

# Education Pack

Level 1  
United Kingdom

**3 lessons to  
help you engage,  
educate and influence  
others around the  
subject of marine litter.**

We have selected activities  
that require few facilities  
and can be adapted to a range  
of ages and circumstances.



Department  
for Environment  
Food & Rural Affairs



Centre for Environment  
Fisheries & Aquaculture  
Science



Interreg  
Atlantic Area

European Regional Development Fund



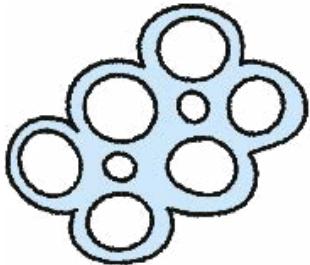
Clean  
Atlantic

# Marine Litter Factsheet

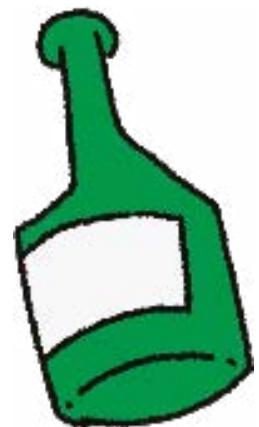
**Marine litter** is any item that humans have discarded that ends up on our beaches, or in our rivers, seas and oceans.

## How does it get there?

Litter comes from humans. We use something, discard it and unless it is recycled or sent to landfill, it ends up on the ground and could find its way to the sea. The most common way is from transport by rivers, sewage and storm outfalls. It can also enter the marine environment by being blown by winds or by being thrown directly in the sea.

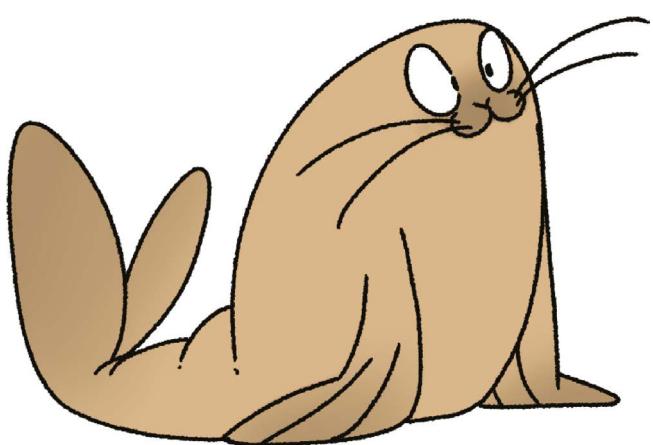


**Plastic** is the most common type of marine litter and includes a wide range of materials. Plastic bottles, food wrappers and abandoned fishing gear are among the most frequently found items globally. In the sea, plastics break down into small fragments called microplastics.



**Glass** is the second most common material found on beaches. It usually comes from bottles.

**Metal** is also a typically found category. Aluminum drink cans and other metal objects such as bottle caps are regularly found on our beaches and in our seas.



This education pack has been adapted to make it suitable as an awareness raising tool for the Clean Atlantic project. The original pack was created by the Commonwealth Litter Programme, which is a programme led by the UK through Centre for Environment, Fisheries and Aquaculture Science (Cefas) to support developing countries across the Commonwealth to take action on plastics entering the oceans.

This document covers activities implemented with the financial assistance of the INTERREG Atlantic Area. It only reflects the author's view, thus the Atlantic Area Programme authorities are not liable for any use that may be made of the information contained therein.

