at reducing waste: _____

Watago Family List

- Juice in large bottles
- Rechargeable batteries
- Cereal in large economy box
- Glass plates, cups & bowls
- Fresh fruit & vegetables
- Lunchbox
- Thermos
- Cloth napkins
- Bars of soap

Wattsamata Family List

- Juice boxes
- Regular batteries
- Small single-serving cereal boxes
- Paper cups, plates and bowls
- Canned fruit and veggies
- Paper lunch bags
- Six pack of soda
- Paper napkins
- Soap in plastic dispensers



Reuse

Reuse means finding ways to use things over and over again instead of throwing them away!

By reusing we are saving natural resources and raw materials it would take to make a new product.

Here are some examples of reusing:

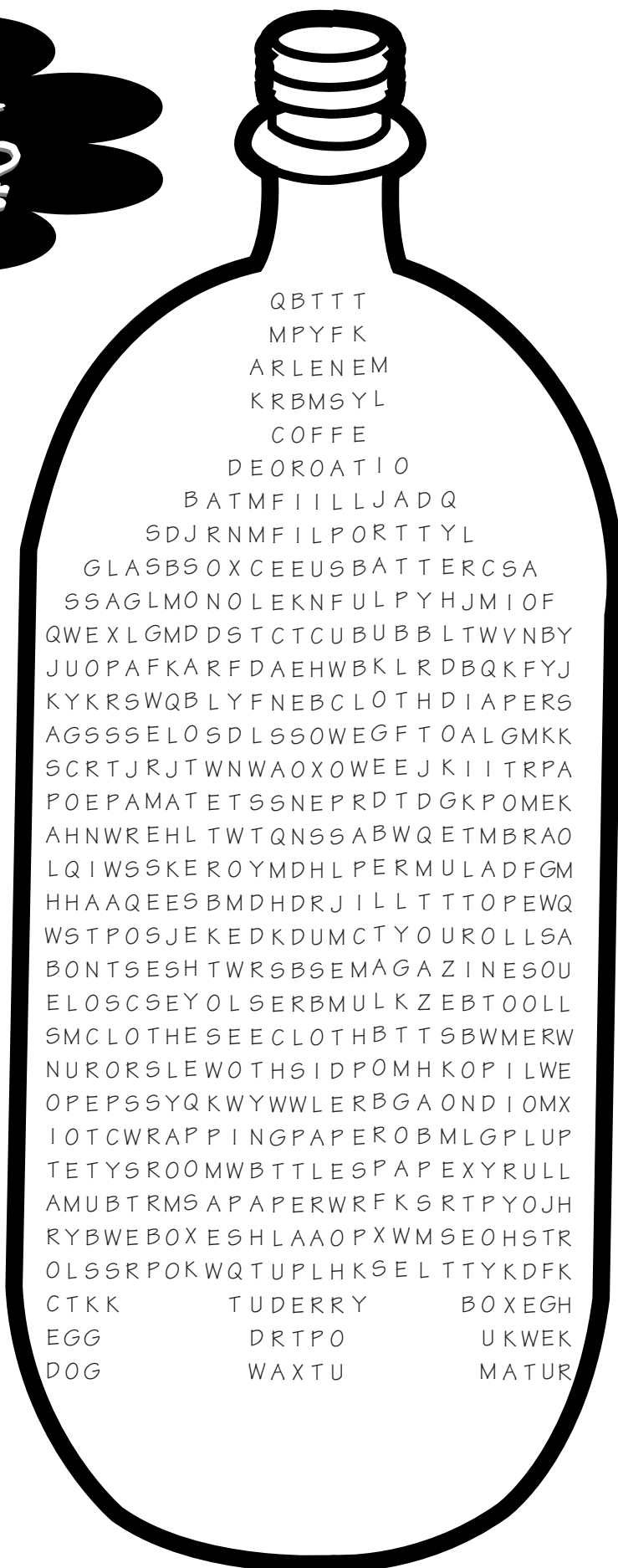
- Refill your reusable bottles or canteens with water or another favorite beverage.
- Use both sides of your paper before recycling it.
- Purchase a book from a used bookstore.
- Have a broken item repaired rather than purchasing a new item.
- Sell or donate things instead of throwing them away.
- Reuse the Sunday Funnies as gift wrap.



What Can You Reuse?

Can you believe that some people think the only thing you can reuse is your toothbrush? We know better, don't we? All the items listed here are examples of things we use everyday that we can reuse over and over and over and over (well, you get the idea). See how many of the items you can find in the word search below. Circle each word you find!

Boxes
Bubble Wrap
Butter Containers
Cloth Diapers
Clothes
Coffee Cans
Decorations
Dish Towels
Foil
Glass Jars
Lunch Boxes
Magazines
Ribbon
Paper
Shoes
Soda Bottles
Wrapping Paper



Recycle

Recycle means taking something old and turning it into something new!

Most items that can be recycled can be placed into one container and taken to your local recycling center or placed at the curb for pick up.

To find out where your nearest recycling center is visit our website at www.hrra.org or see page 2.

Get others to recycle

- It is important that we ALL recycle in order to save the Earth's natural resources.
- You can help by telling others to recycle. This includes your family, friends and teachers.

Start or participate in a recycling program

You can start a recycling program in your school or neighborhood; organize or volunteer at a recycling day at a beach or park; take a fieldtrip to learn more about recycling; or teach others about recycling.

You can also contact your local government to encourage placement of recycle bins in parks and recreational areas.

Close the loop, buy Recycled

All of these can be made from
recycled materials.

