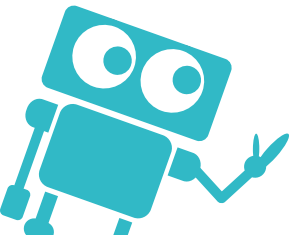# Ozobot
Speeding Around with Ozobot

Draw code for the Ozobot so it goes at least three out of the six speeds on one continuous line.

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Points

Materials:

- Ozobot Evo Entry Kit
- White printer paper
- Ozobot markers or any markers in black, red, blue, and green

Quick Start:

1. Gather the materials you need to code the Ozobot.
2. Make sure you have access to the Color Codes Chart, which outlines all the different codes you can draw for the Ozobot.
3. Plot out the Ozobot's journey. How long will the line be? What speeds will the Ozobot go? Remember to draw the codes on straight lines, rather than on corners.
4. Draw out your code.
5. Calibrate the Ozobot if you haven't already and then test your code. Does it work? If not, grab a new piece of paper and try again!

Hints and Tips:

- Never used an Ozobot before? Explore the Ozobot Experience Pack.
- Calibrating the Ozobot is an important thing to do at the beginning of each session or whenever the light changes in your workspace. It will help the Ozobot know the light levels where you are working. If you've never calibrated before, head to this link or find the Calibration card in your Entry Kit.
- Having trouble learning the different drawing codes? Here is a link to all the codes you can draw for the Ozobot.
- Is your code not working? Double check that most of your line is drawn in black, and the codes have the correct color sequence. It is also helpful when the colorful coding squares are similar in size and don't overlap too frequently.

Extended Challenges

Computer Science: Got at least three speeds? Add at least one more, and then add a Wins/Exit code to the end of your line.

English/Language Arts: Tell a story about the Ozobot and its journey to a friend. Where is it going? Why is it changing speed? Feel free to add or change your code to better represent the narrative you tell.
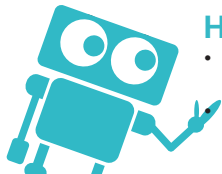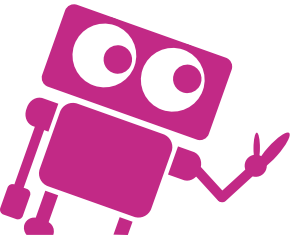
Ozobot

OzoHello

Code the Ozobot to trace the word "Hello" without having to move it yourself.

Materials:
- Ozobot Evo Entry Kit
- White printer paper
- Ozobot markers or any markers in black, red, blue, and green

Quick Start:
1. Gather the necessary supplies and calibrate the Ozobot.
2. Plot out your design. It may be helpful to start in pencil and think about what codes you need to draw in order to get the Ozobot to move the way you want.
3. Draw the entire word and corresponding codes. Be sure to leave enough space for all the Ozobot codes.
4. When you finish, test the Ozobot's ability to trace the word. Does it work? If not, where did it go wrong? Pay attention to where it failed and use that information to help with the next line drawing.

Hints and Tips:
- It is very helpful to use the direction codes for any lines you want the Ozobot to trace in a specific sequence. The codes left at intersection, straight at intersection, right at intersection, line switch left, line switch straight, line switch right, U-turn, and U-turn (line end) are very important for completing this challenge.
- Never used an Ozobot before? It might be helpful to explore the Ozobot Experience Pack.
- Calibrating the Ozobot is an important thing to do at the beginning of each session or whenever the light changes in your workspace. This will help the Ozobot know the light levels where you are working. If you've never calibrated before, head to this link or find the Calibration card in your Entry Kit.
- Having trouble learning the different drawing codes? Here is a link to all the codes you can draw for the Ozobot.
- Is your code not working? Double check that most of your line is drawn in black, and the codes have the correct color sequence. It is also helpful when the colorful coding squares are similar in size and don't overlap too frequently.

Extended Challenges
English/Language Arts: Finished with the word "Hello"? Think of a vocabulary word you've recently learned and code the Ozobot to trace that word next.
World Language: Think of a new word you just learned in a different language, and code the Ozobot to trace the entire word.
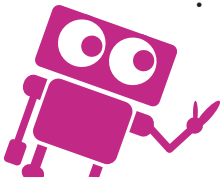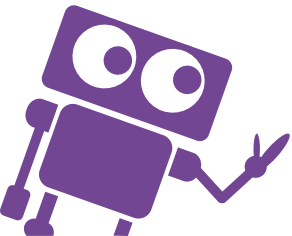
Ozobot
The Maze Challenge

Create a maze out of available materials. Then, using Ozoblockly, code the Ozobot to navigate through the maze.

Mackin Maker

Materials:
- Ozobot Evo Entry Kit
- A device with Ozoblockly access
- Any available materials (paper, cardboard, books, etc.)

Quick Start:
1. Gather the necessary supplies.
2. Design and build your maze out of available materials.
3. Use Ozoblockly to code the Ozobot through the maze.
4. Test it. Does it work? Use a trial-and-error process to work your way through the entire maze.
5. Finished? Show a friend!

