

OzoBuldozer

Lesson 1

Exercise One

Use the Construction Kit to dress Ozobot with the bulldozer.

Use the cubes from the kit to realize its task. In this exercise don't use any color codes.

1. Place the cube onto the green areas on the top road of Board 1.
2. Be sure, that your robot is calibrated.
3. Place the robot onto the black circle and turn it on.
4. See how robot drives and starts to push the cube.
5. See what happens at the corner, when Ozobot turns left.
6. Think, why the cube is dropped outside the road
7. Prepare your answer to say when teacher asks.
8. Listen to the teacher and the other students, note the common discussed answer on your worksheet, below the top road.

Did you complete your exercise quickly? Try to test it with additional codes (your choice).

Exercise Two

Code the bottom road the way, that Ozobot will start, will drive to the end of the line, then return and drive back onto „Start” area, then end its work.

1. Place the codes „U-turn line end” and „Win (exit)” at the proper places of the bottom road of Board 1. Use the markers or the stickers.
2. Place one cube onto any green area on this road.
3. Place the robot onto the black circle and turn it on.
4. See how robot drives, starts to push the cube, then returns and drives back, then ends the work.
5. Repeat the exercise, placing two, three, four... cubes onto the road.
6. Note, how many cubes can be pushed and dropped in the proper area and be prepared to answer the teacher's question

Change the speed of the robot and repeat the exercise.

7. Place the speed code (choose one from „Slow”, „Fast”, „Turbo”) somewhere on the bottom road. Remember to keep the proper distances from the start and from the end.
8. Place the robot onto the black circle and turn it on.
9. See how robot drives, starts to push the cube, then returns and drives back, then ends the work.
10. Repeat the exercise, placing two, three, four... cubes onto the road.
11. Note, how many cubes can be pushed with the new speed and dropped in the proper area and be prepared to answer the teacher's question. Compare the result with the previous one.

Exercise Three

Take the next board (2 or 3), chosen by the teacher.

Plan the coding the road the way, that your robot will start, follow the line (and realize the codes) to move the cubes into the drop area, to topple the domino blocks, then will return to the „Start” areas, then will end the work.

Hint: first move the cube from the cross, then topple the domino blocks

1. Place the proper codes onot the proper places. Use the markers or the stickers.
2. Place the robot onto the black circle and turn it on.
3. Test first, if robot drives properly, following your plan.
4. If not – make the corrections and test again,
5. If so – place the cubes onto the crosses and stand the domino blocks, then test the entire scenario,
6. See how robot moves the cubes and topples the domino blocks. Do you observe any problem?
7. Listen to the teacher and other students. Do you have the common problem? Try to propose the solution.
8. Follow the teacher's instructions and test again. Did the robot make all its tasks properly?
9. If not – try to name the problem and solve it.
10. If so – copy the programm (way of coding the road) into the table. Use the markers or the stickers. So you will have your own complete program written.

Example:

- use the markers to fill the small rectangles with the proper colors or use the proper stickers and stick them onto your worksheet

(for <i>U-turn line end</i>)					
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My OzoBuldozer programm*Exercise 3 (Board 2)*

STEP		CODE			
BEGIN					
1,					
2,					
3,					
4,					
5,					
6,					
7,					
8,					
9,					
10,					
11,					
12,					
13,					
14,					
END					

Name :

My OzoBuldozer programm*Exercise 3 (Board3)*

STEP		CODE			
BEGIN					
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
END					

Name:

Lesson 2

Listen to the teacher, who explains the rules of the game.

Next:

1. Together with your team place the initial codes onto the game board. You should use one **timer's** code and **U'turn line end** codes (7) to make the robot able to turn after moving a cube or not to drive back onto its start. Calibrate your Ozobot. Place the cubes onto the central squares.
2. Play **Round 1**. Observe how the robot drives. When completed - count the cubes lying on your part of the board and note the first score. Place the cubes back onto the central squares.
3. Change anything you want, placing the additional codes onto the board. You can set up the directions, you can change the speed of your robot at any place. Discuss this problem within your team.
4. Play **Round 2**. Observe how the robot drives. When completed - count the cubes lying on your part of the board and note the second score. Place the cubes back onto the central squares.
5. Check, if you previous solution needs some repair. If so – do it before round 3.
6. Play **Round 3**. When completed - count the cubes lying on your part of the board and note the third score.

Sum all of three your scores.

If your team's result is LOWER than your oponents' – YOU WIN!

