Teacher Resource Guide

Includes a teacher guide & student activity pack

Contributes to:
Stage 3 (Years 5-6)

- **ST3-4WS –** investigates by posing questions, testing predictions and gathering data
- **ST3-5WT –** applies a design process to develop solutions to identified problems
- **GE3-1 –** describes the diverse features and characteristics of places and environments
- **GE3-2 –** explains interactions and connections between people, places and environments
- **GE3-3 –** compares and explains the diverse ways people can influence environments
- **GE3-4 –** acquires, processes and communicates geographical information using geographical tools

SEA LIFE Sydney Aquarium x Seabin Stage 3 Learning Pack

Includes:

- Teacher Resource Guide (download separately)
- Student Pack
- Refers to data in Impact Reports. Find these reports here: https://www.visitsealife.com/sydney/conservation/local-conservation-projects/project-seabin/#sea-life-sydney-x-seabin-impact-report-2025-annual

Please Note:

This resource has been produced for teachers to use for FREE and for them to use within the attraction, in a classroom and online learning environments. This resource works best with an excursion to SEA LIFE Sydney Aquarium.

Go to our website https://www.visitsealife.com/sydney/schools/ to find out more about school excursions!

Students are encouraged to:

- investigate microplastics and explain how they form over time
- analyse real marine litter statistics from Sydney Harbour
- interpret percentage data and represent findings through graphs and pie charts
- explore cause-and-effect relationships between human behaviour and ocean pollution
- evaluate the effectiveness of solutions such as Seabin technology
- develop evidence-based conclusions using data
- reflect on how sustainability connects local waterways to global oceans
- apply their understanding through written responses and solution-based thinking

From Rubbish to Research

SEA LIFE Sydney Aquarium x Seabin Stage 3 Learning Pack

Oceans regulate Earth's climate, produce oxygen, and support millions of species. However, plastic pollution poses a significant threat to marine ecosystems, food chains, and human health.

The SEA LIFE Sydney Aquarium & Seabin partnership uses technology and data collection to remove litter and microplastics from Sydney Harbour.

This resource challenges students to analyse real statistics, investigate causes, and design practical solutions.

What is a Seabin?

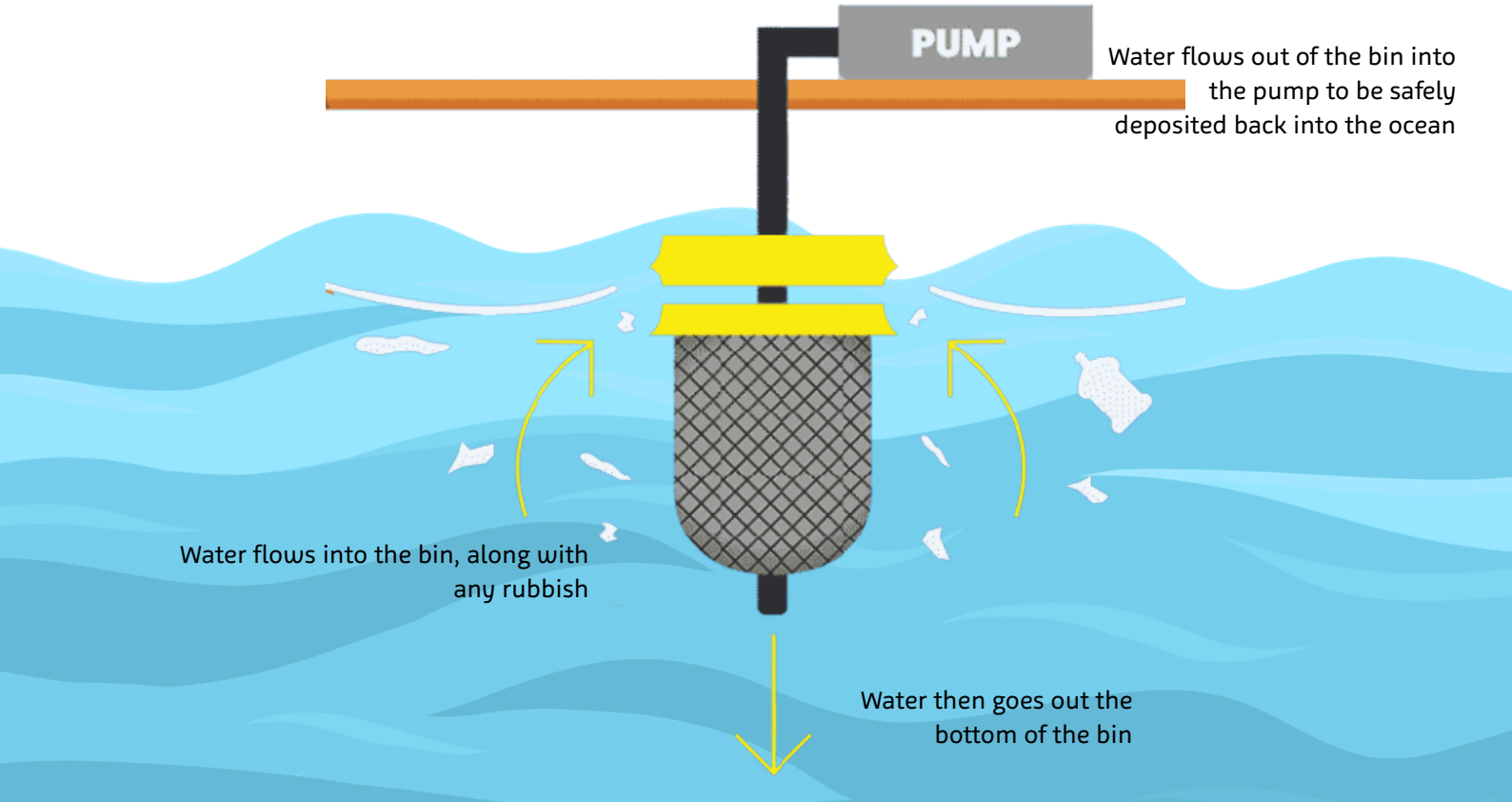
Seabin is like a “bin in the sea.” It floats in marinas and harbours and collects rubbish that is floating in the water.

