BOWLING WITH Bit

K-12 | Computer Science | Beginner

Get ready to bowl a strike with Bit as the bowling ball! Bowling with Bit turns programming into a game. The objective is to knock down all the bowling pins. In this activity, students will learn how program Bit, while using either Color Codes or OzoBlockly strategic and logical thinking.

There are two versions of this game, reflecting the two ways to code Ozobot:

1. **Program Bit with Color Codes and lines.**
2. **Use OzoBlockly to create the path for Bit.**

Grouping:
We recommend groups of no more than 3 students per bot. This activity can also be done individually.

GAME VARIATIONS
There are several variations to this game that can incorporate even more subjects, such as geometry, and allow you to make it more or less challenging depending on the grade you're working with. Some suggestions are given for both versions, but this game is very adaptable. If you have an idea, go for it!

We would love to see what you come up with! Hashtag #ozobotEDU and #ozosquad on your photos or videos.

BOWLING WITH BIT
Color Codes

MATERIALS (per group)

- Bit
- Bowling with Bit: Color Code Challenge (printout, attached)
- Color Codes Reference Sheet (download and print it here: ozo.bot/colorcodesref)
- 6 Bowling Pins (in Classroom Kit)

PREPARATION

If you have never used Color Codes to program Bit before, check out these tips for drawing Color Codes: ozo.bot/colorcodetips

OPTIONAL: A comprehensive lesson series on programming Ozobot with Color Codes can be found here: https://portal.ozobot.com/lessons/compilation/color-codes-basic-training

HOW TO PLAY

1. Plan: What path does Bit need to travel to knock down all the pins?
2. Fill in directional codes to follow the path.
3. Black out any Color Code boxes that are not needed.
4. Choose a speed code to color in the first Color Code slot.
5. Place bowling pins in the circles on the map.
6. Calibrate Bit and place on the start.
7. See if Bit gets a strike!

POSSIBLE GAME VARIANTS

- Change the number of pins and/or configurations.
- See who can get Bit to knock down all of the pins the fastest.

BOWLING WITH BIT
OzoBlockly

MATERIALS (per group)

- Bit
- Bowling with Bit: OzoBlockly Challenge (printout, attached)
- Three Bowling Pins (in Classroom Kit)
- Tablet or Computer

PREPARATION

If you have never used OzoBlockly to program Bit before, check out this Getting Started Guide: ozo.bot/ozoblocklyguide
OPTIONAL: A comprehensive lesson series on getting started with OzoBlockly can be found here: https://portal.ozobot.com/lessons/compilation/ozoblockly-basic-training

HOW TO PLAY

1. Place bowling pins on the black dots on lane.
2. Go to ozoblockly.com in your web browser.
3. Plan a path for Bit to travel to knock down all the pins.
4. Create your program and load it onto Bit.
5. Double click the power button to run the program and place it on the start.

Did Bit knock down all the pins? If not, feel free to try again! You may need to make some changes and refine the program. In programming, this is called "debugging."