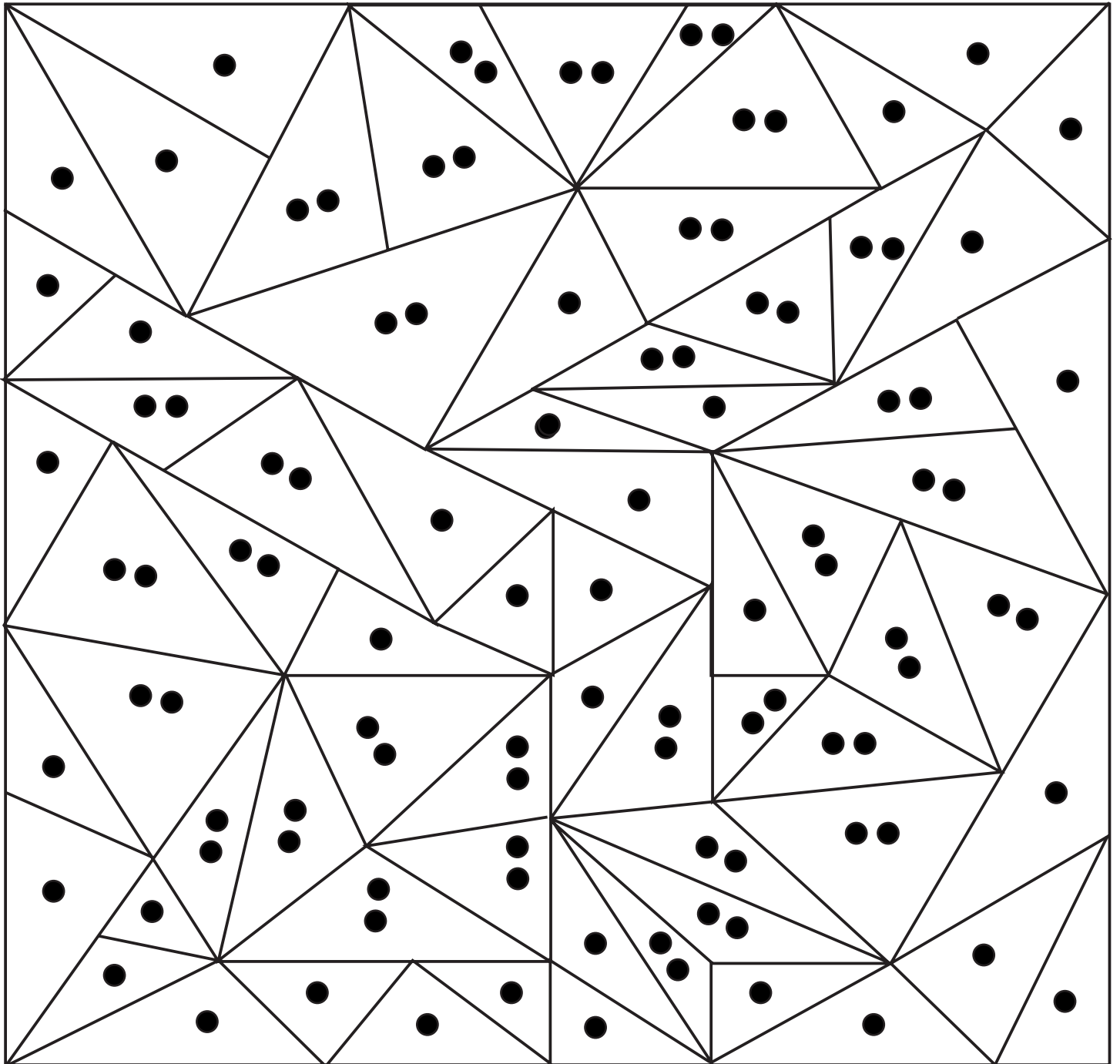
<i>carpet</i>	<i>picnic table</i>
<i>bag</i>	<i>floor mat</i>
<i>tile</i>	<i>book</i>
<i>shoes</i>	<i>park bench</i>
<i>toys</i>	<i>clothing</i>
<i>pencil</i>	<i>envelope</i>
<i>box</i>	<i>paper towels</i>
<i>ruler</i>	<i>binder</i>

How many can you find hidden below?

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



Color the areas and find the hidden symbol. Color areas with one dot yellow. Color areas with two dots blue. Do you know what this symbol means?



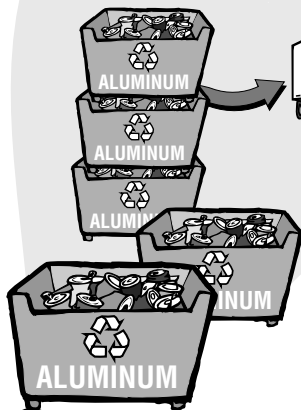
Earth

Keep the Earth Green and Blue!
Always Reduce, Reuse and Recycle.

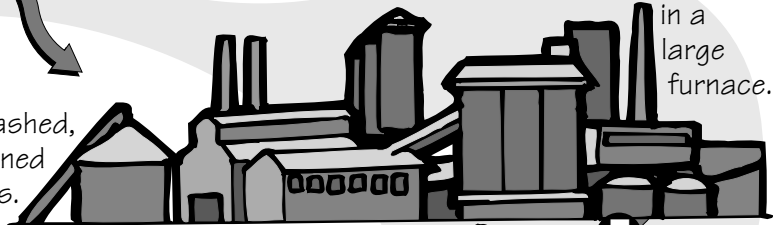


How Aluminum is Recycled

2 The aluminum cans are transported to a processing facility where they use a big magnet to remove other types of metal cans while they go down the conveyor belt.



3 The aluminum is washed, shredded and turned into aluminum chips.



4 The aluminum chips are melted in a large furnace.

1 You can take your aluminum beverage cans back to the store to reclaim your deposit or to a recycling center or leave them in recycling bins at your curb (if you have curbside service).

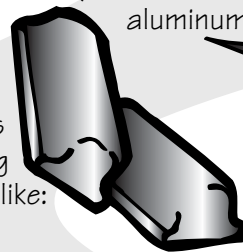


The aluminum beverage can returns to the grocer's shelf as a new, filled can in as little as 60 days after being recycled.



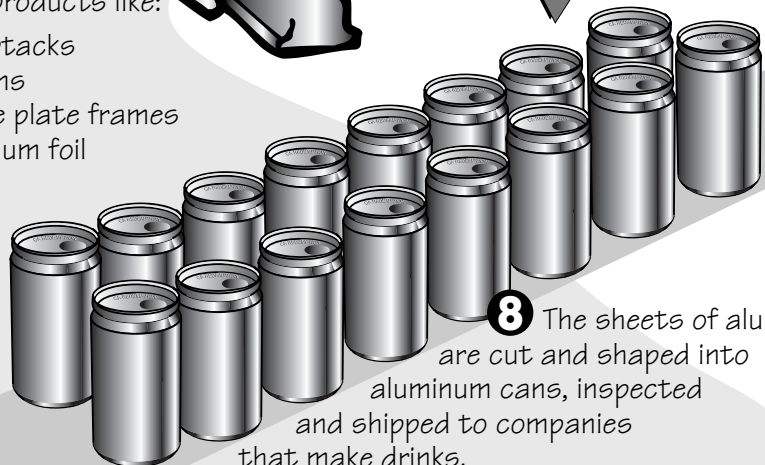
7 Ingots are also sold to manufacturers of aluminum products. These manufacturers melt the ingots down for molding into new products like:

- thumbtacks
- pie pans
- license plate frames
- aluminum foil



6 The ingots of aluminum are taken to a can-making factory. There, the aluminum ingots are melted into rolls of flat sheets of aluminum (similar to thick aluminum foil).

5 The liquid aluminum is poured into molds that make them into large blocks of aluminum. The blocks are called ingots.



8 The sheets of aluminum are cut and shaped into aluminum cans, inspected and shipped to companies that make drinks.

Aluminum

FACTS

Aluminum is the most common metal found within the earth's crust (8 percent) but does not occur as a metal in its natural state. Aluminum ore (bauxite) must first be mined then chemically refined to make aluminum oxide (alumina). Alumina is then refined into the pure metal by an electrolytic process.

One ton of recycled Aluminum saves:

- 14,000 kWh of electricity
- 1,663 gallons of oil

It takes 80-100 years for an aluminum can to decompose, break down and disappear.

Aluminum cans can be recycled into: soda cans, pie plates, thumbtacks, license plates, aluminum foil, and many other items.

Recycling aluminum takes 95% less energy than making it from raw materials.

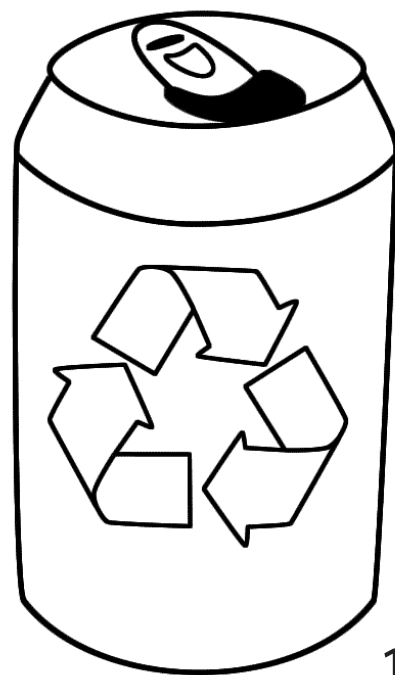
Recycling ONE aluminum can saves enough energy to run a TV for three hours.

