



THE LIFE CYCLE OF THE PRODUCTS WE USE

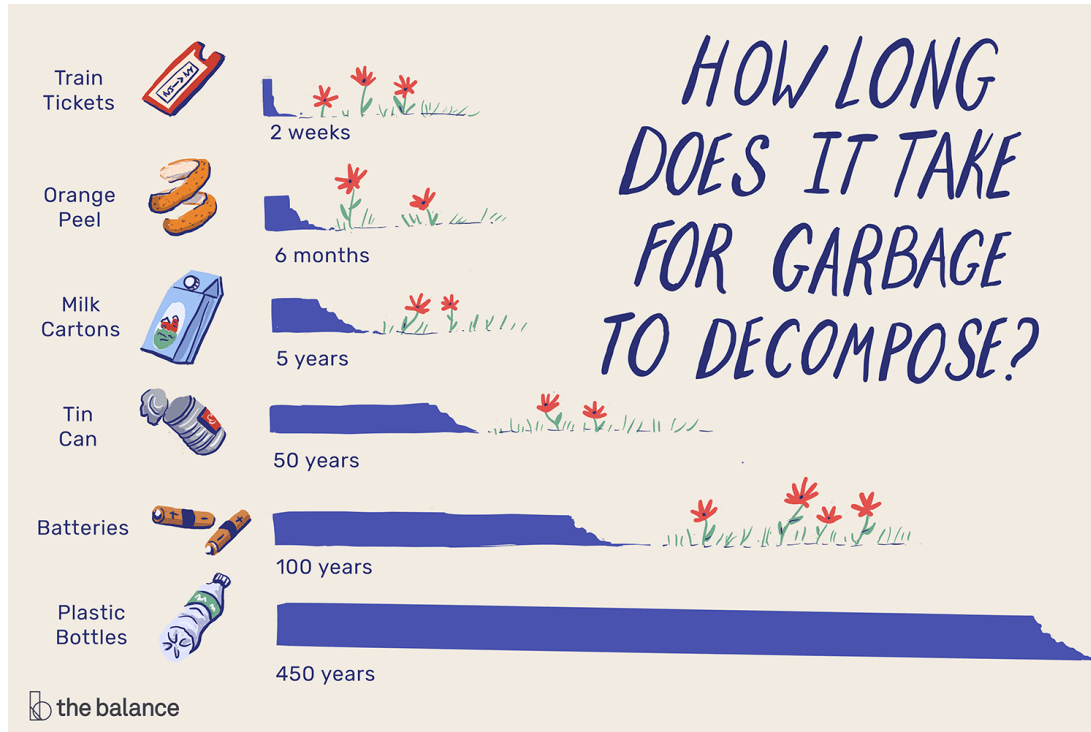
Made by- Tvesa Anuj

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INTRODUCTION



The debates

1. The whole problem of disposal, what is biodegradable and what isn't, what should be used, is complex.
2. On one hand, there is an entire agenda of how trees shouldn't be cut for product manufacturing
3. On the other hand, there is an entire agenda of how we need to go back to using products made of natural materials.

Which one is right?



Let's analyse this

Here's an example-

- You buy a plastic toothbrush. You throw it away after 2 months. – Dumped to never decompose.
- You buy a plastic tiffin box, You use it for years together. – Used for years, still never decomposes
- You buy a bamboo toothbrush- Dumped, decomposes.
- You buy a bamboo tiffin box- Used for years, still decomposes.

Here, the bottom line is that investing in sustainable products when it comes to short term use as well as long term use is the only right option.

However, does this mean you dispose off all your plastic products today and buy new, eco-friendly products?

Ideally, no. This means that when you dispose off your product once it is used, now onwards, opt for sustainable products.



The cutting trees vs Creating more plastic argument- My opinion

- On one hand, cutting trees increases the concentration of oxygen in the air. On the other hand, plastics don't decompose.
- To rate any product as 'eco-friendly' we need to look at the following:

1. Embodied Energy in Products: is the sum of all the energy required to manufacture a product (including procuring raw materials, processing and shipping the manufactures goods to customer)

2. Life-cycle cost analysis (LCCA) is a tool to determine the most cost-effective option among different competing alternatives to purchase, own, operate, maintain and, finally, dispose of an object.

A plastic pencil will have more non-renewable energy embodied in it than a wooden pencil. In plastic pencils, there are two major downsides: First, it takes quite a bit of petroleum and energy to make, and second, it's not easy to get rid of after you're done with it and the process of manufacturing plastic is going to produce its own chemical waste. The biggest virtue of a wooden pencil is it takes less energy to produce the raw pencil material. Wooden pencil will eventually become a heap of shavings that can be composted or decompose naturally.



