



TED: What really happens to the plastic you throw away?

Emma Bryce traces the life cycles of three different plastic bottles.



Transcript

Read the transcript. Underline the words you don't know. Watch the video and read along with the transcript.

This is the story of three plastic bottles, empty and discarded. Their journeys are about to diverge with outcomes that impact nothing less than the fate of the planet. But they weren't always this way. To understand where these bottles end up, we must first explore their origins.

The heroes of our story were conceived in this oil refinery. The plastic in their bodies was formed by chemically bonding oil and gas molecules together to make monomers. In turn, these monomers were bonded into long polymer chains to make plastic in the form of millions of pellets. Those were melted at manufacturing plants and reformed in molds to create the resilient material that makes up the triplets' bodies.

Machines filled the bottles with sweet bubbly liquid and they were then wrapped, shipped, bought, opened, consumed and unceremoniously discarded. And now here they lie, poised at the edge of the unknown.

Bottle one, like hundreds of millions of tons of his plastic brethren, ends up in a landfill. This huge dump expands each day as more trash comes in and continues to take up space. As plastics sit there being compressed amongst layers of other junk, rainwater flows through the waste and absorbs the water-soluble compounds it contains, and some of those are highly toxic. Together, they create a harmful stew called leachate, which can move into groundwater, soil and streams, poisoning ecosystems and harming wildlife.

It can take bottle one an agonizing 1,000 years to decompose.

Bottle two's journey is stranger but, unfortunately, no happier. He floats on a trickle that reaches a stream, a stream that flows into a river, and a river that reaches the ocean. After months lost at sea, he's slowly drawn into a massive vortex, where trash accumulates, a place known as the Great Pacific Garbage Patch. Here the ocean's currents have trapped millions of pieces of plastic debris. This is one of five plastic-filled gyres in the world's seas. Places where the pollutants turn the water into a cloudy plastic soup.

Some animals, like seabirds, get entangled in the mess. They, and others, mistake the brightly colored plastic bits for food. Plastic makes them feel full when they're not, so they starve to death and pass the toxins from the plastic up the food chain. For example, it's eaten by lanternfish, the lanternfish are eaten by squid, the squid are eaten by tuna, and the tuna are eaten by us. And most plastics don't biodegrade, which means they're destined to break down into smaller and smaller pieces called micro plastics, which might rotate in the sea eternally.

But bottle three is spared the cruel purgatories of his brothers. A truck brings him to a plant where he and his companions are squeezed flat and compressed into a block. Okay, this sounds pretty bad, too, but hang in there. It gets better. The blocks are shredded into tiny pieces, which are washed and melted, so they become the raw materials that can be used again. As if by magic, bottle three is now ready to be reborn as something completely new. For this bit of plastic with such humble origins, suddenly the sky is the limit.

Quiz

Scan the QR code above with your phone. Watch the video and take the quiz.



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Academic Word List vocabulary (gap fill)

layers compounds impact create accumulates
✓outcomes consumed expands bonded chemically

1. This is the story of three plastic bottles, empty and discarded. Their journeys are about to diverge with **outcomes** that _____ nothing less than the fate of the planet.
2. The heroes of our story were _____ in this oil refinery. The plastic in their bodies was formed by _____ bonding oil and gas molecules together to make monomers. In turn, these monomers were _____ into long polymer chains to make plastic in the form of millions of pellets.
3. Machines filled the bottles with sweet bubbly liquid and they were then wrapped, shipped, bought, opened, _____ and unceremoniously discarded.
4. This huge dump _____ each day as more trash comes in and continues to take up space.
5. As plastics sit there being compressed amongst _____ of other junk, rainwater flows through the waste and absorbs the water-soluble _____ it contains, and some of those are highly toxic.
6. Together, they _____ a harmful stew called leachate, which can move into groundwater, soil and streams, poisoning ecosystems and harming wildlife.
7. After months lost at sea, he's slowly drawn into a massive vortex, where trash _____, a place known as the Great Pacific Garbage Patch. Here the ocean's currents have trapped millions of pieces of plastic debris.