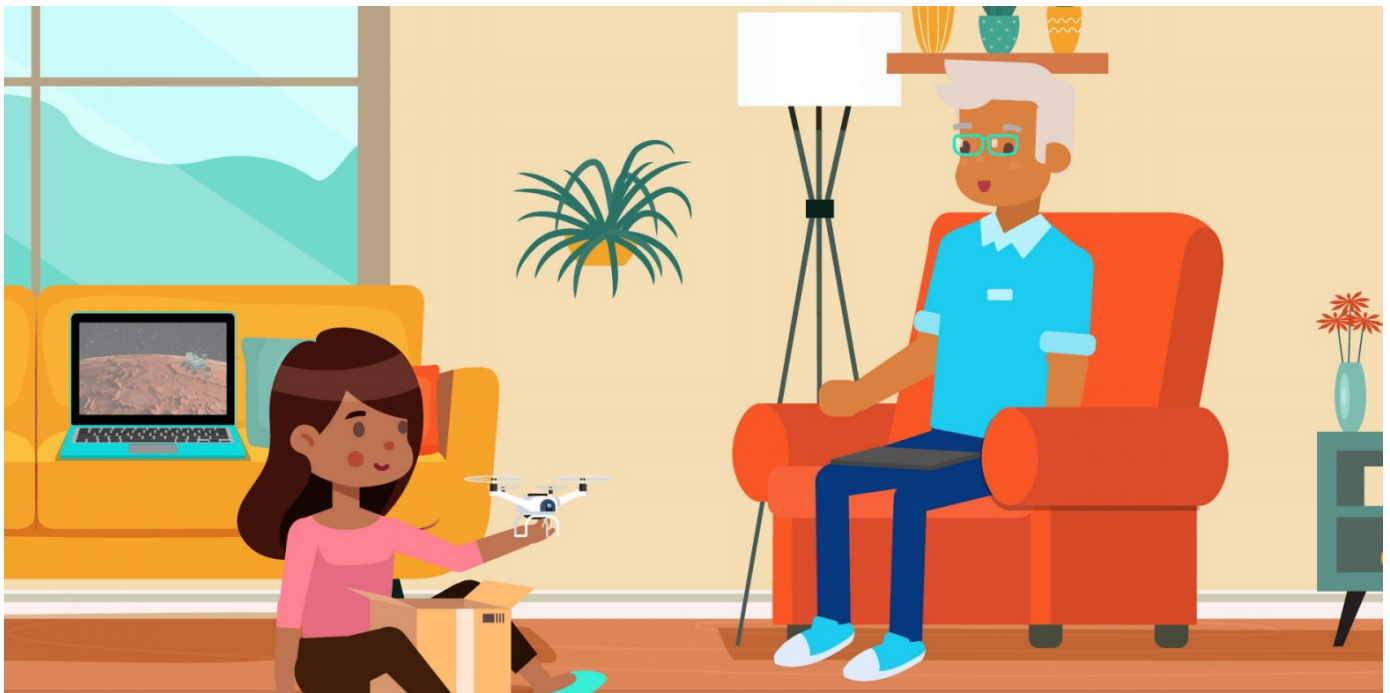


Robotics Activity: Amazon Robotics Challenge



INSTRUCTIONS



Introduction

Close your eyes and picture a robot. What does it look like to you? Robots are all around us. Scientists, programmers, and engineers design robots that can automatically complete a task or job that's usually done by humans. But that doesn't mean robots will one day take over. Instead, these new robots are here to help!

Robots can do jobs that would be too dangerous or too expensive for humans to do safely, quickly, or easily. Imagine robots that can enter and search an area after an earthquake, or a robot that can open a door for a person with a disability. Robots can even make humans more efficient by helping to speed up some of the steps in a process, like moving boxes in a warehouse. Robots can be designed and programmed to do lots of different things.

