

# HOUSEHOLD GUIDE FOR WASTE REDUCTION



WHERE DOES YOUR TRASH GO?



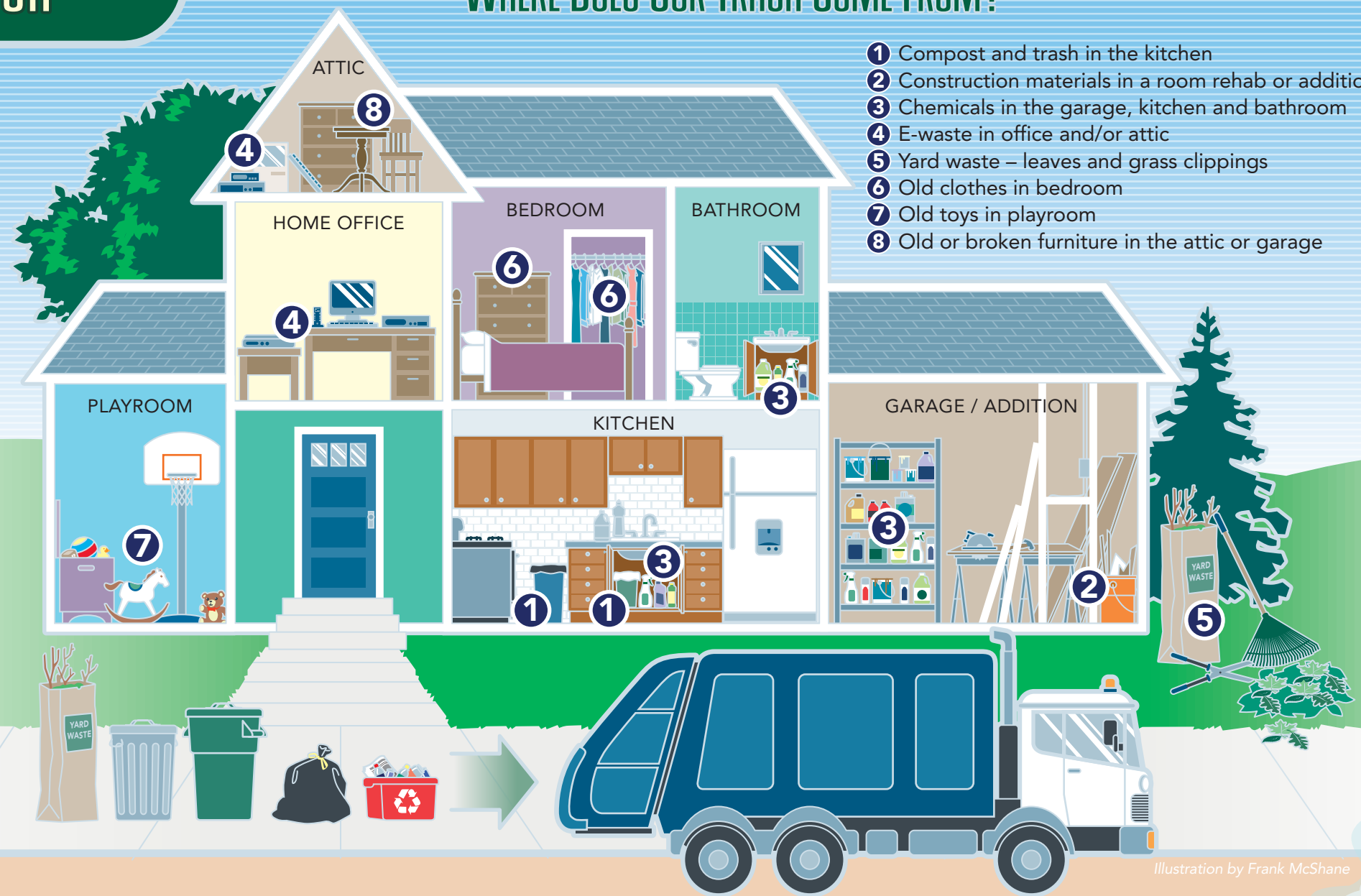
# HOW WE GENERATE TRASH

## Where does your trash go?

In order to manage the massive amounts of waste created on a daily basis, systems were put in place. These systems include recycling, composting, and the most used method of landfilling, in which garbage is piled into mountains and buried with dirt. Although landfilling is the most applied use of waste management, it is not the most effective. Much of the garbage and waste landfilled has the potential to be used alternatively prior to it being discarded. Along with the landfilling of waste being a misuse of resources, there is always a potential for it to leak leachate (garbage soup) into the soil, eventually finding its way into nearby waterways.

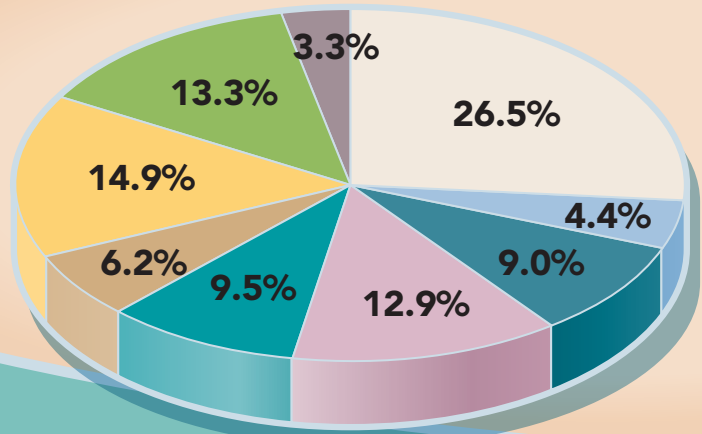
Despite the potential harmful side effects of landfilling it has become the default method of waste management in the United States due to its relatively low cost. The main concern with landfills is they pose a liability with consequences to municipalities, residents, and the economy of a community. All landfills open or closed still have the potential to cause harm. It is our hope that after reading this booklet your knowledge of waste will be heightened and your awareness of the importance of better waste management will be broadened.