Tips

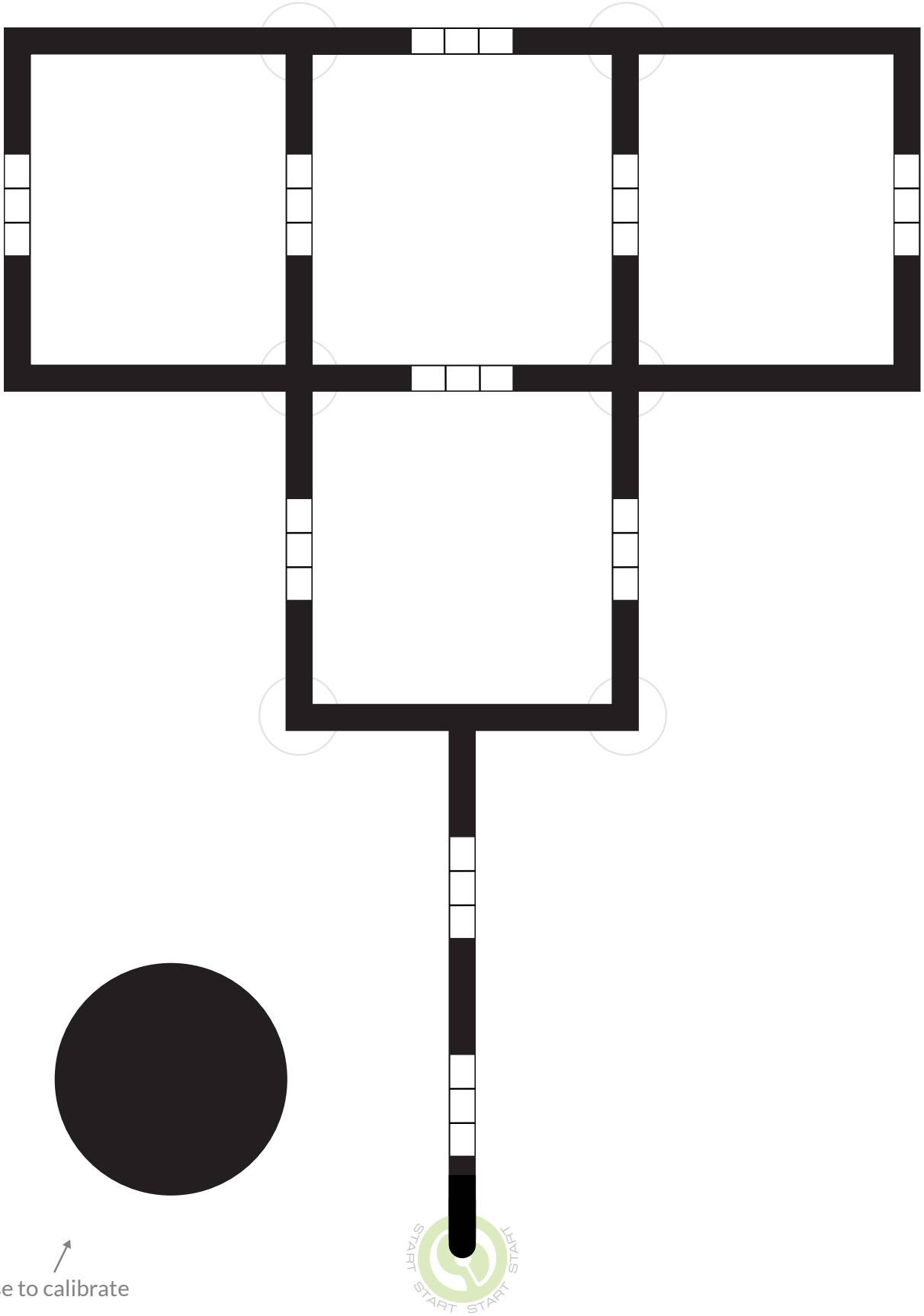
- Placing a "wait statement" at the beginning of your program gives you time to position Bit the way you desire on the start after double-clicking to run the program. Wait statements are found in the timing blocks.
- Bit's turns are approximate (it may turn 87 degrees or 92 degrees instead of the desired 90 degrees). A way to make Bit slightly more accurate is to use movement blocks from Mode 4. This gives you the ability to control the individual wheel speeds, thus giving you greater control over programming angles and distances.

POSSIBLE GAME VARIANTS

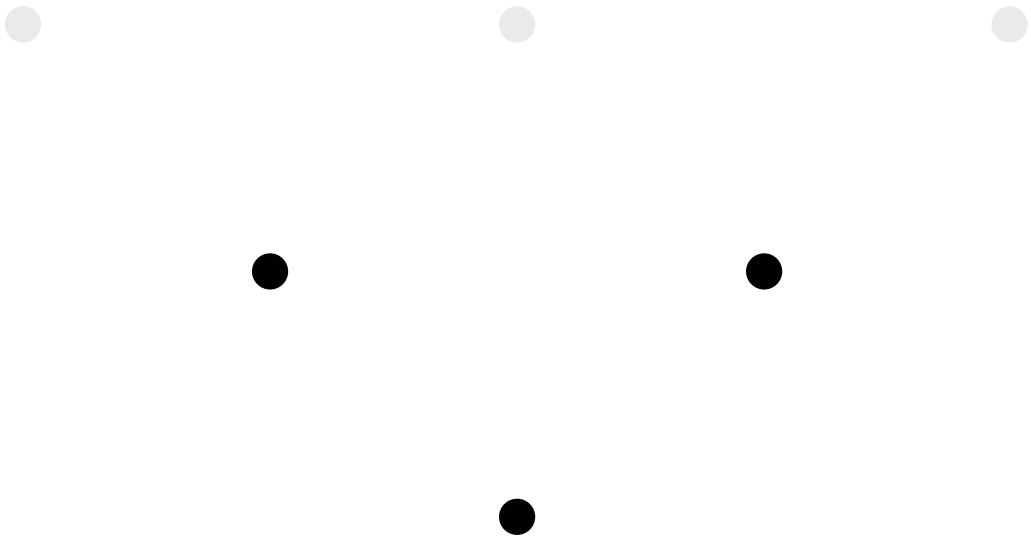
- Try to use the fewest number of blocks to knock down all the pins.
- Create more complex lane shapes for Bit to travel down.
- Place obstacles in the lane for Bit to avoid.

Samples Solutions for Bowling with Bit (Using Three Bowling Pins): OzoBlockly
Keep in mind there are many possible solutions.

Grades K–2	Grades 3–5	Grades 6+
Pre-Reader	Intermediate	Advanced
ozo.bot/bowlingsolution1	ozo.bot/bowlingsolution2	ozo.bot/bowlingsolution3



Use to calibrate



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