Robotics is the field of study where you can learn how to design and program robots. In some schools, teams compete to build robots to complete activities more quickly or more skillfully than other robots. When you learn about robots, you are using many different skills, including design and engineering, computational thinking, and programming. Some robots even have their own programming language!

Practice Activity

Now it's your turn to practice programming a robot to make the Amazon warehouse more efficient.

- 1 Start by visiting [CoderZ](https://gocoderz.com). Click on **Student Sign Up**. (This Challenge only works in the web browser Google Chrome.) <https://gocoderz.com/amazon-cyber-robotics-challenge/>



- 2 Create your account by completing the sign up form. Don't forget to accept the Terms of Use.

The screenshot shows the CoderZ sign-up form for the Amazon Cyber Robotics Challenge. The form includes fields for First Name, Last Name, State, City, and Grade1. It also has a checkbox for "I accept the Terms of Use & Privacy Policy" and a link to "CLICK HERE" for a class code. A red line points from the instruction in step 2 to the "I accept the Terms of Use & Privacy Policy" checkbox.

CoderZ **AMAZON CYBER ROBOTICS CHALLENGE** **amazon future >> engineer**

Can you code an Amazon Hercules virtual robot to deliver your friend's birthday present on time? Create your CoderZ account now and complete the challenge and check your ranking on the leaderboard.

Do you have a class code provided by your teacher? [CLICK HERE](#)
If not please submit signup form to create an account!

First Name: Last Name:

United States State:

City: Grade1:

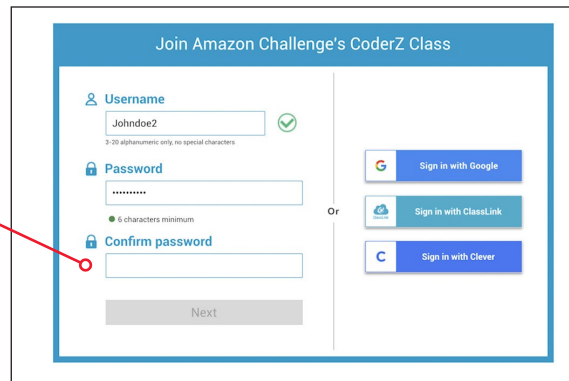
Select your school:

☐ Don't find my school

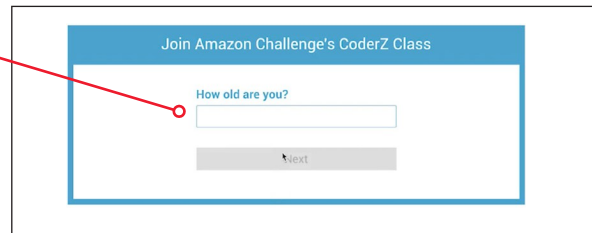
☒ I accept the [Terms of Use & Privacy Policy](#)

We reserve the right to suspend access for any account pending confirmation of all eligibility requirements.

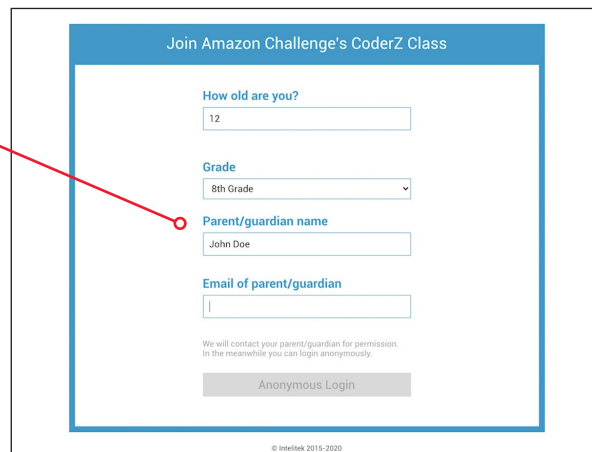
- 3 Join the Amazon Challenge's CoderZ Class by creating a username and password. Once you confirm your password, click **Next**!



