



Students explore how decomposition occurs (when living things die – they break down). They will do this by watching the video clip which looks at what happens to materials over time. The students discriminate between rubbish that is made from living things and other non-living rubbish. They establish the idea that the living things break down into their component nutrients which allows them to be reused and the life cycle to continue.

Activity 3: Biodegradable Rubbish

Resources and equipment you will need:

- [Clip 3: Biodegradable Rubbish](#)
- [Worksheet 2: Biodegradable Rubbish](#)
- [Background Information 3](#)

Teaching/Learning sequence

Introduce the video by reviewing that when things grow old, they die. What happens to the bodies? Distribute [Worksheet 2: Biodegradable Rubbish](#)

Watch the start of the video, then stop the video when the rubbish has been buried.

Ask the students to identify the rubbish and write the names in the categories on the worksheet:

- living thing
- made from a living thing
- made from non-living thing

Ask the students to make predictions.

Continue with the video and ask the students to complete the observations.

Facilitate class discussion before the students write their explanations.

Ask students to complete the final question which highlights that one individual goes through the stages of birth, growth, reproduction and death and the recycled nutrients will allow the life cycle to continue.

Extension

The class could choose the same or different items and replicate the experiment. Different decomposition conditions could be tried.



Worksheet 2: Biodegradable Rubbish

Name: Class:

What happens when living organisms die? The bodies break down releasing the nutrients so they can be used again – for another life cycle.

Watch **Clip 3: Biodegradable Rubbish** carefully and answer the following questions.

1. What does Ben mean when he says Nature takes care of its litter?

2. What kind of rubbish never seems to go away?

When your teacher pauses the clip, fill in the table below using the following items:

- Newspaper
- Milk carton
- Plastic cup
- Tin can
- Potato peel
- Apple

Write the name of the rubbish item in the appropriate column.

Living thing	Made from a living thing	Made from non-living things



Predict the order that the rubbish items will decompose.

Predict	Observe Write your observations. Did they agree with your predictions?	Explain Why did some things break down before others?
1		
2		
3		
4		
5		
6		

Why is it important that when living things die, their bodies break down?



Background Information 3

Activity 3: Biodegradable Rubbish

The life cycle means that as one individual dies another takes over (through reproduction). All living things die eventually.

The bodies decompose or break down. The decomposition is assisted by other living things like bacteria, maggots, and worms.

Living things are described as “organic”. This means they can be readily decomposed by other living things.

It is important that living things decompose so the nutrients can be reused. Leaf litter in a rain forest is recycled very quickly as the warm, humid conditions, are very conducive for decomposition by fungi, bacteria and other decomposers.

Materials that are synthetic (man-made) are more difficult to decompose because organisms which generally perform this role do not have the capacity to act on the synthetic materials.

Approximated time for compounds to biodegrade in a marine environment

Product	Length of Time to Biodegrade
Paper towel	2-4 weeks
Apple core	1-2 months
General paper	1-3 months
Cardboard box	2 months
Wax coated milk carton	3 months
Cotton cloth	5 months
Plastic coated milk carton	5 years
Plastic bottle	10-20 years
Tin can	50-100 years
Aluminium can	150-200 years
Soft plastic (bottle)	100 years
Hard plastic (bottle cap)	400 years
Glass bottle	Undetermined (forever)

Students are directed to follow the POE (predict, observe, explain) procedure to explore the biodegradable rubbish. This allows students to articulate their thoughts. Teachers may have access to misconceptions and address this. Misconceptions can also be addressed as they observe. It is important to remember that sometimes practical results don't always replicate the theoretical expectations.



In this situation, a scientist would review if the test had been fair – have all the variables been controlled, were there some conditions which couldn't be controlled? Repeating the experiment (increased number of trials) is generally a satisfactory approach to dealing with unexpected or unexplained results. Sometimes very effective learning takes place when things don't follow the expected pattern – and many scientific discoveries have resulted by the persistent scientist following the POE approach.