**Author:** Teresa Silvestri

**Title:** Coding for the Ocean Build Your AI Bot to Save the Sea

Purpose of the challenge

* Upon completing the challenge, participants will learn and gain:
* The ability to use artificial intelligence to solve environmental problems.
* Coding skills to create and program an AI bot.
* Knowledge about climate change and the importance of protecting the marine environment.
* Problem-solving abilities in the context of science and technology.
* Development of logical thinking applied to real-world challenges.
* Creativity in designing a bot that can respond to environmental threats.
* Practical experience using coding platforms like Code.org.
* Teamwork and collaboration while sharing bots and competing with classmates.

**Description of the challenge**

Create and train an AI bot to protect the sea! Learn to code, solve environmental problems, and develop logical thinking to safeguard the marine environment.

Educational goals:

- To develop basic skills in programming and artificial intelligence

- To promote environmental awareness and the importance of protecting the environment

- To encourage creativity and imagination through storytelling

- To develop problem-solving and critical thinking skills

**Target audience**  
Primary School students (6 to 12 years)

**Experience**  
Beginner - No prior coding experience required; suitable for complete beginners.

**Duration**  
45 minutes – 1 hour to complete the challenge.

**Recommended tool:**  
Software: Access to Code.org

Hardware: Computer or tablet with an internet connection.

Online tools: Web browser to navigate Code.org or similar platforms.

Support materials: Tutorials and educational resources provided by the platform.

Other tools: Optional audio or video devices to follow the tutorial.

**Instructions**   
Access Code.org

Open your web browser and go to Code.org.

If you don't have an account, you can create one or log in with an existing one.

Start a new project

On the main screen, select the course or tutorial related to ocean protection.

Click "Start" to begin your project.

Follow the step-by-step tutorial

Code.org will guide you through an interactive tutorial. Read each instruction carefully and complete each step.

Make sure to follow the instructions to learn how to program your AI bot.

Program your bot

Use the visual coding blocks to teach your bot how to respond to environmental situations, such as collecting plastic or avoiding obstacles.

Modify the blocks to suit different situations and test the bot's behavior.

Test your bot

After writing the code, test your bot to see how it handles the challenges.

If the bot doesn't work as expected, go back and modify it, then retest it until it's effective.

Share your bot with the class

Once your bot is ready, copy the project link and share it with your classmates.

Join the competition to see which bot is the most effective at protecting the sea.

Review and improve

After completing the challenge, review your code and look for ways to improve it.

You can add more features to the bot to tackle new environmental challenges.

A diagram of a program

AI-generated content may be incorrect.

**Examples:**

Real-life applications:

Artificial Intelligence in Ocean Protection: Companies and organizations like The Ocean Cleanup are using AI-powered systems to collect plastic from oceans, helping to tackle marine pollution.

AI in Environmental Monitoring: AI bots are employed to monitor ocean conditions, track marine wildlife, and detect pollution, improving the efficiency of environmental protection efforts.

**Variations of the challenge**

Expanding the challenge to other environments: You could modify the challenge to involve AI bots protecting other ecosystems like forests, rivers, or even urban areas. The bots would need to address challenges such as deforestation or air pollution.