# WHERE DOES OUR TRASH COME FROM?



- 1 Compost and trash in the kitchen
- 2 Construction materials in a room rehab or addition
- 3 Chemicals in the garage, kitchen and bathroom
- 4 E-waste in office and/or attic
- 5 Yard waste – leaves and grass clippings
- 6 Old clothes in bedroom
- 7 Old toys in playroom
- 8 Old or broken furniture in the attic or garage

# WHAT'S IN OUR TRASH?



- Waste Composition:**
- Paper 26.5%
  - Glass 4.4%
  - Metals 9.0%
  - Plastics 12.9%
  - Rubber, leather, and textiles 9.5%
  - Wood 6.2%
  - Food 14.9%
  - Yard trimmings 13.3%
  - Other 3.3%

Source: <http://www.nj.gov/dep/dsr/trends/pdfs/solidwaste.pdf>

# KEEP THESE OUT OF HOUSEHOLD TRASH:

Bring these items to a landfill or local hazardous waste day to be disposed of properly. Items below increase the potential for fire and gas emissions in landfills.

- Paint
- Rechargeable batteries including lithium
- Construction materials including drywall aka gypsum board, sheetrock
- Green waste (grass trimmings, food scraps, etc.)\*
- Cleaning products
- Pesticides and herbicides
- Fluorescent bulbs
- Gasoline and oil

\* Not toxic, but do increase the potential for fire and gas emissions in landfills.



