

SUPs

Student Information

Overview

When was the last time you bought water in a plastic bottle? Used a plastic take-away food container? Drank through a plastic straw? Said yes to a plastic shopping bag?

There has been a lot of discussion lately about the problem with single-use plastics, but what are they and why are they such an issue?



Not all materials are equal

Before we learn more about single-use plastic, we need to understand some key terms: degradable, biodegradable, and compostable.

- **Degradable**

Degradable means that something can break up into smaller parts by natural physical and/or chemical processes. Things that are degradable can be broken down by oxygen, water and wind exposure, light, exposure to heat or through the actions of micro-organisms. If a degradable product is plastic, it results in microplastics which do not completely decompose. The plastic persists in the environment, disperses in air, soil and water, and is easily ingested by animals and humans.

- **Biodegradable**

Biodegradable items break down into smaller pieces with the help of micro-organisms such as bacteria, fungi and algae. As with degradable products, this process can take weeks or take many, many years. This may result in microplastics. When used in advertising or labelling products, the word “Biodegradable” is not regulated and may be misleading.

- **Compostable**

Compostable items are products that will break down into non-toxic, natural molecules (mostly carbon dioxide, water, and minerals) under certain conditions. They need micro-organisms, humidity, oxygen and/or heat to break down. Unlike biodegradable products, compostable items break down at a rate consistent with similar natural materials (e.g. a bamboo fork will break down in a similar timeframe to natural bamboo). For a product to be labelled as compostable in South Australia, 90% of it must break down within 180 days in compost, with no toxic effect on plants or earthworms. If the product is plastic, it must also break apart into pieces smaller than 2mm within 84 days. Compostable items leave no microplastics.

What are single-use plastics?

Single-use plastic is any plastic item or packaging that is used once (or for a short time) before being disposed of. This includes things like plastic ear buds, cups, packets, bottles, straws and bags.

Think about some food items in your pantry, fridge or lunchbox. Which of these have packaging that is disposed of straight away, with no other uses? Think of a time when you had take-away food. Did you use a plastic fork or knife? Packaging is designed to keep products fresh and convenient to buy, and plastic cutlery is easy to use, but these items are used once and then end up in landfill or as litter for many years to come.

Single-use Plastics



Why are single-use plastics a problem?

Because single-use plastics are convenient, they are widely used. This means there is so much of it around, which leads to lots of litter and pollution. Most plastic is not biodegradable (see note at end of this section about bioplastics) or compostable, and it takes many, many years to break up. Most single-use plastics are also low grade and easily damaged, so they cannot be reused or recycled. They are also hard to recover in a material recovery facility (a place where our waste is separated for recycling).

Plastics also lead to 'microplastic' which is tiny pieces of plastic debris (measuring 5 millimetres or less). Microplastic is created from larger pieces of plastic that have broken up, and can be so tiny that they are measured in micrometres or even nanometres. They can be carried by wind, in raindrops, and enter the food chain by being taken up into plants through their roots.

Fact: Some plastic items take up to 1,000 years to break up. A plastic water bottle can take 450 years!!

As single-use plastic items can't be easily recycled, they should be placed into the landfill bin. Unfortunately, many are not disposed of correctly and end up in our environment, particularly our waterways (rivers, creeks, ponds, seas, and oceans). This can have devastating effects on marine life who often mistake plastic for food or can get tangled in bags, leaving them unable to breathe or move properly, making them vulnerable to predators. Plastic items can also damage habitats and leak chemicals into the water.

Fact: At least 8 million tonnes of plastics end up in oceans each year.

As well as environmental and health problems, there are huge economic impacts from single-use plastic. For the individual, buying something that can only be used once is much more expensive than something which can be re-used. For society, money is spent on litter clean-up and removing contaminants from recycling (things that shouldn't be in the recycling bin).

Measurements

1 micrometre is a thousand times smaller than a millimetre, and is about the size of a bacterium. The full stop at the end of this sentence is approximately 430 micrometres wide.

1 nanometre is a thousand times smaller than a micrometre. Individual molecules can be measured in nanometres.

A note about bioplastics

Bioplastic is plastic that is made from renewable biomass sources such as sugar cane, corn, or yeast. Some of these are biodegradable or even compostable, given the right conditions. Bioplastics are made from renewable sources which limits the use of finite fossil fuels and protects the environment. Many industries are switching to bioplastics (e.g. food packaging, agriculture and medicine). When we talk about single-use plastics, we are not referring to items made from bioplastic.

Legislation

What is being done about single-use plastic?

In South Australia, the government has passed legislation regarding the use of single-use plastic (legislation is about parliament making laws and putting those laws into action). According to the legislation, single-use plastic is defined as a product designed or intended to be used once, or for a limited number of times, before being disposed of.

The single-use plastic legislation restricts manufacturers and distributors from making and selling certain single-use plastic products. Examples of these products include plastic straws, cutlery, stirrers and polystyrene products. These have been the focus of the legislation as they are difficult to recycle and more likely to be disposed of after a single use.

In 2009, South Australia restricted lightweight plastic bags in supermarket checkouts by charging to use them (previously they were free). This gradually led to other states and territories implementing the same, or similar bans in certain stores, further reducing plastic bags in our environment.

In September 2020, the South Australian parliament passed an act to prohibit the sale, supply and distribution of some single-use plastic products. This is called the 'Single-use and Other Plastic Products (Waste Avoidance) Act 2020'

For more information visit [HTTPS://WWW.REPLACETHEWASTE.SA.GOV.AU/](https://www.replacethewaste.sa.gov.au/)



What are the alternatives to single-use plastics?

Some common types of plastic litter are snack bags and wrappers, take-away drink cups and lids, fast food containers, drink bottles, cotton bud sticks, plastic bags and straws. Fortunately, all of these have alternatives which are much better for our environment.

Think back just a few years when you used a straw to drink your favourite drink. That straw was probably made from single-use plastic. Now you can find all different kinds of straws including Stainless steel, bamboo, pasta, rice, paper, bioplastic and reusable silicone. All of which can either be reused or disposed of in environmentally friendly ways.

Alternatives

Here are some other ways to replace or reduce the amount of single-use plastic:



- use reusable containers, cups, cutlery and drink bottles,
- buy your favourite snack in bulk or large packets (not small, single-use packets) and fill into containers that you can wash and reuse,
- make delicious snacks to take to school in reusable containers,
- use beeswax wraps for sandwiches instead of cling wrap, foil or zip-lock bags,
- use tote bags when you go shopping.

Remember: Using your own reusable item is always better than any single-use plastic product.

For more information about replacing single-use plastics, visit

WWW.REPLACETHEWASTE.SA.GOV.AU