Recycled aluminum can be returned to store shelves in as little as 60 days.

About 120,000 cans are recycled every minute nationwide.

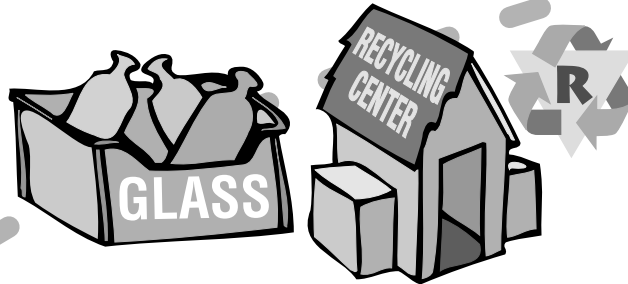
NOTE: The kilowatt hour (symbol kWh) is a unit of energy equal to 1,000 watt-hours.

There is no limit to the number of times an aluminum can may be melted down and reused... that means aluminum can be recycled and reused forever!

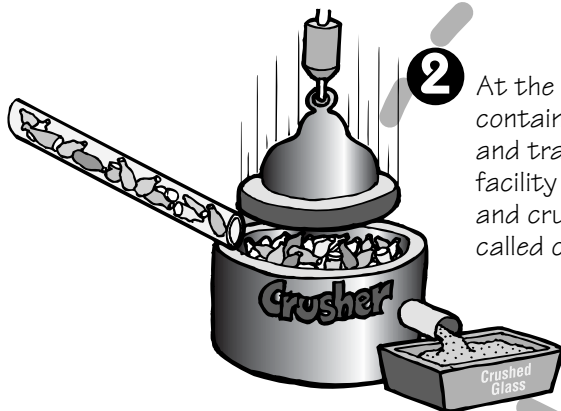


Glass Recycling Process

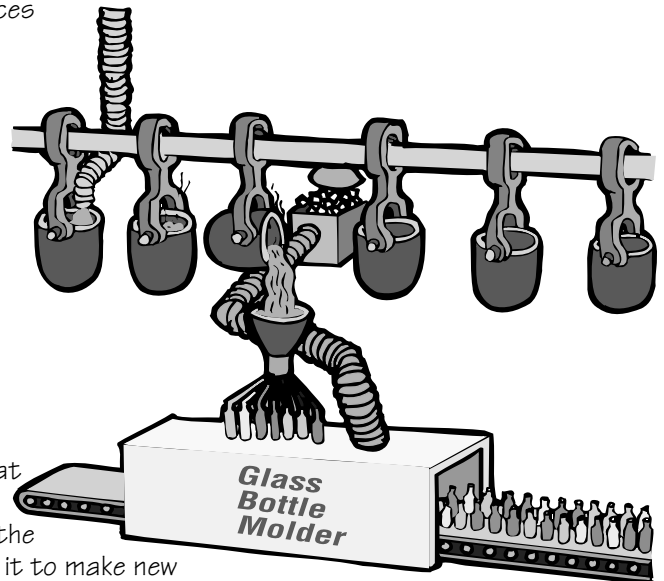
Have you ever thought about what happens to the glass bottles that you place into your curbside recycle bin or take to the recycling center to be recycled? Recycled glass can be used to make marbles, jars, bottles, plates, bowls, tile and more! This is how:



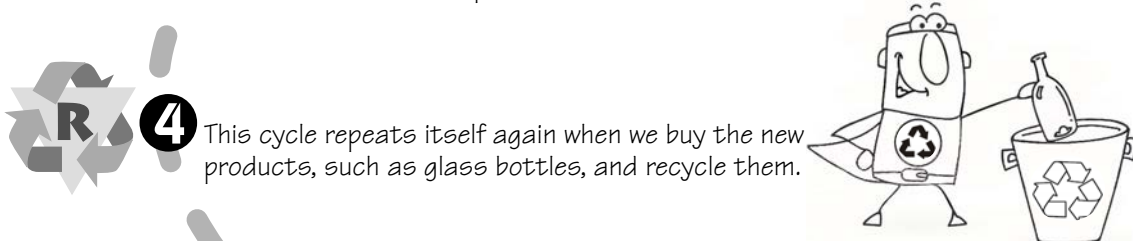
- 1** The glass bottles collected from your curbside bins are taken to the recycling center.



- 2** At the recycling center, the glass containers are sorted by color and transported to a processing facility where they are cleaned and crushed into tiny pieces called cullet.



- 3** Companies that make glass products buy the cullet and use it to make new products.



- 4** This cycle repeats itself again when we buy the new products, such as glass bottles, and recycle them.



Glass

FACTS

Glass is made of soda ash, limestone and lots of sand. The mixture is put into a very hot furnace and when it melts, it turns into glass. Heating the furnace takes a lot of energy!

One ton of recycled glass saves:

- 42 kWh of electricity
- 5 gallons of oil
- 1,330 pounds of sand
- 433 pounds of soda ash
- 433 pounds of limestone
- 151 pounds of feldspar

Glass takes over 1,000,000 (one million) years to decompose (break-down and disappear).

Glass can be recycled into jars, bottles, jewelry, dishes, drinking glasses, coffee mugs and many other items.

Reuse your glass containers as a vase, pencil holder, or a container to hold a collection of things like buttons. When you're done reusing your glass container, recycle it!

Recycling glass takes 30% of the energy required to produce glass from raw materials. Recycled glass melts at a lower temperature than new materials, so it takes less energy to heat the furnace.

Recycling one glass bottle saves enough energy to light a 100-watt lightbulb for four hours.

