

**BEAT  
PLASTIC  
POLLUTION**



**WORLD  
ENVIRONMENT  
DAY**



**INDIA  
2018**

**UN**   
**environment**



# **A School's Plastic Action Journey**

# Beat Plastic Pollution

## If you can't reuse it, refuse it

### #BeatPlasticPollution

## Reduce the Use

Welcome to the UN Environment 'Reduce the Use' challenge – our challenge to you to find ways to cut down on single-use plastics. This is a call to action to help clear up plastic pollution as part of World Environment Day.

2018 is UN Environment's year of sustainable consumption and production – a chance to close the loop and bring circularity into our consumer behaviour – and we want you to be part of this! Play your part starting with plastics and how to transition to more sustainable patterns of plastic consumption and production. Then tell us what your group's actions are on the [World Environment Day website](#).

To help with the challenge, we are launching this activity pack to find the most interesting ways to reduce the use of single-use plastics. We want to find out:

- 1 What plastics you are using
- 2 How you are addressing the use of single-use plastic
- 3 What projects you are organizing to reduce plastic waste

Check out the [World Environment Day Toolkits](#) to organize clean-ups of plastic waste and work through our activities to see how you can reduce the use of plastic. Take part and register your projects [here](#).

### About World Environment Day

World Environment Day is the United Nations' flagship day for promoting worldwide awareness and action for the environment. Over the years, it has grown to be one of the largest global platforms for public outreach, celebrated by millions of people in well over 100 countries. It is the 'people's day' for doing something positive for the environment. Its aim is to harness individual actions and transform them into a collective power that has a legacy of real and lasting impact on our planet. From Bahrain to Bangkok, the day is celebrated in countless ways, with everything from beach clean-ups and tree planting to petitions and photo competitions. Thousands of schools and companies are getting involved, as are governments. The beauty of the day is in this diversity – it's when citizens across the world come together to show their love for our planet.

### Objectives

This set of activities is designed for groups to research the issue they are working on. The objective is to:

- 1 Provide ideas for researching plastic use
- 2 Identify potential information sources for a plastic-reduction project
- 3 Suggest methods for developing and launching the project
- 4 Provide a framework for creating the project

### Activity outcomes

You can use this set of activities for an extracurricular club or in lessons. The activities are based on successful projects used in different curricula around the world to:

- 1 Measure and monitor trends in plastic use in schools or communities
- 2 Create activity-based projects to find ways of reducing the use of disposable plastic in homes, schools or communities
- 3 Introduce young people to ways of researching a case that supports their actions
- 4 Develop an understanding of how to research and present a brief to local decision makers, such as school management

# Step 1: What are you using?

## Introduction

Since the early 1970s, scientists have been telling us that plastics are building up in our oceans and waterways, and along our coasts. There are reports of great gyres (large systems of circulating ocean currents) full of plastic, and islands of plastic waste miles wide have been found floating in the Caribbean, the Pacific and off the coast of Indonesia. Plastic is clogging up beaches and rivers. Our 'planetary arteries' are, in many places, literally full of plastic. Single-use plastics have even been found in remote mountain areas and the middle of deserts. We cannot deny the cause of this – plastic is man-made. We have created it and discarded it, without considering the consequences.

## Activity 1: Survey of plastics

### Objectives

- To identify what plastics the group is using
- To identify other plastics encountered by students

### Instructions

- 1 Go on a plastic journey – Make a note of all the single-use plastic items you use throughout the day that are simply thrown away. You can use these notes to create a tally chart to audit the number and types of items.
- 2 Take a quick look in your bin and see what is in there, or note down items before you throw them away – a tally chart next to the bin may be useful for this.
- 3 As the week progresses, keep track of the single-use plastic items you use (either on paper or on your phone). You could also tally up the numbers of each item you use.
- 4 Fancy something a little more challenging? Go one step further and look at the various types of plastic and their uses. For example, a bottle lid and the bottle itself can be made of different types of PET.

