

Nature's Waste Isn't Wasted

Nature's Waste

Is there such a thing as **waste** in nature? Trees lose leaves, flowers drop petals, snakes shed skin, birds lose feathers, people brush out old hair. All animals poop. And eventually, all living things die. What happens to the parts, pieces, and **organic remains** living things leave behind? Why isn't our planet covered in piles of this stuff, growing higher and higher every day?

Word Connections

Organism means any living thing.

Organic is a way of describing a material that comes from a living or once-living thing.

What do you think **inorganic** means? (Hint: the prefix *in-* means "not.")



What Happens to Nature's Waste?

Word Connection

Break apart the word **biodegradable** to find its meaning:

- *bio-* is a prefix that means life.
- *degrade* means to decompose or break down.
- *-able* is a suffix that means able to be.

So biodegradable means able to be decomposed by living things.

Fortunately for us, and for all living things, organic remains **decompose**. They rot, decay, and break down into smaller pieces. How does this happen?

Organic remains decompose because other living things feed on them. Organic remains contain **nutrients**. Nutrients are substances like vitamins and minerals, which all living things need for growth and life.

Organisms that feed upon organic remains are “nature’s recyclers.” They break down and recycle the nutrients in dead plants and animals, and their waste. These nutrients end up being used again by living plants and animals.

Nature’s waste does not get wasted at all. It gets reused. Nature’s recyclers feed on the wood from this dead tree. They leave extra nutrients from the dead tree in the ground. After the tree is gone, other plants will grow in the same spot.

Organic remains, such as a dead tree, are described as **biodegradable**. Everything made by nature returns to nature.



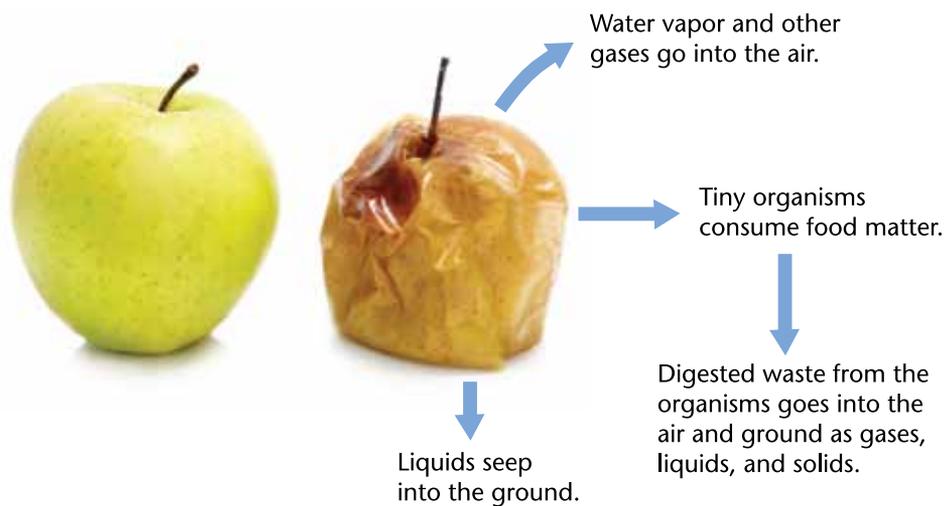
Nature's waste does not get wasted.

Where Does the Matter Go?

Have you ever noticed that rotting fruit gets smaller, until it seems to disappear? Why does this happen? Where does the matter go?



Some of the water in rotting fruit goes into the air as water vapor. Some of the water also drains into the ground.



Some of the matter gets eaten by other organisms.

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When scavengers and other organisms eat the fruit, matter goes into their bodies and is carried away when they leave for another meal or they reproduce. Inside the bodies of the organisms, the matter is digested and broken down to smaller pieces. Those organisms release some of that digested matter into air as gases. Some goes to the soil as solid or liquid waste.

So rotting is more than an icky, smelly process. It means food matter can be used again by other organisms. It means matter is being moved around and being re-cycled through the ecosystem.

What Happens to People's Waste?

Much of the waste from people truly does get wasted. One problem is that some of our trash is inorganic, which means that it is not made from living or once-living things. Nature's recyclers can't feed on inorganic remains. This waste is not biodegradable.

Another problem is that we make so much trash. Then we dump it in places where even organic remains can't be broken down. Many waste products that are naturally biodegradable—such as food waste and paper—will not decompose in a big, deep landfill dump, because nature's recyclers can't live there. There isn't enough soil, light, or water for nature's recyclers to survive.



People's waste does get wasted in a landfill.

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When people let their waste loose into the natural world, it causes other problems. Since nature's recyclers can't break it down, it piles up. Some of it washes into the world's oceans. There, animals mistake it for food, and get sick when they try to eat it. It even collects in giant rafts of plastic.



Plastic waste causes problems for animals that live in the oceans, because there are no nature's recyclers that can consume it or break it down.

People Doing Science

The Garbage Project

Scientists at the University of Arizona have studied our garbage by digging through landfills as if they were archaeological sites. They have sorted, weighed, and measured trash from over fifteen landfills located across North America, from the deserts of Arizona to the Everglades of Florida. What they have found has been a surprise.

The Garbage Project has found that organic materials take up almost half of the space in landfills. Paper, grass clippings, and foods—things like carrots, grapes, corn cobs, and half-eaten bananas still in their peels—were buried deep in the landfills. Scientists could recognize some of these foods even though the items were more than 25 years old. They could read some newspapers that were over 40 years old.

In nature, these things would decompose. But they won't biodegrade in a landfill, where nature's recyclers can't do their work.

Word Connection

An **archaeological site** is a place where there is some evidence of past human activity. Archaeologists are the scientists who dig and sift through the remains at a site. They document and analyze what they find.



Think About It!

What do you see in this garbage? How long do you think it will take to decompose?

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Think About It!

Look at the list of products. Which are made of organic materials?

Environmental Stewardship

What should you do if you don't want to waste your garbage? You can compost organic materials, recycle paper, and reuse glass and plastic containers. Can you think of other things you can do?

Decomposition Fact

Here's how long it takes some commonly used things to decompose, when they are scattered about as litter in nature:

Cotton rags	1 to 5 months
Paper	2 to 5 months
Natural fiber rope	3 to 14 months
Orange peels	6 months
Cigarette butts	1 to 12 years
Wax-coated paper milk cartons	5 years
Leather shoes	25 to 40 years
Aluminum cans	80 years
Tin cans	100 years
Plastic soda bottles	450 years
Glass bottles	500 years
Styrofoam	More than 1,000,000 years

Glossary

biodegradable

Able to be decomposed by living things.

decompose

To decay or break down into smaller pieces.

nutrients

Substances such as vitamins and minerals that organisms need for growth and life.

organic remains

Organisms that are no longer living; or parts of organisms that are discarded, excreted, or no longer needed. Also called natural waste.

waste

Anything that is discarded because it is used up, worn out, or no longer needed.

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