



MARINE
CONSERVATION
SOCIETY

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Plastic Challenge

Sustainability Goals:



Subject links:

Science, Citizenship

Ages 7–11

Curriculum links:

Human impact, Topical issues, Sustainability, Materials & properties, Environmental responsibility

Ocean Literacy Principles:

6. The ocean and humans are inextricably interconnected

Learning Objectives:

- To understand how we can reduce the risk of litter reaching the environment
- To challenge students to live without plastics for a month
- To develop a class project to reduce the school's impact of plastic on the environment

Resources provided:

- [Marine Litter Fact File](#)
- [The 7 Rs](#)
- [Waste Funnel](#)
- [Plastic Challenge poster](#)
- [Planning the Plastic Challenge](#)
- [Plastic Challenge letter to parents](#)

Extra resources required:

- Scissors
- Glue

Step 1

Background

Litter reaches the ocean in a number of ways: it's washed in from our rivers, is left on our beaches, or is cast overboard from boats. It not only makes the marine environment look unpleasant, but it impacts the health of thousands of marine animals every year, usually by ingestion, entanglement or suffocation. Chemicals used in and absorbed by plastics also negatively impact animals' health.

Single-use plastic items are a particular problem. They are used once and thrown away, but last forever in our environment. We can all 'do our bit' to reduce our impact on the environment by reducing the number of single use items we buy, particularly plastic.

To set the scene you could complete the lesson, [How clean are our seas?](#), and to introduce materials and their properties, complete [The Plastic Plague](#) lesson.

Step 2

Set the Scene

20 minutes – The 6 Rs

Explain that today you're focusing on how you can help reduce the amount of litter in the environment. Hand out [The 7 Rs worksheet](#). Students should cut out the definitions and match with the correct answers. Have a group discussion to check understanding. Show the [Waste Funnel](#) and explain that the things at the top have the greatest effect on reducing litter in the environment. Because of this, you're going to focus on how you can rethink and refuse plastic. Take a look at the [Fact File](#) to help explain why we should prioritise these Rs.

Step 3

Activities

Activity 1: 5–10 minutes – What is the Plastic Challenge?

Take a look at the [Plastic Challenge poster](#) with your class. Children should identify what the challenge is about and how they can get involved. Ask them why the challenge might focus on plastic, and use this to discuss the amount of plastic in the environment, how long it takes to break down, and how much of our waste is single-use plastic. Explain that you will be doing the Plastic Challenge in school.

Note – the Plastic Challenge can be done at any time of year, but you can join a community of people when completing it in July.

Activity 2: 20 minutes – Cutting down on plastic

In small groups, brainstorm and discuss all the plastic items that the class use in a day. Students should consider disposable and long term plastic items, and think about the classroom, playtime and the canteen. Children should use the [Plastic Challenge planning sheet](#) to list the items that they personally use, identify those that are single-use plastic and come up with an alternative to use during the Plastic Challenge. Each child should also decide if they are going to complete the challenge for a day, week or full month. Encourage children to take part at home too and hand out the [Plastic Challenge letter](#) to provide parents with more information.

Step 4

Extend

30 minutes – Reviewing the Challenge

Review how children are finding the Plastic Challenge and discuss difficulties and successes. Ask children to write a paragraph about their experiences for the school newsletter and share with us at education@mcsuk.org.

Step 5

Reflect

5 minutes

Discuss which changes you could take forward beyond the month to reduce plastic use in your school. Are there any changes students could make to their lives at home too?

Step 6

Follow up

Complete our [Artivism](#) lesson to explore how art can help raise awareness of environmental issues and create your own artwork.

Marine Litter Fact File



From source to sea

It is estimated that 11 million tonnes of plastic ends up in the sea worldwide each year (1), and that 80% of litter found in the sea is from inland sources. (2)

Sources on land can include intentional and accidental littering, items flushed down toilets, sinks and drains, windblown litter from bins and landfills, and litter carried by rainwater into drains, rivers and eventually the sea. Litter is also a problem at sea, with sources like fishing, sailing, speed boats, commercial ships and container spills causing litter pollution.



