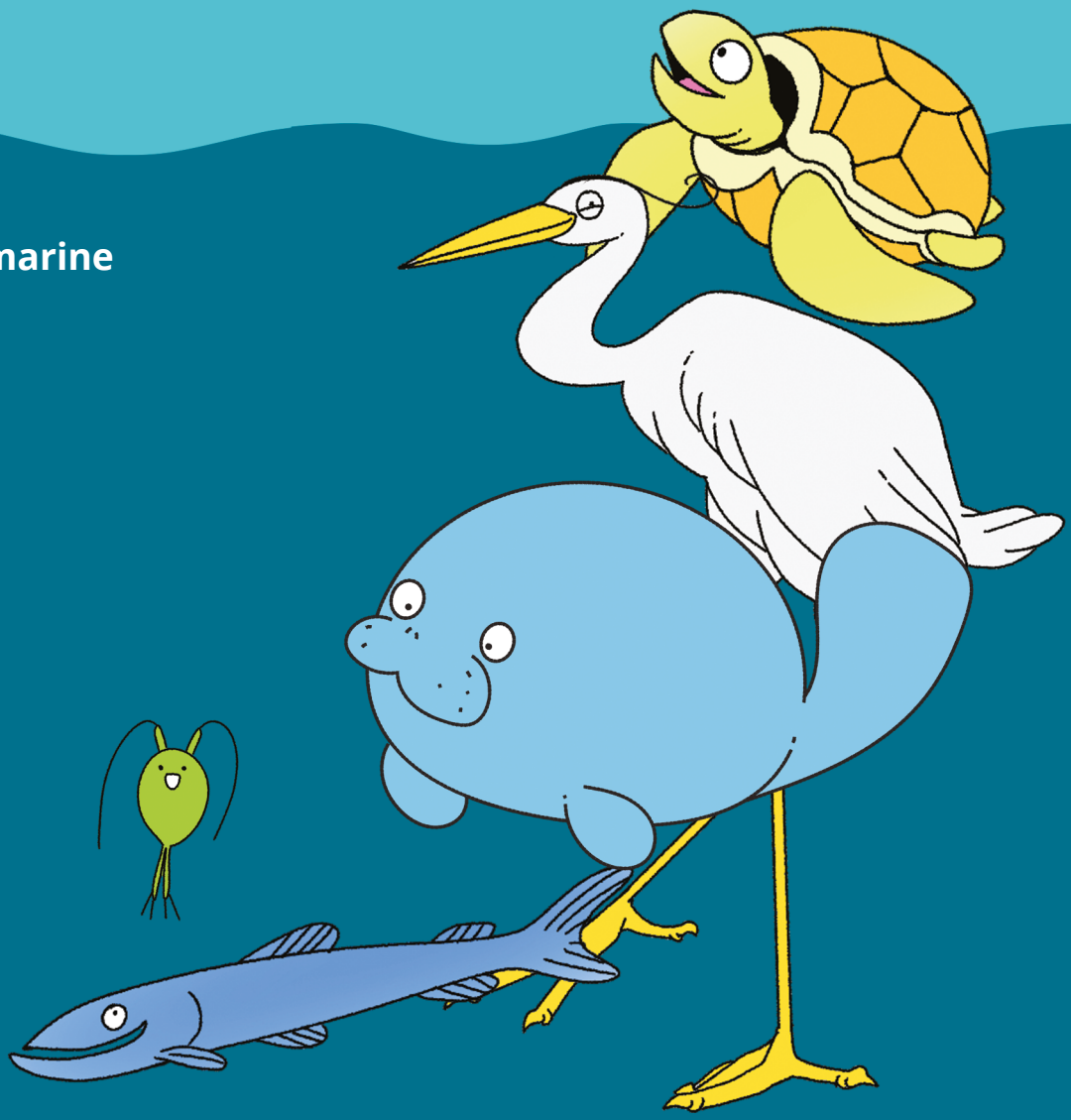
CLiP

Community Pack

Level 1

Belize

3 lessons on marine litter



Department for Environment Food & Rural Affairs

Centre for Environment Fisheries & Aquaculture Science

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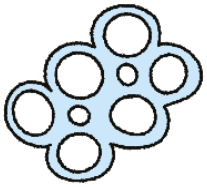
PROUD TO SUPPORT COMMONWEALTH HEADS OF GOVERNMENT MEETING LONDON 2018

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?

