



# RECYCLE, REUSE AND REINVENT

## LIFE CYCLE APPROACH

### RETHINK

The product & it's function

### REDUCE

Energy & materials consumption

### REPLACE

Harmful substances

### RECYCLE

Select materials that can be recycled

### REUSE

Design products so parts can be reused

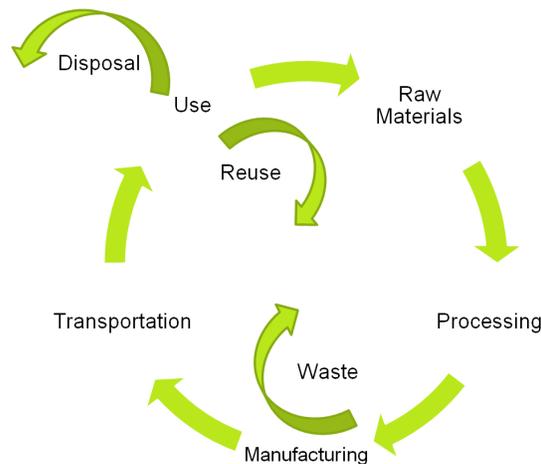
### REPAIR

Make the product easy to repair

### REINVENT

Consider nontraditional uses for the product

## LIFE CYCLE OF A COTTON SHIRT



### RAW MATERIALS

A cotton shirt begins in a cotton field where seed, fertilizer, water, energy and labor are needed to grow and harvest the cotton.

### PROCESSING

After harvest, energy and labor is used to clean and gin the cotton and spin it into thread or yarn and chemicals are used to dye the thread or fabric.

### MANUFACTURING

Energy and labor are used as the thread or yarn is knitted or woven into fabric. Garments are cut and sewn which also creates waste fabric which can be put back into the cycle or discarded. Before leaving the plant, the shirt is packaged using paper and/or plastic.

### TRANSPORTATION

The primary costs here are energy and labor – when we purchase a shirt made in overseas, the greatest percentage of what we pay for the shirt is transportation cost.

### USE

For most garments, the greatest economic and environmental impact comes from use. We use detergent, bleach and lots of water over the life of a shirt to keep it clean.

*At some point the shirt is no longer wearable – outgrown, stained, damaged, etc. At this point, we have a choice to repair, reuse, reinvent, recycle or discard the shirt.*

Source: United Nations Environment Program

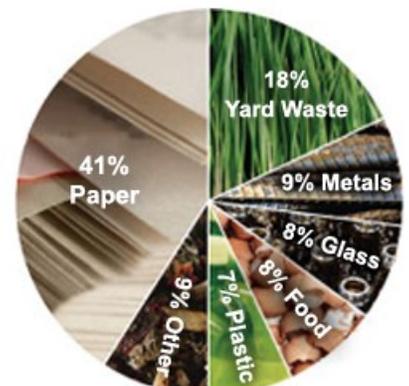
## TRASH FACTS:

- The average American generates 4.5 lbs. of garbage/day
- Plastics require up to 400 years to break down in a landfill
- A modern glass bottle would take 4000 years to break down
- 23 states no longer accept yard waste in landfills

## WHAT'S IN OUR GARBAGE?

The average American family generates 2.5 tons of garbage per year. About 80% of what we throw away could be recycled, reused, donated, composted or made into something new.

Challenge your self to make one or two changes to reduce your household's contribution to the waste stream. Whether it's recycling aluminum cans and plastic bottles or composting your kitchen or yard waste, small changes by individuals and families make a big difference collectively.



## RECYCLE, REUSE AND REINVENT

- **30-50% of the waste stream is organic**
- **In Japan, 50% of solid waste is recycled and 16% of waste goes to landfills**
- **In the US, 30% of solid waste is recycled and 60-70% of waste goes to landfills**
- **In the US, we discard enough iron and steel to continuously supply all of the nation's automakers**

### ALUMINUM

It's 95% more efficient to recycle than to mine the component materials and make "new" aluminum

To prepare aluminum for recycling:

- Rinse containers
- Remove stuck-on food from foil/foil pans
- If a group is collecting pull tabs for a charity like Ronald McDonald House, remove & save tabs.

