

SDG14 Future of the Ocean

MM1: Introduction to Ocean Literacy



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Research and Development

Lesson 5: Introduction to Ocean Pollution

Subject Areas: CSPE, Climate Action and Sustainability, Geography, Science, SPHE

3 GOOD HEALTH AND WELL-BEING



11 SUSTAINABLE CITIES AND COMMUNITIES



13 CLIMATE ACTION



17 PARTNERSHIPS FOR THE GOALS



Lesson Title and Summary: Introduction To Ocean Pollution

In this lesson, learners begin to understand how our actions can influence ocean health and cause pollution. Learners will consider the extent of the pollution problem with a particular focus on plastic.

Using solution-based thinking, learners can imagine what we can do to reduce ocean pollution.

Vocabulary: Interconnectedness, Non-Recyclable, Recyclable, Ocean Literacy

In this lesson, the learner will:

- increase their ocean literacy skills
- increase understanding of nature's influence on humans and interconnectedness
- learn how consideration can help us in everyday choices to prevent pollution
- work as part of a team

Materials

- Teacher's Guide
- Supporting Resource: Reflections
- Large containers/boxes x 2
- Clean and dry rubbish items (recyclable and nonrecyclable)

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Activity Instructions

Activity 1: Walking Debate (20 mins)

1. Designate locations in the classroom for the debate
 - Left side = Agree
 - Right side = Disagree
 - Centre = Not sure or on the fence
2. Read a statement from the walking debate statement list (see Teacher's Guide) and ask learners to go to the side of the room that matches their opinion. Give them 1-2 minutes to discuss with each other their reasons for their opinion. Ask each side to paraphrase. Repeat with other statements on the list.

Activity 2: Rubbish Run (20 mins)

This activity requires preparation. Rubbish items need to be collected, washed and labelled with team numbers. Select a variety of recyclable and non-recyclable items of rubbish. See Teacher's Guide.

1. Divide learners into teams of four.
2. Distribute a minimum of eight rubbish items (each labelled with a team number) to each team. Each team must have the same number of items.
3. At the opposite of the room, have two large containers for rubbish to be deposited in. One container should be labelled 'Recyclable' and the other 'Non-Recyclable'
4. At the sound of a buzzer, each team must work in a relay to bring one item at a time to the containers and deposit it into either Recyclable or Non-Recyclable. Set a timer for the race, depending on the number of items each team has. For example, 8 items = 1 minute / 10 items = 1.5 minutes. The time allocation needs to be challenging!
5. At the end of the time, work as a whole group to check each container and give points for each item in the correct one. Assign points to teams using the number labelled on each item of rubbish. If an item is in the incorrect container, deduct one point.

Activity 3: Reflections (10 mins)

1. In their teams, reflect on the Rubbish Run game and ocean pollution using the reflection prompts in the Supporting Resource. This can be done as a spoken or written activity, with whole class consolidation at the end.

REFLECTIVE EXERCISE: 3-2-1 (10 mins)

- Three things they feel they have learnt from the tasks
- Two things they found most interesting and would like to explore more
- One opinion they have about the activities, what did they like or how they would improve them

Use Post-its or a Mentimeter survey - [mentimeter.com](https://www.mentimeter.com) to gather reflections

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EXTENSION / REDUCTION ACTIVITIES

Reduction: For a shorter class, complete Activity 1 and 2 only.

Extension: For a longer class, extend the duration of Activity 1 and 2, and complete Activity 3 as a written task.

MEDIA BOX: (materials, online video links, extra resources, case studies etc)

Videos: Repak Ireland [@repakrecycling](#) on YouTube

Video: New recycling deposit charges to be introduced in Ireland [3:13 mins]

<https://youtu.be/bayjbbKzQMU?si=KsdqbH7Gvig14IFV>

Documentary: Pulau Plastik [97:00 mins] <https://www.netflix.com/ie/title/81597205>

Trailer: Pulau Plastik [1:46 mins] <https://www.youtube.com/watch?v=uLDnAyr5T4U>

Website: Clean Coasts <https://cleancoasts.org/>

Website: Repak Ireland <https://repak.ie/>

National Waste Action Plan for a Circular Economy

<https://www.gov.ie/en/publication/4221c-waste-action-plan-for-a-circular-economy/>

Local Trip / Expertise / Additional Work and Assessments

Contact the local county council environment officer and find out about their waste plans. Use Supporting Skills- Interview to prepare questions. Invite the officer to give a talk about how their role is changing with climate change and how they are enacting the new national waste action plan for circular economy.

