ANSWER KEY

CODEBOT MISSION 2 LOG - Lesson 1

Pre-Mission Warm-Up

What are some things you can connect to a computer or laptop?	Answers could include: • Keyboard • Mouse • Printer • Speakers or headphones • Camera
Why do you think you should learn how to program a computer?	Answers will vary.

Mission 2 Lesson 1 – Introducing CodeBot

Mission 2 Introduction

What is a “CodeBot”?	A computer on wheels with lots of sensors and controls built-in.

Several output and input peripherals are listed. Write the peripherals in the correct column:

- Accelerometer
- Buttons
- LED lights
- Line sensors
- Motors
- Proximity sensors
- Speaker
- Wheel rotation sensor (encoder)

Outputs	Inputs
LED lights	Line sensors
Speaker	Proximity sensors
Motors	Accelerometer
	Wheel rotation sensor (encoder)
	Buttons

Mission 2 Objective 1

- Click on “motors” to add it to your toolbox.
- Use the Hint if you have trouble completing the goal.

Mission 2 Objective 2

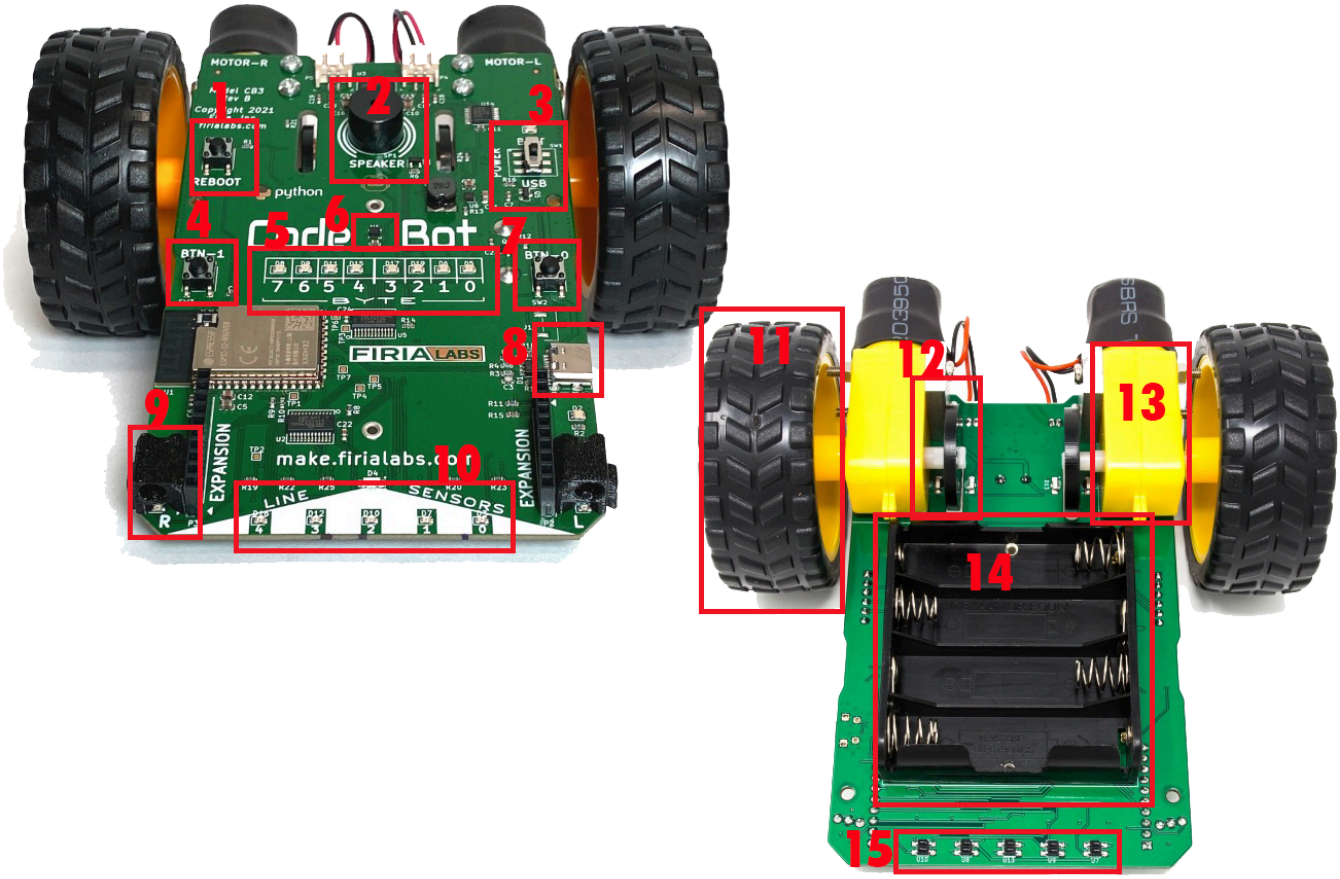
What is an LED?	Light-emitting diodes, the small electronic components that produce light.
Complete the goal by clicking on any LED. There are 17 LEDs on the CodeBot, but they aren’t all easy to see. How many can you find?	8 user LEDs across the middle, labeled 0-7. 5 line sensor LEDs across the bottom edge, labeled 0-4 2 very small LEDs for the proximity sensors (1 in front of each sensor) 1 very small LED is above the power switch (D21) 1 very small LED is below the USB connector (D2)