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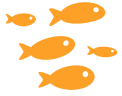
Litter timeline

Litter in the ocean takes longer to degrade than litter on land, but will eventually start to break up due to wave action, currents, saltwater and sunlight. Degradation time varies greatly from 1–450 years depending on the properties of the litter.

Microplastics are a serious environmental issue. They are plastics that have broken up into pieces less than 5mm, as well as pieces that enter the environment this size like microfibres or plastic nurdles, which are the small plastic pellets used in the production of plastic products.

1. Pew 2020
2. Europa 2016

Marine Litter Fact File



Marine life and litter

Litter items can cause harm to all sorts of marine life, from tiny plankton to whales.

Animals can become entangled in litter, causing injury, reduced mobility and even death. Ingestion of litter, particularly plastic, is very problematic for marine life who are unable to digest it. Large amounts of plastic ingestion can lead to starvation, as there is no room left for food. One study found 100% of turtles to have plastic in their stomach. (3) In some areas, the extreme amount of plastic on the sea floor can suffocate the animals and plants living there.

Invasive species

Ocean currents can move plastics around the world. Small animals and plants can hitch a ride on the surface of plastic and travel with the currents, introducing non-native species to new areas. The introduction of non-native species could cause harm to the ecosystem.

Plastic chemicals

Several chemicals used in the production of plastic materials are carcinogenic. Toxic contaminants can also accumulate on the surface of plastic materials that have broken up and been underwater for a long time. When marine animals ingest plastic accidentally, these toxic contaminants enter their digestive systems and could build up in the food web over time.



Gannet carrying fishing rope.
© JHS Archer-Thomson



Microplastic pieces amongst
seaweed. © Natasha Ewins

Marine Litter Fact File



Litter surveys

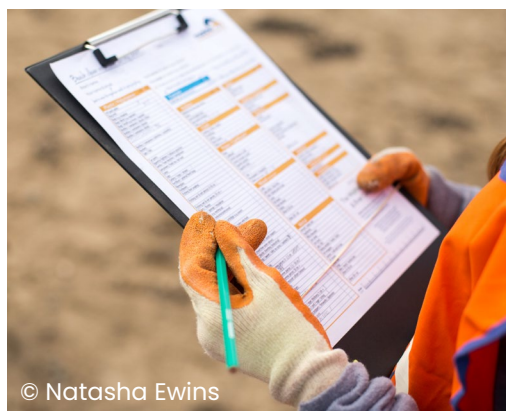
Litter surveys are not only important for clearing rubbish, but also for gathering data on the types of litter polluting our environment. [Beachwatch](#) is our national beach clean and survey initiative, and has been running for over 25 years. Our brilliant volunteers head out to beaches across the UK to clean and survey our coastline, collecting and recording the rubbish they find in a 100m stretch of beach. This litter data helps inform our campaigns and lobby government, and has led to influential changes like the UK-wide carrier bag charge, microbead bans and changes to wet wipe packaging.

We also use the data to determine the sources of litter. For example, if a significant amount of sewage-related debris (SRD) is found in an area, we work with local sewage treatment companies to try to improve treatment plants, and with communities to raise awareness of what should and shouldn't be flushed down the toilet.



Reducing litter

We all need to do our bit to reduce litter in the environment. By rethinking how we shop and what we use in our daily lives, we can all make a difference. Refusing unnecessary plastic and other materials, reducing the amount of products we consume, and repairing rather than replacing are all important actions we can take. Through education, we can help raise awareness, encourage positive consumer behaviour, and campaign for change from businesses and the government.



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Marine Litter Fact File



Recycling

Even if we reduce the number of items we use, we will still need to throw some away. This is where efficient recycling is key. Download a guide from your local council to help students understand what can be recycled at home and at school. Many items can be recycled, but if your local council has limited recycling options check out Terracycle's website for local drop off points.