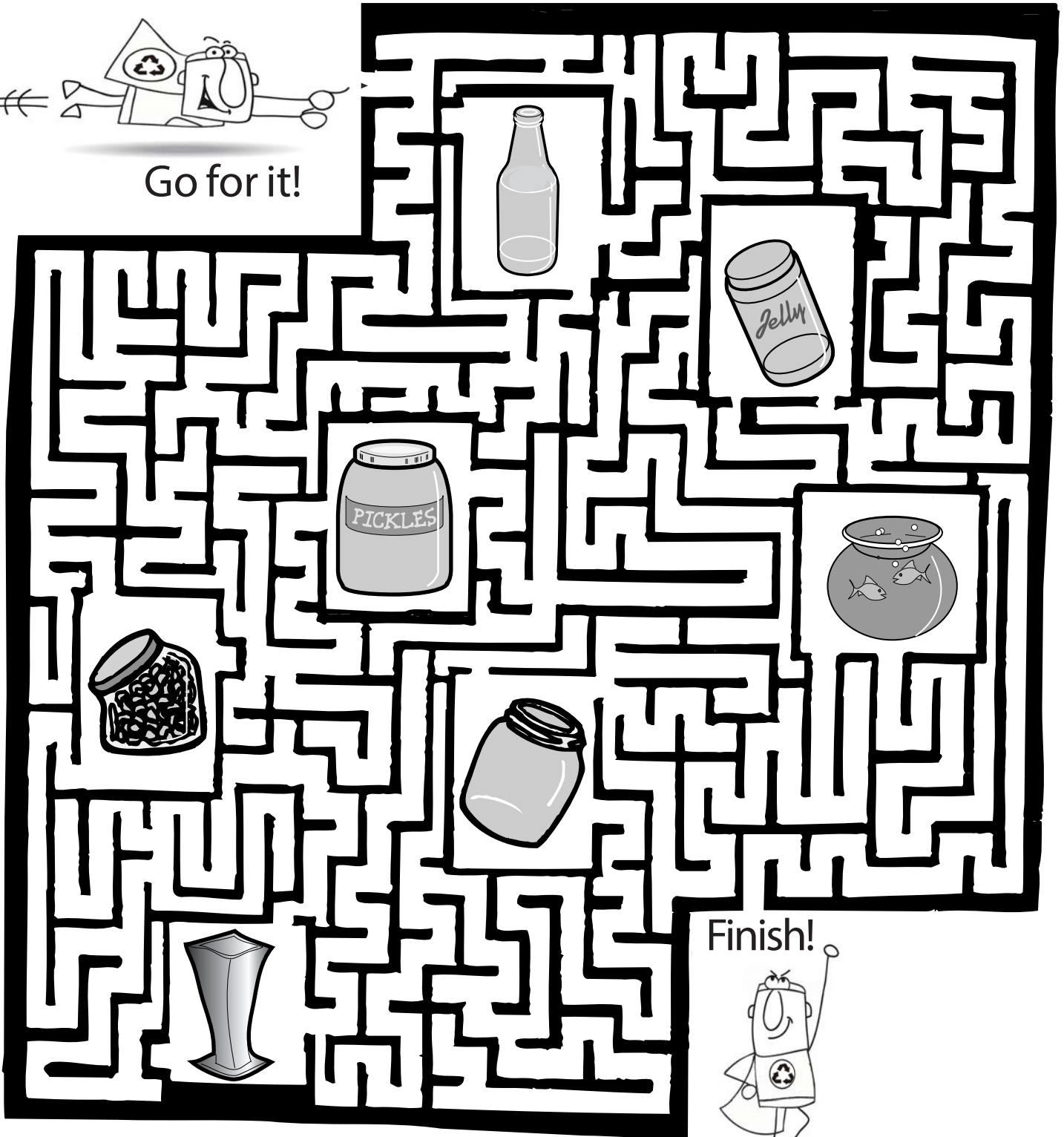
Glass never wears out and can be recycled forever.

Glass Maze

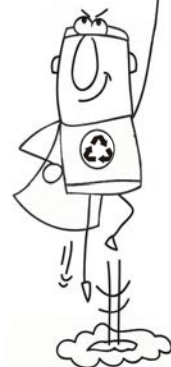
Find your way through the maze and collect the glass containers. These items are all made from recycled glass. Which one of these items can you take to the recycling center and redeem for money? What other ways can you reuse your glass containers?



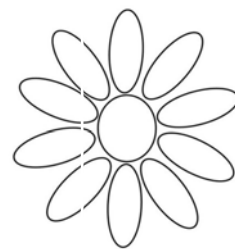
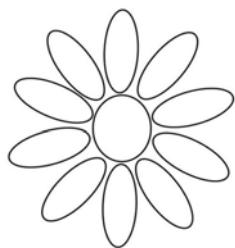
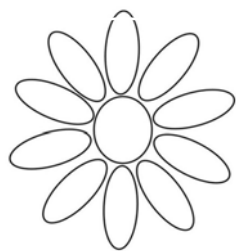
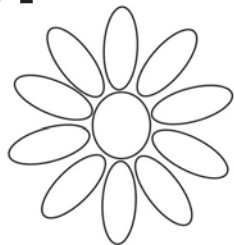
Go for it!



Finish!



Glass Flower Vase



Items needed:

- an empty bottle or jar (rinsed and dried)
- scissors
- tissue paper in different colors
- liquid starch
- a container to hold the starch (like an old margarine tub)
- a paintbrush or old toothbrush

Directions:

- 1) Pour the starch into a container.
- 2) Cut or tear tissue paper into small pieces.
- 3) Place a piece of the tissue you cut or tore on the glass bottle and brush liquid starch over it. Do this until the bottle is completely covered. Overlapping will create a nice effect.
- 4) Let the bottle dry.
Use the bottles and jars you decorated as vases, pencil holders, organizers for your desk, candy holders or containers to put your small collectibles in.

OPTION: You can use small pictures cut from old magazines instead of the tissue paper.

What happens to Recycled Plastic?

1

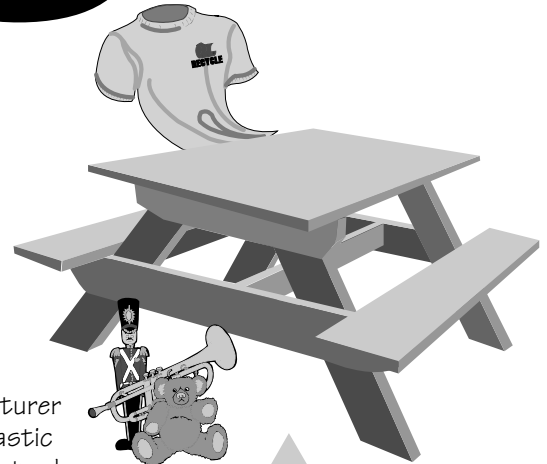
Plastic containers are brought to the recycling center where they are sorted by type and sometimes color. They are crushed together and formed into a huge cube or bale.



5

The manufacturer melts the plastic flakes or pellets down for molding into new products like:

- fiberfill for sleeping bags
- plastic lumber
- containers for non-food products
- toys
- compost bins
- rulers
- T-shirts



2

The bales of plastic are shipped to a plastics processing plant.

3

The plastic is broken apart and shredded into flakes or pellets and then cleaned.



4

The flakes or pellets are shipped to manufacturers of plastic goods.



Plastic FACTS

Plastics are made from oil. Oil is a carbon-rich raw material, and plastics are large carbon-containing compounds.

One ton of recycled plastic saves:

- 5,774 kWh of electricity
- 685 gallons of oil
- 98 million BTU's of energy

It can take up to 700-1000 years for plastic to decompose (break down and disappear).

Plastic bottles can be recycled into; clothing, fiberfill for sleeping bags, stuffed animals, toys, rulers, and more!

Recycling plastic takes 88% less energy than making plastic from raw materials.

Enough plastic is thrown away each year to circle the Earth four times.

Americans throw away 35 billion plastic bottles every year.

Only about 25% of the plastic produced in the U.S. is recycled.

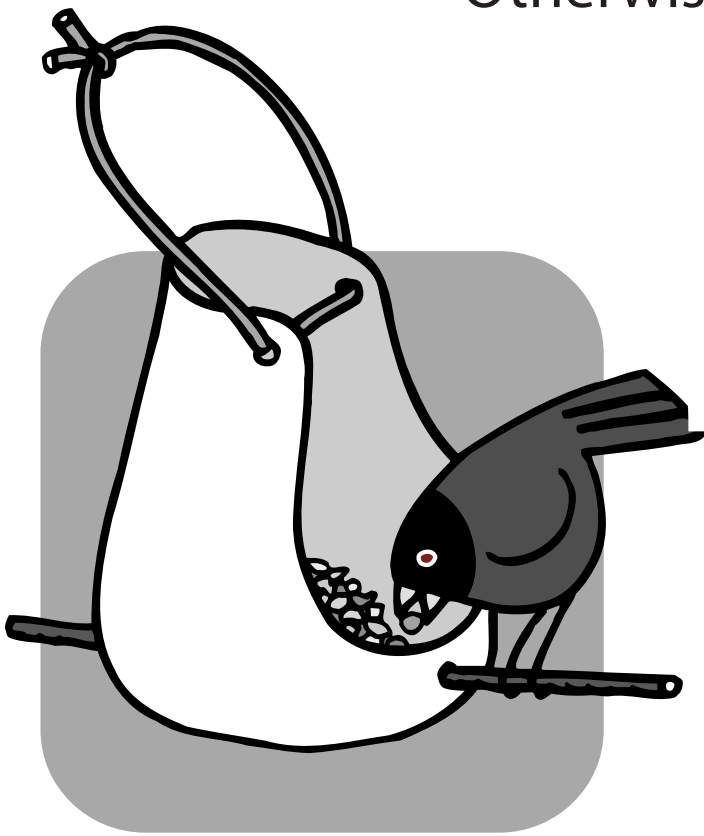
If we recycled the other 75% we could save 1 billion gallons of oil.