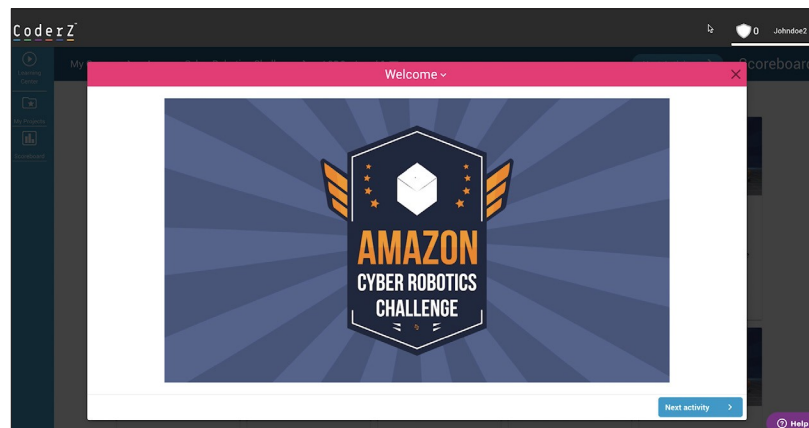
- 4 Enter your age.



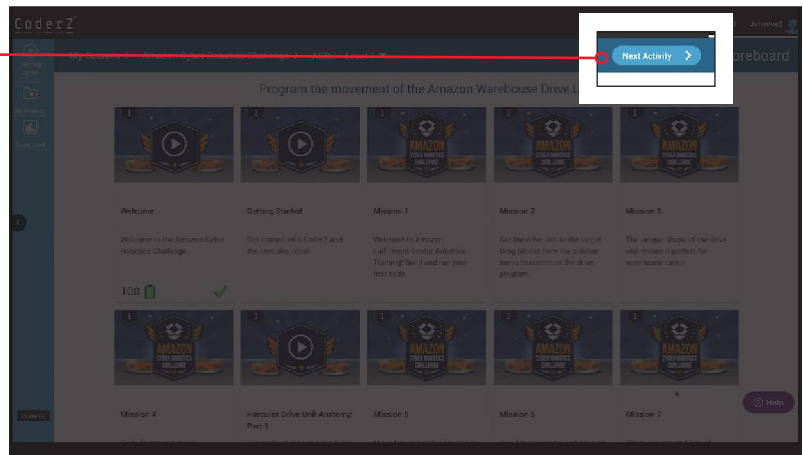
- 5 Complete this form. Click **Login**.



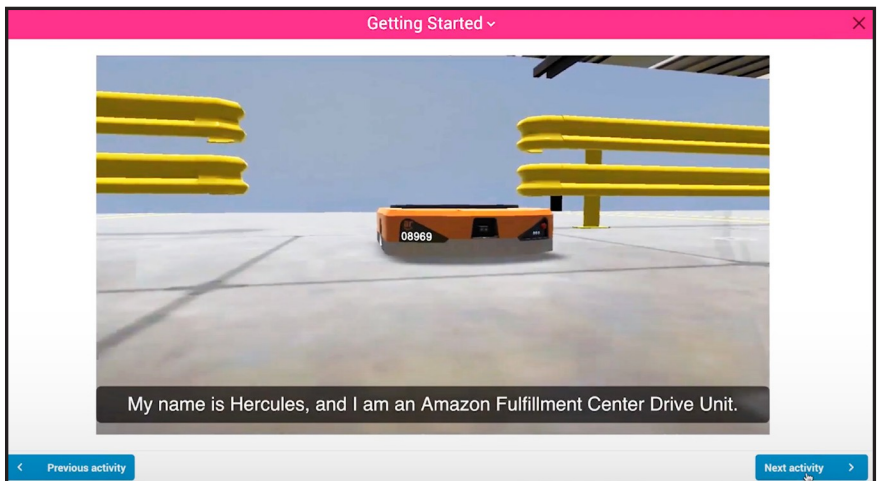
- 6 And you are in! This quick welcome video tells you more about the Amazon Cyber Robotics Challenge and Amazon's Future Engineer's Scholarship program.



