# Source Reduction Plan Instructions

*Sourced from Australian Marine Debris Initiative Tangaroa Blue Information*

**Background**

What is marine debris?

Marine debris are man-made items that ended up in the marine environment through littering or dumping. It injures and kills marine wildlife, affects human health and coastal habitats and is a major pollution issue around the world.

Where does it come from?

A variety of sources contribute to marine debris on our coastline: Near Australia's big cities most of the debris comes from the land: Litter gets washed down storm water drains during rain events, comes from overflowing sewage systems, is left behind by careless beach visitors or carried into the water by the wind. In remote areas sea-based debris is brought in on ocean currents from other countries, recreational boats, fisheries or cargo ships where it is either washed overboard or intentionally dumped into the ocean.

Why does it matter?

Marine debris impacts the environment, economy, wildlife and human health and safety in many different ways.

Animal victims: *Entanglement*: Derelict nets, fishing line, rope, packing bands, balloon string, six-pack rings and many other items can become dangerous traps for birds, dolphins, turtles, seals and other wildlife. The animals get tangled, suffer physical deformities and injuries, suffocate or starve to death. *Ingestion*: Whales and sea turtles amongst other animals mistake plastic bags for jelly fish and sea birds are attracted to colourful plastic fragments that they even feed to their young. With a false feeling of fullness, they starve to death or die from internal injuries or blockages. When the animal decomposes the plastic in the guts is released and can kill again.

Habitat Damage: Habitats are the basis of any ecosystem, and their health is crucial for the survival of many species. But derelict fishing gear and other heavy debris can break or suffocate corals, and plants can be smothered by plastic bags or fishing nets. Since marine debris is more durable than natural modes of transport like driftwood, it can function as a raft for invasive species to travel across the ocean to new shores where it can have a devastating impact on the local ecosystem.

Economic loss: Marine debris is an eyesore along shorelines and may cause economic loss if the area is a popular tourist destination. Often, beach clean-ups are too costly for coastal communities.

What can you do?

Everyone can help reduce marine debris, even if you live far away from the coast. Land and ocean are connected through waterways, and every action from changing consumption habits to cleaning up the environment to big scale projects can make a difference to one of the largest environmental issues. Consume wisely the less rubbish we produce the less might end up in the ocean. To reduce rubbish avoid buying or using single-use items such as plastic bottles or bags, disposable plates and cutlery or products wrapped in plastic. Reuse plastic bags or bottles until they wear out and repair broken items instead of buying new ones.

**Aims/Outcomes:**

* Students develop an understanding of how litter ends up as marine debris
* To challenge students to identify ways to reduce litter at its source in their schools
* To promote student involvement in on the ground projects and actions in their schools

**Activity Format:**

Duration 30-60 minutes

*Students should complete School Litter Survey at school prior to completing this activity.*

**ACTIVITY BREAKDOWN:**

Everyone can help reduce marine debris, even if you live far away from the coast. Land and ocean are connected through waterways, and every action from changing consumption habits to cleaning up the environment to big scale projects can make a difference to one of the largest environmental issues.

Explain marine debris and impacts on the environment (5-10 mins)

* *Discussion:* What is marine debris? Have students been involved in beach clean ups or clean ups at schools?
* Make the link/connection between littering at school becoming marine debris. The ultimate solution to preventing the impacts of marine debris is to stop it at the source.
* Have students share their results from their School Litter Survey: top 3 items found at school, what items were found close to bins and what items surprised the student.

Source Reduction Plan: Identifying the source (10-20 mins)

* Have students work in small groups (if they are from different schools have them split into pairs from the same school and then partner up with another pair or two).
  + Groups to identify one item from their top 3 items found at school (try to have the different groups work on a different item each)
* Complete the Source Reduction Plan Question 1-3 in their workbook.
  + Prompt students with the **5 W** questions
    - **What** is your item? (Are you targeting a product group or only items of a certain brand?)
    - **Where** is it and where does it come from? (Does it come from your tuckshop, lunch eating area, oval or school yard? Did students throw it on the ground, or did it blow out of bins?)
    - **Who** is responsible? (Is there a specific target group e.g. students from a year level, teachers, art students?)
    - **When** does the litter get into the environment? (Is it daily discharge of litter, a certain event (e.g. sports day) or a natural disaster (i.e. blows into the school yard)?)
    - **Why** is it here? (Did it end up here by accident or did it get left behind or dumped, out of habit or because of poor infrastructure (i.e. not enough bins)?)

Source Reduction Plan: Identifying the source (10-20 mins)

* + *Discussion:* What factors influence littering?
  + **Care of Place:** Social norms (what is expected from you socially what is expected from you socially and are your surroundings already dirty) and Physical features (Overflowing bins, graffiti, litter - nobody cares so why should you?)
  + **Responsibility Factors:** Social compact (who is responsible for picking it up? Mutual sense of shared responsibility. Are your surroundings already dirty/clean?) and Sense of Community (what values does the school community have?)
  + **Penalties and Rewards** (both are needed): Penalties are for those who do the wrong thing and rewards are for those that do the right thing
  + **Individual Factors:** perception that their little bit doesn’t matter, it’s not mine why should I pick it up, general world view – some people just don’t care, incorrect beliefs – thinking food scraps are biodegradable, Ick factor – bins and litter are disgusting, habitat – unconscious thing, conflicting preferences – too lazy to get up.
* *Discussion:* what are schools already doing (might be ideas for other students/schools).
* Complete the Source Reduction Plan Question 4-6 in their workbook.
  + What needs to change? When you understand how an item is ending up in the environment, then you need to identify what needs to change to stop that from occurring. Who can help you?
    - Your plan needs to be practical, cost effective and solve the problem
    - It may involve, a change in design, a change in behaviour, a change in practice
    - You may need, infrastructure, education, funding, expertise
  + How are you going to measure if your plan is working? (could continue doing litter surveys during and after)

Reflection (5-10 mins)

* Groups share their item and their plan with the whole group. Allow for feedback from other students.

**EXAMPLE SOURCE REDUCTION PLAN WORKSHEET**

|  |  |  |  |  |  |
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| 1. Name of item being targeted in this Source Reduction Plan | | | | | |
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| 1. What is the main source of where this item is coming from? | | | Why is it ending up on the ground and not in a bin? | | |
| *Think about if certain students use this item, is it from a certain area, is it from the tuckshop or home, etc.* | | | | | |
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| 1. Why is stopping this item from ending up in the ocean/beach/river important? | | | | | |
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| 1. Who in your school or wider community can help you fix this problem?   *(i.e. student leaders, tuckshop, P&C, local council etc.)* | | | What can they do to help?  *(i.e. don’t use item, provide more bins or signs, or change behaviour, etc.)* | | |
|  | | |  | | |
| 1. Who can help? What can they do? | | | | | |
| Who are you going to contact?  (i.e.., Local Council, teacher, etc.) | What is the name of the person you need to contact? | How will they be approached? (i.e. phone call, face-to-face.) | | What are you going to ask them to do? | Who is going to contact them and when? |
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| 1. How bad was the waste/litter before? | | | How are you going to measure if your plan is working or has worked? How bad is the waste/litter after? | | |
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