Note: BTU is a measure of the heat required to raise one pound of water one degree.

Bird Feeder

When you can't reuse your plastic container again, try making something from it. Otherwise recycle it...



Materials You Will Need

- One gallon plastic milk jug or a two-liter soda bottle
- A 12-Inch piece of used wire, string, fishing line or an old shoelace
- A stick or dowel, 12-inches long
- Permanent ink pens or stickers
- One nail
- Scissors

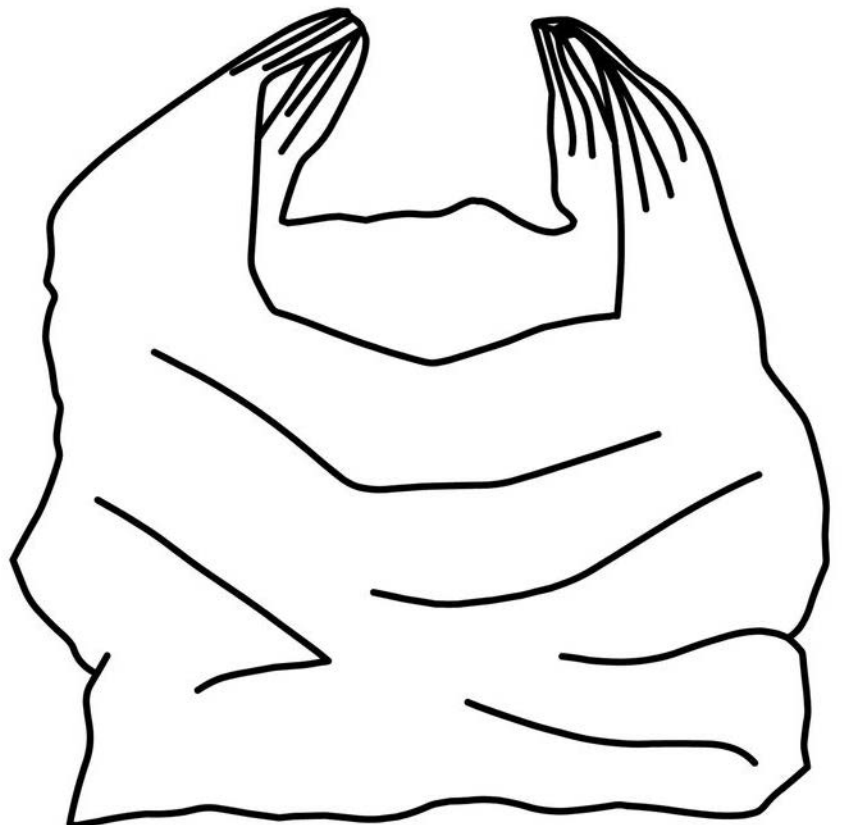
Instructions:

- Ask an adult to help you with the scissors or nail.
- Using the scissors, cut one side and the top off of your milk jug or soda bottle. Leave at least 1^{1/2} inches on the bottom.
- Ask an adult to help you poke a hole in the front and back of the feeder using the nail. Push the stick or dowel through the holes so it pokes out both ends. The stick is used as the bird perch.
- Using the nail, poke two holes at the top of your milk jug or soda bottle from one side to the other. Insert your used wire, string, fishing line or shoelace and tie it together to make the hanger. Put birdseed into the bottom of your birdfeeder and hang it from a tree or on your patio.

MORE interesting PLASTIC facts...

- The energy saved from recycling one plastic bottle can power a 100 watt light bulb for almost an hour
- 17 billion plastic carrier bags are given away by supermarkets every year - That's 290 bags per person!
- It takes just 25 soda bottles to make one fleece jacket!

A wide variety of plastic bags, films, and wraps can go in plastic bag recycling bins at your favorite grocery store or retailer. These items **CAN NOT** go into curbside recycling bins. To find out more about plastic film recycling visit: plasticfilmrecycling.org





Paper

FACTS

Paper is made from trees. The raw wood must first be turned into “pulp.” Wood pulp is a watery “soup” of cellulose wood fibers, lignin, water and the chemicals used during the pulping process. Pulp is then processed by machine into a thin layer. Hot rollers dry & flatten it into paper.

One ton of recycled paper saves:

- 4,100 kWh of electricity
- 380 gallons of oil
- 54 million BTU's of energy
- 7,000 gallons of water
- 17 trees

One ton of recycled cardboard saves:

- 390 kwh hours of electricity
- 46 gallons of oil
- 6.6 million BTU's of energy

Recycling paper takes 60% less energy than making paper from raw materials. It also creates 75% less air pollution and 35% less water pollution.

Americans throw away 4.5 million tons of office paper each year.

That's enough to build a wall of paper 12 feet high from New York to Los Angeles.

Every Sunday 500,000 trees are used to produce the 88% of newspapers that are never recycled.

Cardboard and paper waste make up 41% of the municipal solid waste stream.

Recycling cardboard takes 24% less energy and produces 50% less pollution than making cardboard from raw materials.

Recycling cartons is easy

Step 1 - Empty it out: Empty out that unused milk, juice or broth from your carton before recycling.

Step 2 - Toss it in: Toss the carton – without flattening – into your recycling bin along with all your other recyclable containers such as cans and plastic bottles. (pro tip: you can keep the cap on!).

Step 3 - Take 'em to the curb: On pick-up day, roll your recycling bin out to the curb to be collected.

What happens to Cartons after they leave your house?

At the recycling sorting center, cartons are separated from other recyclable material.

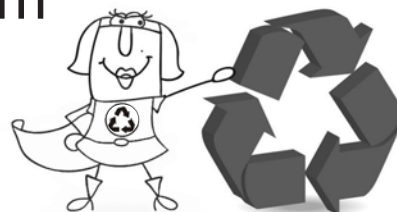
Cartons are packed together and sent to either a paper mill or a recycling company. At the recycling company they turn cartons into building materials. Fact: *About 30 cartons can turn into a single 2'x2' ceiling tile, while roughly 400 cartons make up each wallboard.*

At the paper mill, cartons are added to a large machine called a Hydrapulper – essentially a giant blender – that uses water to break the cartons down into two component parts. The paper is separated and the pulp is used to make paper products, such as paper towels, tissue, office papers, etc. The plastic and aluminum together can be sent on for further recycling, such as producing ceiling tiles or wallboard, or can be used for energy to fuel the paper mill.

