



CODEBOT MISSION 6 LOG - Lesson 3

ANSWER KEY

Pre-Mission Warm-Up

What code reads the line sensors and turns on/off the LEDs?

`vals = ls.check(thresh, is_reflective)
leds.ls(vals)`

What data type (information) does `ls.check()` return?

It returns a tuple of bools.

Mission 6 Lesson 3 – Line Follower

Mission 6 Objective 7

Write the tuple of bools using 1s and 0s.

(True, True, False, False, False)	(1, 1, 0, 0, 0)
(True, False, True, False, True)	(1, 0, 1, 0, 1)
(False, False, True, False, False)	(0, 0, 1, 0, 0)
(True, True, False, False, True)	(1, 1, 0, 0, 1)

What tuples are you using for the 'bot on the line?

Answers can vary. The slide mentions these three:
(0, 1, 1, 0, 0) (0, 0, 1, 1, 0) (0, 0, 1, 0, 0)
But students can also use other variations as well.

After testing, what modifications did you make?

Answers will vary.

- They might not make any modifications.
- They might change some of the speeds.
- They might add more detections.

Mission 6 Objective 8

Write code that will assign a value to `is_reflective`.

`is_reflective = line < ground`

Write code that will assign a value to `thresh`.

`thresh = round(ground + (gap/2))`

What is a local variable?

Answers should include at least some of the following:

- Variable defined in a function.
- Has a local scope.
- Variable can only be used / accessed in the function.
- Variable goes away when the function ends.

What is a global variable?

Answers should include at least some of the following:

- Variable defined outside a function.
- Has a global scope.
- Variable can only be used / accessed anywhere in the program.

How do you make a variable defined in a function global?

Use the "global" keyword at the beginning of the function.

Post-Mission Reflection

What did you learn about programming by completing this mission?

Students can have very different experiences with programming, so their answers will vary. They may really enjoy programming, or find it frustrating. They may mention the importance of testing and modifying their code. They may talk about the importance of spelling and typing. Any valid answer should be accepted. This is an excellent question to share in small groups or with the whole class.

What did you learn about yourself from completing this mission?

Again, the answers will be very dependent on the student's experience. Look for an answer that shows reflection or insight.