Illustration by Frank McShane

# LANDFILLS

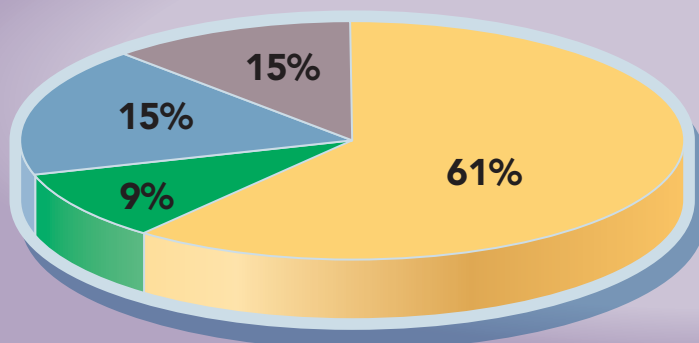
Landfills used to be pits in the ground, but modern landfills are carefully engineered and monitored, including protective linings to separate the trash from the ground. Until the 1970s, there was very little regulation in regard to solid waste management, including what could be thrown away and where the trash went. New Jersey has worked hard to move away from landfilling by supporting alternatives for many years. You can help by producing less trash in your own home, recycling, and composting.

## PROBLEMS WITH LANDFILLS:

- **Misuse of resources.** Landfills involve a large amount of land, maintenance money, and wasted resources that get thrown away instead of used. A lot of products that could be recycled or reused in some way end up sitting in a landfill.
- **Can catch fire.** A landfill fire occurs when waste disposed of in a landfill ignites and spreads, such as batteries and construction materials. Once a landfill catches on fire it is very difficult to put out and can compromise the barrier put in place to protect soil and water from contamination.
- **Liability.** If problems arise due to a local landfill, that municipality is responsible for handling the problems. This costs taxpayer's money, worker's time, and safety.
- **Leaks.** Landfills produce a liquid from the trash called leachate that can run off into local water systems. This is toxic to any water the original source leads to, which often includes water that enters homes.
- **Methane.** Tons of trash piled together give off gases, including methane. Methane is harmful to the environment and is a major greenhouse gas.

Landfills have become our default way of disposing of trash, but there are lots of alternative ways to handle waste disposal. Rowan University has developed an application of remote and in-situ sensing for landfill monitoring and fire warning that aims to help understand the health, economic and environmental effects of landfill fires, and their impact on water, air and soil.

## WHERE DOES OUR TRASH GO?



### New Jersey Waste Destination (2010)

- Recycled: 13,300,000 tons
  - Incinerated: 2,100,000 tons
  - Landfilled In-State: 3,300,000 tons
  - Landfilled Out-of-state: 3,200,000 tons
- Total Generated: 22,000,000 tons**

Source: <http://www.nj.gov/dep/dsr/trends/pdfs/solidwaste.pdf>



A typical landfill



A landfill fire

**Landfill fires can be a serious problem that can increase the risk of soil and water contamination!**



A landfill with cover and solar panels on top

## ENVIRONMENTAL PROBLEM AND HEALTH SPOTLIGHT: ALCYON LAKE IN PITMAN, NJ

### What happened?

The Lipari Landfill in Pitman, NJ severely polluted the Chestnut Branch and Alcyon Lake when contaminants seeped into the underlying aquifer, resulting in one of the top EPA Superfund sites in the country.

### How long did cleanup take?

Cleanup of Alcyon lake began in the 1980s and continued for more than 20 years. Contamination was so bad that Alcyon Lake had to be drained in 1995.

### How much did it cost?

By the end of 1995, the entire cleanup project had cost more than \$100 million.

### What is the status now?

The lake reopened in 1995 and is now safe to fish in. The park around the lake is open to the public.



Alcyon Lake

**New Jersey has 17 solar projects on landfills and brownfields.**

## BENEFICIAL USE OF LANDFILLS

**Solar farms** – When a landfill closes, it gets covered with a thick layer of earth. This creates a perfect surface for solar farms to be built on top.

**Landfill gas** – Or the gas that comes off the trash in landfills, can be used as fuel. To offset the landfill's environmental impact, trucks working at the site can be fueled by the landfill gas.

