

# Direct Instruction Summary

## Intro to Color Codes 04: Direction



### 1. Introduction

The direction the bot is traveling is important when reading asymmetric codes and when determining what direction to turn at intersections.

When Ozobot comes to an intersection and hasn't been programmed to proceed in a certain direction, it will make a random choice.

### 2. Random Choices

At Start 1, students will fill in the end of each line with the color indicated.

Students will run the bot multiple times, keeping tally marks at the end of each line representing the number times the bot proceeds right, straight, or left. Then, they'll make observations about the results and share with others.

### 3. Color Code Directions

At Start 2, the bot should go toward the bird house. Students will determine the direction Ozobot should turn at the intersection and add the Color Code in the blanks. Students fill in the line ends according to the colors indicated.

Run the bot from Start 2. If the bot did not turn as intended, troubleshoot and run the bot again.

### 4. U-Turn Codes

There are two U-Turn codes; one is used at the end of a line (two color blocks) and the other is used in the middle of a line (three color blocks). Students fill in the U-Turn codes according to where they are in the line. Then, observe the pathways of the bot from Start 3 and Start 4. How are they the same? How are they different?

### 5. Directionality

The action of the bot depends on the direction a Color Code is read. Students will apply this idea to Direction codes. In order for the bot to turn the direction students intend, it is important that they notice the direction the bot will be traveling when it comes to an intersection.

From Start 5, the bot should travel to the dog. Fill in the Win/Exit (Play again) next to the dog. Students determine the direction the bot needs to turn, and add the Right at Intersection code. Run the bot.

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From Start 6, the bot should travel to the trees. Fill in the Win/Exit (Play again) next to the trees. Students determine the direction the bot needs to go and add the Straight at Intersection code. Run the bot.

### 6. Lesson Wrap-Up

Have students explain to a partner, in writing, or in a group discussion:

1. the Color Codes they used and why
2. a problem they encountered and how they attempted to solve it
3. how their bot behaved based on the Color Codes used and if the bot demonstrated the correct outcome