Plastics can only be recycled at best 2-3 times before they lose their strength, so we still need to move away from plastics to materials that can be recycled time and time again. We need to change how products are recycled, and how we incentivise best practice to ensure materials and resources are valued. This can include redesigning products or calling for economic incentives like Deposit Return Schemes (DRS), where a small deposit is paid when people buy a single-use drinks container and is refunded when they return it to a store or dedicated recycling point.



Circular Economy

We currently have an economy which is linear, which means we make, use and dispose of products using up finite resources. It's estimated that only 9% of all plastic ever made has been recycled, (4) so we know that recycling alone isn't the solution. Instead we need to move towards a circular economy, where products are designed to be used time and again, repairable, or re-designed into new products. The whole life cycle of the product has been considered so very little ends up in landfill.



Litter collected at a beach clean.
© Natasha Ewins



Single-use plastic straws.
© Natasha Ewins



Cut boxes along dotted lines

Rethink

Always question the choices you make. Could you do things differently in your life so that you use less resources and create less waste?

Refuse

Identify single-use items that you can refuse, like straws and water bottles. Keep looking for new items to refuse.

Reduce

Cut down on the things you buy and the energy you use. By using less, we can cut down the amount of waste sent to landfill and stop it from becoming litter.

Repair

When something breaks see if it can be repaired and used again instead of buying a new one. This stops the old item becoming waste and means energy and resources don't need to be used to make a new one. Win, win.

Reuse

Can the product be used again for another purpose? By reusing what you already have or finding a new use for it, like using a tin can as a pencil pot, you stop the item becoming waste. It also means you don't have to buy something new.

Recycle

By recycling products whenever possible something new can be made from the materials and you stop them going to landfill.

Rot

If you can't repair, reuse or recycle the item, use a bin. Depending on where you live, this may then be sent to landfill or incinerated. Plastic, remember, will never rot away.

Waste Funnel

Reducing our waste means less landfill/ incineration and less litter



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Take part in the Plastic Challenge!

Did you know?

80% of litter in the sea comes from sources on land



What's it all about?

Set up your own Plastic Challenge with your school, community or with friends and family, and help stop plastic pollution from reaching our ocean!

What challenge will you set for yourself?



You could switch to reusable bottles



Pledge to avoid plastic food packaging



Or even cut out single-use plastic for the whole month – and beyond!



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Join the #PlasticChallenge community!

Did you know?

7.7 billion plastic bottles are used in the UK each year





Planning The Plastic Challenge



1. Add any plastic items that you use to Column 1. They don't have to be made from plastic only, they might have plastic parts inside.

2. Decide if the item is: single use - used once and then thrown away like a straw, disposable - used several times then thrown away like a biro pen, long-term - used for a long time like a computer.

3. For single-use or disposable items, decide how you will avoid using them during the challenge.

Name:

*I pledge to take the
Plastic challenge for
_____ days*

Signed:

Plastic Item

*Single use/
disposable/long term?*

I will avoid using the item by..

[illegible]



The Plastic Challenge Letter to Parents

The following text has been written as a template to help you to inform your school community about the Plastic Challenge. Please feel free to edit the text to suit your setting.

Dear Parents/Guardians,

As part of our learning about environmental responsibility and sustainable living, in school we will be taking part in the Marine Conservation Society's Plastic Challenge. This will involve cutting out use of disposable plastic items for a day/week/month. Plastic litter has a huge impact on our environment, with our ocean and its wildlife suffering due to our use, and subsequent disposal of, throw-away plastic items. Taking part in the Plastic Challenge is one way to raise awareness of our environmental footprint and the steps that we can all take to make a difference.

If you would like to take part in the plastic challenge at home, and support our work in school, please visit mcsuk.org/plasticchallenge for information about the challenge and how to sign up.

Yours sincerely,

