

Is it possible to create zero waste?

By Gale, Cengage Learning, adapted by Newsela staff on 11.10.17

Word Count **958**

Level **1170L**



A man classifies garbage at La Alqueria Recycling Center in Bogota, Colombia, on January 17, 2013. Some 60 recyclers classify 10 tons daily of potentially recyclable waste at this recycling center which is part of Bogota's Mayor program 'Basura Cero' (Zero waste). Photo by: Guillermo Legaria/AFP/Getty Images

Zero waste refers to any process that results in no waste, such as a process that recycles waste into raw materials for a new product. The ultimate goal of a zero waste process is to send nothing to a landfill or incinerator.

The zero waste concept is based on nature, because nature endlessly recycles natural resources to sustain the biosphere, a term that refers to all life on Earth. Nature does not create waste, because one organism's waste is another organism's resource.

Plants release oxygen as waste, and animals use that oxygen for respiration. In the process of respiration, animals combine oxygen with food molecules to produce the energy needed for movement, growth and reproduction. Animals release carbon dioxide as waste, and plants use that carbon dioxide in photosynthesis. During photosynthesis, plants convert light energy into the chemical energy they need to sustain life.



Doing More With Less

Some companies have zero waste programs because they are committed to proving that energy and resource efficiency are good business. Choosing sustainable materials for a product, streamlining the production process, and reducing the need for packaging all result in significant cost savings for the manufacturer. These savings can be passed on to the consumer, who will be encouraged to buy a less expensive, more sustainable product than the competition offers.

An example of a zero waste product is a refillable glass bottle. This differs from a recycled glass bottle that is smashed and processed into something new. Smashing a bottle takes energy, and the waste glass requires even more energy to be turned into a new product. If instead the bottle is simply refilled, no additional energy and equipment are needed to keep using it.

From Corporation To Consumer

Companies like Honda, Subaru, General Motors and Ford started zero waste programs in the early and mid 2000s. These efforts involve sending just a small amount of waste to landfills. All materials that enter these plants are used, reused or recycled. The food company Nestlé announced in 2015 that all 23 of its U.S. factories are now zero waste.

So, what needs to happen for zero waste programs to grow and succeed? There need to be rules in place that require businesses and households to recycle in order for zero waste programs to work. This is necessary because the consumer's actions at the end of a product's life cycle create the closed-loop cycle that mimics the natural world. The goal is to eliminate waste rather than simply manage it.

In 2009, San Francisco, California, passed a law that called for zero waste, and made recycling and composting mandatory. By 2010 San Francisco had become the greenest city in the United States, keeping 80 percent of its waste out of landfills and incinerators.

Cradle-To-Cradle Design

Many zero waste ideas are a part of cradle-to-cradle design. This is different from traditional cradle-to-grave design, which tracks a product from birth ("cradle") to death ("grave"). Cradle-to-cradle design tracks a product from its birth to the rebirth of its various parts, eliminating the "grave," or trash stage. This process reduces waste, improves sustainability and preserves natural resources. Cradle-to-cradle design is a relatively new theory in the fields of manufacturing and design. It has been embraced by many designers and engineers, but it has so far proved difficult to carry out in the real world.

The cradle-to-cradle theory regards all substances as either biological nutrients or technical nutrients. Biological nutrients are those that can safely be returned to the earth to become food for other organisms. A technical nutrient is a material that can be continually reused without

becoming degraded (worn out) or entering the waste stream, such as steel. At the end of a product's life, it is separated into biological nutrients, which are composted, and technical nutrients, which are recycled. Nothing is placed in a landfill.

The Zero Waste Institute

The Zero Waste Institute was founded by Paul Palmer, a chemist who pioneered the zero waste concept in the 1970s. The organization considers recycling a last resort, and calls instead for industry and consumers to stop generating waste in the first place. Only then can zero waste truly be achieved.



The zero waste concept expands the traditional three Rs. The traditional three Rs are reduce, reuse, recycle. Zero waste, on the other hand, believes in refuse, reduce, reuse, recycle and rot. Refuse means “do not accept what you do not need.” Rot means “compost whatever you can to replenish the soil.”

Zero Waste And Sustainability

Preventing waste is more efficient than handling it after it is produced. For this reason, zero waste programs should be incorporated in all sustainable development efforts. This is already happening with zero waste events and zero waste stadiums. For example, the 2012 London Olympics was planned as the world's first-ever zero waste games. Planners fell short of their goal, but it was still an improvement compared to previous Olympics. Over 70 percent of the 8,000 tons of waste generated during the games was recycled. Newly built facilities were extremely energy efficient, resulting in less pollution from power plants that generated their electricity.

Sustainability means meeting our needs today without compromising the needs of future generations. Putting in place zero waste programs is an important way to conserve resources so they remain available to others in the future.