



CODING & ROBOTIC

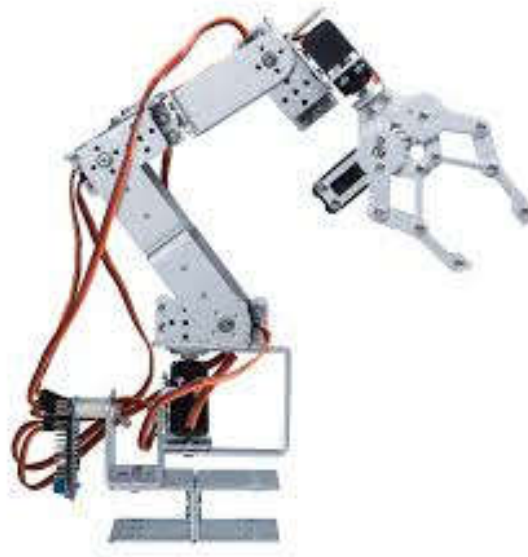
OZOBOT

TOMMASO SPAGNOLI

LAURA WU

1

What is a ROBOT?



1 What is a ROBOT?

A robot is a **machine** that can be **programmed** to do certain tasks.



录屏王 - 这是试用版本

NEW CHINA

world's first train running on virtual tracks released

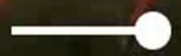
按 Esc 即可退出全屏模式



稍后观看 分享

Windows taskbar overlay with icons for search, task view, file explorer, and other system utilities.

Zhuzhou, Hunan Province



0:00 / 1:32



YouTube



2

Mini Robot-Ozobot



2 ways to code Ozobot

- 1 Screen-free with **Color Codes**
Draw lines and Color Codes with markers, and your bots follow your lines and code commands.

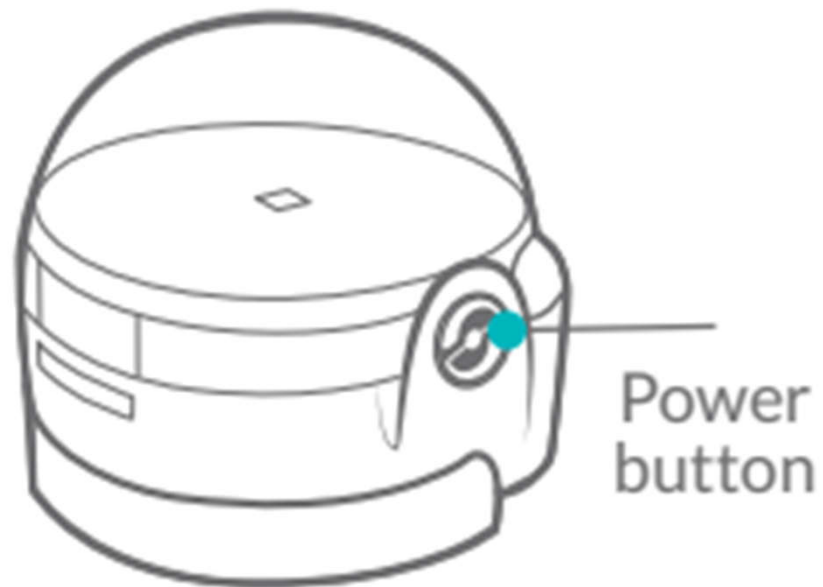


- 2 Online with the **OzoBlockly editor**
Drag and drop blocks of code together to program your bots.



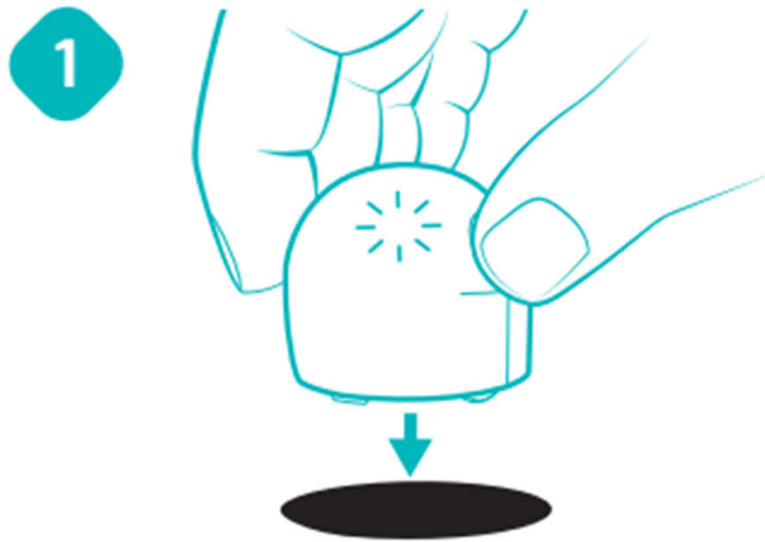
2

Power on/off

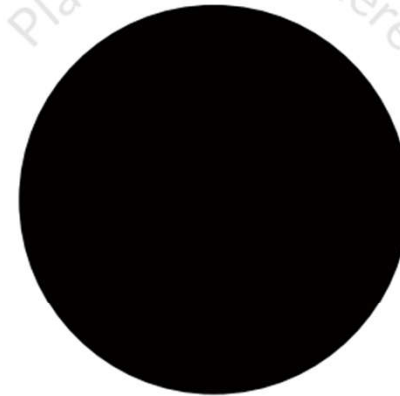


2

Calibration



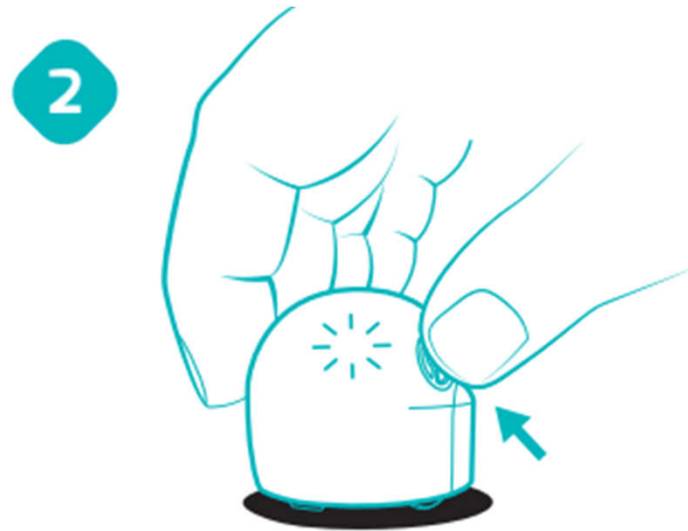
Place Ozobot Here



Make sure your bot is powered off, then place your bot on black circle.