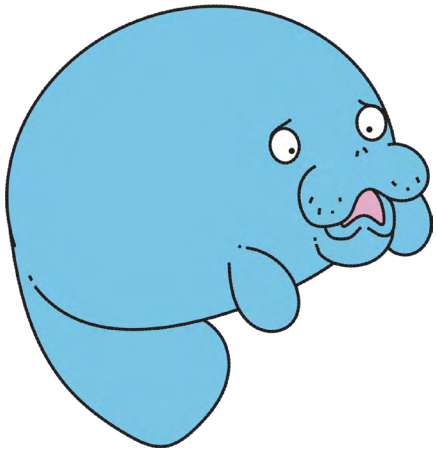
Litter comes from humans. We use something, discard it and unless it is recycled or sent to landfill, it ends up on the ground and could find its way to the sea. The most common way is from transport by rivers, sewage and storm outfalls. It can also enter the marine environment by being blown by winds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



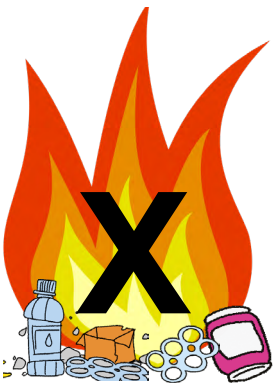
Plastic is the most common type of marine litter and includes a wide range of materials. Plastic bottles, food wrappers and abandoned fishing gear are among the most frequently found items globally. In the sea, plastics break down into small fragments called microplastics.

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.



Sometimes people burn garbage to get rid of it, but if this contains plastics they will release harmful chemicals that we breathe in. This is dangerous to humans, wildlife and the environment!



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

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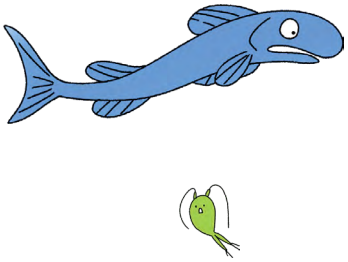
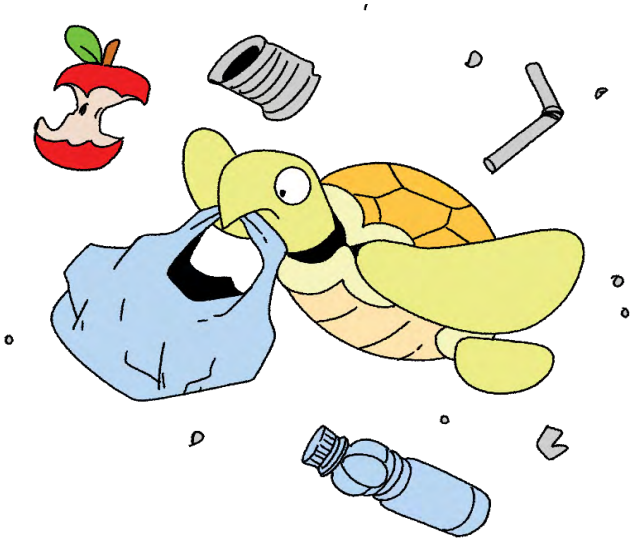
Marine litter can carry "alien" invasive species

© Matt Ecklund





Lesson 1: What is marine litter?

Objective: To give the community 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.

