

BEGINNER/INTERMEDIATE EV3 PROGRAMMING

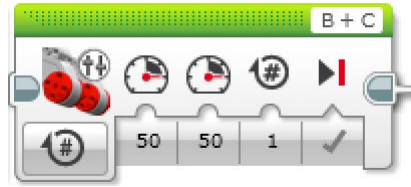
SWITCH STATEMENTS & LINE FOLLOWING



By **STEMPowering Girls**
stempoweringgirls.org

REVIEW

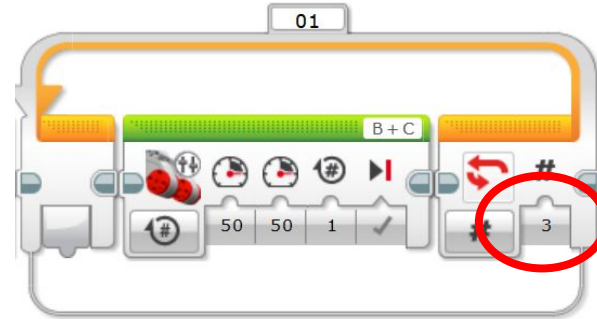
So far, we've learned about the move tank block, the loop block, and the wait block.



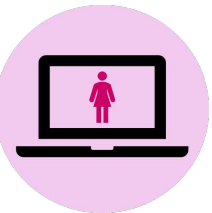
Move Tank Block, used for moving forward, backward and turning.



Wait block, used for waiting a certain amount of time, and for stopping at a color



Loop block, used for looping blocks a number of times



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SWITCH STATEMENTS

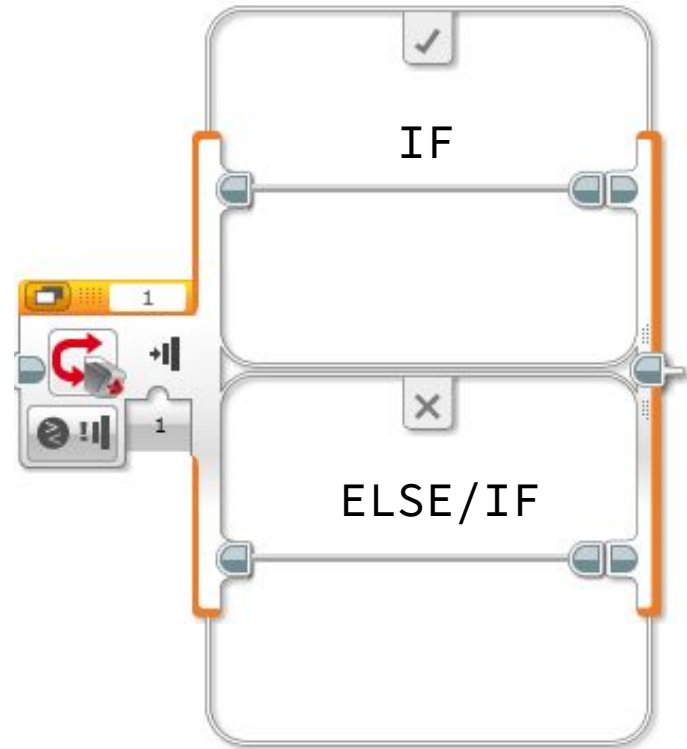


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SWITCH STATEMENTS

This is a switch statement or “Switch” block. It’s used as an “If, else” statement. For example, “If the robot _____, then _____, else, _____.” There are 2 different settings when using a color sensor; Compare, and Measure.

