

## Calibration

How long it takes a robot to travel a given distance will depend on the power level of the motors driving it, the surface its driving on and how “fresh” the batteries are. A good way to determine how far your robot will go in a given time is to collect a data set and use the data to estimate how long it will take for the robot to go a given distance. This is called **calibration**—in this case you are calibrating distance versus time. To do this, you need a measuring stick or tape, your robot, and Robolab. Write a program to make your robot go forward for 1 second. Run the program and measure how far the robot goes. Write the distance in the data table. Next program it for 2 seconds and measure and record how far it goes. Repeat this for 3, 4, 5, and 6 seconds. When you’re done, you can graph your data and the line you draw between all the points will be your average speed.

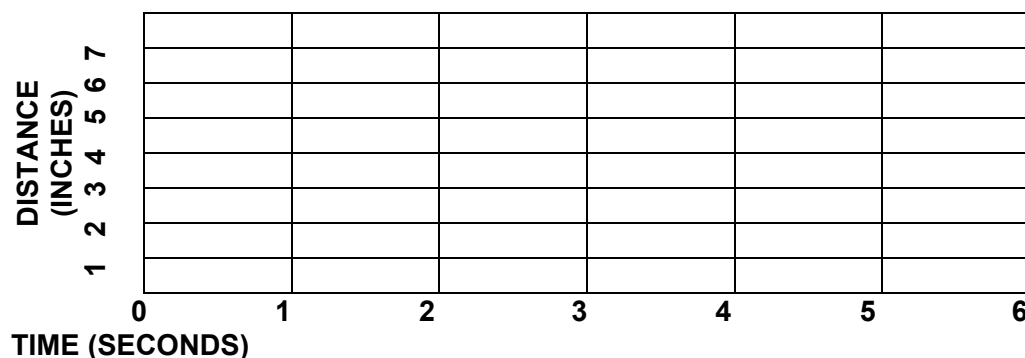
You can do the same for point turns. Write a program to make your robot go turn for 1 second. Run the program and measure how many degrees the robot turned. Write the angle in the data table. Next program it for 2 seconds and measure and record how many degrees it turned. Repeat this for 3, 4, 5, and 6 seconds. When you’re done, you can graph your data and the line you draw between all the points will be your average turning speed.

**STRAIGHT**

TIME	DISTANCE
1 SEC	
2 SEC	
3 SEC	
4 SEC	
5 SEC	
6 SEC	

**POINT TURN**

TIME	ANGLE TURN
1 SEC	
2 SEC	
3 SEC	
4 SEC	
5 SEC	
6 SEC	



Now you can measure each leg of your maze, and looking at your graph, determine how long your robot will need to go forward to cover that distance.