

Activity 1 Tasks

- Open the WeDo 2.0 app. Complete the **Cooling Fan** lesson.
 - Make the model rotate at a different speed.
- Write your ideas below for how to change the program.
 - Modify the program based on your ideas. Run your new program. See what happens.

Your team needs:









Your team needs:







Sunlight Zone

Activity 2 Tasks

Modify the cooling fan model from the previous task so it represents an offshore wind turbine. Will you need special tools or equipment?

Challenge

- Open the WeDo 2.0 app.
- Make the motor turn in both directions and code it to go faster and slower. Try it out!







The sunlight zone receives light that warms the water and enables plants to grow.

CAREER CONNECTION

A marine biologist studies life in all parts of the ocean. There is a lot to observe and discover in the sunlight zone!

Find out more on <u>Page 30.</u>

Session 4

Activity 1 Tasks

- Open the WeDo 2.0 app. Complete the **Spy Robot** lesson.
- Code the model to flash a light when a team member approaches the sensor.
- Modify the program based on your ideas and test it out!

Challenge

Code the model to display a different light pattern that is unique to your team.

How could sensors help us explore the oceans?

Write your ideas:

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Your team needs:





Sensors can help scientists detect things that can't be seen with our eyes.

Show how you include everyone's awesome ideas!

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Your team needs:







My ideas:

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Twilight Zone

Activity 2 Tasks

- Follow the WeDo 2.0 *FIRST* LEGO League SUBMERGEDSM building instructions and combine with the submarine from Session 1.
- Open the WeDo 2.0 app. Try the program provided in the instructions to motorize your model.

Challenge

- Change the program so that the submarine will do the following:
 - When the motion sensor detects an object moving towards it, the propeller spins quickly to back away.
 - When the motion sensor detects an object moving away from it, the propeller spins slowly to move in and get a closer look.
- Share what you built and explain how you coded the model.

CAREER CONNECTION

A marine archaeologist explores how humans have interacted with the oceans in the past. They can teach us a lot about the history of the oceans.

Learn more on <u>Page 30.</u>



Activity 1 Tasks

- Open the WeDo 2.0 app. Complete Milo the Science Rover lesson.
 - Next, code the model to move backward.
- Write your ideas for how to change the program below.
- Change the existing program based on your ideas. Test it out!

Challenge

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Modify the model so it represents a submarine. What can you add? What would you remove?

Your team needs:





Submarines that travel to the deepest parts of the ocean need special equipment to navigate.

> You may need to add lights to see in the dark or an arm attachment to pick up objects.

Draw what changes you made to the model:

Your team needs:







There is so much to learn about the abyssal zone because its extreme environment is hard to reach!



Abyssal Zone

Activity 2 Tasks

- Modify the Milo rover from the previous task so that it represents a submarine and can be driven.
- Open the WeDo 2.0 app.
- Change the program so that the vehicle drives slowly on the mat.

Challenge

- Pick two spots on the mat the submarine should visit.
- Change the program for your vehicle to move between two icons.
- Share how you coded your submarine.



CAREER CONNECTION

Oceanographers are scientists that study all areas of the ocean. This could include mapping the seafloor or understanding how different living things survive there.

Discover more careers on Page 30.