# Marine Litter Factsheet

**Marine litter can cause serious damage to marine life!**

Animals can mistake litter for food



© Alamy

Marine litter can cause damage to animals' surroundings



© Shutterstock

Animals can become entangled in marine litter

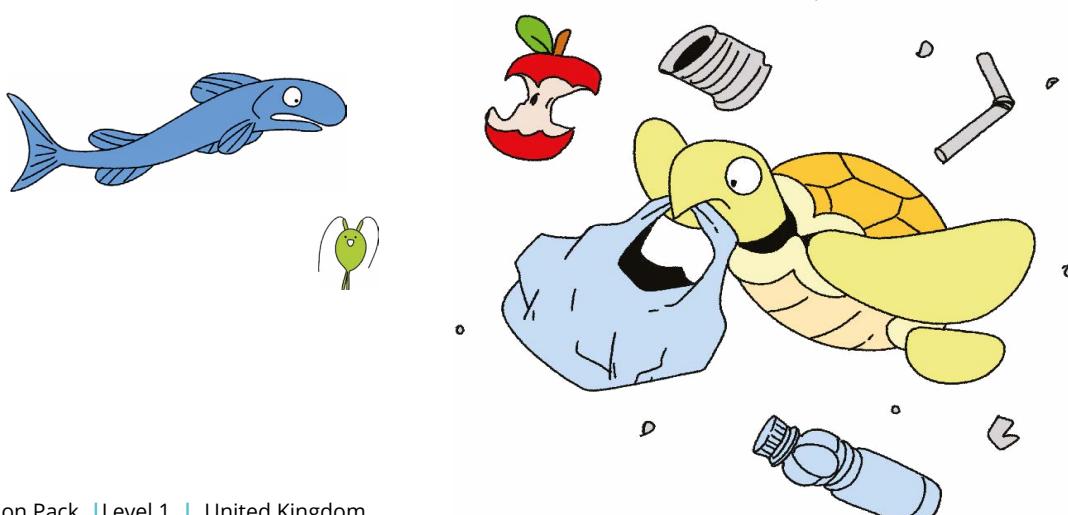


© Shutterstock

Marine litter can carry “alien” invasive species



© Matt Ecklund



# Lesson 1: What is marine litter?

Objective: To give an introduction to marine litter and the problems that it causes to marine ecosystems.

Marine litter or marine debris is defined as any persistent, manufactured or processed solid material discarded, disposed of, abandoned or lost in the marine and coastal environment.

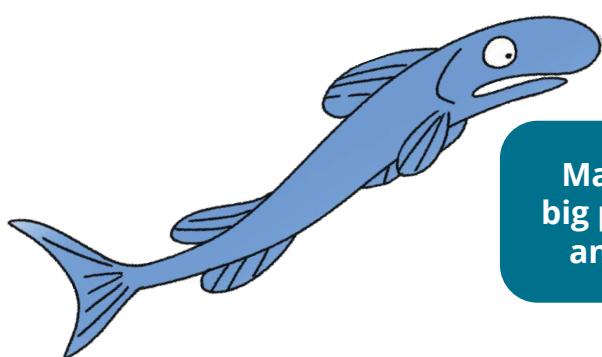
You may ask, how does it get there? Litter ultimately comes from humans. We use something, discard it and unless it enters landfill or is recycled, it ends up on the ground and could find its way to the sea. The most common way is from transport by rivers, sewage and storm outfalls. It can also enter the marine environment by the wind or by being abandoned directly in the sea (as with fishing gear). Marine litter has been found in almost all marine environments on the planet and causes serious problems for marine life.

Animals often mistake litter for food, causing ill effects. Litter can also cause an animal's habitat to be damaged, can become entangled with the animal and introduce invasive species that disrupt ecosystem balances. Plastic is one of the most common materials found in the marine environment and over time, due to the wave action and UV exposure, is broken down into smaller and smaller fragments called microplastics. Microplastics are not only a concern for marine animals but also for humans as microplastics and toxins are part of our diet through the fish and seafood we eat.