### PLASTIC

Recycling 1 pound of PET plastic (most water & drink bottles) saves 12,000 BTU of energy

It is 66% more efficient to recycle plastic than to make new.

These step help the recycler:

- Plastic bags—recycle only items that are clean and dry
- Rinse and crush lightweight bottles and cartons
- Don't forget the plastic wrap around paper products, electronics, furniture, etc.

### PAPER / CARDBOARD

Each ton of paper recycled saves:

- 17 trees
- 380 gallons of oil
- 3 cubic yards of landfill space
- 4000 Kilowatts of energy
- 7000 gallons of water

### STEEL

Americans use 100 million steel/tin cans every day

Recycling steel and tin cans saves 74% of the energy used to produce them from raw materials

58% of all steel/tin cans can be recycled

### GLASS

Recycling glass cuts the waste involved in glass production by 80%

Glass can be recycled indefinitely

Reuse glass containers first, then recycle.

- Rinse glass containers
- When possible remove any metal or plastic tops/rings
- Remove labels when practical

Source: RecyclingRevolution.com

## SPECIAL CARE ITEMS

These items can and should be recycled, but require special handling.

**Compact Fluorescent Bulbs**—these contain a small amount of mercury and shouldn't be thrown in the trash—Most Home Depot stores in Oklahoma have drop-off sites

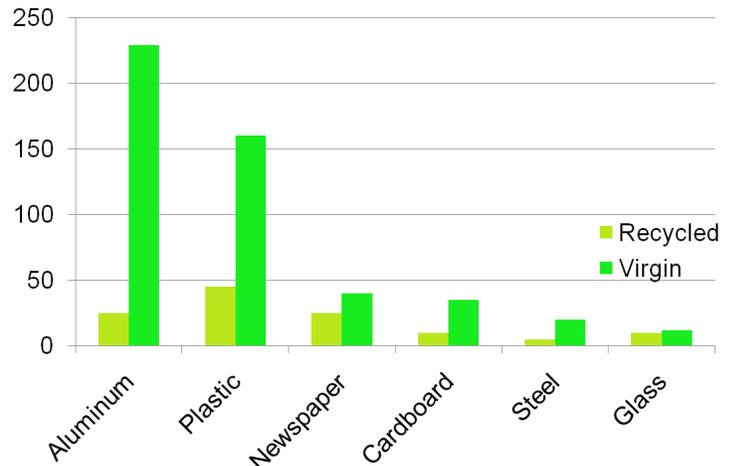
**Electronics**—A ton of scrap computer components contains more gold than 17 tons of gold ore. In addition to recovering the gold, computers contain heavy metals and chemicals that are best kept out of the waste stream. All Office Depot, Staples and Best Buy stores accept computers, monitors, televisions, etc. Be sure to remove the hard drive from computers first—Best Buy has a good instructional video.

**Rechargeable Batteries**—most electronics retailers and some home stores accept batteries from phones, digital cameras, etc. Put in your zip code at [www.Call2Recycle.com](http://www.Call2Recycle.com) to find a location near you.

**Tires, Car Batteries, Motor Oil**—If you have a professional change or replace these items, they will handle safe disposal as well. If you do it yourself, many of those same businesses will accept these products for recycling.

Source: Environmental Protection Agency

## ENERGY USE: RECYCLED & VIRGIN CONTENT PRODUCTS



## NEVER RECYCLE THESE MATERIALS

- **Aerosol Cans (unless recycle symbol is present)**
- **Brightly colored paper**
- **Post-it notes**
- **Ceramics/Pottery**
- **Disposable Diapers**
- **Plastic or wax coated cardboard juice boxes or cartons**
- **Wet paper, napkins or paper towels**
- **Pizza boxes**
- **Plastic cling wrap, prepackaged food bags including frozen food bags—sources differ—some say any plastic bag that has contained food is unacceptable—others say to wash the bag well.**
- **Household glass (including glassware, cookware, etc.)**
- **Medical waste**
- **Hazardous waste**

## RECYCLE, REUSE AND REINVENT



### THINGS WE SHOULD REUSE (AT LEAST ONCE)

Many items, like glass jars can be reused indefinitely. Others have a more limited life span.