### Conversions of Municipal Solid Waste (MSW) created:

**(2010)** 22 Million tons of MSW Generated =  
60 Empire State Buildings  
25 Golden Gate Bridges  
3.5 Great Pyramids of Giza

**(2014)** 20.8 Million Tons of MSW Generated =  
57 Empire State Buildings  
23.7 Golden Gates Bridges  
3.3 Great Pyramids of Giza

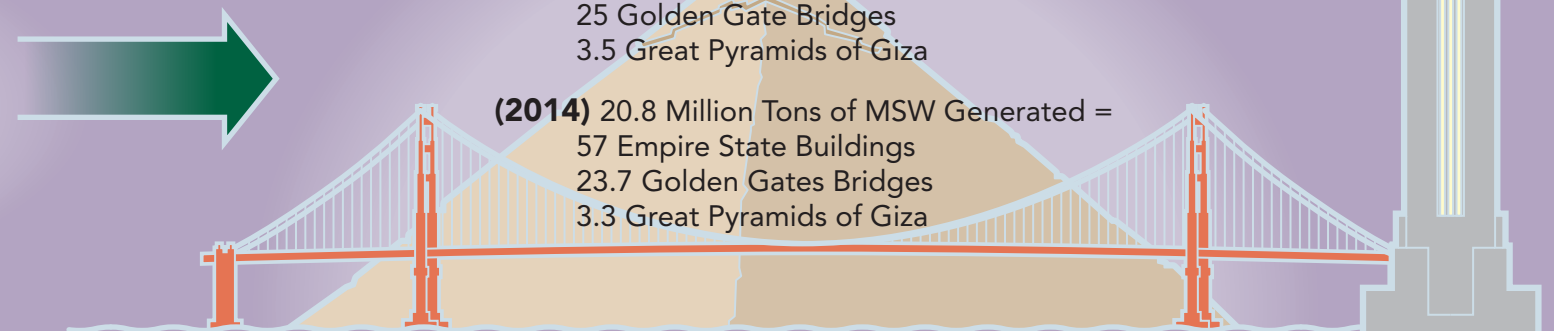


Illustration by Frank McShane

# RECYCLING

Recycling has been a staple in the State of New Jersey since 1987 with the introduction of the "New Jersey Mandatory Source Separation and Recycling Act." This requires residents to separate their recyclable materials from their regular trash. With the introduction of this law New Jersey residents were capable of recycling 12.8 million tons of 20.8 million tons of waste created. Recycling is a superior alternative to landfilling where resources are being renewed rather than forgotten.

## WHAT IS RECYCLABLE, WHAT IS NOT, AND WHAT YOU THINK IS BUT REALLY ISN'T

### Common Recyclables in New Jersey:

- Aluminum Cans
- Cardboard
- Glass Containers
- Plastics Numbered 1 & 2 (many towns allow additional numbers)
- Newspaper & Office Paper

### Common Non-Recyclables in New Jersey:

- Juice Boxes
- Plastic Straws
- Wax Covered products – large juice box containers
- Paper Towels
- Pizza Boxes with Food or Grease

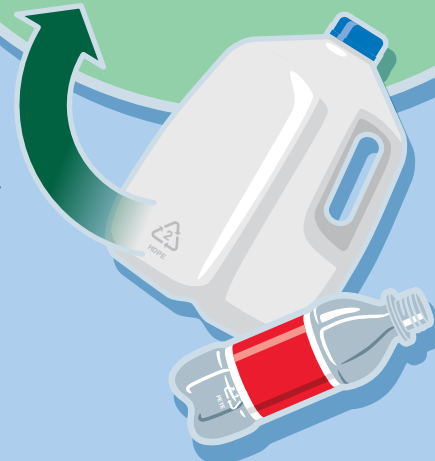
### Common Products Mistaken as Recyclables:

- Plastic Bags
- Garden Hoses
- Medical Syringes
- Bowling Balls
- VHS Tapes
- Propane Containers
- Scrap Metal
- Construction Debris
- Plastics with Food Contaminants
- Household Hazardous Materials



## WHAT DO THE NUMBERS ON PLASTIC MEAN?

The stamp is a Resin Identification Code and the numbers indicate exactly what type of plastic is being used for that particular container. The codes help local recycling centers sort their returns and indicates to consumers which containers can be turned in. Plastics numbered 1 and 2 are most commonly recycled, while 3, 6 and 7 are rarely recyclable.