2

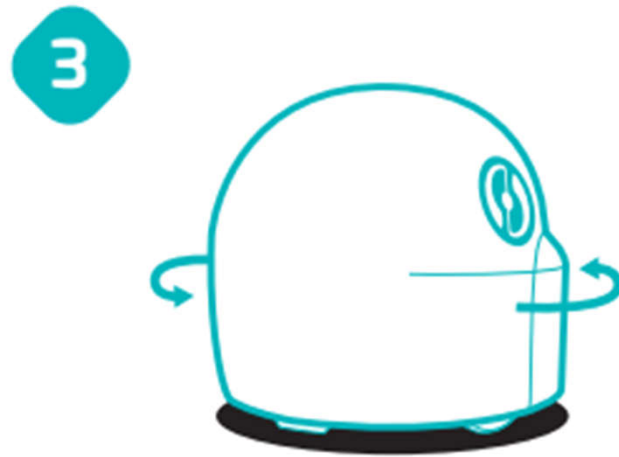
Calibration



Press and hold your bot's power button for 2 sec. until the top LED light blinks white. Then, release power button.

2

Calibration



Your bot will move on the circle.

2

Calibration



You bot blinks green when calibrated. If your bot blinks red, start over from Step 1.

3

Drawing Lines

What would happen if the line was too thick? Or too thin?



Too Thin!



Inconsistent!



Just Right



3

Drawing with different colors



3

Drawing Lines



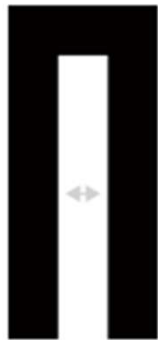
Too Sharp!



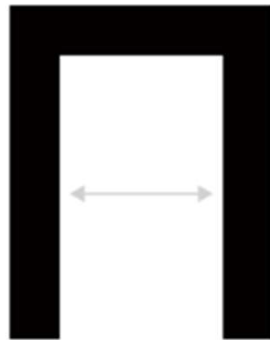
Just Right



Just Right



Too Close!



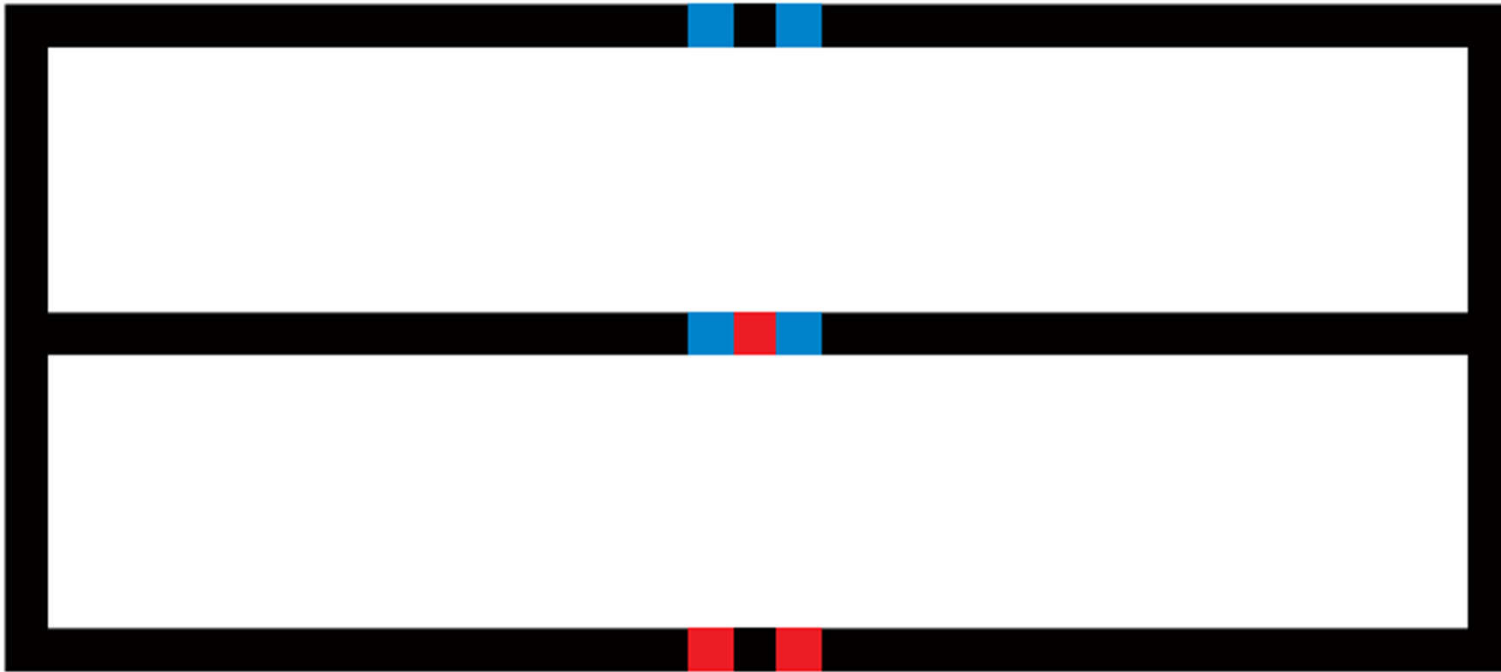
Just Right

3 Drawing the corners



4

Color Code



4

Color Code

SPEED



SNAIL
DOSE



SLOW



CRUISE



FAST



TURBO



NITRO
BOOST

DIRECTION



GO
LEFT



GO
STRAIGHT



GO
RIGHT



LINE JUMP
LEFT



LINE JUMP
STRAIGHT



LINE JUMP
RIGHT



U-TURN



U-TURN
(LINE END)

SPECIAL MOVES



TORNADO



ZIGZAG



SPIN



BACKWALK

TIMERS



PAUSE (3 SEC.)



