COLOR CODES Chart

ozobot

Speed

Short Super Slow	Slow	Cruise	Fast	Turbo	Nitro Boost
R G B	R BK R	G BK G	B BK B	B G B	B G R

Direction & Special Moves

Left at Intersection	Straight at Intersection	Right at Intersection	Line Switch Left	Line Switch Straight	Line Switch Right
G BK R	B BK R	B R G	G R G	G B G	R G R

U-Turn	U-Turn (line end)	Tornado	Zigzag	Spin	Backwalk
B R B	B R	R G R G	B BK G R	G R G R	R G BK B

Timers

Pause (3 sec.)	Timer on (30 sec. to stop)	Timer off
R B R	R BK B G	G B BK R

Wins/Exits

Win/Exit (Play Again)	Win/Exit (Game Over)
G B	G R

Counters

Enable X-ing Counter	Enable Turn Counter	Enable Path Color Counter	Enable Point Counter	Point +1	Point -1
G R B G	R B G B	R G B R	R B R G	R B G	G B R

Key: **BK** = Black   **B** = Blue   **G** = Green   **R** = Red

COLOR CODES Chart

OZOBOT

Speed

Speed codes change your Ozobot's velocity from Short Super Slow (slowest) to Nitro Boost (fastest).

Short Super Slow
A three-second dose of super slow speed.

Slow
A slow speed command effective until the bot reads a new speed code or is turned off.

Cruise
The default speed command.

Fast
A high speed command effective until the bot reads a new speed code or is turned off.

Turbo
An extra high speed command effective until the bot reads a new speed code or is turned off.

Nitro Boost
A three-second dose of Ozobot's highest speed.

Cool Moves

Cool Move codes tell your Ozobot to bust a move!

Tornado
A command to spin around four times at increasing speed, then continue following the line in the same direction.

Zigzag
A command to sway right-left-right-left while moving forward, then continue moving straight.

Spin
A command to spin around twice at a consistent speed, then continue following the line in the same direction.

Backwalk
A command to quickly turn 180 degrees, wiggle backwards for one second, then turn 180 degrees again and continue following the line in the same direction.

Direction

Direction codes tell your Ozobot what to do at an intersection.

Left at Intersection
A command to turn left at the next intersection.

Straight at Intersection
A command to continue straight at the next intersection.

Right at Intersection
A command to turn right at the next intersection.

Line Switch Left
A command to immediately turn 90 degrees to the left, move forward to a new line, then make a random turn to follow along the new line.

Line Switch Straight
A mid-line command to continue straight after the line ends. The code will not work if Ozobot encounters an intersection before the line ends.

Line Switch Right
A command to immediately turn 90 degrees to the right, move forward to a new line, then make a random turn to follow along the new line.

U-Turn
A mid-line command to turn around 180 degrees and follow the same line in the opposite direction.

U-Turn (Line End)
A line-end command to turn around 180 degrees and follow the line in the opposite direction.

Counters

Counter codes tell your Ozobot to count five intersections, turns, or line color changes.

Enable X-ing Counter
A command to make your Ozobot stop following lines after it crosses five intersections ('T' or '+' intersections). After the fifth intersection, Ozobot executes a "done" maneuver, stops following the line, and blinks red.

Enable Turn Counter
A similar command to the Enable X-ing Counter, except that Ozobot only counts intersections where it makes a turn. It will not count intersections where it continues straight. Ozobot can randomly choose to go straight at an intersection, or be commanded to go straight with a "Straight at Intersection" code.

Enable Path Color Counter
A command to make your Ozobot stop following lines after it reads five color changes in the line. If the line Ozobot is following transitions from red to green, it counts as one color change. Transitions to and from black lines are not counted, and color segments less than two centimeters in length are not counted.

Enable Point Counter
A command that tells your Ozobot to count point codes down from five. Each time Ozobot reads a "Point -1" code it counts down. After the fifth "Point -1" code Ozobot will make a "done" maneuver, stop following lines, and blink red. You can add more to the total count (not to exceed five) with "Point +1" codes. You can reset Ozobot by turning it off, then on.

Timer

Timer codes tell your Ozobot to pause or count seconds.

Timer On (30 sec. to stop)
A command to make your Ozobot countdown from 30 sec., but continue to move and read codes while counting down. Ozobot will flash its light(s) at a rate of one flash/sec., flash rapidly to signify time is up, then shut off.

Timer Off
A command to stop counting down seconds and return to default behavior.

Pause (3 sec.)
A command to stop moving for three seconds, then continue with default behavior.

Wins/Exits

Win/Exit codes tell your Ozobot to celebrate its success, then either start over or stop.