- 7 Click to go on to the **Next Activity**, and you are ready to get started with CoderZ and the Hercules robot!

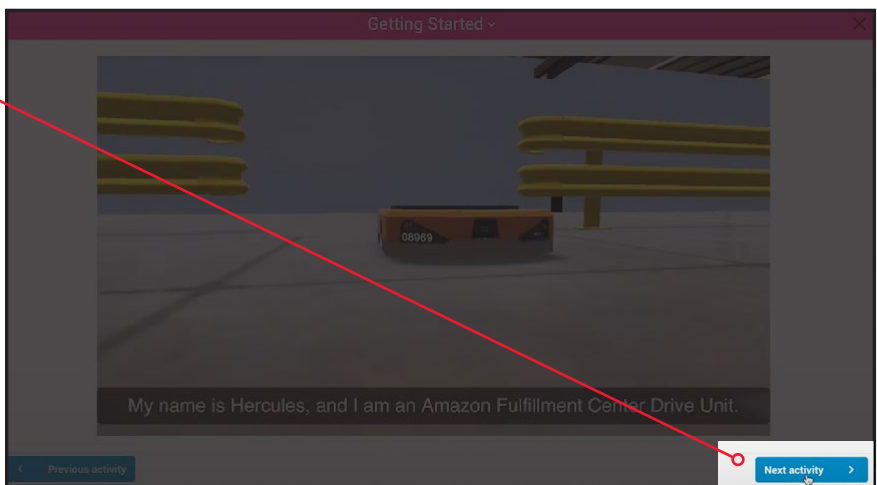


- 8 Choose **Getting Started**, and watch the video as Hercules explains how he operates.