TIMER ON
(30 SEC. TO STOP)



TIMER OFF

WIN/EXITS



WIN/EXIT (PLAY AGAIN)



WIN/EXIT (GAME OVER)



STEM@IT

4

Color Code



Which code we should choose to program our car?



4

Color Code



Which code we should choose to program our car?



4

Color Code



Which code we should choose to program our car?

4

Color Code



X
Codes On Colored Lines



X
Different Sizes



X
White Spaces



X
Overlapping Colors



X
Too Dark



✓
Codes On Black Lines



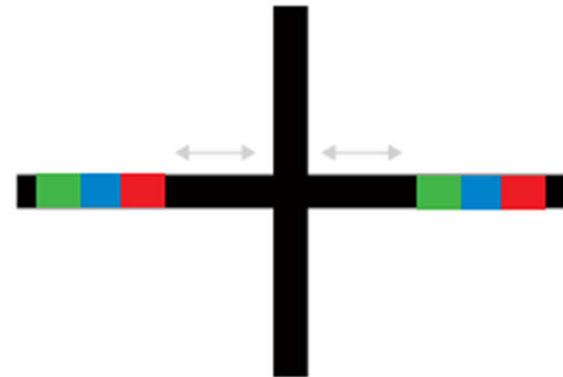
X
No Codes on Corners!



✓
Keep Codes on Straight Lines Away from Corners



X
Too Close!