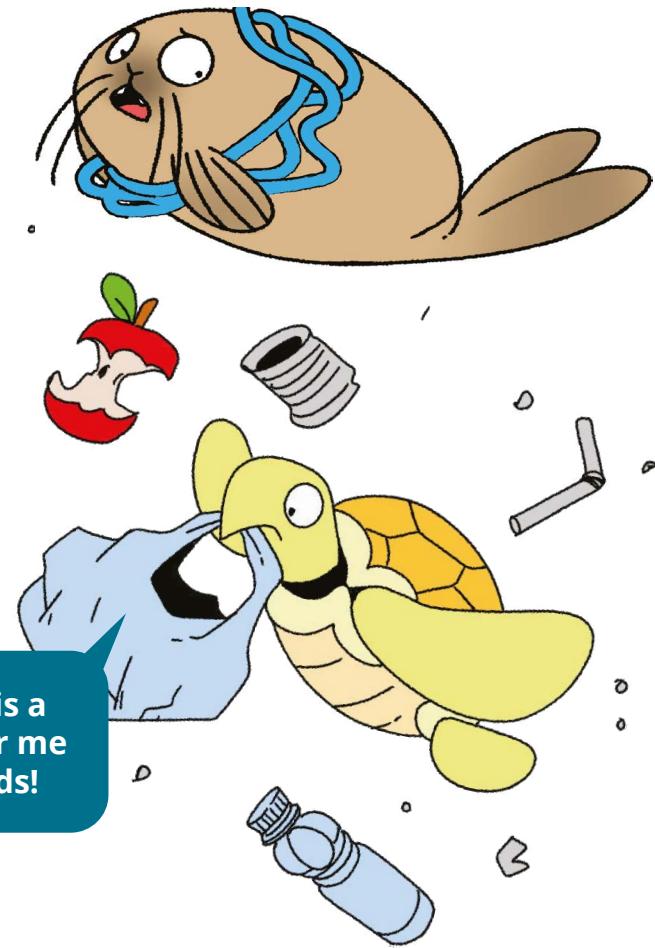
This lesson will introduce the concept of marine litter. We will cover how marine litter enters our seas and oceans and the problems of marine litter from the perspective of one of our best-known marine animals in the UK and the Atlantic.

## Additional Resources

- [What is the problem with plastic?](#)
- [National Geographic- Kids Take Action Against Ocean Plastic](#)
- [It's Okay to be Smart- How Much Plastic is in the Ocean?](#)
- [Ocean Heroes: 5 Gyres - Problem With Plastics](#)
- [Trash vortex \(Artistic film\)](#)



Marine litter is a  
big problem for me  
and my friends!



# Activity: What are things made of?

The aim of this activity is to understand the properties of different materials and to describe them. The group will compare natural items to man-made, synthetic items and explore what happens to these items in water (do they float or sink?) and over time (do they break up, rust, biodegrade or remain unchanged?).

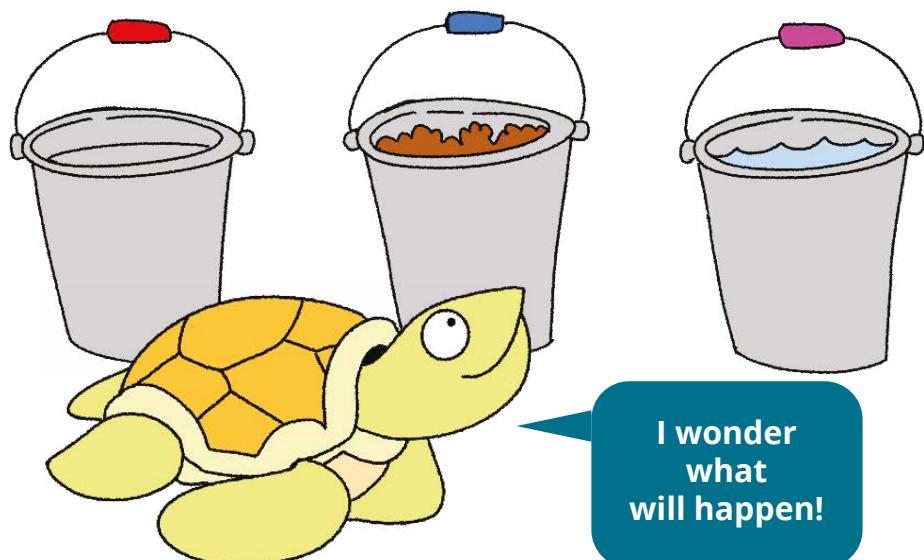
**Time: 30 minutes**

**You will need:**

- A variety of materials found from around the school/ community centre. These should include a mix of man-made and natural items, hard and soft, flexible and rigid.
- 3 buckets
- Gloves
- Soil or sand
- Water
- Pencils and Paper

**Instructions:**

Work with everyone as a big group or divide into smaller groups. Take each object in turn and describe the item: What do they look and feel like? Where did it come from? What do you use it for? How long do you normally use this item for? If space permits, set up three buckets or containers: one with soil (or sand), one with water and one empty. Place some items in each bucket and predict what you think will happen to those items, writing your observations in the table on the next page. If you like you can leave the items in the buckets over a period of time to see what happens.