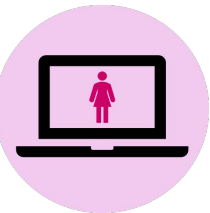
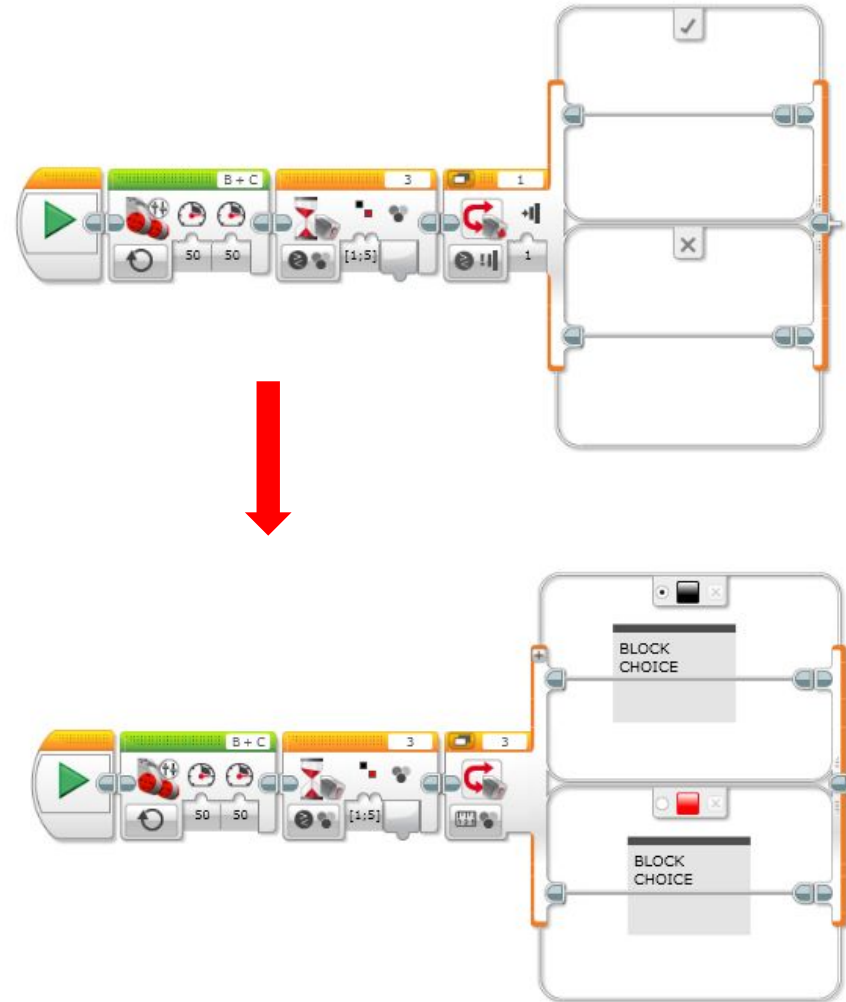


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SWITCH STATEMENTS

Copy the code on the side, in which the robot moves forward until either blue OR black, and then has a switch statement. Change the switch statement to measure, color. Then change the colors to blue and black. Fill out the different cases with your choice.

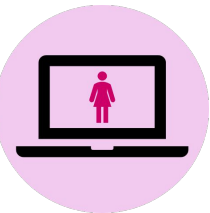
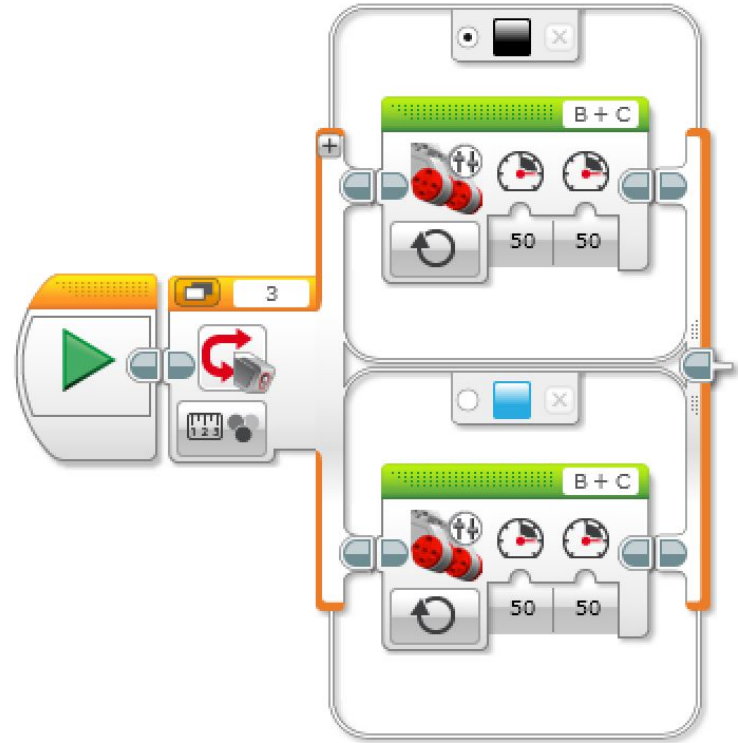