## WHAT TO DO WITH E-WASTE?

E-Waste otherwise known as Electronic Waste is considered any product labeled as a computer, monitor, laptop, portable computer, or television. It is under New Jersey Law that all of these products be recycled after use by the consumer. It is best to take these products to local facilities that have the capacity of disposing of them properly.

## WHAT IS E-WASTE AND WHAT IS JUST WASTE?

### Electronic Waste that your town or county is required to accept by State Law:

- Computers
- Monitors
- Laptops
- Portable Computers
- Televisions

### Electronic Waste that is not required to be accepted by towns or counties but may still be recyclable:

- Cellphones
- Keyboards
- Printers
- Microwaves



Old computers at a recycling facility

## RECYCLING QUICK FACTS:

- **Do not place plastic recyclables in plastic bags.** Employees at recycling facilities do not open plastic bags and everything is thrown away.
- New Jersey recycled 12.8 million tons of solid waste in 2014.
- Two types of recycling exist; Single Stream and Dual/Multi Stream.
- Facilities that accept plastic grocery bags include ACME and other supermarkets, Target, and Whole Foods.

## CONSTRUCTION AND DEMOLITION WASTE

Efforts to reduce waste from construction & demolition include designing sustainable buildings, using recycled materials, and salvaging materials during deconstruction.

### Hurricane Sandy

Another source of construction and demolition waste is debris resulting from natural disasters. Disposing of the trash can be costly as landfills do not have the capacity to handle the amounts of waste resulting from natural disasters. Hurricane Sandy created 5.25 million cubic yards of debris, enough to fill the Empire State Building 3.5 times. 3 million cubic yards alone were from New Jersey, costing the state \$150 million. The debris was being sent to landfills across multiple states, while vegetation, trees, and other organic matter were incinerated or chipped to be recycled.

# COMPOSTING

Composting food and organic waste helps prevent them from finding their way into landfills where they decompose on a large scale and create harmful gases like methane, contributing to climate change. When food and other organic wastes find their way into landfills, valuable space is taken up and potent smells are created from their decomposition. One of the main benefits to composting is that after a backyard compost pile has matured, the compost can be added to plants and soil to stimulate growth, usually better than store-bought fertilizer.

## SIMPLE STEPS TO COMPOSTING

- 1 Find the right location.** It is important to know whether you want to use a bin to compost or, if space is available, to have an open composting pile. Would it be best suited closer to the kitchen? Compost positioned in the sun will mature faster but it's not required.
- 2 Time to Create!** Your first layer will need to consist of dried leaves and twigs (Brown Ingredients). Place these at the bottom of your compost and water thoroughly. The water will encourage bacteria to grow which will start the breakdown process.
- 3 It's time for some Green!** Green ingredients, that is. Your next layer will need to have about the same amount of grass clippings, plant scraps, or other green ingredients as your first layer had brown "stuff".
- 4 Next it's time to thicken your compost.** Do this by repeating steps two and three while adding in shredded newspaper or straw and veggie scraps. Continue to add water to keep moist.
- 5 Add soil.** If wanted, you can finish off your foundation by adding in a thin layer of soil to 'seed' the compost in. The seeding will kick start your compost by introducing ingredients rich in useful microorganisms.
- 6 Now is the time to add more food scraps** and other additional green ingredients into your compost. Every time you add more to the pile make sure to also add a thin layer of brown ingredients to balance out your mixture.
- 7 Final product.** Your compost has matured when it looks like rich, dark soil. You can scrape away some of the finished product or empty your bin and start from the beginning.

