

How Does Recycling Work?

A cycle is a sequence of events that repeats itself. Like a circle, you can begin at any point on the circumference, ending up at the same spot. Recycling is like that. Products that have been used once can be reformed into something new and usable again. And recycling does more: it protects the planet, too.

Let's take a look at how three products can become part of a recycling cycle: outdated electronics, abandoned tires, and plastics. The cycles shown in our ScrapMap™ show how they can be used again through the process we call recycling.

Experts believe that every six months our technology doubles! Electronic toys and tools quickly become outdated. There are about 500 million outdated cell phones waiting to be recycled. Look inside a typical cell phone or computer and you will find steel, copper, zinc, plastic, aluminum, and glass, as well as tiny amounts of silver, gold, palladium, and platinum. One ton of mobile phones can contain 300 grams of gold, compared to an average ton of gold ore, which contains only five grams of gold. And with some that are used to make electronics only found in a few sensitive habitats on earth, it is clear why recycling, refurbishing, reusing, and shredding electronics for recovery is a vital part of the cycle.

Organisms over hundreds of thousands of years, it formed so slowly that it's considered a non-renewable resource. Americans use about 40 million plastic bottles every day! Even though synthetic rubber (latex) comes from the sap of tropical trees, natural rubber (latex) comes from trees in a landfills. However, when we recycle, the material can be reused repeatedly, saving energy at the same time. Did you know that recycling a single plastic bottle saves enough energy to power a 60-watt light bulb for six hours? With almost 10 billion pounds of plastic recycled each year, that is a considerable amount of energy! Recycled plastic is used to make everything from cleaning materials. You might even be wearing plastic parts to clean clothes! Recycled plastic containers to automotive parts to building materials. You might even be wearing recycled plastic parts to make a t-shirt that is cool and practical.

Plastics in the Cycle

All sorts of materials can be recycled



Ferrous Metal

Items made from iron and steel, like old automobiles, machinery, or appliances.



Non-Ferrous Metal

Anything made of aluminum, copper, lead, zinc, magnesium, or tin.



Plastics

Items made from plastic, like milk jugs, soda bottles, and grocery bags.



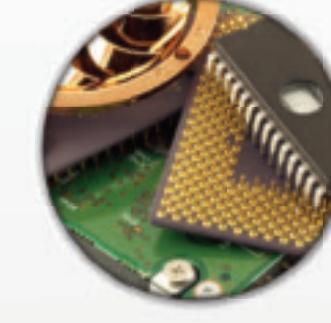
Paper

Paper products such as newspapers, magazines, office paper, and cardboard boxes.



Glass

Bottles, jars, and other glass containers.



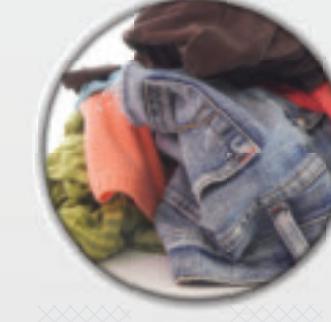
Electronics

Old TVs, computers, cell phones, and other electronics equipment.



Tires

From old cars, trucks, and bicycles.



Textiles

Clothing, furnishings, and other products.

The ScrapMap™ II

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Recycling and the Environment

Recycling is a very important way to help the environment. The environment is the place we live and all the things around us. It includes the air we breathe, the water we drink, and the plants and trees growing around us. Protecting the environment is therefore key to our survival.

Unfortunately, our environment is in danger. We use many things only once and then throw them away, like worn-out bikes and cars, empty soda cans and bottles, and old newspapers. These items then get buried in places called landfills, or improperly tossed away elsewhere. But dumping our old and worn out items in landfills is not ideal for many reasons. Not only are we wasting recyclable resources – but we use up land to store these materials and we risk potentially contaminating the earth and all those who depend upon it, including animals and people, if not safely handled.

Fortunately, recycling – or creating new things from our old things instead of just throwing them away – provides several key benefits that will help our environment. For example, when we make new products from recyclable materials, we don't have to fill up the landfills, and instead we can save the land for more productive uses. Recycling also saves valuable resources. When we recycle, we don't have to mine for new ore or cut down more trees to make our products. Additionally, recycling saves energy since machines need less energy to make new products from recyclable materials. This saves oil and coal and results in fewer greenhouse gas emissions, which can otherwise harm the environment.

Recycling protects the planet's air, water, and land; and saves energy, and natural resources that can be used for other valuable purposes!

The ScrapMap™

The recycling process is depicted on the ScrapMap™ as a large circle. Each of the circles on this page shows how we can take something old and create a new and useful product. In the United States in 2013, more than 130 million metric tons of scrap metal, paper, plastic, glass, textiles, rubber, and electronics – valued at more than \$80 billion – were manufactured into new products.

Your Old Computer Can Become New Again

The U.S. electronics recycling industry annually processes up to 4 million tons of used and end-of-life electronics equipment – cell phones, TVs, computers, copiers, fax machines, music players, copiers, and even iPads!

More than 70 percent of the electronics collected and recycled here in the U.S. can be sorted and used as ingredients in the manufacture of new products. Shredding or otherwise processing the electronics makes available the valuable materials contained within them – including steel, copper, aluminum, plastic, and glass. The rest are refurbished and resold as functioning electronic equipment both here in the U.S. and internationally.



Your Old Tires Can Help Build the Newest Highways

Each year, Americans generate approximately 300 million scrap tires. In the past, scrap tires — generated when an old, worn tire is replaced with a new tire — were often dumped illegally in lakes, abandoned lots, along the side of the road and in sensitive habitats. Today, scrap tires are playing a much different role as an important part of the manufacture process with more than 90 percent recycled and reused annually. Rubber from scrap tires is used in the manufacture of landscaping mulch; playground mats and athletic surfaces; molded products such as railroad ties, flowerpots, garden hoses, welcome mats; and rubberized asphalt used in the paving of roads. Cutting-edge technologies are even being developed to allow scrap tires to be used in the manufacture of new tires!



Household Plastic Can Be Recycled Over and Over Again in Manufacturing

Since 1950, the global production rate of plastic has grown steadily, and all signs point to continued growth. Because of this, there is a need to ensure that plastics are recycled when they reach the end of their useful lives so that we can protect our natural resources. While we are all familiar with the recycling of food, beverage, and other common plastic household containers, plastic recycling goes far beyond that. Engineered and industrial plastics are found in all types of products, from cars to refrigerators, and these plastics are being recycled every day as well.