# Worksheet

Item description

What happens when you place the items in the buckets?

What do you think will happen over time if in the environment and not buckets?

# How many pieces of marine litter can you find?



# Lesson 2: Marine Litter in the UK

Objective: to explore the issue of marine litter in the UK and the Atlantic, focused around a field trip and beach clean. Other options would be to carry out a river or community clean-up.

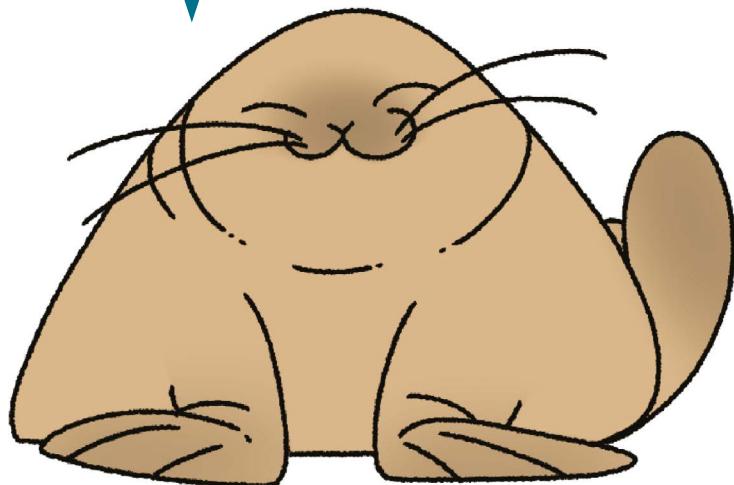
Beach, river or neighbourhood clean-ups are great ways to make people aware of the marine litter that is present in their local environment. It is important to remind your group that litter doesn't have to be dropped on a beach or in the sea to be found in the marine environment. Rivers, drains, wind and rain can transport rubbish from the land to the sea, so it is just as useful to carry out a clean-up by a river than on the land. Recording the type and number of litter items found can also be fed into national and global programmes to help understand the sources of litter. For example in the UK, Marine Conservation Society has been running its Beachwatch programme since 1994 and has been collecting litter data from beach clean-ups for over 20 years. There are lots of recording platforms that you can feed into and more

information on beach clean-ups is available on the internet. Please ensure that you have carried out appropriate health and safety risk assessments.

## Resources

- [Marine Conservation Society beach cleans](#)
- [Marine Conservation Society: become a beachwatch organiser](#)
- [OSPAR: Guideline for Monitoring Marine Litter on Beaches](#)
- [Surfers against sewage](#)

I love a day  
at the beach  
- if it's clean!



# Activity: Beach field-trip and categorisation exercise

The aim of this exercise is to get the kids out and about to a local beach to see marine litter first hand and record the types of litter they find. Remember if you don't live near a beach, you can clean a river bank or even a local community area!

**Time: 1-3 hours**

**You will need:**

- Beach, river or town
- Gloves and litter pickers
- Notebooks and pencils
- Completed Health and Safety Risk Assessment

## Instructions:

Select a local beach or river, ensuring that you have permission from the land owner for access. Check the tide times and select a date and time for 2 hours or more after high tide, and not on an incoming tide.