✓
Place Codes Away from Intersections

4 Practice Color Code

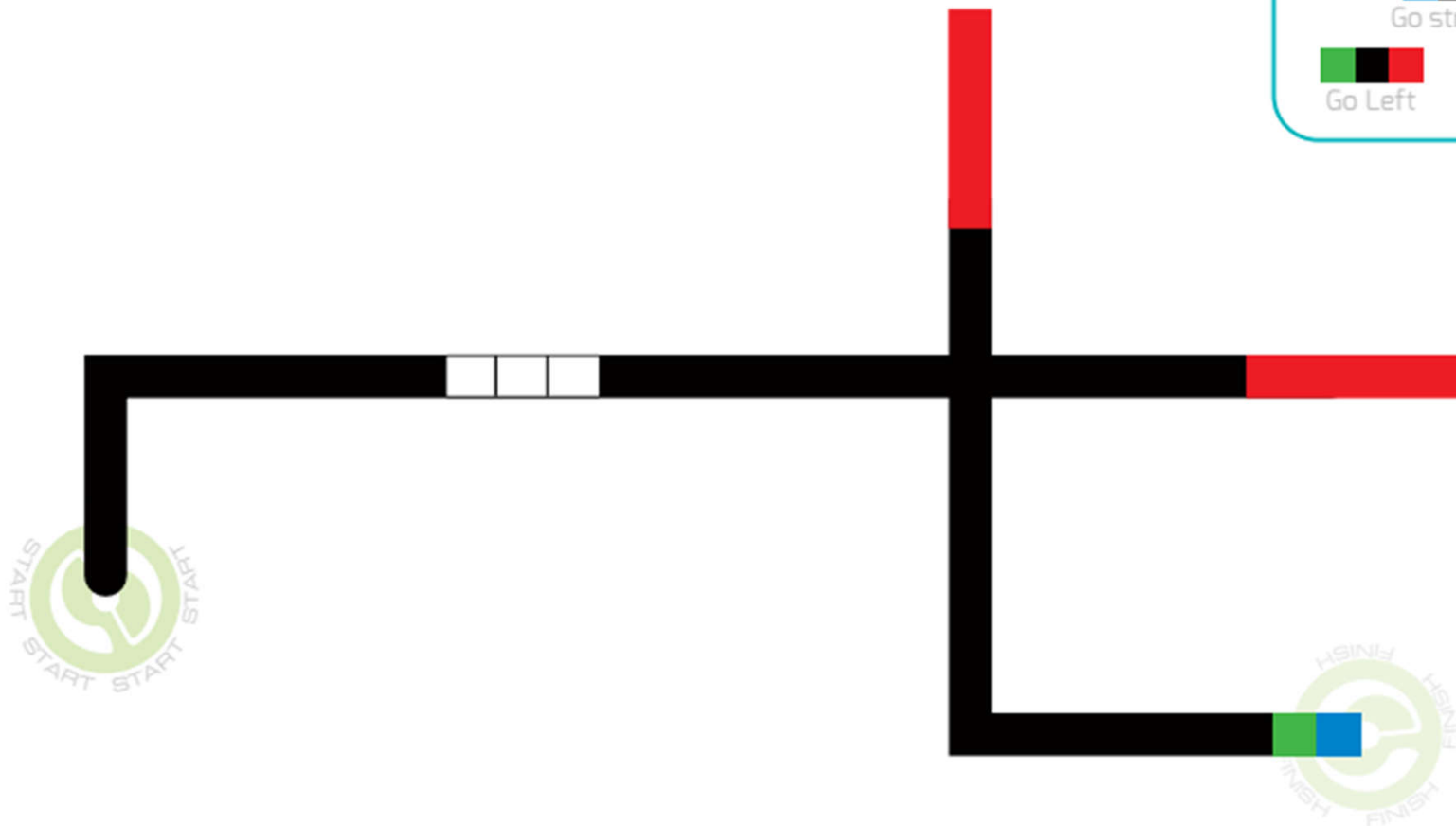
Code Bank

Choose one

Go straight

Go Left

Go right



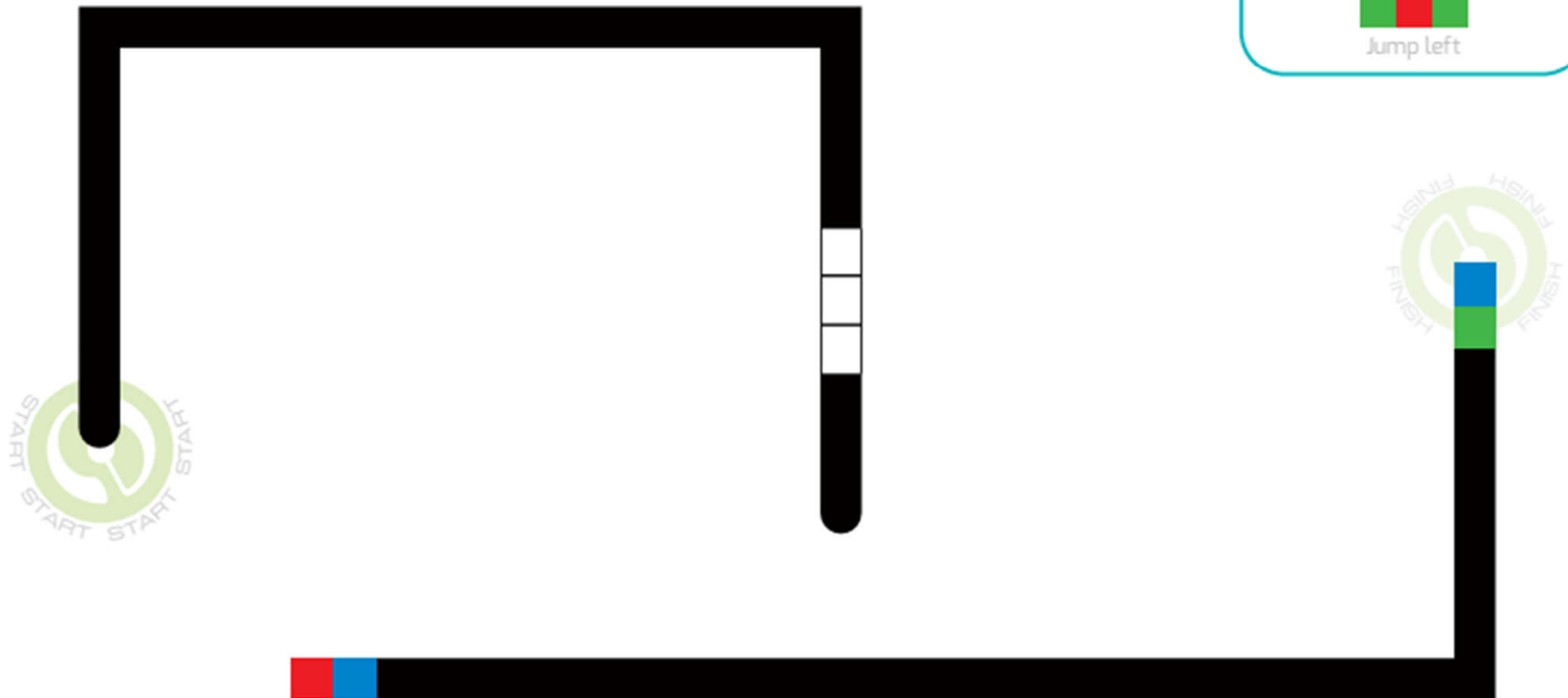
4 Practice Color Code

Code Bank

Choose one

Jump Straight Jump right




Jump left

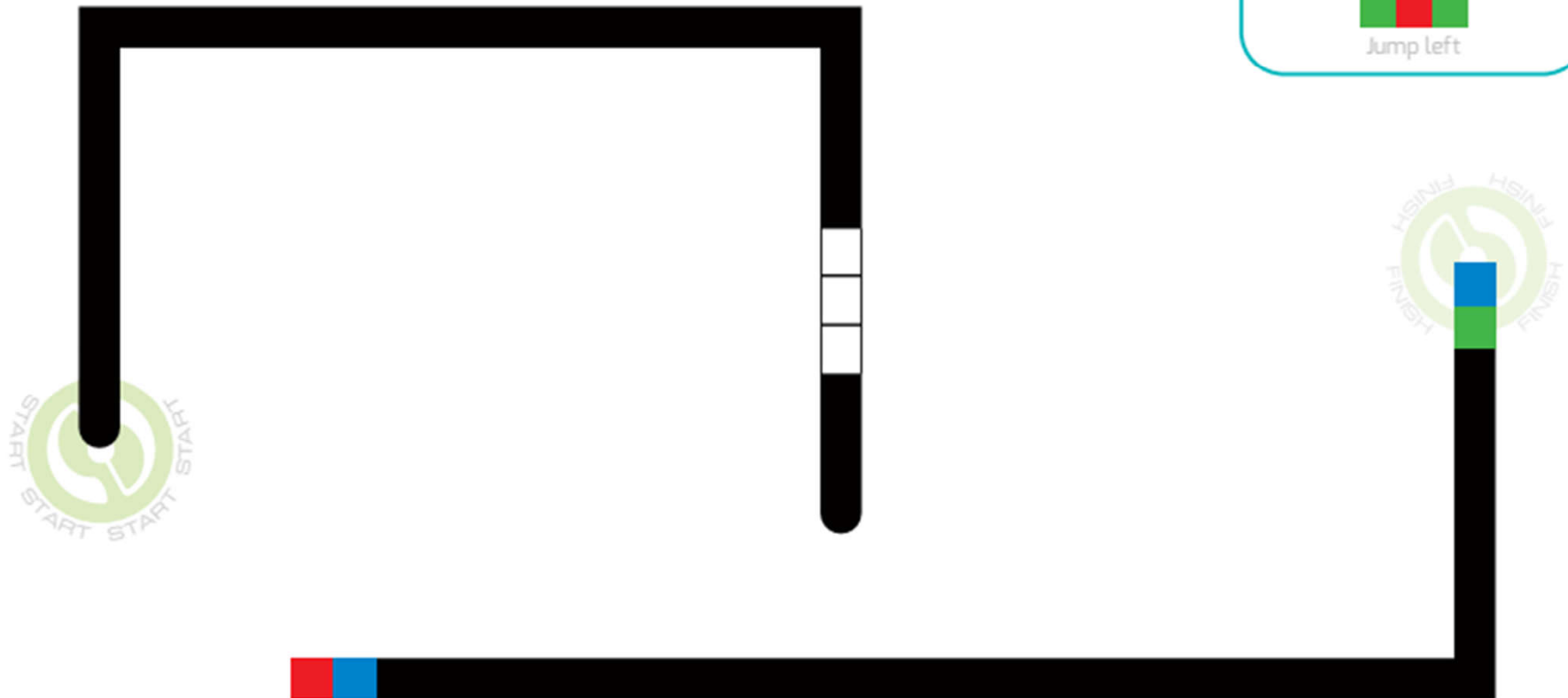


4 Practice Color Code

Code Bank

Choose one

	
Jump Straight	Jump right
	
Jump left	



GAME #1

Task 1: Deliver the package

1. Can't draw line on the river
2. Use All of the codes indicated on the printout. Each one can be used only once.
3. Think ahead, leave the white area for code
4. Ozobot cross the river slowly and speeds up after crossing the river.