**Dry Cleaning Bags** can be used to cushion clothing in a suitcase or as packing material

Put **butter/margarine wrappers** back in the refrigerator and use to grease a pan before baking

Use the back of **business cards** to label storage boxes/tubs

**Used envelopes** are great for list-making

Any clean **spray bottle** can be reused until the spray mechanism fails

Always save **plastic bread clips and twist ties**—to close the bags (like powdered sugar) that don't come with a closure

**Plastic grocery bags** can go back to the store to be used again, they can serve as liners for small waste baskets and when cleaning out the litter box or to pick up after Rover.

**Mesh vegetable bags** make great scrubbers

We all know that **panty hose** with a run can be worn under slacks, but they are great for straining/filtering as well as storing onions.

Sturdy **shoe boxes** can transport cupcakes or cookies, store photos, make dioramas for school projects, etc.

Worn **sheets and towels** can be cut up for cleaning rags (serge or zigzag the edge for durability. Sandwich the good parts of a worn **mattress pad** between pretty fabric for potholders

Before recycling **outdated phone books**, cut out the pages you rely on, put them in a folder and put in your car for reference

### REUSE OF FOOD PACKAGING

Although studies of the safe reuse of food packaging materials have been limited, the following general guidelines apply:

1. Packages from products other than food should never be used as food containers. Similarly, plastic trash bags (unless labeled as "safe for food storage") should never be used to store food.
2. Glass can be reused for all foods, regardless of what food was originally packed in the glass container. However, single-use jars should not be used for foods processed in a pressure canner.
3. Reuse food packaging for foods with similar acidity, sugar, fat or alcohol content or foods that will be exposed to the same type of processes.
4. In general, do not subject food packages to heat unless instructions on the original package give heating information.
5. Do not reuse porous packaging such as paper, paperboard & expanded foam (Styrofoam) as air pockets can trap bacteria.
6. Do not reuse microwave packages that contain materials to enhance browning or crispness.
7. Avoid storing foods with strong odors or flavors in reused food packages. The packaging material might absorb the chemicals that produce the odor or flavor and transfer them to other foods.
8. If materials are safe for use in a microwave, they are generally labeled.
9. If you store a non-food item in a food container, do not reuse the container for food storage.
10. Use only "food grade" paper or plastic in direct contact with food.

Source: Reusing Food Packaging: Is it Safe?  
M. Susan Brewer; University of Illinois Cooperative Extension

### DONATE OR RECYCLE

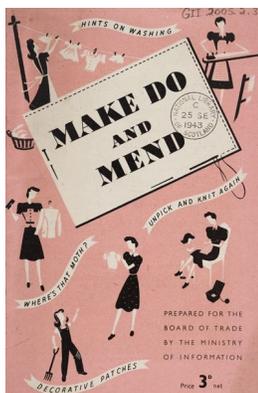
- Eyeglasses
- Hearing Aids
- Bathtubs, sinks & toilets
- Computers
- Cell phones
- Smoke detectors
- Ink cartridges
- Telephones
- Books/Magazines
- Packing/Foam Peanuts
- Paint
- Cars
- Clothes Hangers
- Propane tanks (grill)
- Sewing Machines

### MAKE DO AND MEND

This series of booklets helped British families deal with rationing and shortages of just about everything during World War II. The book was re-released in 2009 and in addition to time tested instructions for cleaning with vinegar and baking soda, it offers these tips:

- A used sheet of fabric softener is great for dusting plasma TV's and computer monitors. It's anti static properties keep dust from settling back as quickly
- When you have hot fat, such as drippings from ground beef or bacon, mix it with cheap oatmeal and set out as a treat for birds.
- Even if you have an ice maker, keep a few ice cube trays around to freeze leftover broth, pureed fruit or vegetables, wine or other "liquid" ingredient that would otherwise go to waste.

