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| **Challenges:** | |
| |  | | --- | | **Challenge 1:** Use the rv.color\_rgb() function to explore using the color LED. Try to find RGB values for the primary and secondary colors.  e.g. rv.color\_rgb(255,155,0) will make yellow. | | |  | | --- | | **Challenge 2:** Use the disp\_at() function to display your name at several locations on the screen. | |
| |  | | --- | | **Challenge 3:** Have Rover drive 5 units forward. Use the rv.waypoint\_x() function to read and display Rover’s horizontal position when Rover is finished driving. | | |  | | --- | | **Challenge 4:** Use a While loop to turn on the LED red, then green, then blue each for 1 second until the [clear] key is pressed to escape the loop. | |

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| **Challenges:** | |
| |  | | --- | | **Challenge 5:** Have Rover drive 5 units forward. Predict the amount of time for Rover to reach 4 units and read Rover’s position at that time. If the value returned is equal to 4 turn the LED green, if the value returned is less than 4 turn the LED red, and if the value is greater than 4, turn the LED blue.  Note: Enter your predicted time to travel 4 units as the input to the sleep() function in the student program. Distance driven is measured and stored the variable x immediately after sleep() completes. | | |  | | --- | | **Challenge 6:** Have Rover drive on the number line between 0 and 10. While Rover is driving, read its position and control the LED so that the LED displays colors corresponding to the number line diagram below. | |
| |  | | --- | | **Challenge 7:** Have Rover drive on the number line between 0 and 10. While Rover is driving, read its position and control the LED so that the LED displays colors corresponding to the number line diagram below. | | |  | | --- | | **Challenge 8:** Have Rover drive on the number line between -10 and 10. While Rover is driving, read its position and control the LED so that the LED displays colors corresponding to the description below.   * While Rover’s position is less than or equal to zero, the LED is magenta. * While Rover’s position is greater than 0 and less than 2, the LED is off. * While Rover’s position is greater than or equal to 2 and less than or equal to 4, the LED is red. * While Rover’s position is greater than 4 and less than 5, the LED is blue. * While Rover’s position is greater than or equal to 5 and less than 10, the LED is green. * While Rover’s position is greater than or equal to 10, the LED is yellow. | |