5

Ozoblockly-Setup



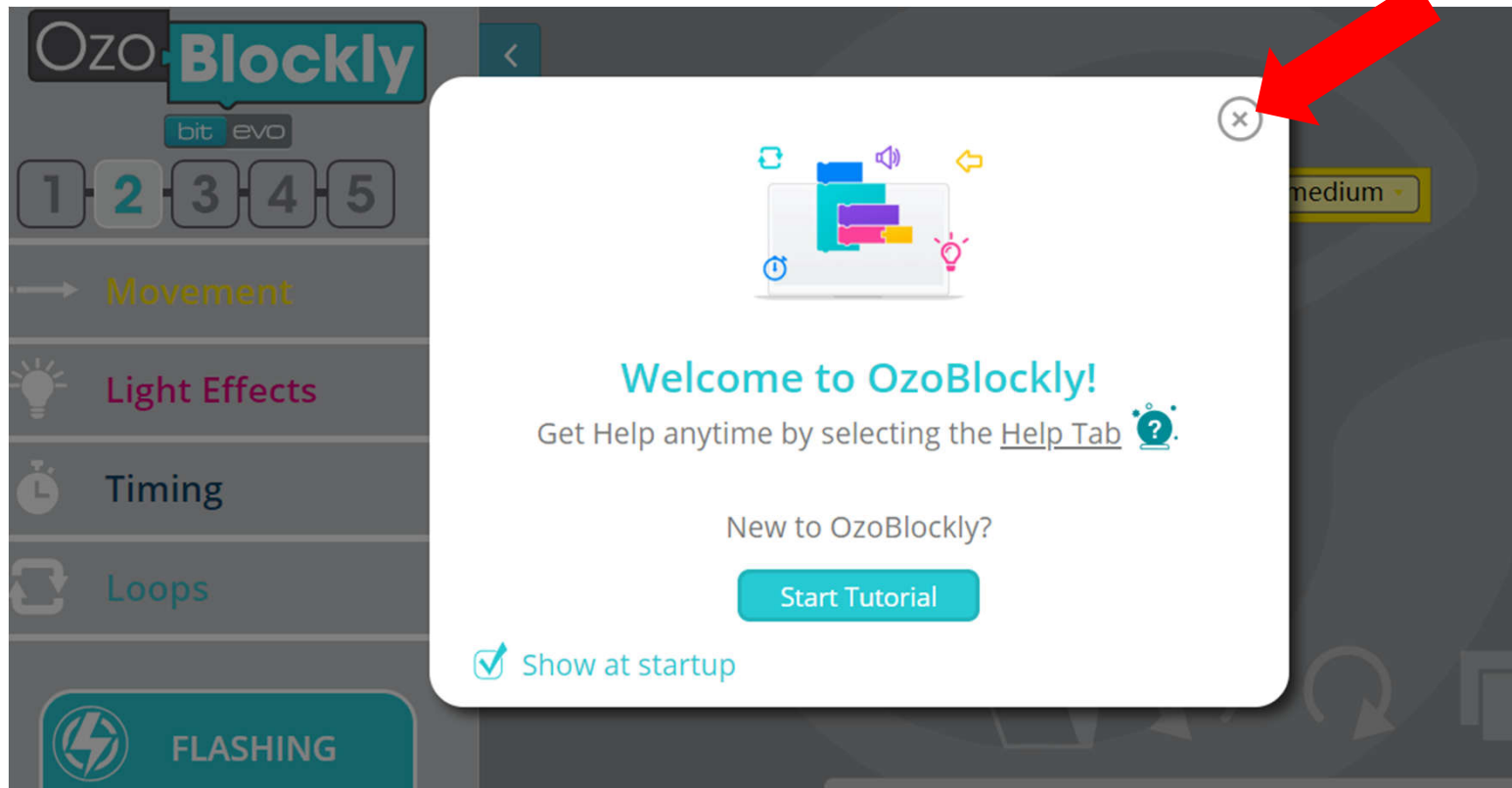
5

Ozoblockly-Setup

2.

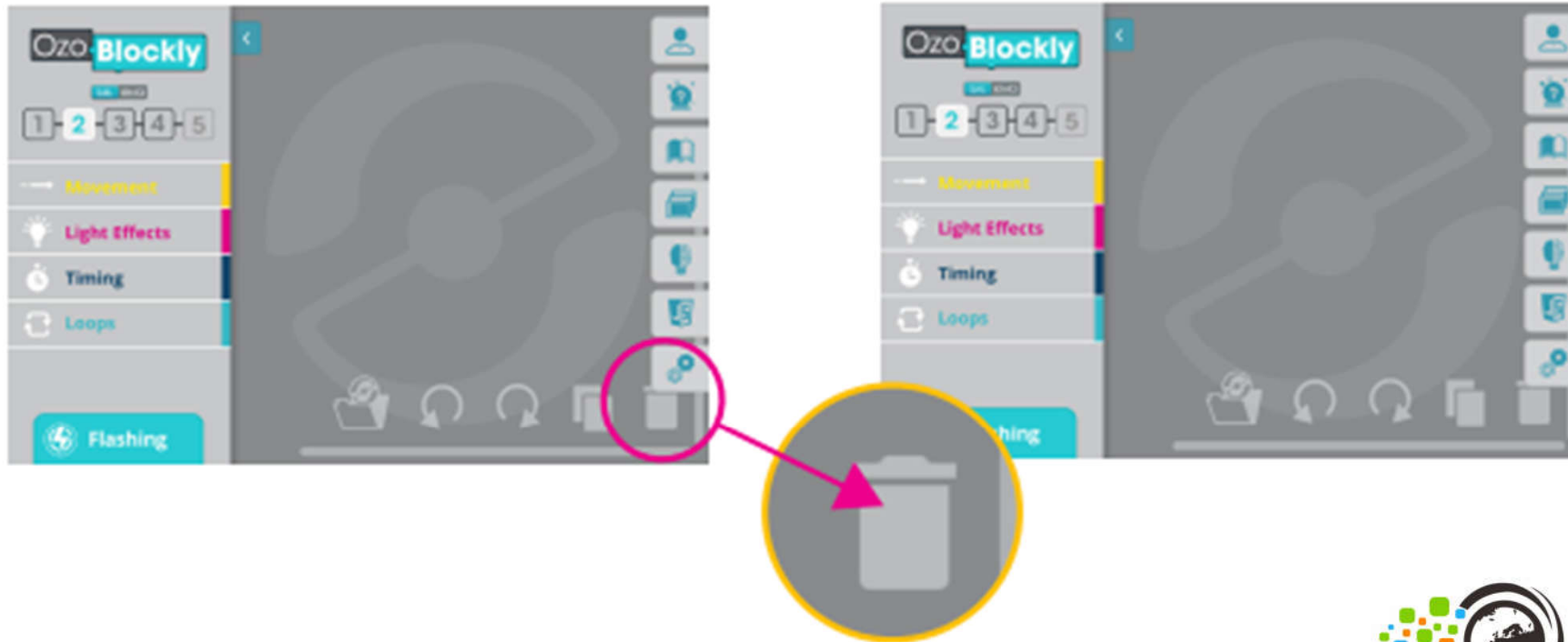
3.