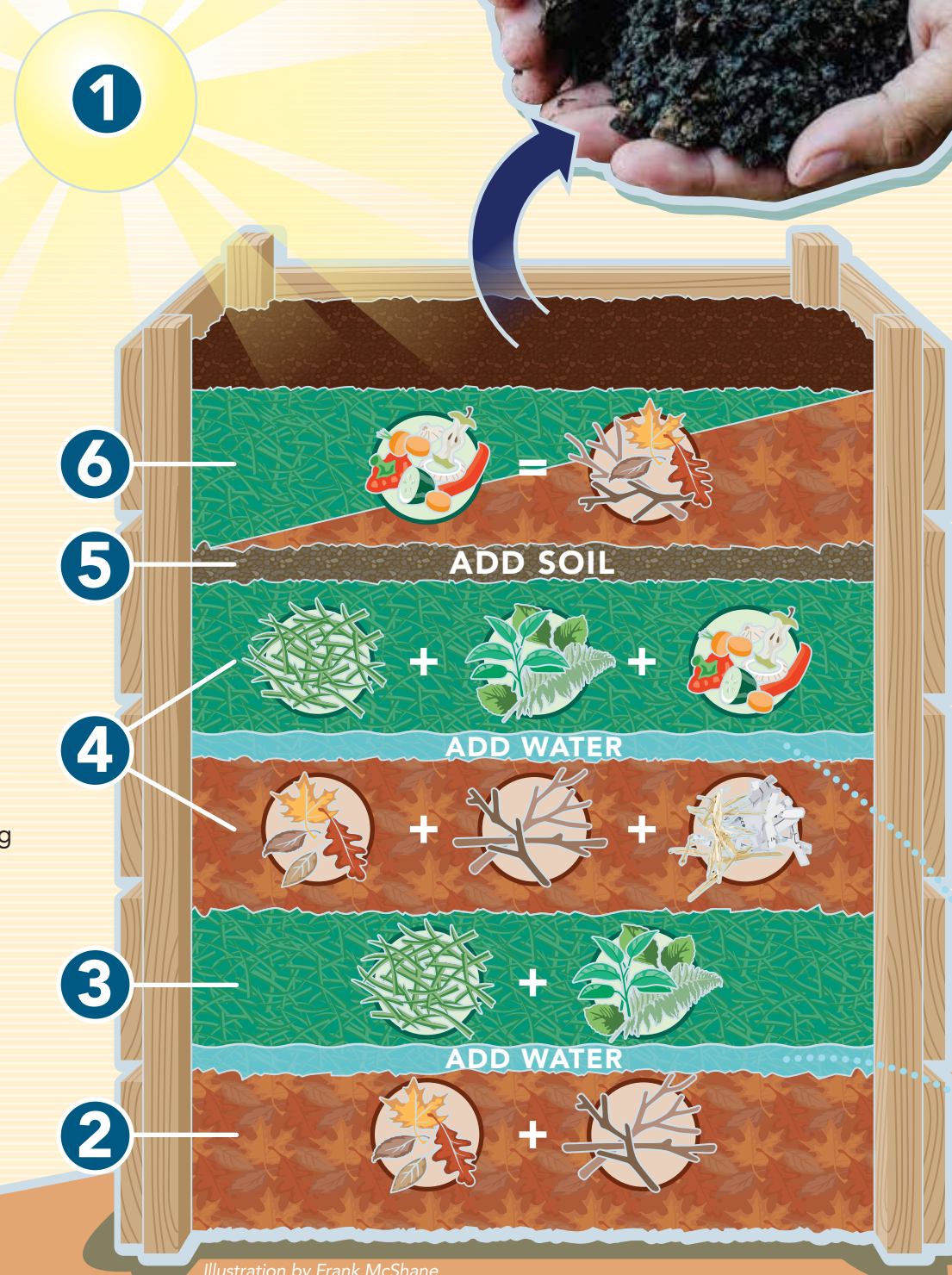


Illustration by Frank McShane

## DIFFERENCE BETWEEN BROWN AND GREEN INGREDIENTS:

### Brown Ingredients:

- Leaves and twigs
- Wood Scraps
- Shredded Paper/Newspaper
- Hay
- Saw-dust

### Green Ingredients:

- Grass Clippings
- Fruits and Vegetables
- Coffee Grounds
- Tea Bags
- Horse/Cow Manure
- Weeds/Prunings
- Egg Shells

