

Natural Resources and life cycle of a product (Year 4)

Curriculum Links:

Geography

- The impact of production
- Waste Management

Science

- Plant life cycle

Topics Discussed

Natural Resources - where they come from and how we use them

- Discuss the natural resources used to make our recyclable materials
- How do we get these natural resources? i.e.: mining, drilling
- How long does it take for materials to break down, why is it important to close the loop.
- Why do we need to follow the three R's
- Environmental costs of using these natural resources and the process of manufacturing

Lifecycle of Plants

- Discuss seedlings through to plants to pruning to green waste to mulch and back onto the new plant to help it grow.

Before you start the lesson

- Make sure you have Red/ Green and yellow bins for demonstration purpose. Alternatively, use any two bins in the classroom and label it as Red/ Green and Yellow bins
- Gather some display items (example -empty plastic bottles, cans, glass bottles, paper/cardboard)

Lesson Outline/ Teacher Resource

Resources and the Life cycle of plants

Introduction: *Topics going to be covered today are the impact of production on our environment, where do our natural resources come from? How long does it take for materials to breakdown? Why is it important to close the loop and, the Plant life cycle - from plants to mulch and back into the garden?*

First, let us discuss our two bins. What can and cannot be recycled? What makes all these products?

We can recycle 5 types of items - paper & cardboard, plastic, glass, steel and aluminium

Let us discuss some recycling rules. No lids-lids go into rubbish, rinse it, no plastic bags, no bagging boxing.

Play the **sorting game** -Put a pile of items in a box - students to pick up an item and put into correct bin - make into a relay if enough space

If these items were not to be recycled and were put into the landfill how long you do think each item would take to break down.

Paper- 3 weeks to 3 months

Glass- 1,000,000 years

Plastic- approximately 500 years

Aluminium- up to 500 years

Steel- up to 200 years

All things manufactured come from natural resources. Natural resources are materials that are mined, drilled or chopped from our natural environment. Most of our natural resources are not renewable, which means when we've used them all up, there is no more. So how will we be able to make the items that we've all got used to having? Some examples of natural resources are: coal and oil (used to make plastic) and bauxite (used to make aluminium). Trees are renewable, but take a long time to grow, a lot longer than it takes for us to chop them down and make paper and cardboard.

Natural resources have two critical functions:

They act as the raw materials used to make items for us, human production process (as referred to before) and they maintain the ecosystem services that are vital to all life on earth. We don't often think about the benefits of our natural resources, but they include the provision of fresh water by the water cycle and oxygen in the air.

If we continue to use our non-renewable resources instead of renewable resources (i.e. solar power instead of burning fossil fuels or recycling) then we will continue to harm our environment.

Who can think of another way we can conserve our natural resources? Recycling is one of them. Others are (waste hierarchy) refuse, reduce, reuse and then recycle. We call this "Closing the Loop".

Play "MRF" Video

We now want to talk to you about a different type of recycling, something that we don't always think of as recycling. I am talking about the life cycle of plants.

The plant starts life as a seed, which germinates and grows into a plant. The mature plant produces flowers, which are fertilised and produce seeds in a fruit or seedpod. The plant eventually dies, leaving seeds which germinate to produce plants. Where the recycling

component comes in throughout the life of the plant we will prune the branches, we will pick flowers and then they die. What can we do with the branches and dead flowers? We can compost them; turn them in mulch, which then is put onto our garden to help our plants grow. Just like plants when they are growing, mulching uses three elements - heat (sun), water (rain) and air.

At Council, we have great big piles of mulch, but at home, you usually have a compost bin or a small open area. It does not matter about the size; the process is still the same.

Questions for discussion

- Q. What is used to manufacture any products?
- Q. Can we make more natural resources?
- Q. Can you name one renewable natural resource?
- Q. How can we conserve our natural resources?
- Q. What do you mean by closing the loop?

