
Name: _____

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TECHSHEETS.DEV

GREEN TECH SERIES

Boyan Slat

Cleaning Up Our Oceans

Imagine going on a dream vacation to Greece, putting on your scuba gear, and diving into the beautiful blue water—only to find more plastic bags floating around than fish. That is exactly what happened to a 16-year-old Dutch student named **Boyan Slat** in 2011. Instead of just being sad about it, Boyan decided he was going to clean up the ocean.

The biggest problem Boyan faced was the **Great Pacific Garbage Patch**. Ocean currents naturally push floating plastic into massive, swirling patches out in the open ocean. For years, scientists said cleaning it up was impossible. Using boats and nets would take thousands of years, cost billions of dollars, and accidentally trap millions of fish and sea turtles.

Boyan had a brilliant idea: instead of chasing the plastic with boats, why not let the ocean clean itself? He founded a company called **The Ocean Cleanup** and designed a giant, U-shaped floating barrier. This barrier moves slightly slower than the ocean currents, acting like a giant, passive funnel. The plastic naturally floats right into it, where it gathers up to be scooped out by a boat every few weeks. Because it uses no nets underwater, fish can easily swim safely underneath it.

But Boyan didn't stop there. He realized that while cleaning the ocean is great, it's even more important to stop the plastic from getting there in the first place. His team discovered that 80% of ocean plastic comes from just 1,000 major rivers. So, they invented **The Interceptor**: a 100% solar-powered, autonomous boat that parks inside polluted rivers. It catches the plastic before it ever reaches the sea. Today, Boyan Slat's green technology is actively cleaning the world's waters every single day.

Part 1: Reading Comprehension

1. What specific experience inspired a young Boyan Slat to want to clean the ocean?

2. Why did scientists believe that using traditional boats and nets to catch ocean plastic was a bad idea?

3. How does The Ocean Cleanup's giant floating barrier catch plastic without trapping fish?

4. What is the purpose of the "Interceptor," and how is it powered?

Part 2: Critical Thinking

5. Cleaning up the plastic already in the water is very important. However, what are two things that ordinary people or companies could do to help solve the ocean plastic problem *before* it even reaches a river or the ocean?

Part 3: The Interceptor Math Challenge

The Ocean Cleanup team is trying to figure out the best way to deploy their solar-powered **Interceptors** in a highly polluted river. You are the lead engineer! Use your math skills to help them plan the cleanup.



One Interceptor
Catches: 1,000 lbs of plastic
per day



The Polluted River
Dumps: 45,000 lbs of plastic
per month (30 days)

Step A: Calculate the Interceptor's monthly catch.

If one Interceptor works for a full 30-day month, how much total plastic can it catch?

1,000 lbs $\times$ 30 days = _____ lbs caught

Step B: Find the missing plastic.

The river dumps 45,000 lbs of plastic a month. If you put exactly **ONE** Interceptor in the river, how much plastic will still escape into the ocean?

45,000 lbs - Your answer from Step A = _____ lbs escape

Step C: The Solution

To completely stop all the plastic in this river from reaching the ocean, how many Interceptors do you need to place in the river? Explain your math.