Shred and press: Cartons are shredded into a million pieces, then heat is applied and they are pressed back together into large sheets. (Like a panini press made of shredded cartons!)¹

¹ www.recyclecartons.com

Learn more at www.RecycleCartons.com



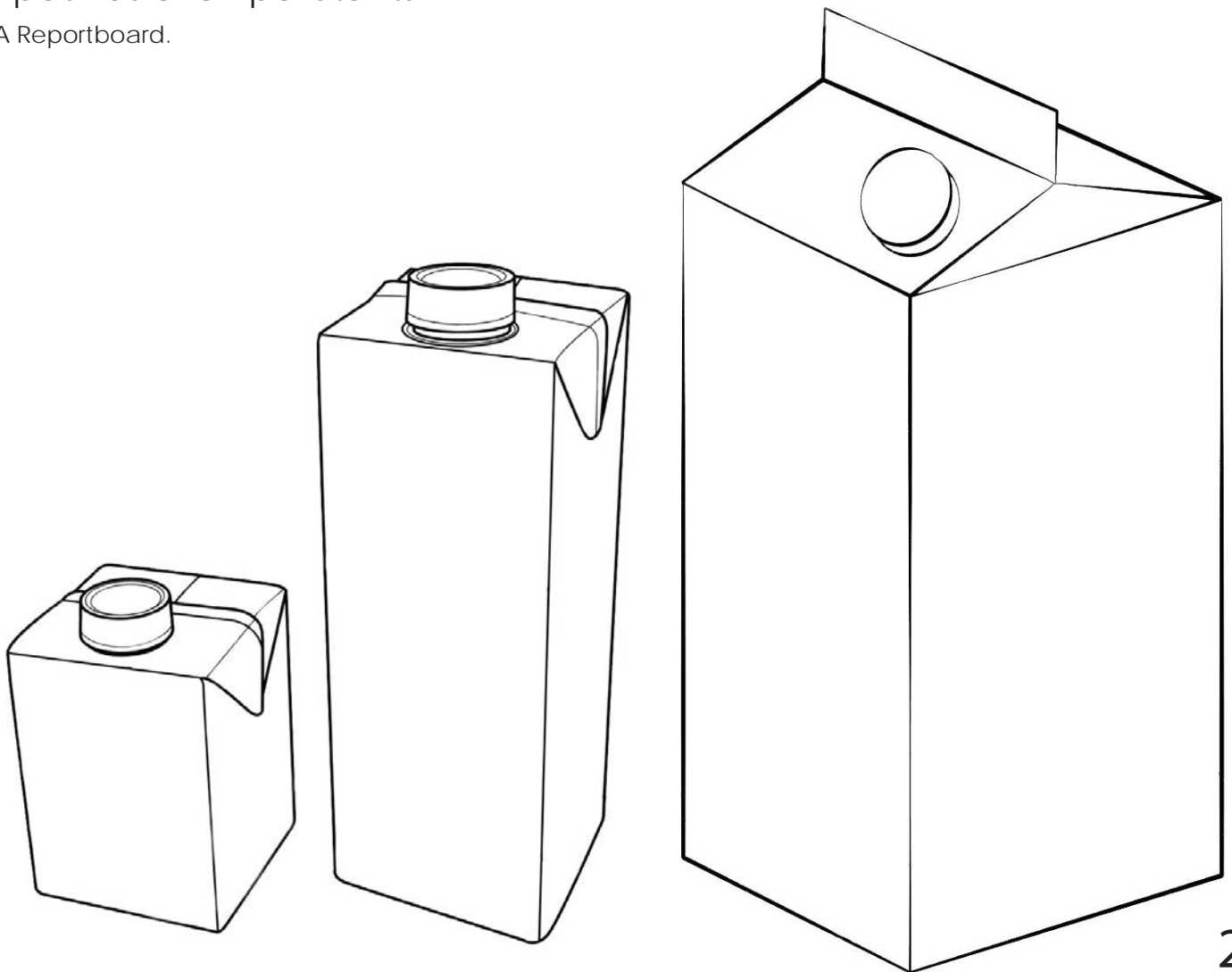
Carton

FACTS

Cartons are mainly made from paper in the form of paperboard, as well as thin layers of polyethylene (plastic). The shelf stable ones have also a thin layer of aluminum. www.recyclecartons.com

Paper, aluminum and plastic recovered from recycled cartons save us from depleting our environment's precious resources and can become new products like napkins, tissue paper, and even building materials. A ton of paper made from recycled fibers instead of virgin fibers conserves 7,000 gallons of water, 17-31 trees, 4,000 KWh of electricity, and 60 pounds of air pollutants.¹

¹EIA Reportboard.



Mixed Recycling

What's IN?

Cardboard & boxboard
Food & beverage cartons
Junk mail
Magazines & newspaper inserts
Newsprint
Office paper
Pizza boxes

Aerosol containers
(food grade only)
Aluminum foil
Cans bottles
Foil containers
Metal lids from cans & bottles

Plastic bottles
(with or without caps attached)
Plastic containers, tubs & lids
Plastic one-use cups
(no lids, no straws)

What's OUT?

Gift wrap & gift bags
Ice cream containers
Paper cups (hot & cold)
Shredded paper * *

Take-out containers

Aerosol containers (deodorizers,
cleaners, pesticides, etc.)
Foil tops from yogurt containers
Paint cans
Pots & Pans
Small pieces of scrap metal
Spiral wound containers

Loose bottle caps
Plastic bags & wrap * *

Plastic plates, bowls, & utensils
Prescription bottles
Single-use coffee containers
Styrofoam cups, containers &
packaging peanuts
Water filters

Beverage bottles & jars * *

Food bottles & jars * *

Ceramic mugs & plates

* * Items with two stars can be recycled but NOT in your mixed recycling bin.

Oh No! Something isn't right!

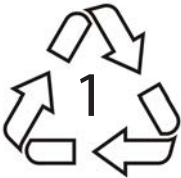
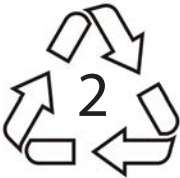

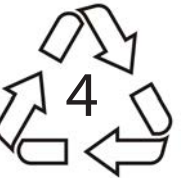
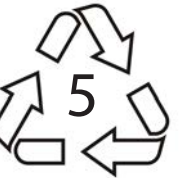
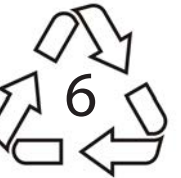
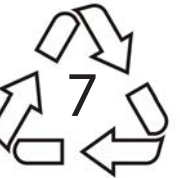


Recycle Right

Unfortunately there are a lot of items that shouldn't go in the recycling bin. These items contaminate the good material and some items are a danger to the workers. Using the list on the left, circle all the items that should NOT have gone to the recycling sorting center. Always recycle right!

Symbols

What do the numbers mean?