Source: The Modern Make do and Mend  
John Lewis



## REINVENT - IN THE KITCHEN

Leftover food should be cooled quickly and reheated or used in another dish within 2-3 days. If you can't use it within that time, chop and freeze and use within a month or so.

- Keep a 2-3 quart container in the freezer to collect small amounts of leftover meat and vegetables (including broth). When it's full, make a pot of soup.
- Slow cook leftover roast beef, pork or chicken and shred for sandwiches or tacos
- Mix leftover pasta and vegetables with Italian dressing and chill for a salad
- Puree or "juice" celery, onions and peppers and freeze in ice cube trays and add to soups and sauces for flavor
- Too much bread—make croutons (cut in cubes before drying) or breadcrumbs (dry the whole slice—then crumble)

## REINVENT- AT HOME

Throughout history, thrifty families have learned to repair, rejuvenate and reinvent just about anything. In today's economic climate, we need to remember these skills.

Almost everything in the home can become something new—with a little time, talent and imagination.

98% of all textile items that go to landfills could be repaired, reused, or given new life as something else.

Most furniture can be repaired, refinished, recovered or reupholstered—with the right tools.

### AN OLD T-SHIRT CAN BECOME:

- A shopping bag
- A pillow case
- A throw pillow
- A child's dress
- A new shirt
- A quilt or throw
- A rug
- A basic craft supply for endless projects



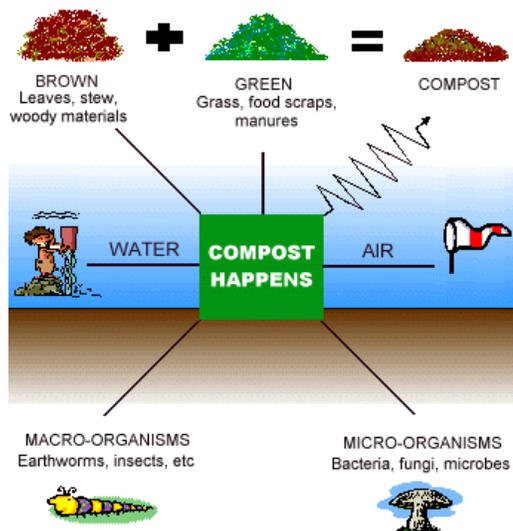
## REINVENT KITCHEN/YARD WASTE—COMPOST!

### Materials OK to Compost

- Animal manure
- Cardboard rolls, cereal boxes, brown paper bags
- Clean paper
- Paper towels
- Coffee grounds and filters
- Cotton and wool rags
- Dryer and vacuum cleaner lint
- Crushed eggshells (but not eggs)
- Fireplace ashes
- Fruits and vegetables
- Grass clippings, yard trimmings
- Hair and fur
- Hay and straw
- Houseplants
- Leaves
- Nut shells
- Shredded newspaper
- Tea and tea bags
- Wood chips, sawdust, toothpicks, burnt matches

### WHAT IS COMPOSTING?

Composting is nature's process of decomposing organic materials into rich soil, known as compost. Anything that was once living will decompose. Composting is an accelerated version of what happens in nature. By composting your organic waste, you are returning nutrients to the soil so the life cycle can continue. To learn more about composting, visit the OSU Extension Center.



### Materials NOT OK to Compost -- and Why

- Meat, fish, egg or poultry scraps (odor problems and pests)
- Dairy products (odor problems and pests)
- Fats, grease, lard or oils (odor problems and pests)
- Coal or charcoal ash (contains substances harmful to plants)
- Diseased or insect-ridden plants (diseases or insects might spread)
- Pet wastes (dog or cat feces, cat litter) (might contain parasites or germs)
- Yard trimmings treated with pesticides (might kill composting organisms)
- Black walnut tree leaves or twigs (substances harmful to plants)