### Ingredients that can be added:

- Human and Pet Hair
- Wood Ash (in moderation)
- Natural Fibers like Cotton or Wool
- Nut Shells

### Ingredients that should NOT be added:

- Meats or Bones
- Dairy Products
- Baked Products
- Cooked Rice
- Dog Waste
- Cat Litter
- Glossy Paper
- Walnut Shells
- Diseased Plants
- Weeds with Seeds
- Non-Organics
- Plastic Bags



# FOOD WASTE

Across the world, 1.3 billion tons of food is wasted every year, an equivalent of \$1 trillion dollars. In the US 30% of edible food goes to waste, making it the largest source of materials in landfills. Decomposing food waste in landfills results in 3.3 billion tons of greenhouse gas emissions. While a lot of this waste comes from farms and supermarkets, a large amount also results from food that spoils in our refrigerators. Reducing food waste could save you money and feed many hungry people in our communities. In the US, 16 million children are food insecure. In New Jersey alone, 12% of residents are food insecure and that number is even higher for children – at 17%.

Here are some ways you can keep food waste out of landfills:

- **Serve smaller portions.**
- **Compost.**
- **Donate your food.**
  - ◆ Donate non-perishable food to the Food Bank of South Jersey.
  - ◆ There are over 25 food kitchens and food pantries in South Jersey. To find a local one near you, visit <http://www.njahc.org/help-fight-hunger/search-your-county/>.



Backyard composter



# WASTE REDUCTION CHALLENGE

## STOPPING TRASH AT ITS SOURCE

The best way to reduce waste is to stop it before it is generated! Reducing trash at its source saves resources and the energy used to convert new resources into products.

Challenge yourself and see how many of these you can check off!

- FIX IT**
  - Repair instead of replace. We're very used to throwing out old items that are broken and don't work properly. With a little research you can repair your old clothes, electronics, or other items, saving you money, helping the environment, and providing you with a new skill. Check out these sites below to start repairing your items:
    - ◆ [ifixit.com](http://ifixit.com) is a great source of repair guides for electronics.
    - ◆ [Repairclinic.com](http://Repairclinic.com) sells replacement parts and free videos for repairing your appliances.
    - ◆ [YouTube.com](http://YouTube.com) hosts videos from amateur and professional people repairing many items.
    - ◆ [Ehow.com](http://Ehow.com) and [wikihow.com](http://wikihow.com) host step-by-step directions and videos of how to fix and build your own items.
- USE LESS DISPOSABLE PRODUCTS**
  - Take reusable canvas bags with you when shopping.
  - Use non-disposable plates, cups, and utensils.
  - Take a refillable water bottle with you instead of buying plastic water bottles.
- DONATE IT**
  - Take your items to a nearby donations center. Many of these benefit a cause or are small businesses. Check these places out:
    - ◆ RanchHope (Cowtown & Pennsville)
    - ◆ The Arc of Salem County (Salem)
    - ◆ Thrift Village (Glassboro)
    - ◆ Habitat for Humanity ReStore (Pitman)
    - ◆ Salvation Army Store (Vineland)
- RESELL IT**
  - Host a yard sale or sell your items online on [craigslist.com](http://craigslist.com) or [ebay.com](http://ebay.com) and make some money on what otherwise would go to waste.
- BUY MORE DURABLE PRODUCTS**
- BUY IN BULK**
- BUY ITEMS MADE FROM RECYCLED MATERIALS**
- USE A LESS TOXIC OR NON-TOXIC ALTERNATIVE FOR A PRODUCT**



## GET INVOLVED!

Learn more about the waste planning process and attend a public meeting about waste planning.



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**This publication was made with support from:**



21 Main Street/Auburn-Pointers Road  
Swedesboro, NJ 08085  
856-881-2269  
[www.sjlandwater.org](http://www.sjlandwater.org)

The South Jersey Land & Water Trust is a nonprofit organization whose mission is to preserve and protect the land and water resources of southern New Jersey – maintaining and enhancing the natural, cultural, and historic heritage of the region.



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Funding for this publication was provided by the U.S. Department of Agriculture

