

Today's lesson is on the types of plastic. The students will learn about the 7 main types of plastic, and common items that they are made of.

We will then learn about microplastics, the different types and how they are made.

# OVERVIEW

PLASTIC VARIES, DEPENDING ON  
WHAT IT IS USED FOR

SOME IS FLEXIBLE, SOME IS RIGID

Plastic can vary in texture and flexibility, depending on what it is used for.

Some plastic is rigid, this includes things like chairs, tables, car parts, storage boxes, etc.

Some plastic is flexible, this includes things like fibres used in clothing, laminated sheets, plastic shopping bags.

The students can be asked to name any rigid or flexible plastics that they see in the classroom

# TYPES OF PLASTIC

## RESIN IDENTIFICATION CODE (RIC) SYSTEM



Not all plastic is created equal; it comes in various shapes, colors, and types, each serving different purposes.

Some plastics are reusable, while others are not due to their chemical composition. Likewise, some can be recycled, while others require alternative disposal methods.

In 1988, the Resin Identification Code (RIC) system was introduced by the Society of the Plastics Industry, categorising plastic resins into seven groups. The objective was to establish a consistent national system that promotes post-consumer plastic recycling. Over time, with minor adjustments, the RIC has become the globally recognised standard for classifying plastics.

# HOW DO WE TELL THEM APART?

- PLASTIC IS OFTEN MARKED WITH THE SYMBOL OF WHICH TYPE IT IS
- LIDS ARE OFTEN MARKED ON THE INSIDE
- THE TYPE OF PLASTIC MATTERS WHEN IT COMES TO RECYCLING



Plastic items often have a symbol imprinted on them, which helps identify which type of plastic it is.

This is really important when it comes to recycling, as certain types of plastic cannot be mixed in the process. One of the reasons they cannot be mixed is because they have different melting temperatures.

Here, we can show examples to the class, and get them to pass them around.

## **DISCUSSION POINTS**

**WHAT TYPE OF PLASTIC ARE YOUR  
ITEMS MADE FROM?**

**IS THERE PLASTIC IN YOUR CLOTHING?**

Students can be asked to look at their own items of plastic, and see if they can spot the symbol

Look on the inner label of clothing to see if they are made of plastic



# WHAT ARE MICROPLASTICS?

In the next part of this lesson students are going to learn about microplastics.

Begin by asking the students if they know what microplastics are?

Ask them if they can think of any types of microplastic?

# DEFINITION OF MICROPLASTIC

PLASTIC LESS THAN 5<sub>MM</sub>

Microplastics are tiny pieces of plastic that are less than 5mm in size. The upper size category of microplastics can be seen with a naked eye, while the lower size category likely requires a microscope.

There are some difference in the scientific world as to the smallest size a microplastic can get before it is termed a 'nano plastic'. But the general consensus is that this is 1 micron in size. Which is 1/1000 of a millimetre. Tiny!

# TYPES OF MICROPLASTIC

## PRIMARY MICROPLASTIC

PLASTIC PIECES THAT WHEN PRODUCED ARE <5 MM



## SECONDARY MICROPLASTIC

PLASTIC PIECES THAT BREAKDOWN INTO MICROPLASTICS



Microplastics are classically broken up into two main types. This is primary microplastics and secondary microplastics. The two groupings are typically a reflection of how the microplastics are created.

Primary microplastics are manufactured to be that size. They are produced as microplastics. This includes things like beads, glitter, microbeads in cosmetics and nurdles.

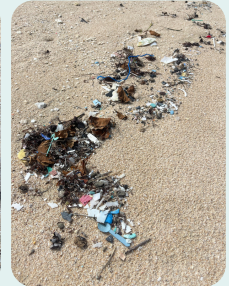
Nurdles are the building blocks for most plastic items. Nurdles are melted down and made into many plastic items, from clothes to cars, food wrappers to artificial Christmas trees. It takes around 600 nurdles to make one plastic drink bottle.

Secondary microplastics are microplastics that used to be large pieces of plastic but have been broken down into smaller pieces. This can happen due to exposure in the environment.



# MICROPLASTIC IN THE ENVIRONMENT

MICROPLASTICS ARE EVERYWHERE, THEY HAVE BEEN FOUND IN THE MARIANA TRENCH,  
ANTARCTICA, AND EVEN IN THE CLOUDS...



MICROPLASTIC ON THE BEACH IN  
ARNHEM LAND, NORTHERN TERRITORY.  
WANUWUY (CAPE ARNHEM) AND  
DHAMBALIYA (BREMER ISLAND)

Microplastics have been now documented pretty much everywhere on the planet.

This includes in the deepest ocean trenches (the Mariana Trench is more than 11km deep), and the ice in Antarctica.

If students have learnt about the water cycle, here is a great place to tie in that evaporation means that microplastics can now also be found in the clouds.

On the right are some examples of microplastics found on beaches around NE Arnhem Land.

# HOW MICROPLASTICS AFFECT YOUR HEALTH



This video can be played to provide another style of learning for the students. Audio will be required, although there are audio cues. The video goes for 2 minutes.

[https://www.youtube.com/watch?v=aiEBEGKQp\\_I](https://www.youtube.com/watch?v=aiEBEGKQp_I)

# **PRACTICAL**

**COMPLETE THE WORKSHEET ABOUT  
TYPES OF PLASTIC**

Students can fill in the worksheet provided in the lesson pack