

Instruction Summary for Teachers

Objectives

Students will use Ozobot Blockly to program Ozobot to collect items washed out to sea from the Intertidal Zone and return them to their original location.

Students will troubleshoot and refactor an Ozobot Blockly program.

Students will research plants and animals that live in the Intertidal Zone.

Teacher Tips

Before introducing the Ocean Challenge Mat activities, share videos or allow students to look for resources in the library about the ocean's zones, historical and present explorers, and challenges we face in the exploration and conservation of ocean resources.

Story

This lesson follows a brief storyline that will continue throughout the first four lessons related to the Ocean Challenge Mat.

Step 1 Spark Curiosity

Go on a mini in-school field trip and compare different parts of the school environment to the zones of the ocean. Discuss why each zone has its particular name.

Outside - Intertidal Zone

Bright classroom - Sunlight Zone

Dim classroom - Twilight Zone

Dark classroom - Midnight Zone

Step 2 Exploration

Discuss tides. Identify and briefly discuss or research the included plants and animals. Use the Activity Sheet to document the information.

Step 3 Main Lesson Challenge

Students will use the programs provided as a starting point for creating programs to return items that have been scattered throughout the mat back to the Intertidal Zone.

Add the net catcher to Evo, connect the bot to Ozobot Blockly, and run the program.

Use the Lesson 1 Spec to document the actions of the bot and changes made to the program. Write the final refactored program on the Lesson 1 Spec.

Beginner Share Code:

Intermediate Share Code:

Advanced Share Code:

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Step 4 Optional Extended Challenge

To optimize the catching of objects, refactor the program using Level 4 Sensor blocks to turn toward the object detected before moving forward to catch it. Sample program:

<https://ozo.bot/b/y6qz3c>

Step 5 Lesson Wrap-Up

Guide a class discussion around the thinking process and programming strategies used while programming Ozobot in each step of the lesson. Or pair groups together to discuss.

Example questions:

When you first looked at the program, what blocks did you see? Were any of them unfamiliar to you?

After running the original program, what was the first thing you thought needed to change?

After making that change to the program, did Ozobot respond in the way you thought it would?

Are there any blocks in the program you are wondering about?

Are there any further changes that you'd like to make to the program to improve it?

Ask students to reflect on what they have learned about the Intertidal Zone and choose one challenge that current events pose. Brainstorm solutions to these challenges.