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SWITCH STATEMENTS

Next let's create a program that uses sound to distinguish different colors. First bring out a switch statement and change it to the measure, color setting. Choose the colors blue and black, and then bring move tank blocks into each of them (on the "On" setting).

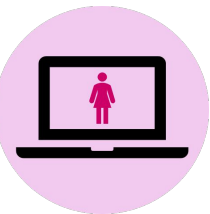
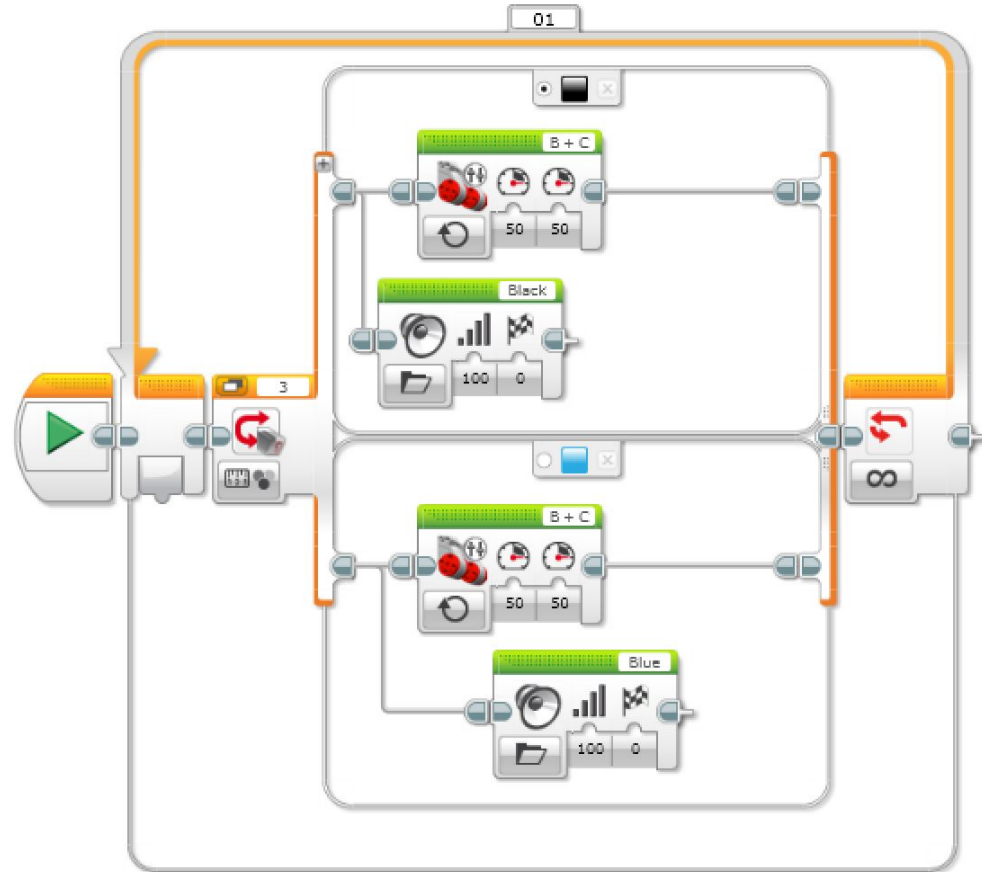


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SWITCH STATEMENTS

Now bring a **sound** block into each of the cases, and choose a different sound for each one. Attack these with a separate wire in the code. Finish by putting all of this into a loop block. The code should look like this.