## Activity 2: Waste estimator

### Objectives

- To estimate the amount of plastic waste produced
- To consider how this waste could be reduced

### Instructions

- 1 Get each person in your class to collect their plastic waste for one week. You could have a separate box for plastic waste next to your dustbin at home or at school.
- 2 Weigh each person's plastic collection and then add up the combined weights to get the total amount of waste generated by your class in one week. Are there any other ways it could be measured? For example, if you do not have information from all the class members, you could calculate the average based on available information and multiply by the number of students in a class.
- 3 Brainstorm ideas about how the waste you produced could be reduced – not by recycling, but by reducing your use.
- 4 Fancy something a little more challenging? Design a competition to reduce the amount of waste – a 'Reduce the Use' challenge of your own.

# Step 2: Plastic impacts

## Introduction

Plastic debris varies in size, from large items to fragments smaller than 5 mm in diameter, which are known as microplastics. These are not single-use plastics in the sense of a plastic spoon or bag, but we are introducing them into the environment through our everyday use of plastic – something to look out for and think about. All plastics have ecological, social and economic costs. They are creating problems for all living creatures, including humans – a fact that scientists have been reporting since the 1970s. Birds, turtles and other ocean creatures get caught in plastic carrier bags and snared in abandoned fishing gear, or die with their stomachs full of plastic.

Some sources of plastic waste are not so obvious. You may want to think about the following sources and your plastic footprint when considering how to reduce your plastic use:

- Tyre dust washed into sewers
- Dust from painted surfaces, which accounts for 10 percent of microplastics in the world's oceans
- Microplastics from products that are thrown away and break down into small pieces
- Synthetic fibres from fleeces and acrylics from clothing rubbing together or being washed
- Microbeads in cosmetics (although they are banned in some countries and about to be banned in others)

## Activity 1: Resource use

### Objectives

- To identify all the plastic resources used

### Instructions

- 1 Go around your classroom and look at the plastic resources you buy in.
- 2 What do you use that is wrapped in or made of plastic? Think about cosmetics, facial scrubs, food packaging, mobile phones, pens, computers, cars, bottles, plates, cups, etc.
- 3 Consider how you dispose of it.
- 4 Find out how the waste is treated.
- 5 Fancy something a little more challenging? Create a flow diagram from origin to disposal, then see how you can turn that line into a circle.

### A word on packaging

Why are products packaged the way they are?

**To protect products during transportation and from contamination or damage** by moisture, humidity, gases, bacteria, insects and light.

**To preserve products for longer**, which reduces food waste by giving us more time to use or consume them.

**To enable transportation over long distances**, giving us access to a wide variety of non-local produce and encouraging trade.

**To enable products to be stacked**, thus saving space and making transportation more efficient.

Source: INCPEN

## Activity 2: What actions would people support to 'reduce the use'?

### Objectives

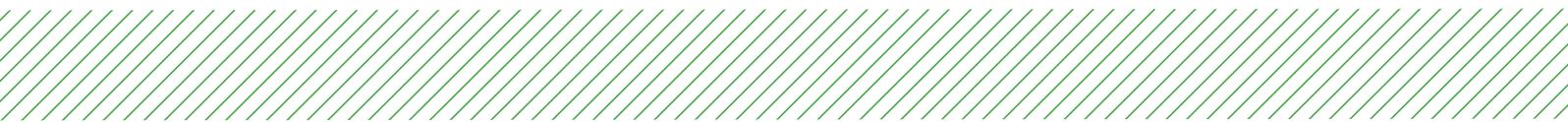
- To identify people's ideas about plastic consumption
- To identify what single-use plastics are necessary and what we can live without
- To identify perceptions of plastic consumption within groups or communities

### Instructions

- 1 Consider the single-use plastics you are using and how they are disposed of. How can you reduce, reuse, recycle or replace them?
- 2 Taking inspiration from the 'Reduce the Use' survey (below), how would you like to reduce your plastic use, and what actions could work? Consider which of these people would like to do, which of these they will do, which of these they are doing already and which are difficult – find out why.
- 3 Which actions does your group rate most highly – can you create an order of priority? Which actions might be easiest to promote? Feel free to add to the list; the list is just a starter.
- 4 Use the survey to canvas opinions at school or at home.
- 5 Fancy something a little more challenging? Add to the list of actions. Check out the [Tunza Facebook page](#) for ideas.