Win/Exit (Play Again)
A command to perform a "success" animation, then continue to follow the line.
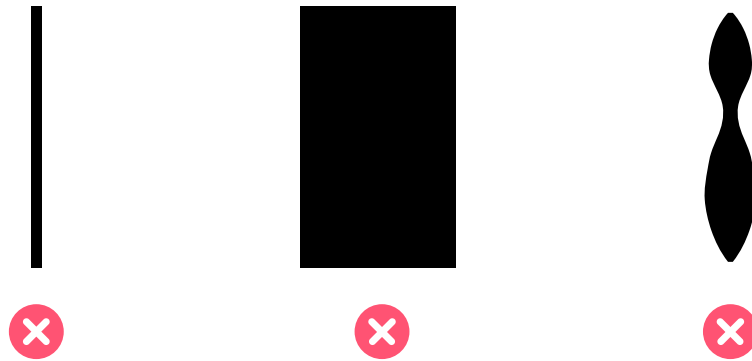
Win/Exit (Game Over)
A command to perform a "success" animation, then stop following the line.

COLOR CODES Guide

Markers

To draw Color Codes, you'll need black, red, green, and blue markers (included with your Evo).

Lines, Corners & Curves

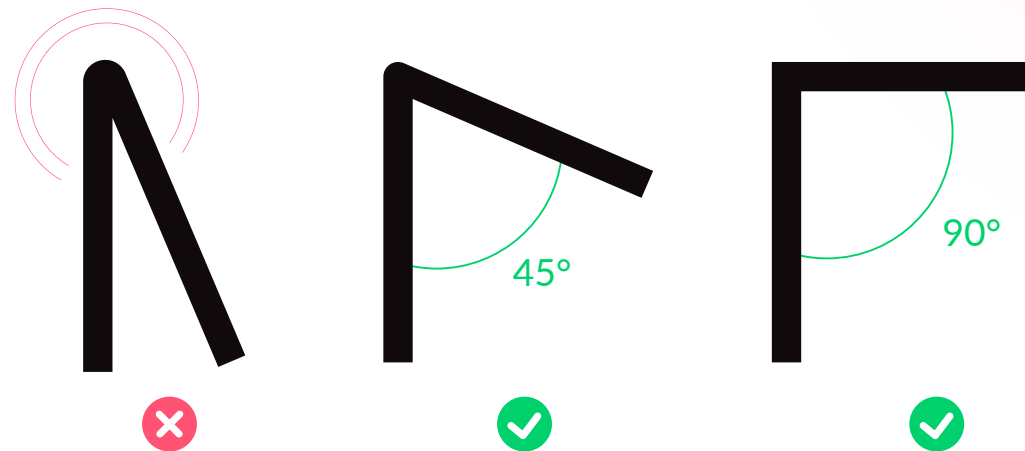**Line Spacing** ⟷ Lines should be at least 20mm from another line.

