ANSWER KEY

CODEBOT MISSION 3 LOG - Lesson 3

Pre-Mission Warm-Up	
What are some common programming errors you have made during this unit?	Answers will vary. The most common mistake is a spelling error. It could also be the wrong punctuation or capitalization.
How can you avoid the errors, or identify them when they are made?	Answers will vary. Students could say “Typing carefully” and “Looking at the error message.”

Mission 3 Lesson 3 – Get Moving (Objective 7-8)

Mission 3 Lesson 3 Introduction	
What are two things you need to do to power-up CodeBot’s motors:	Make sure batteries are loaded. Set the power switch to BATT
Mission 3 Objective 7	
What is the import statement for this code?	from botcore import *
What code turns on the wheels?	motors.enable(True)
What code powers a wheel?	motors.run(LEFT, 50)
What code moves the ‘bot forward in a straight line?	motors.run(LEFT, 50) motors.run(RIGHT, 50)

Mission 3 Objective 7 Robot Lab #1

- How far does the CodeBot move if both wheels have the same power, with a given delay?
- Use the chart below to record your lab results. **ANSWERS WILL VARY – a potential chart could look like this:**

LEFT and RIGHT Wheel Power Setting	Sleep Delay	Distance Traveled
30	1 second	6 inches
30	2 seconds	12 inches
50	1 second	11.5 inches
50	2 seconds	23 inches
20	4 seconds	14.5 inches
40	2 seconds	18 inches
80	1 second	20 inches
100	1 second	26 inches

Mission 3 Objective 8	
What code makes the wheels rotate?	When the powers are the same, but opposite, like this: motors.run(LEFT, 50) motors.run(RIGHT, -50)

Mission 3 Objective 8 Robot Lab #2

- What angle does the CodeBot turn with a given wheel power and delay?
- Does the 'bot move clockwise ↷ or counterclockwise ↶?
- Use the chart below to record your results.
- Try to get at least one combination that moves the 'bot in a 90◦ angle.
- **ANSWERS WILL VARY – a potential chart could look like this:**

LEFT Wheel Power	RIGHT Wheel Power	Sleep Delay	Angle & Rotation
50	-50	1 second	Clockwise 250
-50	50	0.5 seconds	Counterclockwise 120
40	-40	0.5 seconds	Clockwise 100
30	-30	0.5 seconds	Clockwise 70
35	-35	0.6 seconds	Clockwise 95
35	-35	0.5 seconds	Clockwise 85
35	-35	0.55 seconds	Clockwise 90
-35	35	0.55 seconds	Counterclockwise 90

Post-Mission Reflection

What is something you learned about moving CodeBot?	Answers will vary. Possible answers are: • Python code powers the motors.run(LEFT, 50) • The motors have to be enabled to run • If the powers are the same, the 'bot moves forward • If the powers are negative, the 'bot moves backward • If the powers are equal but opposite, the 'bot turns • The sleep delay determines how long the motors are powered