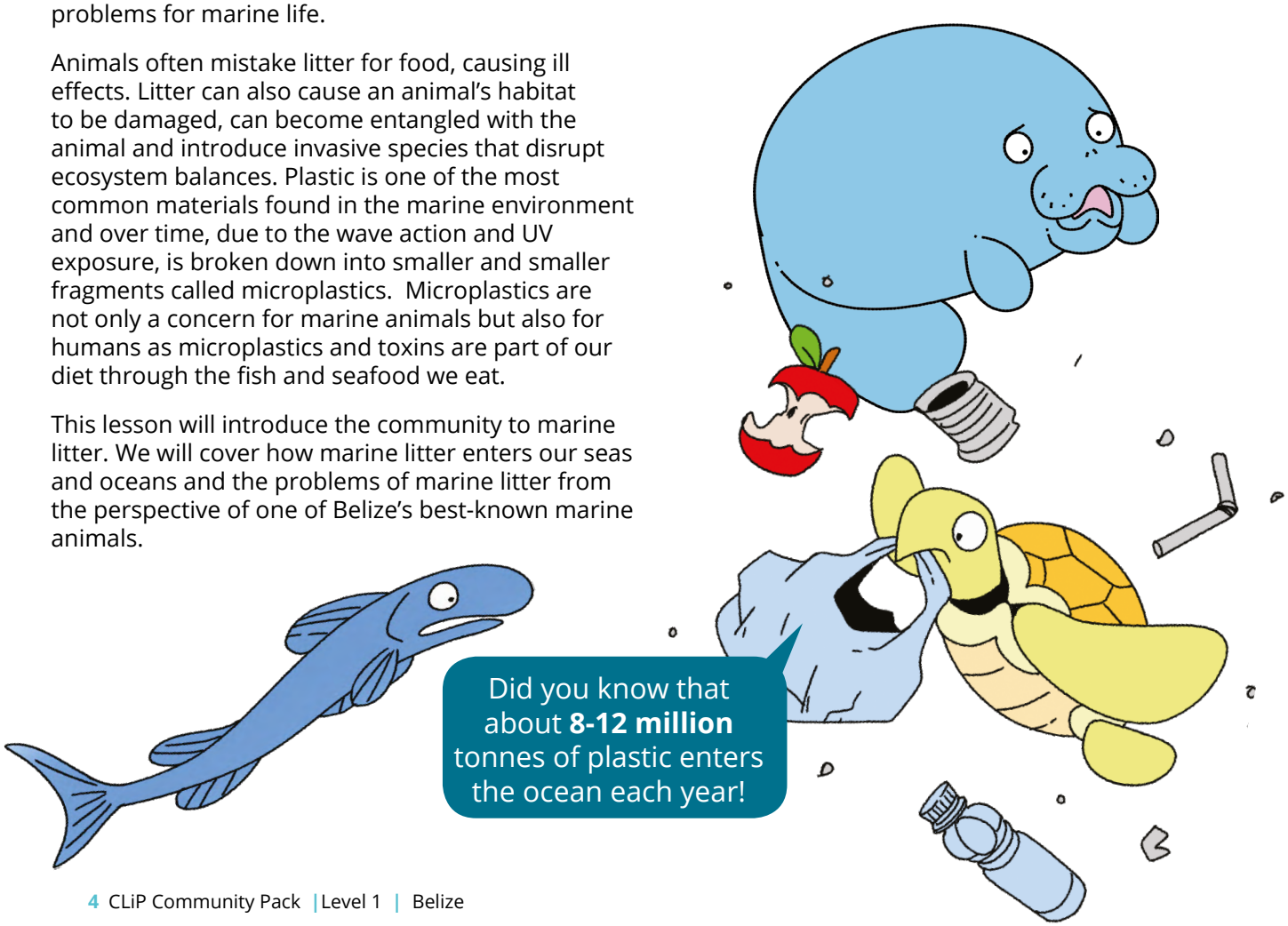
You may ask, how does it get there? Litter ultimately comes from humans. We use something, discard it and unless it enters landfill or is recycled, it ends up on the ground and could find its way to the sea. The most common way is from transport by rivers, sewage and storm outfalls. It can also enter 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 community to 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 Belize's best-known marine animals.

Additional Resources

- Two Minutes on Oceans w/ Jim Toomey: Marine Litter
- 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)



Activity: What are things made of?