20mm
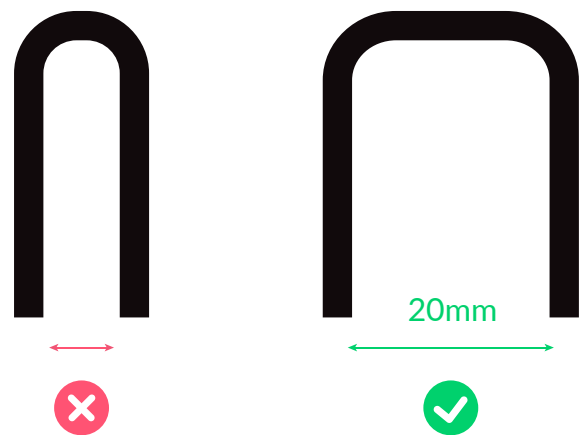
Angles Ideal angle: 90°

45°

90°

✅ **Draw a line Ozobot can follow**

Line Thickness:
5mm / 0.2in / 14pt

Tips:
The flat side of your Ozobot marker's chisel tip is the perfect thickness.
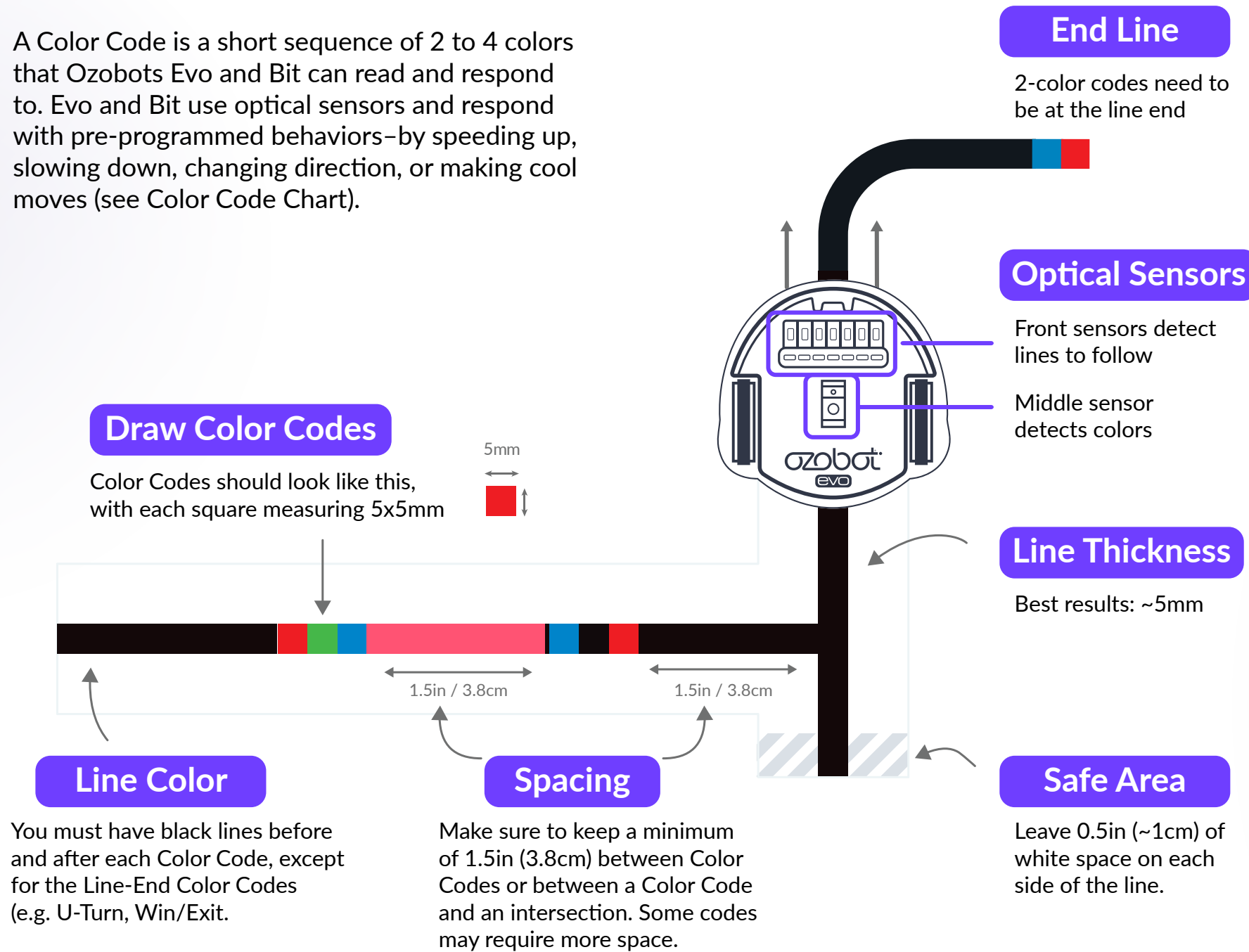
5mm
(14pt)

Color Guide for Color Codes

● RGB: 72/183/73
CMYK: 72/0/100/0
#48B749

● RGB: 0/131/202
CMYK: 100/35/0/0
#0083ca

● RGB: 237/28/36
CMYK: 0/100/100/0
#ed1c24

● RGB: 0/0/0
CMYK: 30/30/30/100
#130c0e

COLOR CODES Guide

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What is a Color Code?

A Color Code is a short sequence of 2 to 4 colors that Ozobots Evo and Bit can read and respond to. Evo and Bit use optical sensors and respond with pre-programmed behaviors–by speeding up, slowing down, changing direction, or making cool moves (see Color Code Chart).

Draw Color Codes

Color Codes should look like this, with each square measuring 5x5mm

5mm

Line Color

You must have black lines before and after each Color Code, except for the Line-End Color Codes (e.g. U-Turn, Win/Exit.

Spacing

Make sure to keep a minimum of 1.5in (3.8cm) between Color Codes or between a Color Code and an intersection. Some codes may require more space.

1.5in / 3.8cm   1.5in / 3.8cm

End Line

2-color codes need to be at the line end

Optical Sensors

Front sensors detect lines to follow

Middle sensor detects colors

Line Thickness

Best results: ~5mm

Safe Area

Leave 0.5in (~1cm) of white space on each side of the line.