4.



5

Ozoblockly-Setup



✓
Your screen
should look
like this

5

Ozoblockly-Setup

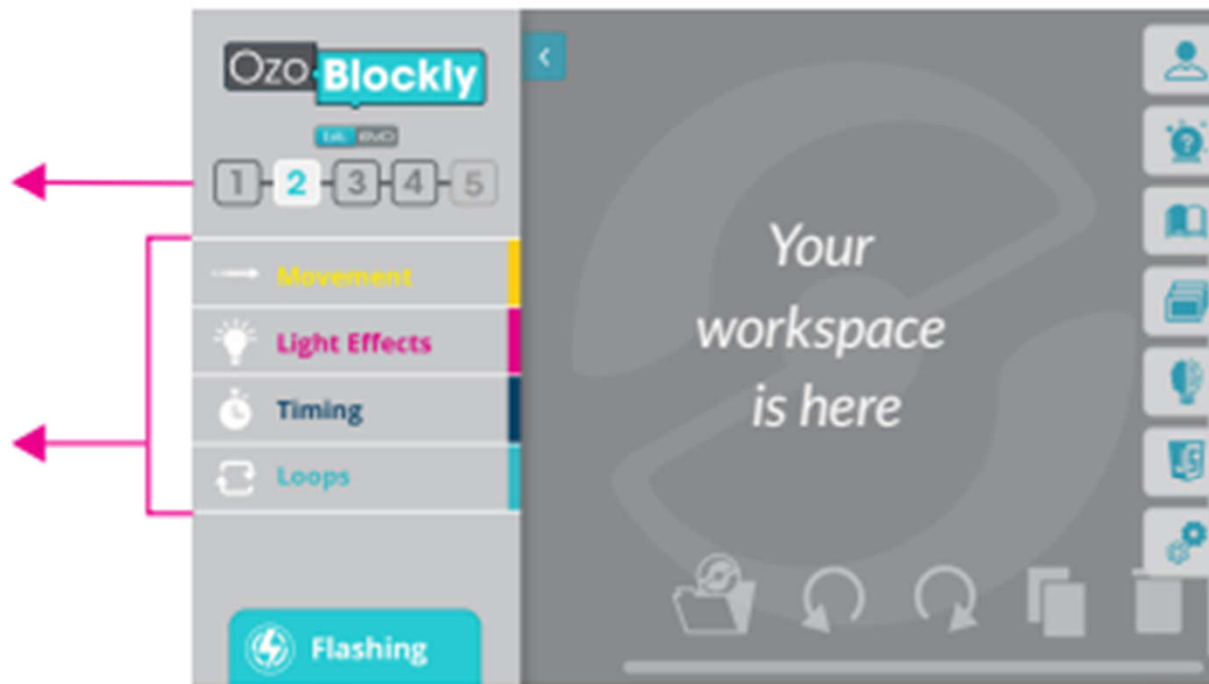


6

Fast Tour of Ozoblockly

Modes
(Levels of OzoBlockly Experience)

Categories
(Coding Blocks)



- Login
- Help
- Glossary
- Examples
- Challenges
- Java Script preview
- Settings

7

Example Program

The image shows a screenshot of the Ozobot Edu software interface. On the left, a sequence of five numbered steps (1-5) is shown in a horizontal line. Step 2 is highlighted in blue, and a pink arrow points from it to a sidebar menu. The sidebar menu contains several icons, with the second icon (a person) highlighted in blue. A pink circle highlights the 'Square Walk' example program in the 'Beginner Mode Examples' list. A pink arrow points from this circle to a larger, zoomed-in view of the 'Square Walk' program details on the right.

Step 2

Beginner Mode Examples

Square Walk
Difficulty: ●○○○○
Blocks used: Movement, Loops, Light Effects
Ozobot traces a square shape and shines a green light while moving straight, and a red light while rotating.

Dance Lesson
Difficulty: ●○○○○
Blocks used: Movement, Loops, Light, Sounds
A virtual dance instructor calls out moves and Evo responds.

Victory Lap
Difficulty: ●○○○○
Blocks used: Movement, Light Effects, Loops
Ozobot just won a race and is now doing a victory lap, greeting fans and celebrating along the way.

Beginner Mode Examples

Square Walk
Difficulty: ●○○○○
Blocks used: Movement, Loops, Light Effects
Ozobot traces a square shape and shines a green light while moving straight and a red light while rotating.