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

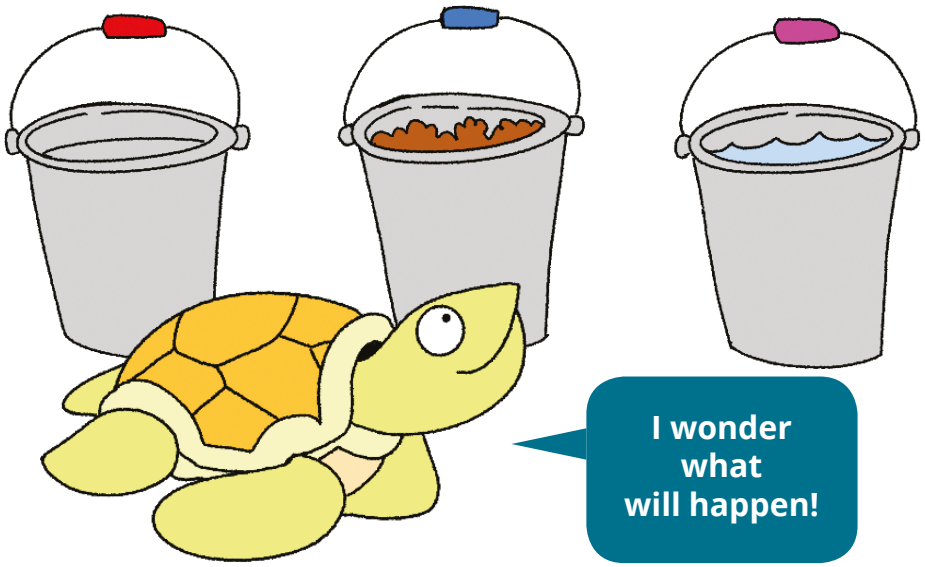
Time: 30 minutes

You will need:

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

Instructions:

Work with everyone as a big group or divide into smaller groups. Take each object in turn and use your senses to describe the item: 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, 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. Revisit items in one month to see what has changed and record your observations.



Worksheet

Worksheet

Item description	What do you think will happen over time ?	What did happen over time?

How many pieces of marine litter can you find?

Worksheet

Lesson 2: Marine Litter in Belize

Objective: to help the community explore marine litter in the Caribbean, 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 a great way to make your community 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 trash 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. Did you know the Scouts Association in Belize have been carrying out beach and river cleans for 27 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.

Activity: Beach field-trip and categorization exercise

Time: 1-3 hours

You will need:

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

Instructions:

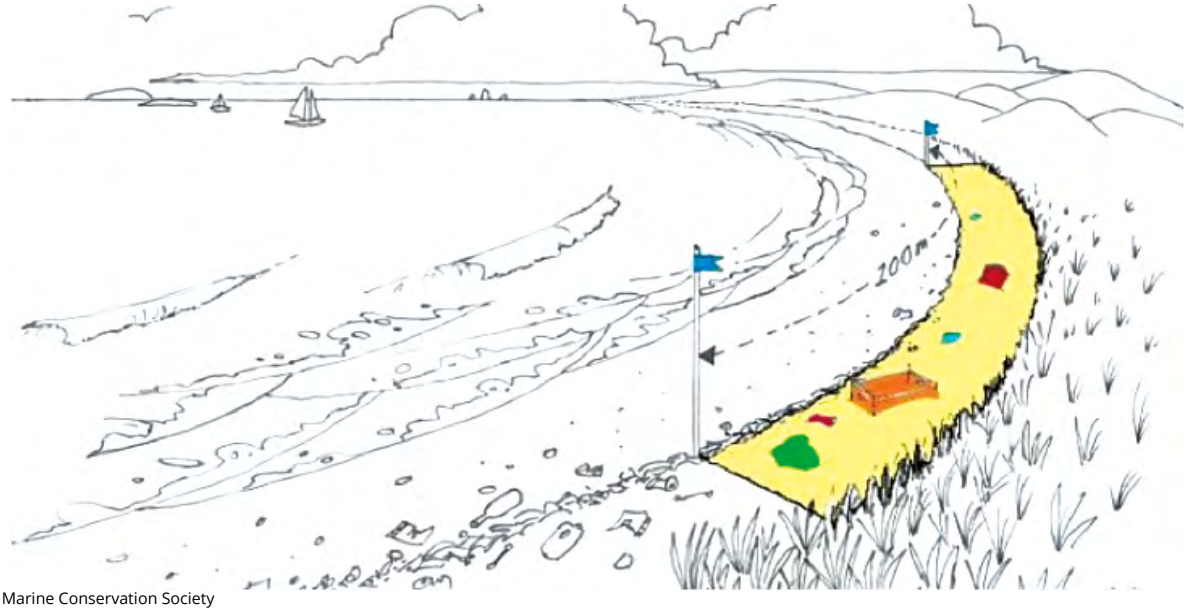
Select a local beach or river, ensuring that you have permission from the land owner for access. Check the tide times and select a date and time for 2 hours or more after high tide, and not on an incoming tide.