⊗ What Not to Do

Codes on black lines only

Squares should not have space in between them

Squares should not overlap

Codes should be in the same height as the line

Too dark

Squares should be the same size

Squares should be ~5x5mm

Codes should be at least 1in apart

No Color Codes on corners

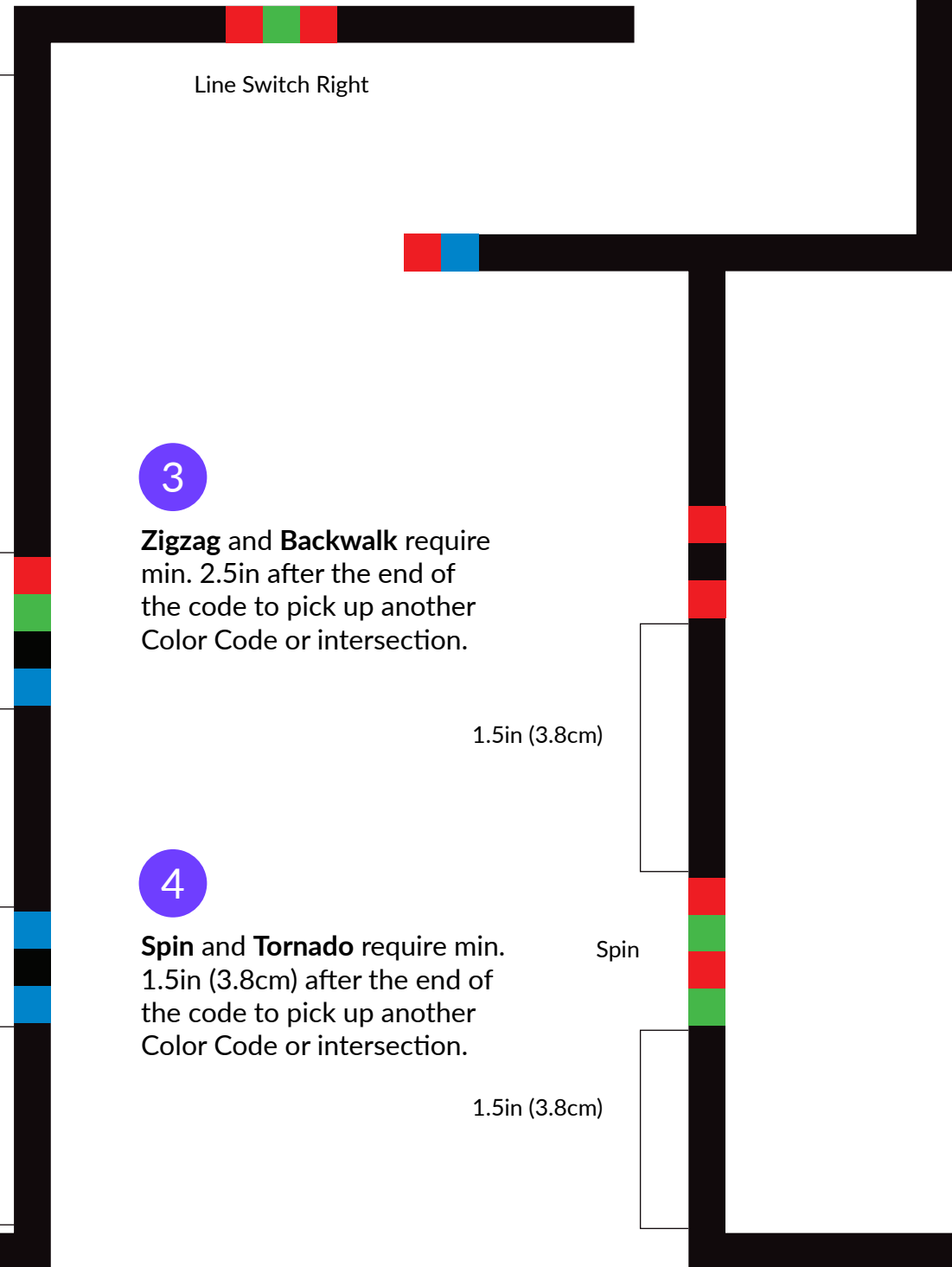Color Codes should be at least 1.5in (3.8cm) from intersections

COLOR CODES
Lessons Map Guide

ozobot®

2 **Line Switch Right** and **Line Switch Left** require a parallel black line beside it. **Line Switch Straight** requires a perpendicular line.

U-Turn

Line Switch Right

2.5in (6.4cm)

1 There should be at least 1in (2.5cm) distance between any parallel tracks

1in (2.5cm)

Zigzag

1.5in (3.8cm)

1.5in (3.8cm)

3 **Zigzag** and **Backwalk** require min. 2.5in after the end of the code to pick up another Color Code or intersection.

1.5in (3.8cm)

5 Line that end with a Color Code should look like this. Leave a safe area of 1in (2.5cm) in diameter.

1in (2.5cm)

4 **Spin** and **Tornado** require min. 1.5in (3.8cm) after the end of the code to pick up another Color Code or intersection.

Spin

1.5in (3.8cm)