						
PETE	HDPE	V	LDPE	PP	PS	OTHER
Polyethylene Terephthalate	High Density Polyethylene	Vinyl	Low Density Polyethylene	Polypropylene	Polystyrene (Styrofoam)	Other
soda bottles water bottles shampoo bottles mouthwash bottles peanut butter jars	milk, water and juice jugs detergent bottles yogurt tubs margarine tubs grocery bags	Clear food packaging, shampoo bottles	bread bags frozen food bags squeezable bottles (mustard, honey)	ketchup bottles yogurt tubs margarine tubs	meat trays egg cartons cups & plates	3 & 5 gallon water bottles some juice bottles
					<div> **Styrofoam** DOES NOT go in your recycling bin. </div>	

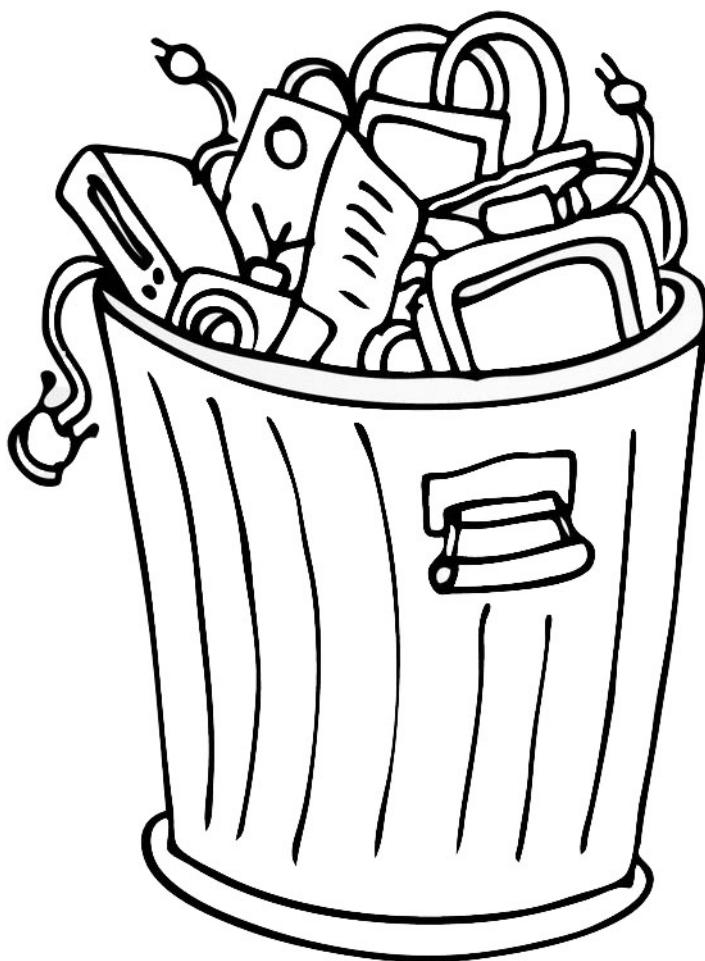
Have you ever wondered about those little numbers inside a triangle of arrows on the bottom of plastic containers? They tell you the kind of plastic used to manufacture the soft drink bottles, laundry detergent packages, milk jugs, and other plastic bottles that you purchase. The numbers and letters are intended as identification codes to facilitate the recycling process. It's good to know, but use the What's IN? What's OUT? guide to Recycle Right!

Electronic Waste (E-Waste)

Dont' throw away your electronics! They can be recycled for free at your local transfer station or recycling center.

Drop off these
unwanted devices.
(See p.2 for locations.)

TVs
Printers
Computers
Tablets
VCRs
Video Games
Fax Machines
Cell Phones
Digital Cameras
VHS tapes
CDs
DVDs



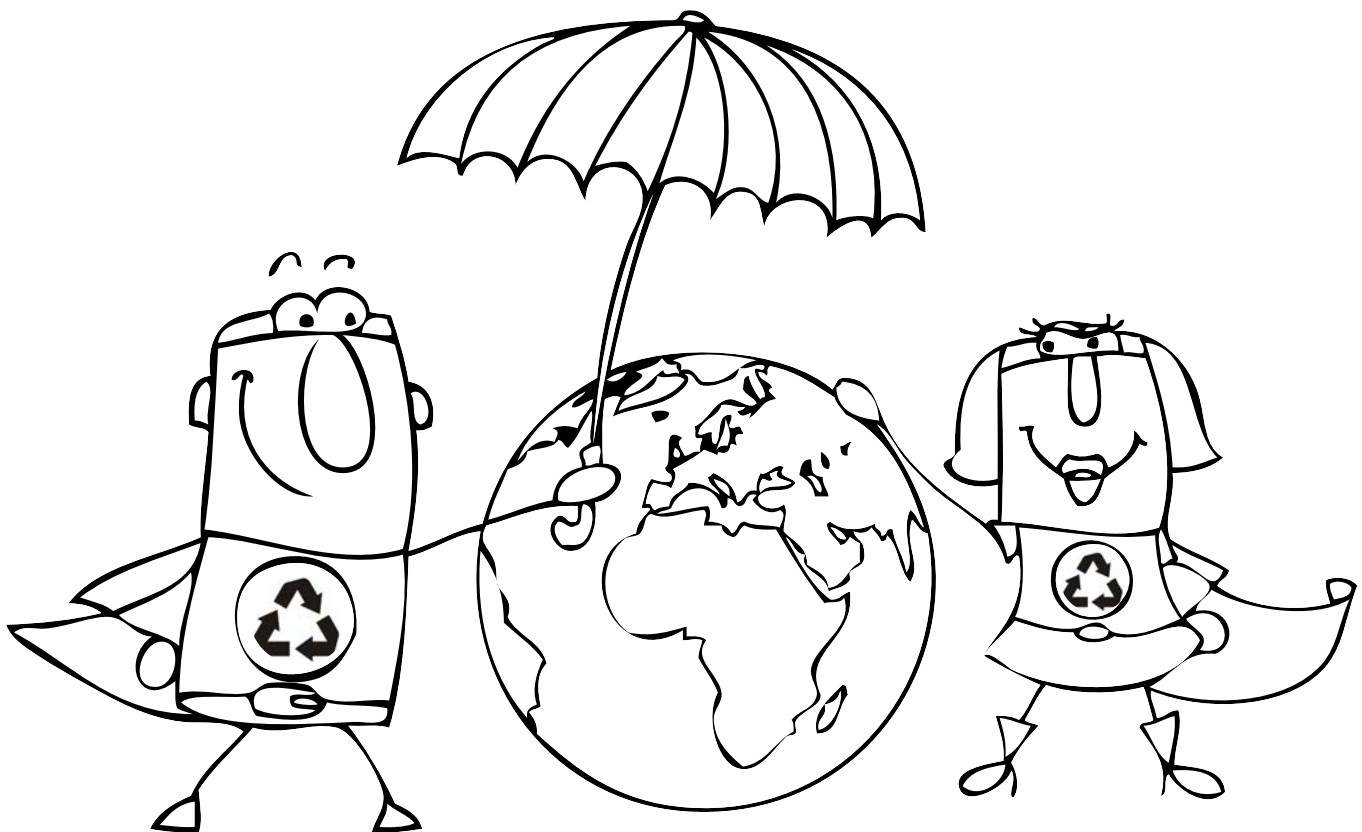
Household Hazardous Waste

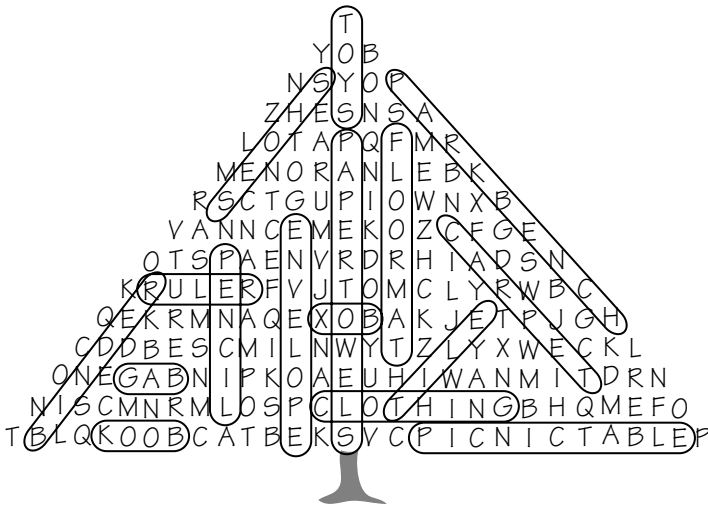
Household Hazardous Waste, like cleaners, pesticides, pool chemicals, gasoline etc., should be disposed of at an HHW event. Do not pour chemicals down your drain or onto your lawn. For the next date and location visit www.hrra.org



Make less waste!
Protect the earth!