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.

Organize your community 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 garbage responsibly and bring a selection of clean, safe litter items back to the community center for additional activities and lesson 3.

Back in the community center, 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?



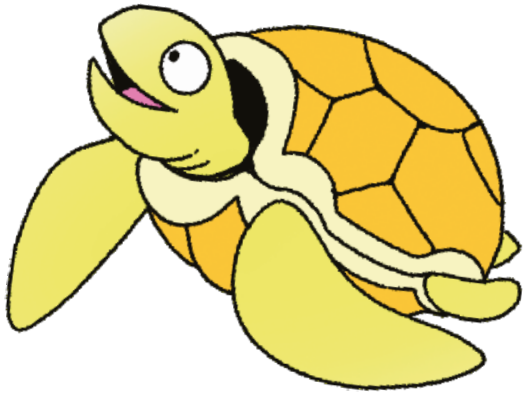
© Marine Conservation Society

Worksheet

What did you find?

Plastic	Plastic cutlery	
	Plastic bags	
	Plastic bottles	
	Drink pouches	
	Plastic straws	
	Fishing gear	
Foam	Food containers	
Metal	Drink cans	
Paper		
Glass		
Rubber		

See if you can recreate the CLiP crew from some of the litter you found today!



Worksheet

Lesson 3: Solutions?

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

It is really important that we all help to reduce the amount of litter in our country 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 trash on the ground. However, they were using natural materials like leaves and coconut husks that over time would biodegrade and become part of the soil. Materials we use these days are increasingly synthetic, which can last a really long time so we must put these items in the garbage bin, or reuse or recycle them. Plastic can take up to 1000 years to disappear!

There are three actions that individuals can do to help reduce the amount of plastic that enters the marine environment: Reduce, Re-use and Recycle. Start the lesson by introducing students to these ideas that can be implemented in Belize.

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 shop when you buy your groceries
- bring water from home in a reusable water bottle
- don't use plastic straws.

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 trash.

Did you know that Belize is preparing to ban some of the most common plastic garbage items such as foam containers, plastic bags, straws and food utensils? These items cannot be easily recycled and don't break down. Find the full list of items to be banned on this website:

http://www.doe.gov.bz/index.php/news/95-single-use-plastics-phase-out.

Remember the 3 R's:

Reduce, Reuse, Recycle!

Activity: Reduce, Re-use, 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.

