

1 Motor Car-bot Speed Test Challenge

For this challenge you will need:

1. 1 Motor Car-bot
2. Yard Stick
3. LEGO Minifigure or LEGO Brick

Your challenge:

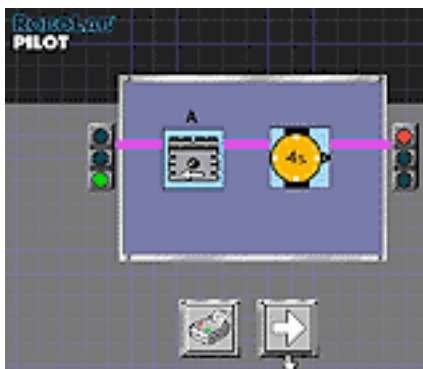
To measure your car-bot's **Speed** – the distance the car-bot goes in a given time

You will measure and compare the carbot's:

- Speed on rug
- Speed on floor

Create and download the following programs on your RCX:

Program Slot 1 – Program motor A to move forward for 1 second



Program Slot 2 – Program motor A to move forward for 2 seconds

Program Slot 3 – Program motor A to move forward for 4 seconds

Test your car-bot's speed:

1. Place a yardstick on the floor to test how far the car travels in one second. Run Program Slot 1 and measure the distance the car traveled. Repeat the test three times. Use the worksheet to record your tests and to calculate the average distance and speed.
2. Place a LEGO figure or other object on the floor next to the distance equivalent to that covered in one second.
3. See if the car travels the correct distance without knocking the figure over.
4. Repeat steps 1 – 3 running Program Slots 2 and 3. **Estimate the distance first.**
5. *Finished? Try calculating carbot's speed going backwards!*

Name _____ Date _____

1 Motor Car-bot Speed Test – Record Sheet

1 second

Estimate _____

Test	Distance Floor	Distance Rug
Test 1		
Test 2		
Test 3		
Total		
Average Distance Floor	Divide total _____ by 3 = _____	
Average Distance Rug	Divide total _____ by 3 = _____	
Average Speed Floor	Divide distance _____ by seconds 1 = _____	
Average Speed Rug	Divide distance _____ by seconds 1 = _____	

Name _____

Date _____

2 seconds**Estimate** _____

Test	Distance Floor	Distance Rug
Test 1		
Test 2		
Test 3		
Total		
Average Distance Floor	Divide total _____ by 3 = _____	
Average Distance Rug	Divide total _____ by 3 = _____	
Average Speed Floor	Divide distance _____ by seconds 2 = _____	
Average Speed Rug	Divide distance _____ by seconds 2 = _____	

Name _____

Date _____

4 seconds

Estimate _____

Test	Distance Floor	Distance Rug
Test 1		
Test 2		
Test 3		
Total		
Average Distance Floor	Divide total _____ by 3 = _____	
Average Distance Rug	Divide total _____ by 3 = _____	
Average Speed Floor	Divide distance _____ by seconds 4 = _____	
Average Speed Rug	Divide distance _____ by seconds 4 = _____	

How far will your robot travel in 1 minute?

Rug _____

Floor _____

How do you know?