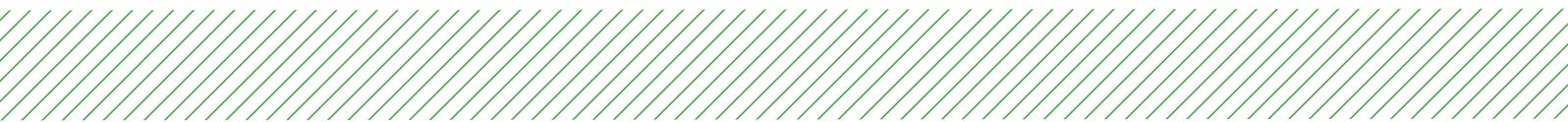
## Activity sheet 1: How can you 'reduce the use'?

| Action to reduce plastic  | Will you do it?<br>Yes/No | If not, why not? |
|---|---------------------------|------------------|
| Buy loose fruit and veg rather than pre-packaged  |                           |                  |
| Buy washing powder in a cardboard box   |                           |                  |
| Buy bars of soap rather than liquid soap  |                           |                  |
| Order drinks that come in glass bottles   |                           |                  |
| Stop using single-use, plastic-fibre wipes  |                           |                  |
| Stop using plastic bottles and plastic cups   |                           |                  |
| Use a reusable water bottle and cup   |                           |                  |
| Take reusable bags to the shops   |                           |                  |
| Cut down on takeaways in plastic boxes  |                           |                  |
| Use refillable cleaning and toiletry products   |                           |                  |
| Stop using plastic straws   |                           |                  |
| Buy in bulk rather than buying individually wrapped items   |                           |                  |
| Reuse jars and containers for storing food and leftovers  |                           |                  |
| Use glass or metal containers for storing and protecting food, rather than plastic food bags, plastic containers and cling film |                           |                  |
| Use loose-leaf tea rather than teabags, as these may contain plastic  |                           |                  |
| Use reusable chopsticks and cutlery   |                           |                  |
| Avoid facial and body scrubs containing plastic microbeads  |                           |                  |



## Your actions

| Action to reduce plastic | Will you do it?<br>Yes/No | If not, why not? |
|--------------------------|---------------------------|------------------|
|                          |                           |                  |
|                          |                           |                  |
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# Step 3: What should happen to plastic?

## Innovations and actions

### Introduction

There is no silver bullet to deal with the plastic pollution epidemic. Over the past 20 years, entrepreneurs, companies and researchers have created a huge variety of biodegradable and/or compostable plastic substitutes. Any online search pulls up a wealth of interesting ideas:

- A brewery in the United States has created **edible six-pack rings** made from barley and wheat from the brewing process. The rings are 100 percent biodegradable and can safely be eaten by animals.
- Cambridge University is using the fully compostable Vegware and there's the **edible cutlery** that emerged last year in India. It's made of sorghum blended with rice and wheat and comes in three flavours – plain, sweet or savoury.
- In Egypt, scientists are working on a polymer derived from the organic compound chitin (found in the shells of shrimp, crabs and lobsters), to be made into grocery bags.
- In Japan, scientists have recently discovered plastic-eating bugs.

The UN Environment 'Biodegradable Plastics' report suggests that some people are attracted to "technological solutions as an alternative to changing behaviour". Everyone needs to work together, from policymakers, to industry, to individuals, but we must make sure behaviours help drive change. This includes doing our part to reduce, reuse, recycle, repair and redesign.

### Activity 1: Who thinks what?

#### Objectives

- To identify people's ideas about plastic consumption
- To identify what single-use plastics are necessary and what we can live without
- To identify perceptions of plastic consumption within groups or communities

#### Instructions

- 1 Are you aware of the different sources of plastic in your life? Which are necessary and which can be replaced?
  - i. Which plastic items do you feel make your life better?
  - ii. Why do you feel they improve your life?
  - iii. Which items could you easily replace?
  - iv. Which items could be reduced in number?
  - v. How often do you recycle unwanted items?
  - vi. How often do you sort and recycle plastic?
  - vii. What alternatives are there to plastic items?
  - viii. What can you do to make recycling easier?
- 2 How are plastic products currently disposed of on your campus or at your school?
- 3 Is there litter? Are there ways to clean up plastic waste in your area? (See our guide on how to beat plastic pollution [here](#)).
- 4 Fancy something a little more challenging? Try researching alternatives to plastic. Or can you find a way to recycle your plastics?

