Direct Instruction Summary

Intro to Ozobot Blockly 03: Loops (Gr 2-5)

1. Introduction

Students will program Ozobot to move in a repeated sequence or pattern using a loop.

Explain to students, a loop in computer science is a block that programs a sequence of instructions to repeat. They'll explore two different kinds of loops; count-controlled and forever. A count-controlled loop repeats the same steps a specific number of times. A forever loop repeats the same steps endlessly. Show examples of each type of loop.

2. Build a Sequence

In Level 2, students will program Ozobot to display the color orange, skate forward, display the color blue, then turn left, adding blocks from the Light Effects and Movement categories and adjusting the drop-downs.

3. Run Your Program

Connect Evo to Ozobot Blockly by clicking on the bot icon on the right side of the workspace. Follow the instructions. When connected, click Run Program.

4. Add a Count-Controlled Loop and Run Your Program

From the Loops Category, add a count-controlled loop to the program. Drag it above the top block and it will expand to encompass all the blocks in the program. Adjust the drop-down to 4. Run the program again and notice the changes.

5. Make Changes to Your Code Blocks and Run Your Program

Students will modify the current program to tell Evo to travel in an octagon. Adjust the first light block to yellow, and the second light block to purple. Adjust the rotate block from left to slight left. Change the loop block to repeat 8 times. Run the program.

6. Build a New Sequence

The new sequence: skate forward, spin left, skate backward and spin right.
Delete the current program on the workspace.
Add two skate medium forward block, and two spin left blocks to the workspace and place them in the order skate, spin, skate, spin. Adjust the dropdowns so the blocks read: skate medium forward, spin left, skate medium backward, spin right.

7. Add a Forever Loop and Run Your Program

Go to the Loops category and add a forever loop to the workspace. Drag it around the program. Run your bot and observe the loop. Remind students that they need to click Stop Program to make the bot stop.

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8. Lesson Wrap-Up

Have students explain to a partner, in writing, or in a group discussion:
1. the coding blocks used in their program
2. a problem they encountered and how they attempted to solve it
3. how their bot behaved based on the coding blocks used and if the bot ran the program correctly
4. the definition of a sequence
5. the definition of a loop