7

Example Program

```
repeat 4 times
do
  set top light color green
  move forward distance 4 steps speed medium
  set top light color red
  rotate right
```



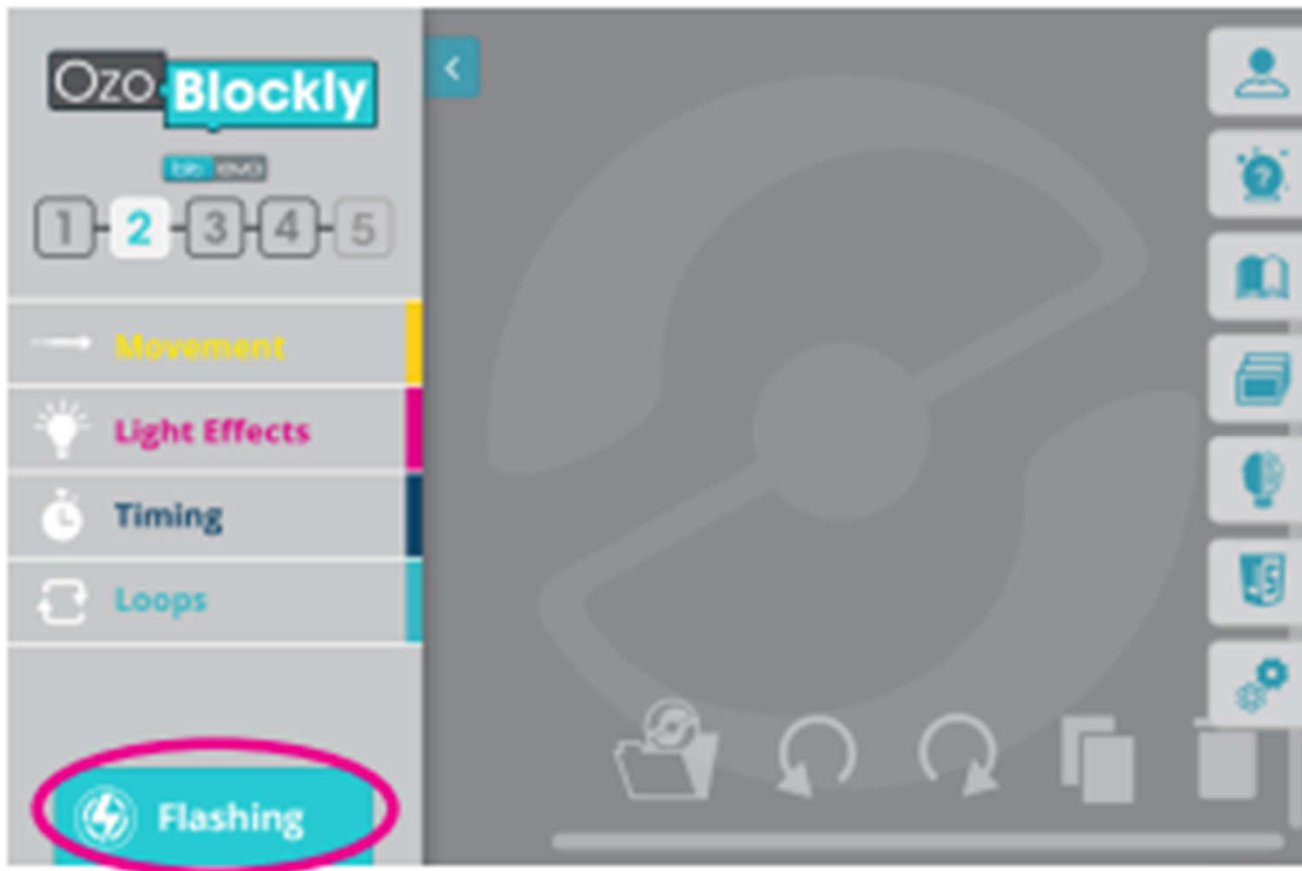

Calibrate from Screen

- **Calibration prepares your Ozobot for Flash Loading.**
- **During Flash Loading, your bot will read the program as a series of color flashes through its optical sensors.**
- **Calibration makes sure the bot sees the color flashes properly.**