#### Types of plastic treatment

**Mechanical recycling** – chopping and creating new plastic from the pellets. This is what people usually think of when they think of recycling.

**Chemical recycling** – plastic is broken down into its constituent parts. These technologies are still being developed.

**Prevention** – plastic packaging is lighter than it used to be, meaning fewer raw materials are used. The industry has also signed an agreement, known as the **Courtauld Commitment**, to work towards reducing packaging and waste.

**Reuse** – many types of plastic packaging are long-life artefacts. For example, returnable crates have lifespans of over 25 years and reusable bags are playing a greater role in responsible retailing.

Another option is **energy generation from waste**.

## Activity 2: Setting targets

### Objectives

- To identify targets for reducing plastic consumption in your group

### Instructions

- 1 How can you prevent plastic from entering the oceans? Think about your 'Reduce the Use' survey actions and ideas.  
  
Design a grid of actions for different types of plastic:
  - Reduce
  - Replace
  - Recycle
  - Collect and clean
- 2 Look at the results of your surveys and write down the key points and actions on Post-it notes.
- 3 Group the actions into:
  - Actions that are easy to do
  - Actions that are semi-easy to do
  - Actions that will take longer to complete
- 4 Choose the top three and start implementing them, e.g. a waste-free snacks day. Discuss incentives such as displaying results and targets in a public place.
- 5 Write up an action plan starting with the easy actions, then move on to the harder ones. Afterwards, present your ideas to decision makers at your school.
- 6 Ask your teacher to help arrange a meeting with the head teacher, or your governors. Can you get their support by presenting a plan setting out what you would like to achieve? For example, you could start with a 'Reduce the Use' day, with events like waste-free meals or clean-up campaigns. Or you could run a simple poster campaign to raise awareness about the plastic problem.
- 7 Finally, let us know what you are doing at your school on our website. Register [here](#).

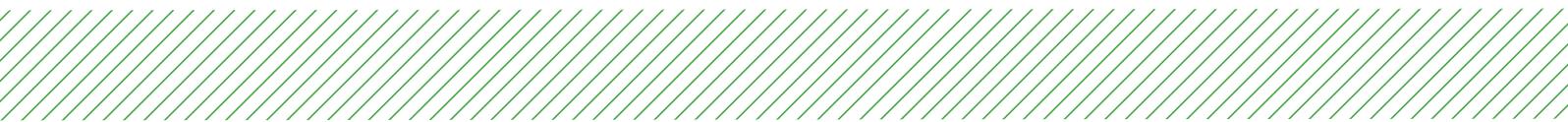
# Plastic Action Journey

## Guide to different plastics

Get to know the different plastics. This can be done using the **Resin Identification Code**, which is the number printed on most plastic bottles and food containers. It indicates what kind of plastic resin the product is made from.

| Resin Identification Code  | Examples  | Your examples |
|--|---|---------------|
| <br>Polyethylene terephthalate (PET)  | Bottles for soft drinks, water, juice, mouthwash                                    |               |
| <br>High-density polyethylene (HDPE)  | Bottles for milk, water, juice, cleaning products, shampoo, bags, cereal box liners |               |
| <br>Polyvinyl chloride (PVC)          | Bags, cling film, plastic toys  |               |
| <br>Low-density polyethylene (LDPE) | Bags for bread, frozen foods, component of paper milk cartons and disposable cups   |               |
| <br>Polypropylene (PP)              | Yoghurt cartons   |               |
| <br>Polystyrene (PS)                | Cups, plates, bowls, takeaway containers, meat trays                                |               |
| <br>Other                           | Products made from other plastic resins not listed above                            |               |

**Can you use your plastic resin audit with your tally chart in the lesson plan to see which plastics you are using the most?**



[www.unenvironment.org](http://www.unenvironment.org)  
[www.worldenvironmentday.global](http://www.worldenvironmentday.global)  
[#worldenvironmentday](https://twitter.com/unenvironment)  
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