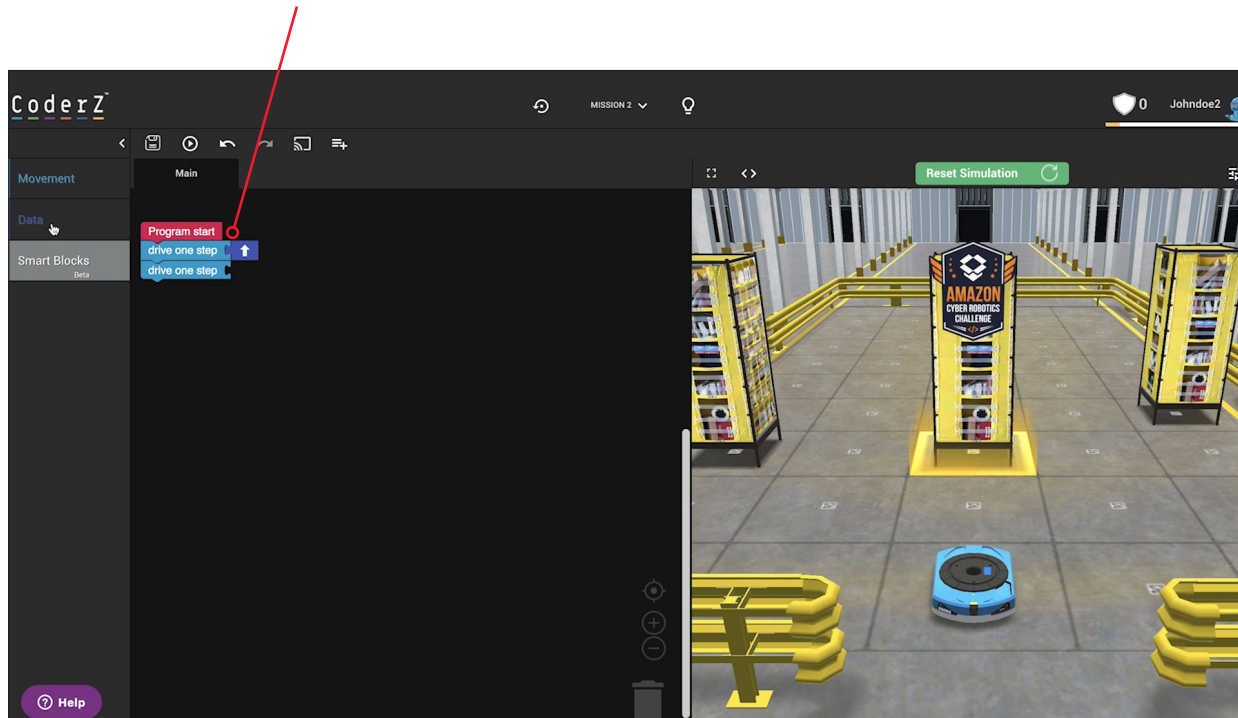


- 9 Click on **Next Activity** to enter your first mission, and practice coding Hercules yourself.

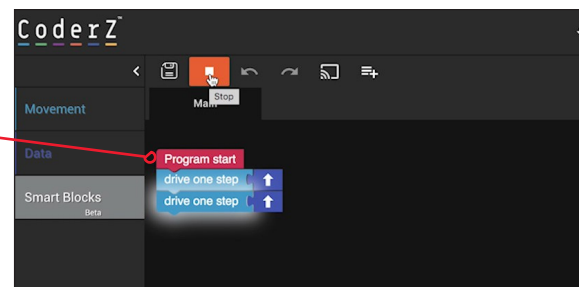
In Level 1, your goal in all of your missions is to program the robot to drive h1 to the yellow target.



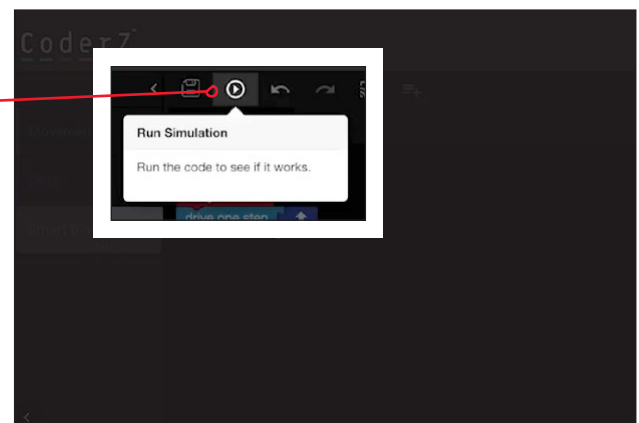
- 10 To program Hercules, you will use block-based programming. Block-based programming is a great way for you to learn and practice coding. Each block instructs the computer to do one step in a program. When you stack a bunch of blocks together, you are programming the computer to perform each of those steps in that order. Remember, your goal is to get Hercules to move to the yellow square.



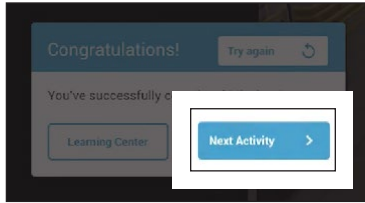
- 11 Let's try it by dragging the block that says **drive one step** to the **Program start** block.



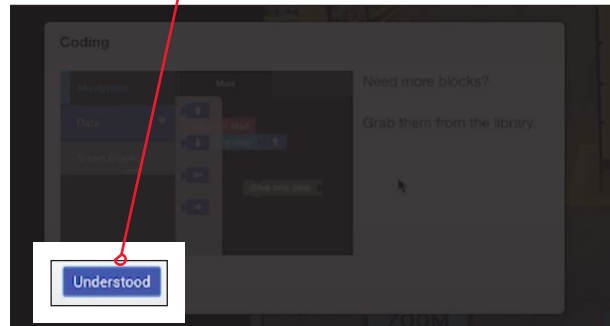
- 12 Now check that your code works correctly by clicking on the **Run Simulation** button.