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2 SENSOR LINE FOLLOWING

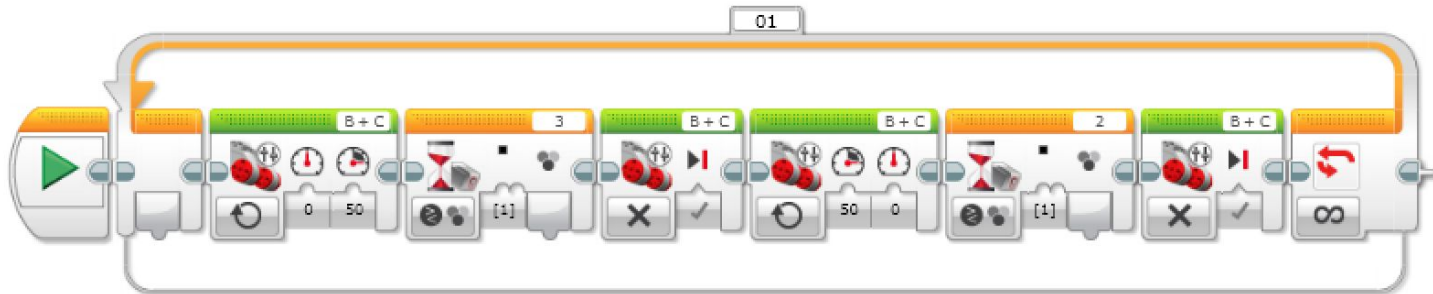


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LINE FOLLOWING: HOW IT WORKS

This is a 2 sensor line following program. If the robot senses the black line with the left sensor then the the robot will turn left. If the the robot senses the black line with the right sensor then the the robot will turn right. This is put into a loop.



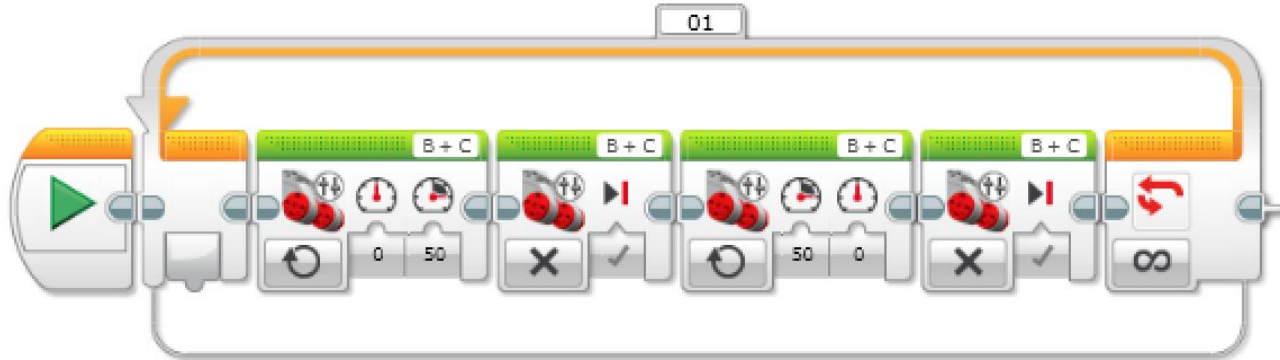
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LINE FOLLOWING

First let's bring all our block out. We need a loop block, and then place 4 move tank blocks inside the loop. Change the 1st and 3rd blocks to the On setting, and the 2nd and 4th to the Off setting.