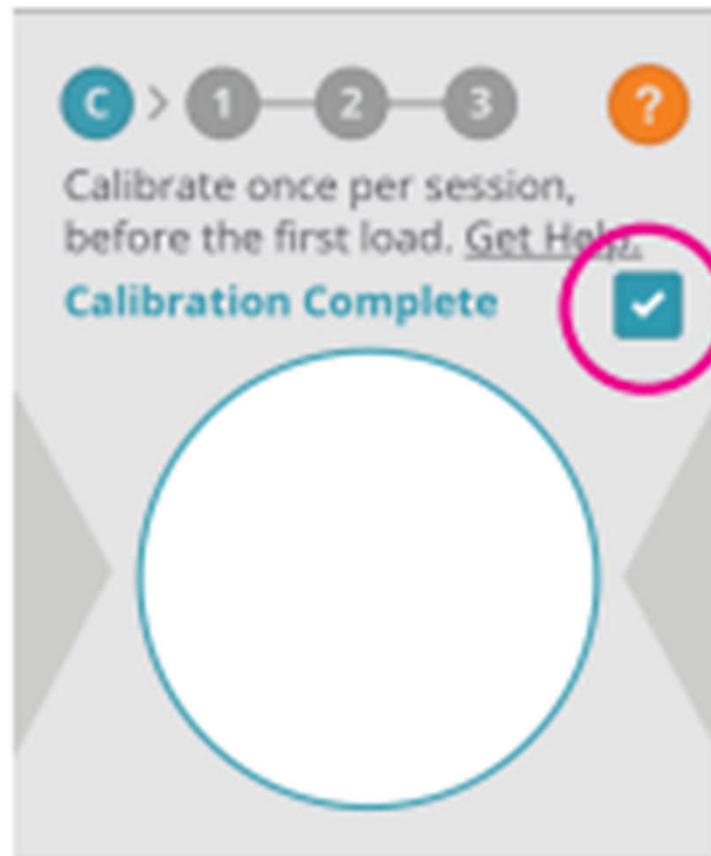


Calibrate from Screen





Calibrate from Screen





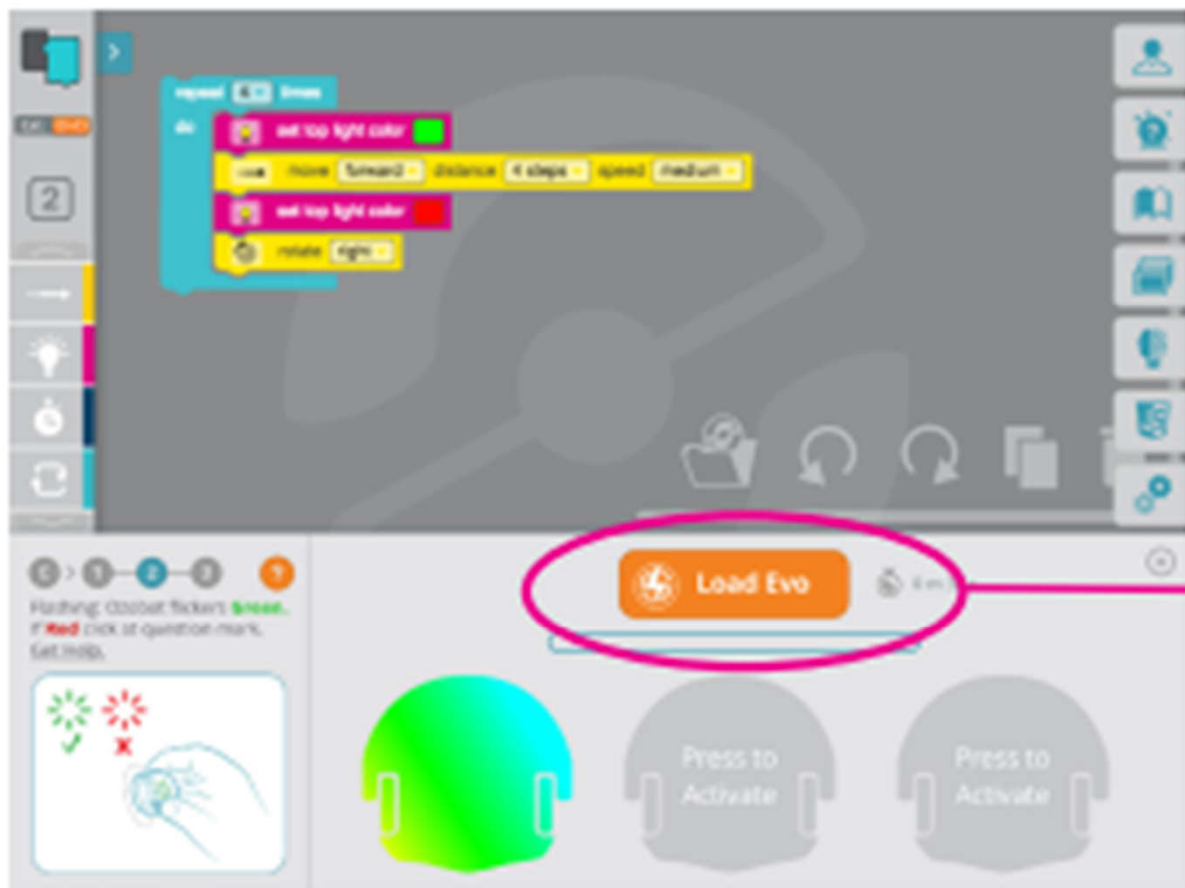
Load Programs

Bot Loading spot





Load Programs

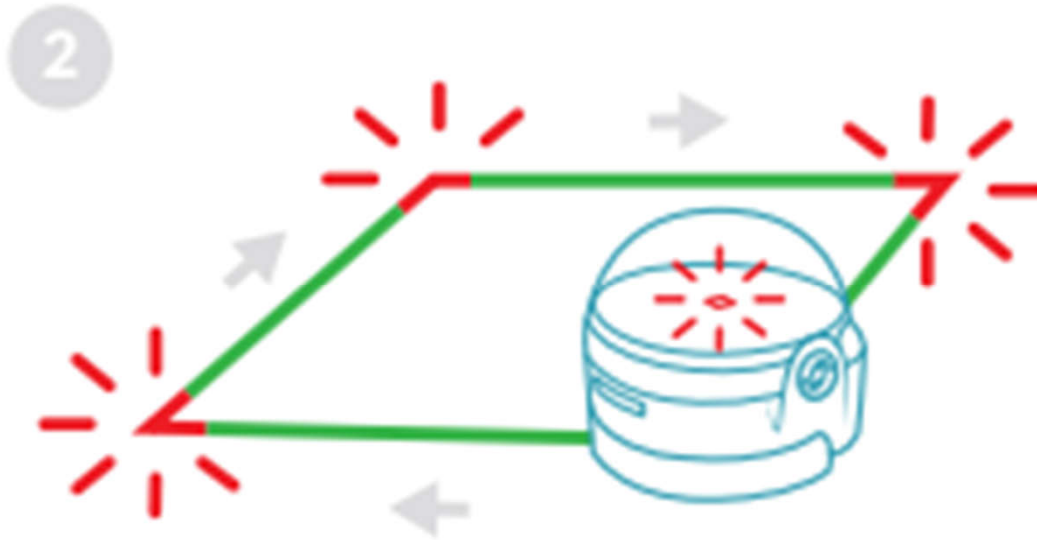


or

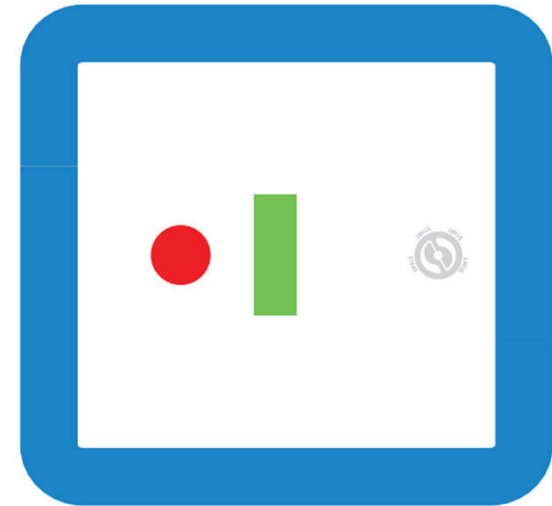


9

Load Programs



10 Game 2



Task:

Ozobot will walk around by itself inside the map, 'bouncing' off of blue and green until it lands on red.

Set Ozobot on the start symbol and aim it to get it to the red circle the fastest.

10

Game 2





FINE