

What's the problem?

Subject/Topic: Pollution, Materials

Suitable for: Older years

1 Background

Litter left on beaches, washed into rivers or thrown overboard from boats not only makes the marine environment look unpleasant, it kills thousands of marine animals every year, usually by ingestion, entanglement or smothering. Plastic is the most commonly found material and it does not biodegrade, rather it breaks down into smaller and smaller pieces which are mistaken for plankton or other food sources.



2 Set the Scene

Ask students to collect waste items from home and bring them into school. These could be items that are to be thrown in the bin or recycled (must be clean!). Explain that they will be examining the waste so they should try and bring items made from different materials. Use Litter Sources and Impacts game on interactive whiteboard to introduce the idea of how waste reaches the ocean.



3 Resources

Worksheet: Waste not want not!
Marine Litter gallery, clean household waste (collected by students), Marine Litter interactive game

4 Investigate

In small groups, students should share their items and group them according to the material they are made from. Use **'Waste not want not!'** to record the number of pieces of waste made from each different material. Groups to share and as a class discuss the most commonly found material (likely to be plastic). Students to share their knowledge of the properties of each material. Introduce the concept of biodegradability - some materials like paper, break down, others, like plastic don't. Pose the question, 'What's the problem with plastic?' Initially, students are not expected to answer this fully, rather the question should be returned to throughout to build and consolidate knowledge. Back in groups, re-sort the items of waste into recyclables and non-recyclables. Discuss what happens to each group - is recyclable waste always recycled? Why/why not? Show images of marine litter and pose the question, 'How does it get here?'

6 Extend

Pose the question, 'What can we do to stop marine litter?' Students to consider ways that we can reduce marine litter, thinking about who needs to take action, how they can help and the possible impacts of these changes.



5 Apply

Group to brainstorm ways they believe marine litter reaches the beach. As a class compare and discuss ideas. Support students to identify the 3 main ways public litter reaches our beaches (left on beaches, washed into rivers or thrown overboard from boats). Examine images of marine litter (**Waste not want not!**). For each one identify the threat it poses to marine life e.g. ingestion, entanglement or smothering (some may be all 3!).

7 Reflect

Return to the original question, 'What's the problem?' Students to share their opinions and ideas. Encourage students to draw upon their learning, making reference to the material, biodegradability and recycling where possible. Extension group to share their ideas about what can be done.



A project made possible by

M&S

marine conservation society

waste not, want not!

Carefully examine your group's waste. Think carefully about the material each one is made from and record as a tally in the chart below.

Material	Tally
Paper/cardboard	
Plastic	
Metal	
Glass	
Other	

We found the most common material to be

Properties

Now think about the properties of each material and record these below. Some useful words are: biodegradable, non-biodegradable, hard, floats, sinks.




Material	Properties
Paper/cardboard	
Plastic	
Metal	
Glass	
Other	

Plastic is a particular problem for marine creatures. Why do you think that is?

Name:

According to the Marine Conservation Society's annual survey, plastic makes up nearly half of the litter found on UK beaches. How do you think plastic items reach the sea?

Examine the images below. For each one, decide how they could be a danger to marine wildlife.

	Ingestion (Could be mistaken for food and eaten)	Entanglement (Becoming caught up and hurt)	Smothering (being covered and unable to breathe)
			
			
			

So, what's the problem?