Hints and Tips:
- Never used an Ozobot before? It might be helpful to explore the Ozobot Experience Pack.
- Never used Ozoblockly before? Head to this link: ozobot.com/create/ozoblockly/. Use the Glossary, Challenges, and Help options in the Menu to familiarize yourself with the coding language/platform.
- If you are new to Ozoblockly, it might be best to start at a lower level (2 or 3) and stick to the direction blocks to code the Ozobot through the maze.
- Calibrating the Ozobot is an important thing to do at the beginning of each session or whenever the light changes in your workspace. This will help the Ozobot know the light levels where you are working. If you've never calibrated before, just follow the instructions in Ozoblockly.

Extended Challenges
Social Studies: Instead of a maze, create a map that depicts something you've recently learned about. Code the Ozobot to go from one point to another to help communicate information (ex: draw a map and code Ozobot to follow a specific migration pattern).
English/Language Arts: Build a maze based on a novel you recently read or one you really enjoyed.
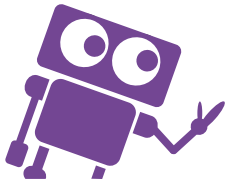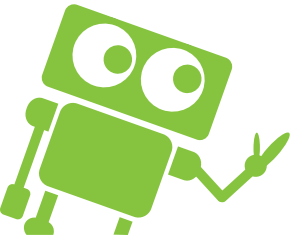
Ozobot
Climate Change OzoCreation

Create a visual display on paper that depicts an effect of climate change as well as some potential solutions. Code the Ozobot to move over your creation to help communicate your message. Get creative with your code and use sounds, lights, sensors, and anything else you can think of to help convey the topic!

MackinMaker

Materials:
- Ozobot Evo Entry Kit
- A device with Ozoblockly access
- Paper
- Markers
- Additional materials as desired

Quick Start:
1. Brainstorm an effect of climate change and potential solutions, and gather the necessary supplies.
2. Create your visual display. Remember that you'll want to code Ozobot to move around this display.
3. Explore Ozoblockly and brainstorm how you might code the Ozobot to help convey your message about climate change. Program and test the Ozobot.
4. Continue with a trial-and-error process to code the Ozobot just right.
5. When you are ready, share your creation!

Hints and Tips:
- Never used an Ozobot before? It might be helpful to explore the Ozobot Experience Pack.
- Never used Ozoblockly before? Head to this link: ozobot.com/create/ozoblockly/. Use the Glossary, Challenges, and Help options in the Menu to familiarize yourself with the coding language/platform.
- If you are new to Ozoblockly, it might be best to start at a lower level (2 or 3).
- Calibrating the Ozobot is an important thing to do at the beginning of each session or whenever the light changes in your workspace. This will help the Ozobot know the light levels where you are working. If you've never calibrated before, just follow the instructions in Ozoblockly.

Extended Challenges
Music: Code the Ozobot to play a unique song of your own creation while it is moving across your visual display

Computer Science: Ready to advance? If you aren't already, use the coding level 5 to program Ozobot. If you are already using level 5, use the Python editor located in the Ozoblockly Menu.
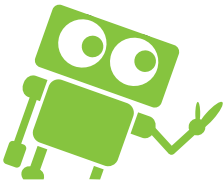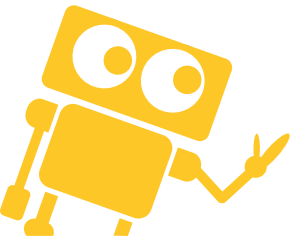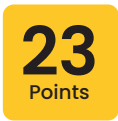
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Points

Ozobot
Kinetic OzoSculpture

Create your own kinetic sculpture with paper, markers, and the Ozobot. Create the sculpture by adding paper designs onto the Ozobot and programming movement, lights, sound, and anything else into the Ozobot.

MackinMaker

Materials:
- Ozobot Evo Entry Kit
- A device with Ozoblockly access
- Paper
- Tape or another adhesive
- Markers
- Additional materials as desired

Quick Start:
1. Brainstorm what your Ozobot kinetic sculpture will look like and sketch out your plan.
2. Make your sculpture with paper, markers, adhesive, and any other materials you want to add.
3. Program the Ozobot sculpture using Ozoblockly. Add lights, movement, sound, and anything else you want to add to your moving sculpture.
4. Share your creation!

Hints and Tips:
- Never used an Ozobot before? It might be helpful to explore the Ozobot Experience Pack.
- Never used Ozoblockly before? Head to this link: ozobot.com/create/ozoblockly/. Use the Glossary, Challenges, and Help options in the Menu to familiarize yourself with the coding language/platform.
- If you are new to Ozoblockly, it might be best to start at a lower level (2 or 3).
- Calibrating the Ozobot is an important thing to do at the beginning of each session or whenever the light changes in your workspace. This will help the Ozobot know the light levels where you are working. If you've never calibrated before, just follow the instructions in Ozoblockly.

Extended Challenges
Art: Can you create a sculpture inspired by a famous artist you like? How might you modify your creation and/or code to reference the artwork of the artist you chose?

Geography: Create a sculpture that represents a place that you recently learned about, or somewhere that is important to you. Add symbolic depictions to the sculpture and think about the colors that best represent that place when coding the Ozobot.