Additionally, survey local people in the their town about their recycling habits and knowledge.



Waste Management

- Were you able to correctly identify and separate recyclable items from non-recyclable ones in the game? Why or why not?
- How conscious are you about sorting your trash into recyclable and non-recyclable categories in your daily routine?
- Reflect on the materials commonly found in your non-recyclable trash. Are there alternative products or practices that could reduce the amount of non-recyclable waste you generate?
- Explore any challenges or barriers you face in consistently recycling. How might you overcome these obstacles to enhance your recycling efforts?
- Think about the concept of "reduce, reuse, recycle." How can a focus on reducing and reusing contribute to a more sustainable and eco-friendly lifestyle?

Ocean Health & Plastic Pollution

- Reflect on the interconnectedness of human activities and their impact on ocean health. How do actions on land, such as waste disposal or industrial practices, affect the quality of the ocean?
- In what ways do you personally contribute to or mitigate ocean pollution through your daily habits and choices?
- What are some of the long-term consequences of ocean pollution on marine ecosystems and biodiversity?
- What improvements or changes does government need to make around ocean health and plastic pollution?
- What are some of the economic impacts of ocean pollution, including its impact on fisheries, tourism, and coastal communities?
- How are vulnerable communities affected by ocean plastic pollution?



Activity 1: Walking Debate Statements

- It is difficult to live life without polluting the planet.
- Single-use plastic should be banned.
- Water is our most precious resource.
- We are not separate from our environment, we are part of it.
- Human behaviours cause ocean plastic pollution.
- Sustainable fishing is the key to saving marine life.
- Ocean pollution is unavoidable.

Activity 2: Rubbish Run Game

Collect, wash and dry a minimum of eight trash items per team. These need to be a mix of recyclable and non-recyclable items. The greater the number and variety of items, the better. Avoid purchasing items for this game- this only adds to the problem!

The most common trash items found in and around the ocean are:

- plastic bags
- bottles
- bottle caps
- food containers and cutlery
- straws
- coffee cups
- plastic film
- wrappers
- synthetic rope
- fishing items

If you have these unused items available to you, they can also be included as they are commonly found in ocean garbage patches at sea, and washed up on shorelines.

- sanitary products
- cotton swabs
- tobacco packaging

Often, items we think can be recycled in our home bins in Ireland actually aren't for a number of reasons. By using some of these items in the Trash Dash game, you will open up better discussion and debate around the recycling systems.

- coffee pods
- netting around fruits and vegetables
- used matches
- medical blister tablet packs
- polystyrene
- paper sachets (like salt and pepper)
- soiled tinfoil
- foil lined paper/packets



Ocean Health & Plastic Pollution

Ocean plastic pollution is a significant environmental issue that affects our oceans and marine life. It occurs when plastic waste, such as bottles, bags, and packaging, ends up in the ocean instead of being properly disposed of or recycled.

Some of the main sources of ocean plastic pollution include:

- Single-use plastic items like plastic bottles, bags, straws, and packaging that are designed for one-time use.
- Improper waste disposal such as littering, inadequate waste management practices that lead to the direct entry of plastic waste into rivers, streams and coastal areas.
- Fishing gear that has been abandoned, lost or discarded, like nets, lines and traps.
- Inadequate recycling facilities and infrastructure and low rates of plastic recycling in communities.
- Runoff from rainwater can carry plastic waste into storm drains, and ultimately, into the ocean.
- Shipping activities that cause the accidental or deliberate release of plastic waste from ships.

