

Variables: Line Locator Challenge 1

Line Locator Challenge

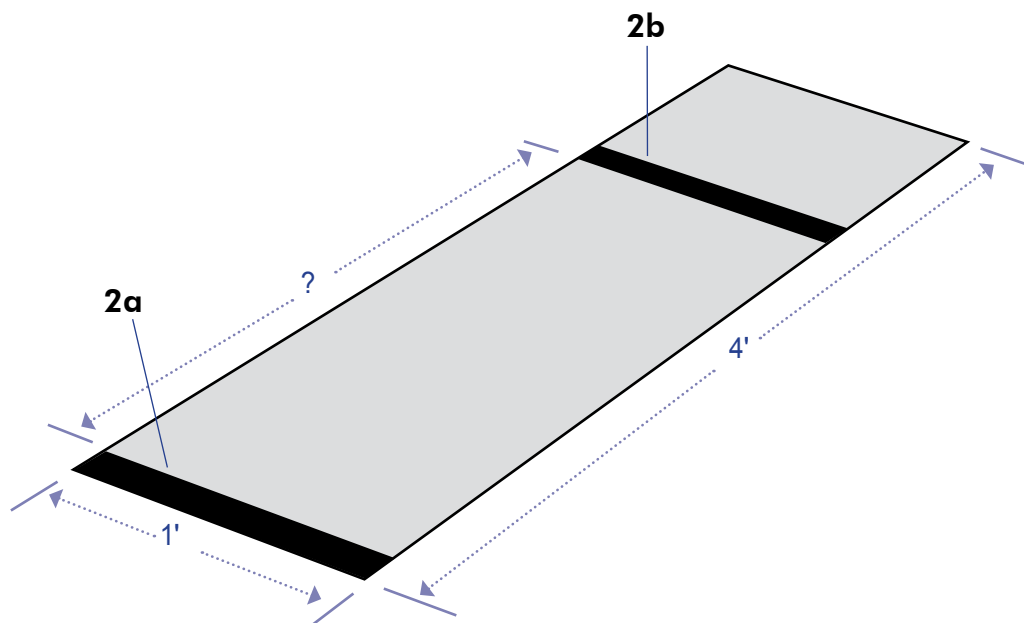
In this challenge, you must report the distance between two dark lines, in Degrees.

Materials

- 4' long light-colored smooth playing surface, at least 1' wide (hard floor, table, shelf, panel)
- Black removable tape to mark locations on playing surface

Playing Field Setup

1. Use part of a standard 4'x4' gameboard or floor space
2. Using the board diagram below:
 - a. **Start Line:** Make one dark tape line to mark the start of the measured distance
 - b. **Goal Line:** Make a second dark tape line to mark the end of the measured distance
3. Complete the challenge as described in the Rules and Procedure section on the next page!



NOTE: diagram not drawn to scale

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Rules and Procedure

1. Load any programs you intend to use onto the NXT
2. Start the robot anywhere on or around the Start line (your choice)
3. The robot must travel to the second line...
4. ... then return to its original position.
5. The robot must then display (on its screen) the number of Rotation Sensor degrees that the robot traveled to get to the second line
 - Hint 1: The Rotation Sensor starts at 0, and counts up as the robot moves forward
 - Hint 2: The Rotation Sensor counts backwards as the robot moves backward
 - For this challenge, do not worry about the thickness of the starting line
6. Move the Goal Line, and run your program again
7. Beat the challenge by successfully reporting the correct number of degrees both times!

If your robot goes this distance...	... it should report about this many Degrees of rotation
0 cm	0 degrees
10 cm	208 degrees
20 cm	416 degrees
30 cm	625 degrees
40 cm	833 degrees
50 cm	1042 degrees
100 cm (1m)	2083 degrees
200 cm (2m)	4167 degrees