- 13 Congratulations! Your code works, and you've successfully completed Mission 1. Let's try one more code by clicking **Next Activity**.



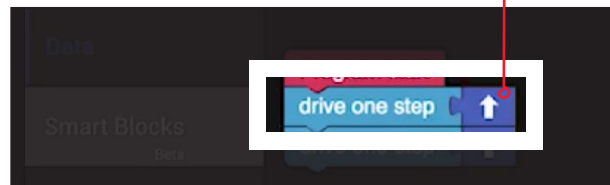
- 14 Here's a hint. You can grab more blocks from the library. These smart blocks tell Hercules where to go. Click **Understood**.



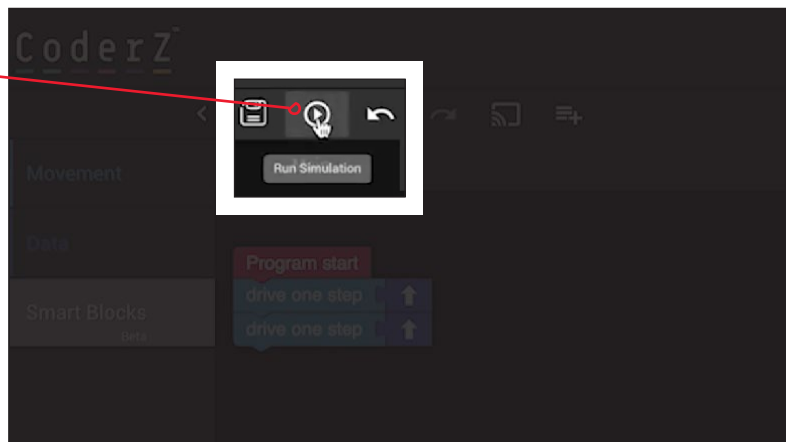
- 15 Ready for Mission 2? Now it's time to program Hercules. You can see that if Hercules drives one step, he won't be in the yellow square. So you are going to click the **Movement** tab in your coding area, and choose another block that says **drive one step**. You also want to make sure the arrow is pointing the direction that you want him to go.



- 16 You can find more arrows in the **Data** tab. You just snap the correct arrow on to the **drive one step** block.

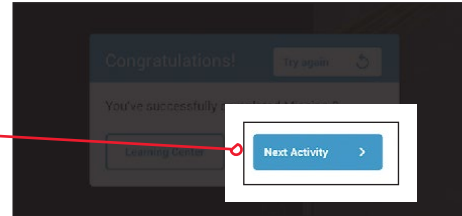


- 17 Do you remember how to test your code? Click **Run Simulation** one more time and see if your code works!



18

You've got it! Now it's your turn to see how many missions you can complete. Click **Next Activity** and keep going. You can do it!



Extension Activities

For more information about robotics, try these ideas.

- ☐ Do some research on the robotic arm that's part of the International Space Station (ISS). What important functions does that robot do?
- ☐ Click **Explore** and choose someone else's project to remix. How can you build on another Scratch-er's ideas?
- ☐ Look into local robotics programs at your school or in your community. Think about starting a robotics club with your friends!
- ☐ See how many missions you can successfully program Hercules to complete. How far can you get?
- ☐ Design and build your own robot out of scrap materials. What tasks would your robot perform?

Parent Tips

Your child is learning about robotics and the ways that robots help humans complete tasks. Support your child by asking her to share the activity with you, and try one or more of the ideas below:

- ☐ Use the Internet to explore some interesting robot creations. How are companies using robots now?
- ☐ Discuss what functions or tasks in your household could be completed by a robot. Think about how a robot could make your house more efficient.
- ☐ Explore jobs or careers related to robots. What careers use robots? What careers are part of designing robots?