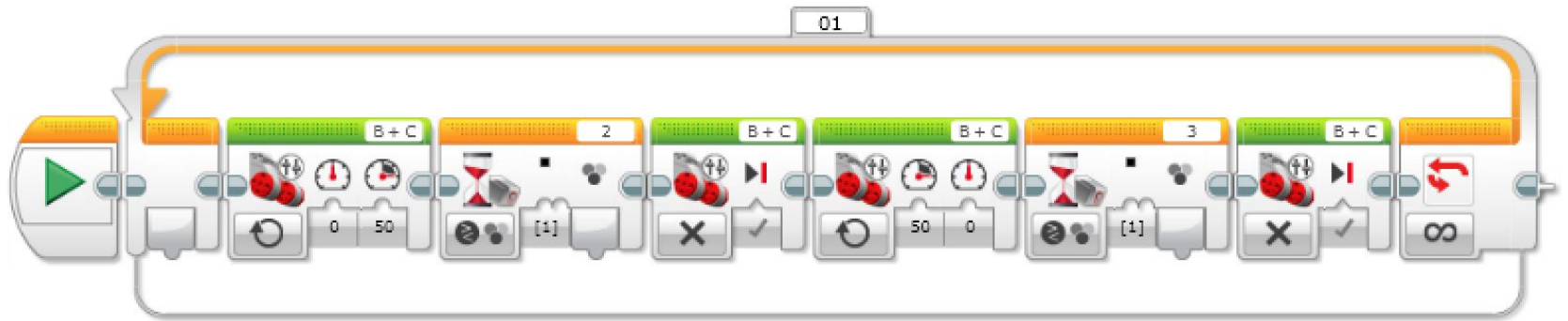
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LINE FOLLOWING

Next place a wait block in between the “on” and “Off” move tanks blocks. Change these to the setting “color sensor”, “compare”, ”color”.



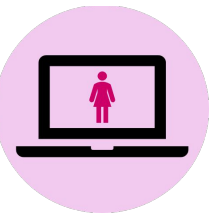
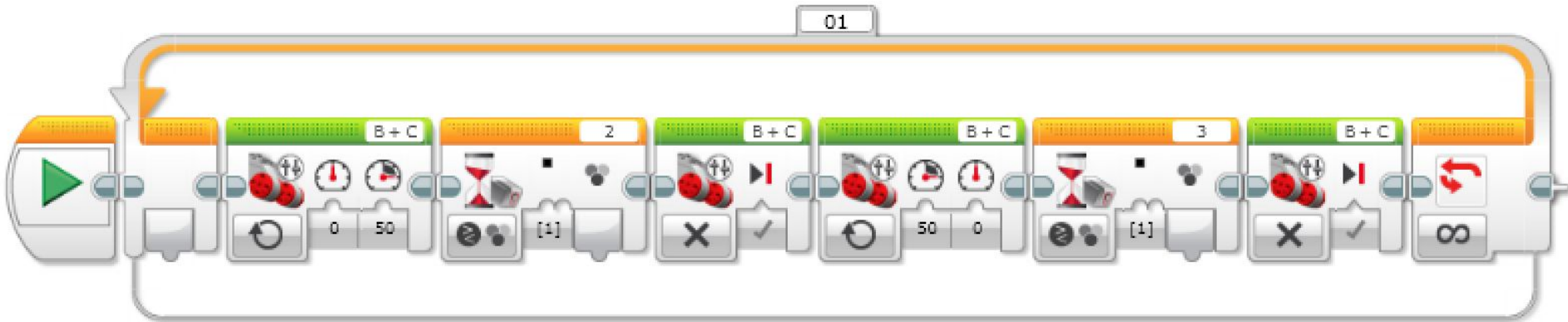
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LINE FOLLOWING

Lastly change the move tank blocks to turn the appropriate way, and the ports on the wait blocks to the ports of your color sensors.



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