FIRST

LOGICS ACADEMY
…a playground for innovative minds

FIRST LEGO LEAGUE - Ontario

Record		
Test Square #	Predicted Light Percentage Value	Actual Light Percentage Value
1	5	4
2	15	14
3	30	29
4	40	43
5	50	51

Questions	
Question 1 Math	What made estimating the light values difficult? Comment on how close you were with each of the 5 you predicted.
It was hard because 100 wasn't the maximum and 0 wasn't the minimum. A goo estimate meant using some math first.	
Question 2 Math	What made estimating the distances it would travel a little bit easier?
The distance it could travel cold be compared to values I already knew.	
Question 2 Robotics	Why do we use parts per 100 (percentages) as a way to quickly understand what portion of something we have? Can you think of a better number instead of 100?
It is easy to quickly understand parts out of 100 because our system is based on 10. We could use 10 but it wouldn't be as accurate. 1000 is a bit too large.	
Question 3 Coding	Why would getting a percentage value be better than getting an absolute light intensity back? For example you could send out 83 lux (light intensity units) and get back 13 lux, and use that to control your code. What makes this less useful?

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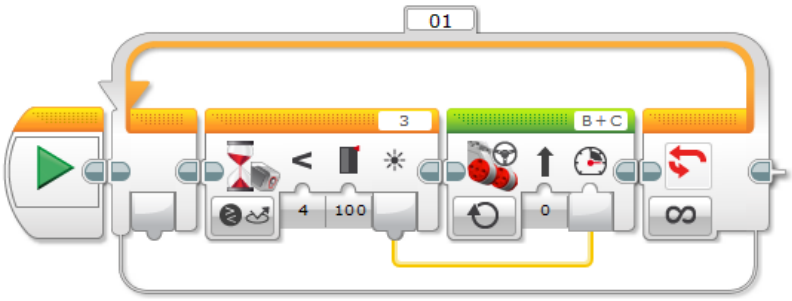
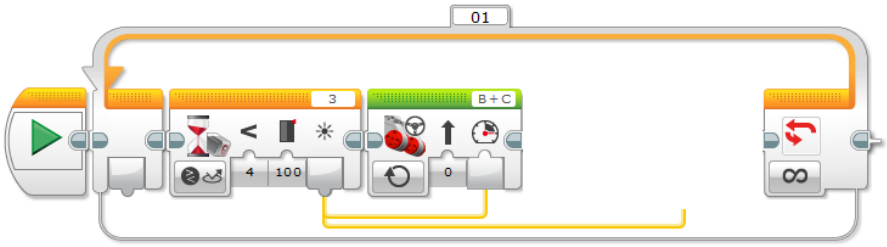
This would be harder to understand because you don't quickly know what proportion of the original light is coming back.

Extension Coding and Math	With EV3 you can measure values and then "carry" those values into other parts of the code. For example, you can tie together the amount of light coming in, with the speed of the wheels. The code below accomplishes this. (It is in a loop so they value keep getting updated).  Copy this code and try it on top of your gradient page. Now that you understand this principle, turn your robot into an effective, floor sweeping light meter. All you need to do is include a sound block, choose a tone to play, and draw a line from light value to the volume section. (Use 0.2sec for the time on your sound block). *Hint* 

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