

## **GCSE Biology – Rate of Decay - Transcript**

How does our food waste turn into compost? It decays.

Let's look at the key factors that affect the rate of decay. Decay, or decomposition, is how dead organisms are broken down.

Microorganisms like bacteria and fungi are the main decomposers.

'They release enzymes that break down the dead organisms. They absorb some of the nutrients that are produced and return the rest back to the soil and into the atmosphere.'

Other creatures, like worms and woodlice also help. They're called detritivores, they chew larger pieces into smaller bits, increasing the surface area for microorganisms to work on.

Three key abiotic factors affect how fast decay happens.

### 1. Temperature.

Warm conditions speed up enzyme activity, so decomposition happens faster.

But if it is too hot enzymes denature, decomposers die and decomposition stops. But colder temperatures slow decay. That's why we refrigerate our food.

## 2. Water availability.

Microorganisms need moisture to survive and digest materials. Too dry, decay slows and stops to keep it edible for longer.

## 3. Oxygen availability.

Most decomposers need oxygen for respiration. In low oxygen environments, like sealed containers, decay slows. That's why we seal food to preserve it.

Some bacteria, however, can survive without oxygen. They use Anaerobic Respiration.

Gardeners and farmers use warm, moist, oxygen-rich compost heaps to speed up decay, turning waste into rich compost that feeds new life.

Decay might sound unpleasant, but it keeps the cycle of life going.