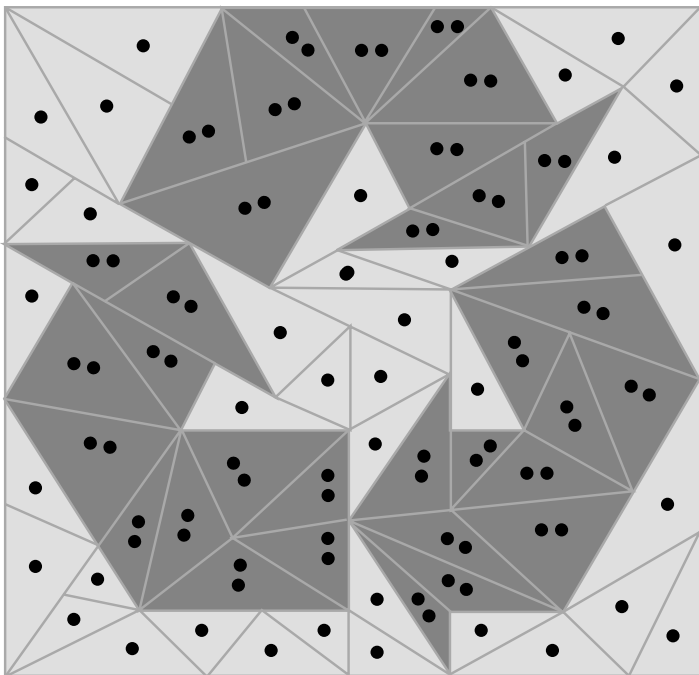
Reduce
Reuse
Recycle



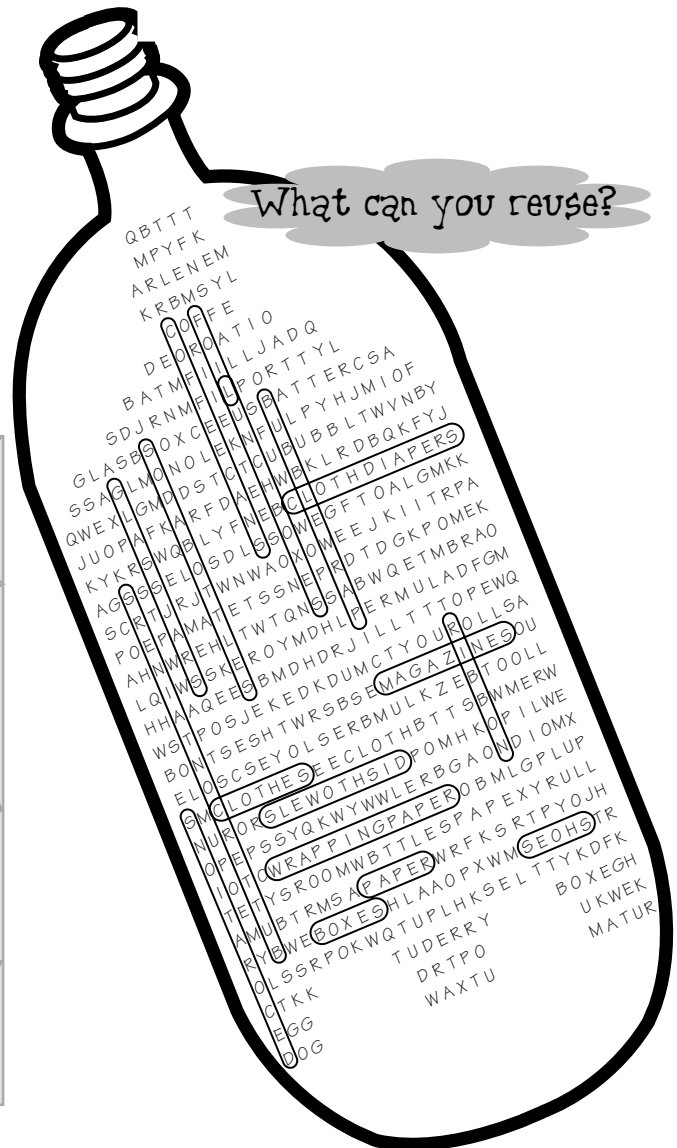


Glass Maze

You can take the glass bottle to a recycling center or redeem it for money. You can reuse your glass containers as a vase, pencil holder, a candy jar... and much, much more!



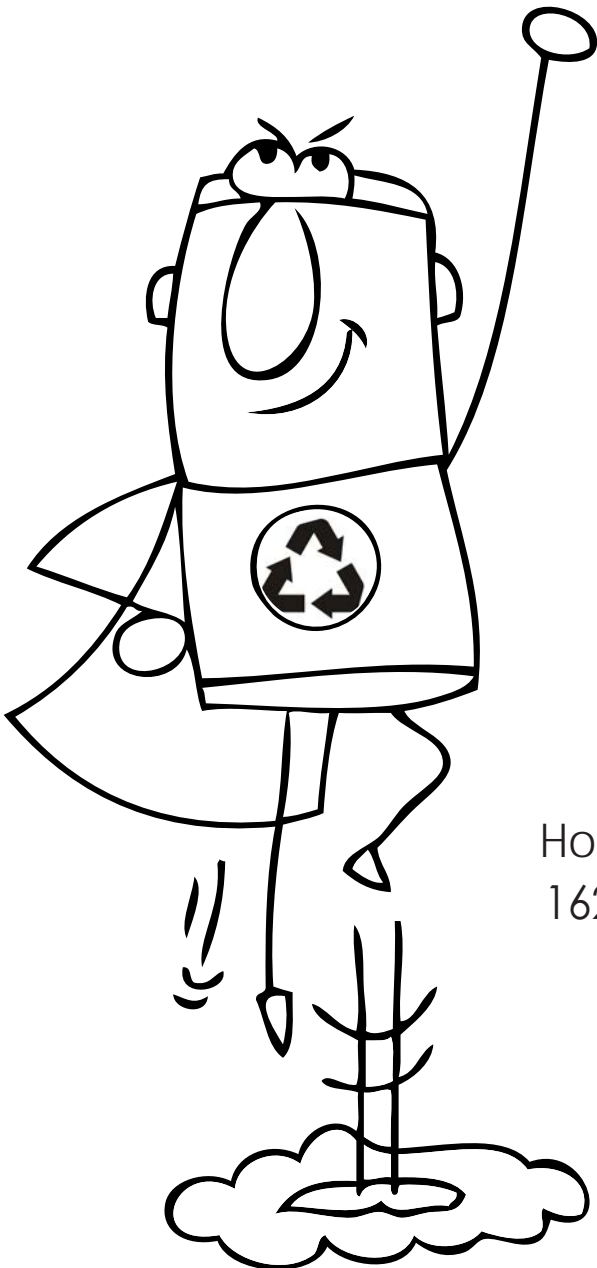
What can you reuse?





Learn More Recycle Right

www.HRRA.org



Housatonic Resources Recovery Authority
162 Whisconier Road, Brookfield CT 06804
email: info@hrra.org
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