Did you know that 80% of plastic in the ocean comes from land-based sources?

What's happening in Ireland?

- Each person in Ireland produces 65kg of plastic waste per person each year, compared to the EU average of 33kg, making Ireland the largest producer of plastic waste in Europe.
- Ireland also has the fifth lowest recycling rate, with 31% of plastic packaging waste produced.
- Approximately 9 million tons of plastic waste enter our ocean each year.
- Plastic generally takes between 450 and 1,000 years to decompose and plastic waste is suffocating our ocean.
- There are an estimated two million disposable coffee cups a day in Ireland going into landfill.
- Around 22 million plastic bottles are purchased in Ireland each week.

According to the Ocean Conservancy Coastal Clean-Up report 2023 these were the most common items found on the Irish Coast:

4,059 cigarette butts	2,587 plastic food wrappers	1,708 plastic beverage bottles
433 plastic bottle caps	561 straws and stirrers	692 paper cups and plates
214 plastic grocery bags	964 plastic takeaway containers	511 other plastic bags



Waste Management in Ireland- Recyclables

In Ireland we collect all recyclables in the same bin and the sorting of all these materials take place at a recycling facility. Irish recycling plants are upgrading their mechanised sorting facilities to allow for more sorting of plastic. Until 2020 Irish recycling facilities could only process rigid plastics (mywaste.ie).

WHAT CAN GO IN MY RECYCLING BIN?

Please place all items in your recycling bin **CLEAN, DRY & LOOSE**



- Empty Juice / Milk Cartons
- Packaging Boxes
- Food Boxes
- Gravy / Salt Tubs
- Gift Cards / Wrap
- Paper / Envelopes
- Pizza Boxes
- Washing Powder Boxes
- Tissue Boxes
- Toilet / Kitchen Roll Tubes



TINS, CANS & FOIL

- Drink Cans
- Food Cans
- Pet Food Cans & Trays
- Soup / Sauce / Fruit Tins
- Gift / Biscuit / Toiletry Tins
- Sweet / Chocolate Tins
- Aluminium (Tin) Foil
- Aluminium Trays
- Beer Bottle Lids
- Metal Jar & Bottle Lids



ALL PLASTICS

- Bread wrappers
- Fruit / veg and salad wraps and bags
- Kitchen / toilet roll outer wrap
- Breakfast cereal bags
- Plastic shopping / carrier bags
- Dried fruit / seed and nut bags
- Frozen food bags
- Pasta / rice / noodle bags
- Cheese packs outer wrap

- Baked goods / Confectionary outer wrappers
- Crisp / cracker wrappers
- Bubble wrap
- Electrical item/white goods / appliances bags/wrap
- Mattress / pillow wrap
- Wet wipes outer wrap
- Detergent/dishwasher bags
- Garden compost / bark bags
- All pots, tubs and trays
- Water / juice Bottles
- Milk / cream Bottles
- Sauce / dressing Bottles
- Meat / veg / bread trays
- Butter/margarine / ice-cream tubs
- Yogurt pots
- Salad / fruit bowls
- Chocolate / biscuit trays
- Bottle / jar lids
- Take-away plastic containers
- Shampoo / liquid soap and gel bottles
- Make-up / toiletry tubs and mouth wash bottles
- Detergent / household cleaning bottles
- Plastic plant pots



PAPER & CARDBOARD

- Newspapers
- Books / Phone Books
- Magazines / Catalogues
- Diaries / Calendars
- Letters / Junk Mail
- Egg Boxes
- Sugar Bags / Potato Bags



REPAK

Waste Management in Ireland- Recyclables

Recycling can be challenging for several reasons.

- When non-recyclable items are mixed with recyclables, it can compromise the quality of the recycled materials and make the process less efficient.
- Recycling guidelines and regulations can vary widely between regions and even within the same country.
- In some places there may not be sufficient infrastructure and policies for collecting, sorting, and processing recyclable materials.
- Certain plastics or materials may not be easily recyclable using current technologies.
- A lack of awareness and understanding on what can be recycled can lead to improper disposal.