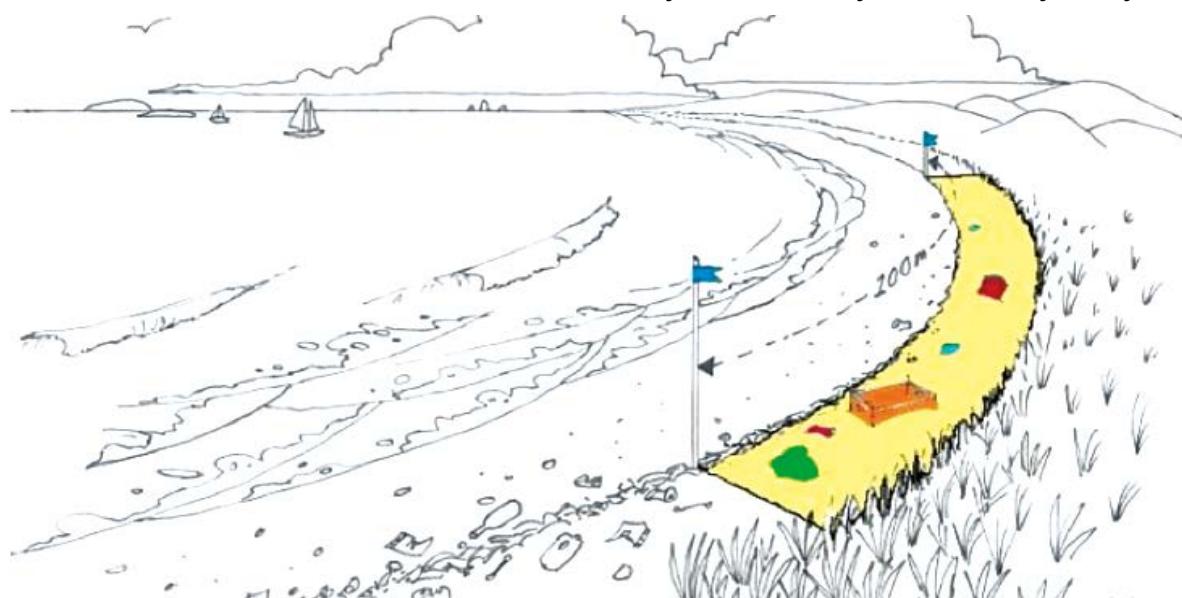
At the beach or river, select a 100m stretch and mark out the area to survey. This should run from the strandline (the high-tide mark where you often get a collection of shells and where the

sand changes color) to the back of the beach or bank where the plants start to grow.

Organise your participants in groups and ask them to pick up, record and tally all the marine litter they find in the designated area described above. Ask the group to create categories based on what the items are made of and create sub-categories if needed. The table on the following page can be used as inspiration.

Once completed, make sure you dispose of the rubbish responsibly and bring a selection of clean, safe litter items back to the class or community centre for additional activities and lesson 3.

Back in the class or community centre, collate all the records from the groups, creating counts from the tallies of items. Older participants can draw graphs to identify the most common categories. Reflect upon your findings. Is this what you were expecting? What was the most commonly recorded item? Is this item something that your community uses from day to day?



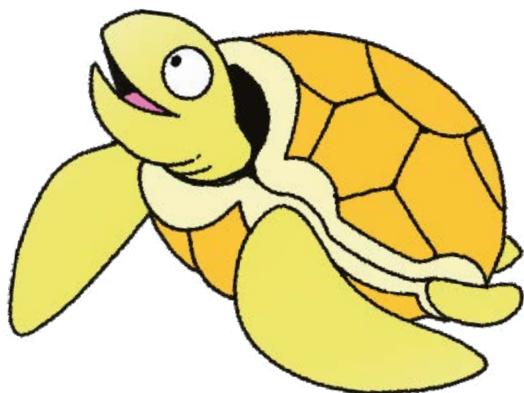
# What did you find?

Plastic	Plastic cutlery	Plastic bags	Plastic bottles	Plastic cotton buds	Plastic straws	Fishing gear	Food containers	Drink cans	Metal	Cigarette butts	Glass	Rubber
---------	-----------------	--------------	-----------------	---------------------	----------------	--------------	-----------------	------------	-------	-----------------	-------	--------

**See if you can recreate a sea creature from some of the litter you found today!**



Wow, it's me!



# Lesson 3: Solutions?

Objective: to explore solutions to the marine litter issue and to understand how our actions can help.

It is really important that we all help to reduce the amount of litter that enters the marine environment. In the first lesson, we learnt the difference between natural and synthetic materials. Years ago, our ancestors would drop their rubbish on the ground. However, they were using natural materials like wood and clay that over time would become part of the soil. More and more materials we use these days are synthetic, which can take a long time to degrade and persist in the environment. We must put these items in the rubbish bin, or reuse or recycle them. Plastic can take up to 1000 years to disappear!

There are three actions that we all can do to help reduce the amount of plastic that enters the marine environment: Reduce, Reuse and Recycle. Start the lesson by introducing students to these ideas that can be implemented in the UK and elsewhere in the world.