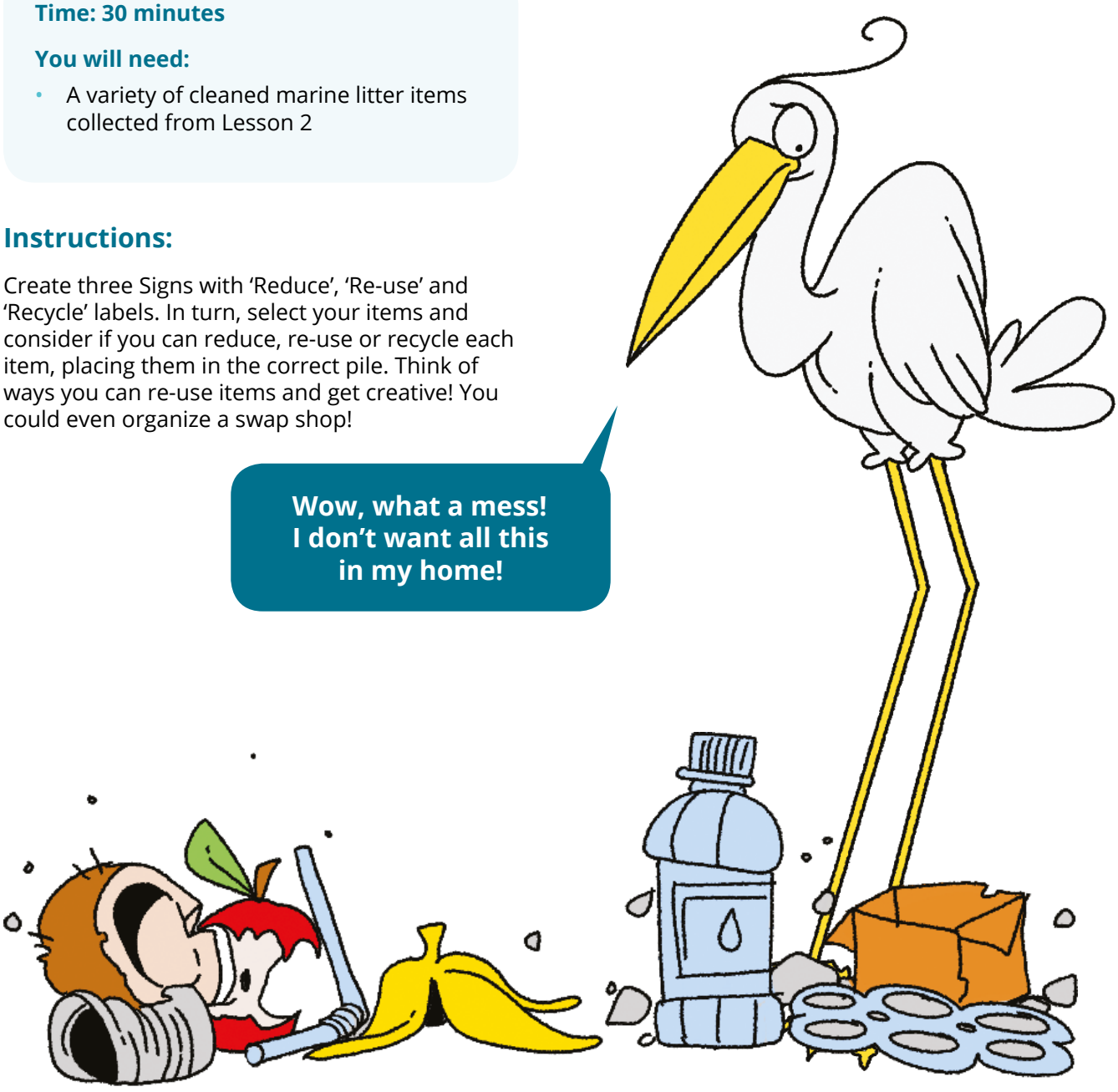
Time: 30 minutes

You will need:

- A variety of cleaned marine litter items collected from Lesson 2

Instructions:

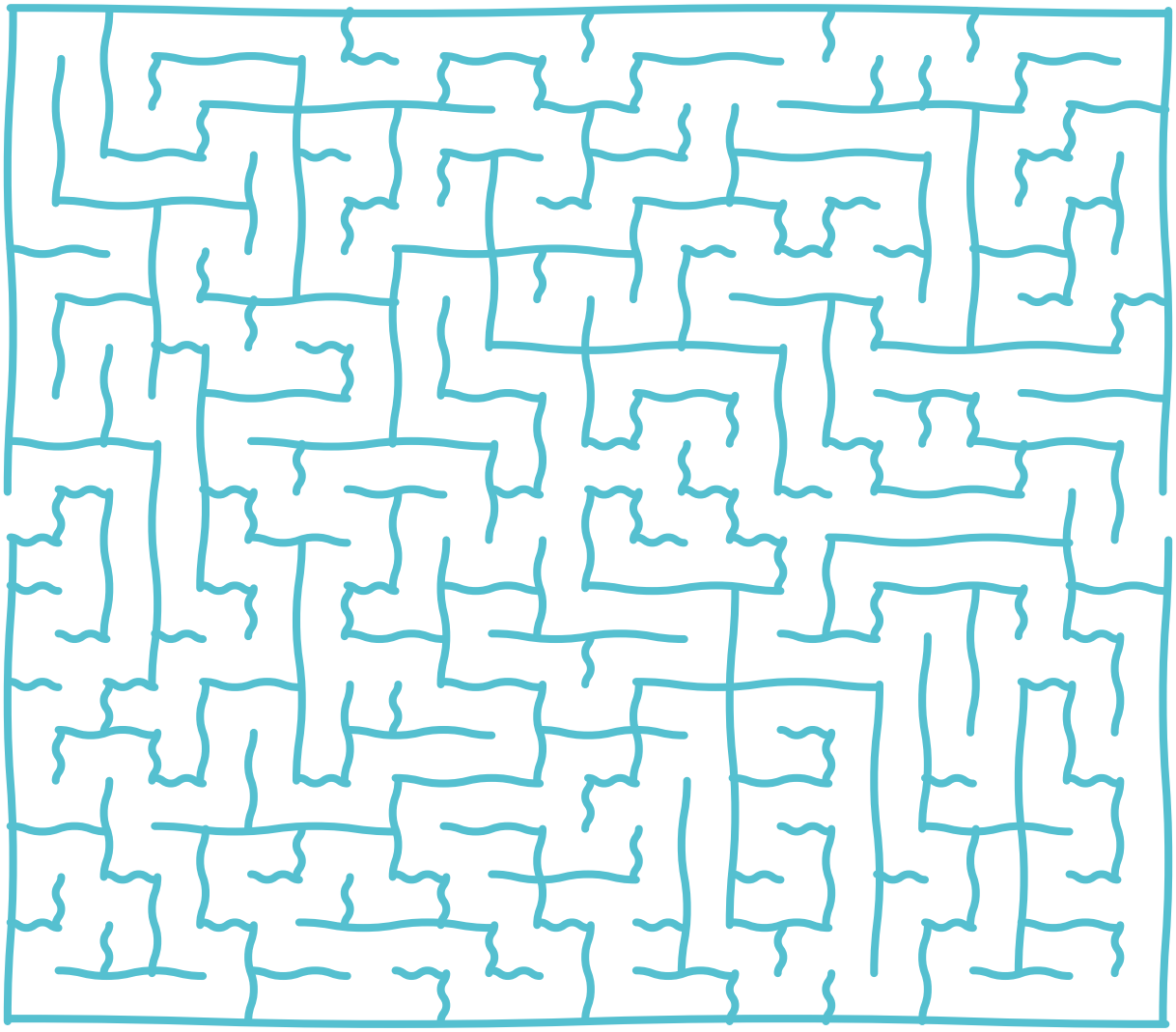
Create three Signs with 'Reduce', 'Re-use' and 'Recycle' labels. In turn, select your items and consider if you can reduce, re-use or recycle each item, placing them in the correct pile. Think of ways you can re-use items and get creative! You could even organize a swap shop!

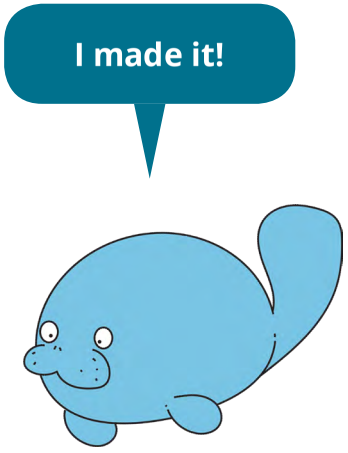


Worksheet

Help Mango find the recycling center!

Mango the Manatee





Recycling center