It also filters the water to catch tiny pieces of plastic called microplastics.

In 2025, SEA LIFE Sydney Aquarium’s Seabin captured 664.09kg of marine litter in Sydney Harbour

How it works

The Seabin is situated at the water's surface and is plumbed into a shore-based water pump on the dock. The water is sucked into the Seabin, drawing all floating debris inside. The water then flows out through the bottom of the bin and up into the pump on the dock.



The Seabin is easy to empty and replace. It can work 24 hours a day, 7 days a week.

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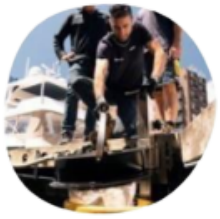
Sydney Harbour Impact (2023-2025)

2568.85
kilograms
of marine litter captured



711.63
million
litres of water filtered for microplastics and plastic pollution

285
Olympic swimming pools

1,407,774
plastic items captured

921,737
microplastics were captured

SEA LIFE Sydney Seabin

Worksheet One: What are microplastics?

Microplastics are tiny pieces of plastic less than 5mm long.

Over 2023-2025, Seabin captured 921,737 microplastics in Sydney Harbour

Explain the difference between plastic items and microplastics.

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Why are microplastics difficult to remove from the environment?

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List 4 possible sources of microplastics in Sydney Harbour.

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How might microplastics affect marine animals and food chains?

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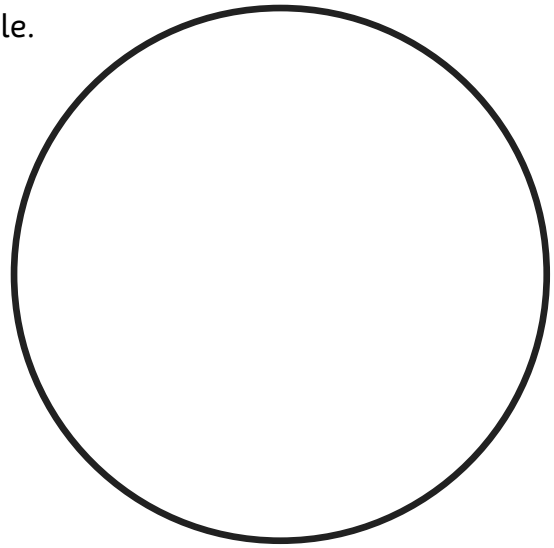
Worksheet Two: What type of pollution is most common?

Use real Sydney Harbour data to identify which type of pollution is most commonly captured by Seabin units.

Create a pie chart using the percentages in the table.

Pollution Type	Percentage (%)
Microplastics	65.47%
Unidentified soft plastics	15.89%
Unidentified hard plastics	6.72%
Foam pieces	3.17%



Which category is the biggest problem?

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Why might soft plastics be more common than hard plastics?

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What could “unidentified plastic” mean?

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If microplastics make up 65.47% of the pollution captured, what does that suggest about long-term pollution trends?

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Seabin

Worksheet Three: Where does harbour pollution come from?

Complete the table below.

Source	Example	How it reaches the harbour
Streets & stormwater drains		
Boats and marinas		
Beaches		
Food packaging		
Clothing fibres		

Which source do you think is the easiest for people to reduce? Explain why.

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Seabin

Worksheet Four: Is Seabin enough?

Seabin technology removes litter from the water. But stopping pollution before it enters the harbour may be even more effective.

List 3 benefits of Seabin technology.

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List 2 limitations (things it cannot solve).

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Suggest 3 additional solutions Sydney could use to reduce plastic entering waterways.

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Mini Assessment Task: Is Project Seabin effective?

Write a short report (1–2 pages) answering the question:
"How effective is the SEA LIFE Sydney Aquarium x Seabin partnership in reducing pollution?"

Your report must include:
- 2 statistics that you've learnt
- 1 graph or pie chart
- 3 reasons why the program helps
- 2 improvements or future ideas
- One action people can take
- A concluding statement

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Mini Assessment Task: Is Project Seabin effective?

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Seabin

Reflection: Local Action

How does pollution in Sydney Harbour connect to global oceans?

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What responsibility do humans have to protect marine ecosystems?

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What is one change you would recommend for your school?

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