## Reduce:

You can reduce the number of single-use items that you use. Simple ways to do this are:

- bring a reusable bag to the supermarket when you do your shopping
- bring water from home in a reusable water bottle
- don't use plastic straws or plastic cotton buds.

## Reuse:

There are many ways that you can creatively use things that you may otherwise throw away. Can you think of someone else that would be able to use it? Can you re-purpose it for another use?

## Recycle:

Many of the items that end up in our landfill sites can be re-made into other items. Check with your local area which items can be sent for recycling and make sure to separate these

from your rubbish.

Did you know that the UK government is planning to bring new controls on some common single use plastic items such as plastic straws, plastic cotton buds, and plastic drink stirrers from April 2020? These items cannot be easily recycled and don't break down. The new measures will ban the sale of plastic drinks stirrers and restrict the sale of plastic straws and cotton buds.

## Resources

- [Reduce, Reuse, Recycle lesson ideas](#)
- [Reduce, Reuse and Recycle, to enjoy a better life](#)
- [The Three R's for Kids](#)
- [30 better ways to reuse and repurpose old stuff](#)
- [Pinterest recycling ideas](#)

Remember the 3 R's:  
Reduce, Reuse, Recycle!



# Activity: Reduce, Reuse, Recycle game

The aim of this activity is to understand the three ways that you can make sustainable everyday choices to help combat marine litter by implementing the three R's: Reduce, Reuse and Recycle.

**Time:** 30 minutes

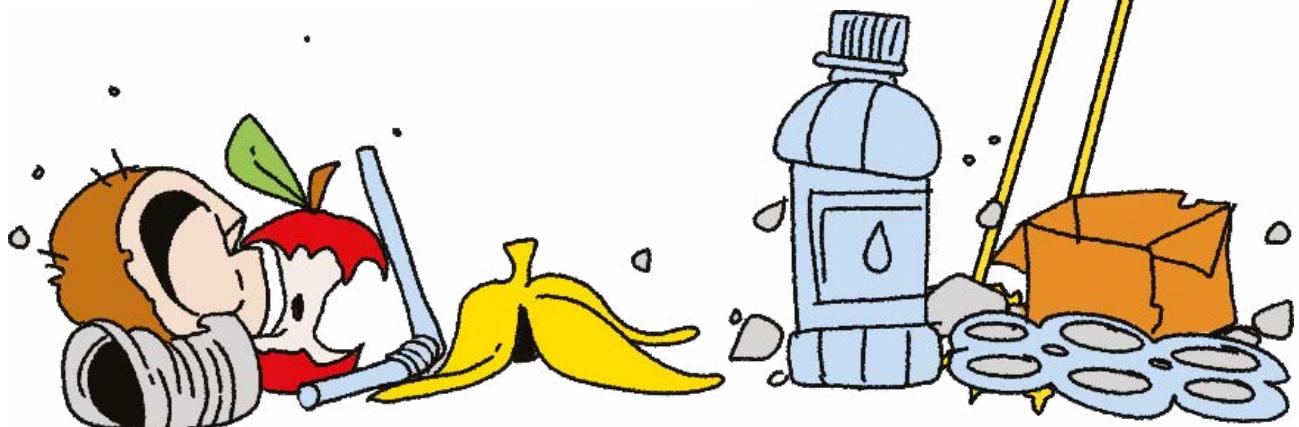
**You will need:**

- A variety of clean marine litter items

## Instructions:

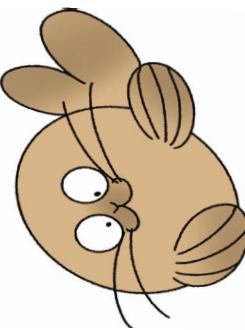
Create three Signs with 'Reduce', 'Reuse' and 'Recycle' labels. In turn, select your items and consider if you can reduce, re-use or recycle each item, placing them in the correct pile. Think of ways you can re-use items and get creative! You could even organise a swap shop!

**Wow, what a mess!  
I don't want all this  
in my home!**



# Help Sandy find the recycling centre!

Can you help  
me find the  
way?



Sandy the Seal

I made it!



Recycling center