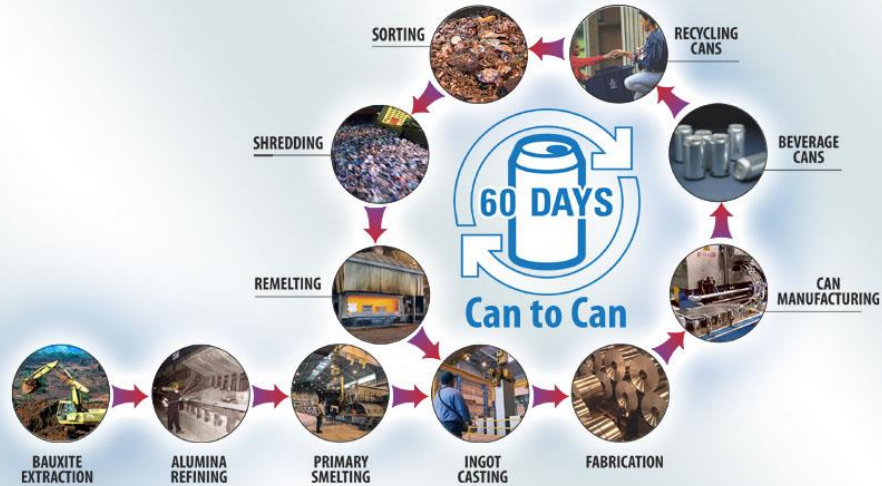
Now, we are going to talk about 2 products made out of 2 Non Biodegradable materials.



Life cycle of a tin can

1. Brand new aluminum is produced from bauxite ore, which is usually found in Africa, Oceania, and South America. After it is strip-mined, bauxite is chemically processed and turned into alumina, or aluminum oxide. Then, alumina is smelted to produce pure aluminum metal. This aluminum is rolled into thin sheets of metal that can be shaped into new products.
2. After sheets of aluminum metal arrive at a manufacturing plant, they are used to create new cans. The sheets are fed through a press machine, which punches out the shape. Other machines will process and refine this shape by thinning the walls, forming the bottom, and trimming any excess. Once the cans are cleaned and prepared for commercial use, they can be printed with company brands, logos, and images.
3. Consumers drink their beverages and either throw away or recycle the empty can. When they are recycled, aluminum cans are transported to scrap metal facilities, where they'll be melted down for reuse. The melted form of recycled aluminum will go through the same manufacturing process it initially did. This reuse is called secondary production of raw aluminum, whereas processing new aluminum from bauxite ore is called primary production. Because secondary production can be done over and over thanks to the properties of aluminum, a used can is able to be recycled and ready for consumer use again in as little as 60 days. Furthermore, recycling cans save up to 95% of the necessary energy consumption to create new cans through primary production.

Life-Cycle of the Aluminum Can



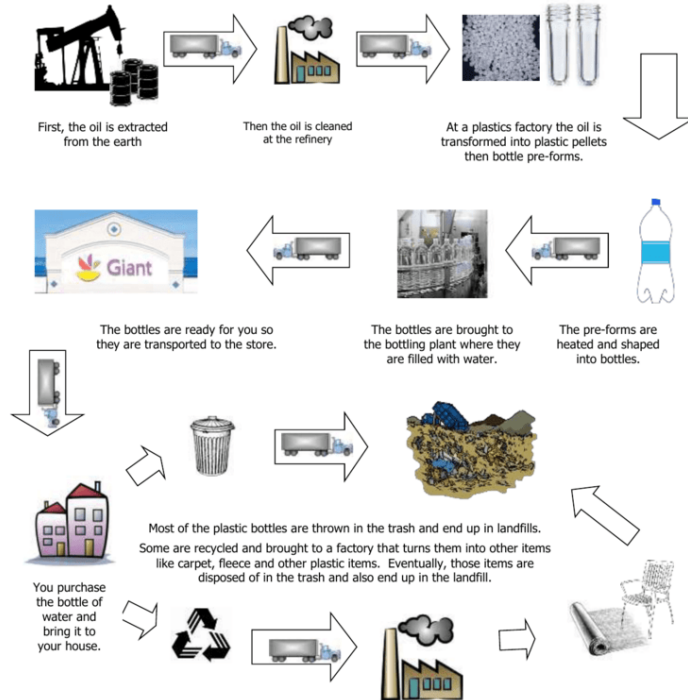
A plastic bottle

1. The distillation process separates the crude oil into components, called fractions. Each fraction that is separated is a mixture of hydrocarbon chains. The fractions differ in size and structure of molecules and are generally separated into three categories: light, middle, and heavy fractions. Light fractions result in hydrocarbons: gasoline, naphtha, kerosene, jet fuel, and paraffin. Medium fractions result in diesel fuel and gas oil. Heavy fractions result in fuel oil. PET is produced from naphtha from the light fractions of hydrocarbons. Naphtha is used to produce the base molecules, called monomers, that makeup PET.
2. As it cools down, the plastic water bottle is formed. The bottles are filled with water and sealed for use in the bottling process. These bottles are then transported to grocery stores and other suppliers to be bought by consumers.
3. When plastic bottles are not recycled, they are sent to landfill where they can take up to 1,000 years to decompose. Moreover, products made from recycled bottles, such as clothing, often end up in landfills as they cannot be recycled with today's infrastructure.



The Life Cycle of a Plastic Bottle

The average American consumes 167 bottles of water each year. There are many steps involved in making a bottle of water and throughout the process many natural resources are used. Make a note of how many times the bottle is transported throughout the process and remember that transportation also uses gasoline and releases a lot of carbon dioxide into the air which contributes to air pollution.



Conclusion

1. Practice minimalism
2. When it comes to use and throw products, opt for products made of biodegradable materials.
3. Practice the 3rs



THANKS!

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