Blink LED Activity

In this activity we will be building a circuit and writing the code to make an LED blink using our Arduino!

\*Fill in the information missing for later use\*

1. Gather Materials
   1. Breadboard
   2. Arduino
   3. USB for Arduino
   4. Raspberry Pi
   5. blinkProject-Student.py
   6. 220-ohm resistor (check workbook guide for how to determine resistance)
   7. LED
   8. 3 jumper wires
2. Build the LED circuit
   1. Plugin the power cable to the \_\_\_ digital pin on the Arduino and the \_\_\_ hole in the ‘c’ column on the breadboard.
   2. Plugin the ground cable to the GND pin on the Arduino and the second (-) hole on the breadboard.
   3. Plug the 220-ohm resistor into the third hole in the (-) column of the breadboard and the \_\_\_ row of the ‘b’ column.
   4. Plug the last jumper wire into the second hole of the (-) column and the \_\_\_ row of the ‘b’ column.
   5. Plug the long leg (anode) of the LED into the \_\_\_ hole of the ‘c’ column and the short leg (cathode) into the \_\_\_ hole of the ‘c’ column.

\*the long leg should connect to positive, the short to negative\*

*Note*: Double check that the power (digital pin) connects ONLY to the long leg of the LED, and the ground (resistor and GND) connects ONLY to the short leg of the LED. This is important! If the roles are reversed, our parts could be broken once we provide power to the Arduino!

1. Write the code
   1. Write your pseudocode below (Remember to follow the steps given in the workbook!):

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b. Open BlinkLED-Student.py and compare your pseudocode to the pseudo code provided in the comments. Is there anything you forgot to include?

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c. Write your code in the spaces provided in BlinkProject-Student.

*Note*: Look in your workbook for how to find the functions you need if you get confused. If you’re still confused, ask one of us to help!

d. Have one of the instructors come double-check your circuit and the code you have written. Once you have our ok, plug your USB cable into your Raspberry Pi and connect your Arduino.

e. Test your circuit by running your code! Is there anything you could change in your code to make the LED blink faster? If so, how fast can you make it blink before you can’t see the blink happen?