Mission 2 Objective 3

- Click on “speaker” to add it to your toolbox.

Mission 2 Objective 4 • Click on “encoders” to add it to your toolbox. • Complete the goal by clicking on an encoder. They are easiest to see from the back of the ‘bot.	
Mission 2 Objective 5 • Click on “CodeBot Button” to add it to your toolbox.	
There are three buttons on the ‘bot. What is the name of each button?	• REBOOT • BTN-0 • BTN-1
Mission 2 Quiz: Don’t Zap Your Bot!	
What is static electricity?	A charge that builds up when you walk across a carpet. It causes a jolt and spark when touching something that is grounded.
What are three things you can do to protect CodeBot?	• Hold the CodeBot by its edges. • Be gentle with the LEDs and electronic components. • Touch grounded metal before handling the CodeBot.
Mission 2: More CodeBot peripherals • Click back on Objective 5. Close the Objective Panel so you can clearly see the CodeBot in the simulator.	
Where are the line sensors on CodeBot?	The line sensors are on the underside of the ‘bot, along the bottom edge.
Where are the proximity sensors?	The proximity sensors look like eyes on the ‘bot. They are on the far right and left on the bottom edge.
Where is the accelerometer?	The accelerometer is just above the user LEDs, between Code and Bot.
Where is the USB connector?	The USB connector is below BTN-0, above the left proximity sensor.
Where is the power switch?	The power switch is above BTN-0. It indicates if you are using batteries or power from the computer (USB).

CodeBot Review Label the parts of CodeBot.



1. Reboot button	**6.** Accelerometer	**11.** Wheel
2. Speaker	**7.** BTN-0	**12.** Wheel encoder
3. Power Switch	**8.** USB connector	**13.** Motor
4. BTN-1	**9.** Proximity sensor	**14.** Battery pack
5. User LEDs	**10.** Line sensor LEDs	**15.** Line sensors

CodeBot Parts:

- Accelerometer
- Battery pack
- User LEDs
- Wheel encoders
- Line sensor LEDs
- Line sensors
- Button 0
- Button 1
- Wheels
- USB connector
- Proximity sensors
- Reboot button
- Speaker
- Motors
- Power switch

Post-Mission Reflection	
Inspect your CodeBot. All electronic devices you use have similar circuit boards inside. Name a few devices you use every day that might contain computer chips or “microcontrollers” such as the one on the ‘bot.	Many possible answers, including these: • Cars • Kitchen appliances • Video games / controllers • Cash registers / ATMs • Toys • Phones, watches, etc.
What is something you do that uses an electronic device? How do you think this activity was done before electronic devices?	Activities could include: • Getting to school • Learning at school • Entertainment • Shopping