

Activity 2

The life of plastics

Not all plastic is the same. This experiment will enable you to become familiar with the different types of plastic we use in our everyday lives.

YOU WILL NEED Ask everyone in the class to bring in as many different types of plastic as they can find • Paper • Pens •







- 1 Arrange all the plastic on one table.
- 2 Discuss with the class the different qualities of the plastic, as shown in Table 1.
- 3 Discuss possible physical tests for the plastic i.e. two people pulling, scrunching up in your hand, trying to distort its shape, etc.
- 4 Divide the class into groups.
- 5 Give each group a range of different plastics.
Flexible • Recyclable
Hard • Soft • Transparent
Non Recyclable • Long lasting
- 6 Get each group to classify the plastic into different types.
- 7 They can use any kind of classification as long as they can justify it themselves.
- 8 They should write the characteristics of each class of plastics on a piece of paper and place all the plastics that fit that class on it.
- 9 When this task is completed, one person from each group should explain the way they have organised their plastics and why.
(REMEMBER, at this stage, there is no right and wrong way to organise the plastics. The important thing is for each group to justify its decision.)

Consider this

Why do you think plastic is such a useful material?

How many different plastic classes did the groups come up with?

Table 1 - How plastics are classified

SYMBOL	NAME & DESCRIPTION	USES
	(PETE) Polyethylene • PET is a clear tough plastic. • Forms a good barrier and prevents liquid or gas from getting in or escaping.	• Soft drink bottles. • Plastic food jars – peanut butter and tomato ketchup bottles.
	(HDPE) High Density Polyethylene • HDPE is a clear/coloured and tough plastic. • Does not let moisture through. • Very resistant to chemicals.	• Used in packaging household chemicals such as bleach. • Also plastic milk bottles, shampoo bottles, yoghurt tubs.
	(PVC) Polyvinyl Chloride • Resistant to chemicals. • Blends easily to make a flexible or rigid plastic.	• Wire and cable insulation, medical tubing, clear food packaging. • Construction pipes, floor tiles, window frames.
	(LDPE) Low Density Polyethylene • Tough, flexible & transparent.	• Used as a plastic film i.e. bread and frozen food bags, dry cleaning. • Squeezable bottles.
	(PP) Polypropylene • Good chemical resistance, high melting point	• Ketchup bottles, yoghurt tubs. • Medicine bottles.
	(PS) Polystyrene • Versatile plastic that can be rigid and/foamed. • Low melting point.	• Meat & fruit trays in supermarkets, vending machine coffee cups, TV/appliance packaging.

Tell Me More!

Within the plastics industry, material technologists and engineers design plastics for specific purposes. They use different chemicals to produce plastics with different characteristics.

All plastics are officially classified (see Table 1). Can you group the different types of plastic you have collected according to this table? (Most plastic packaging will show the triangular symbol on it.)

It is possible to recycle most plastics but unfortunately very few types are recycled in Ireland. Recycling saves a lot of energy because plastics are produced from crude oil and by recycling we prevent overuse of fossil fuels.

