Electronics Worksheet

- A multimeter measures electrical values like DC voltage and resistance in a circuit.
- It helps you check voltage levels (e.g., batteries) and test if components or wires have proper continuity or resistance.
- DC voltage is the steady electrical potential difference between two points that drives current in one direction.
- Resistance is the opposition to the flow of electric current in a material, measured in ohms.

Task:

Plug in your Arduino into the given circuit.

1. Setup the Multimeter on the DC Voltage  setting, with the black and red probe measure the following:

AAA Battery_____

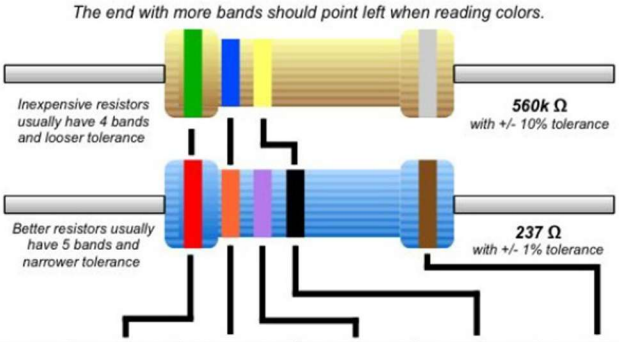
Arduino 5V pin_____

Arduino 3.3V pin_____

Arduino Digital Pin 8_____

2. Resistance Measurements

Resistor Color Codes can be used to check your multimeter readings. We will use the yellow or blue resistor in the picture below to learn how to find the resistor values by the color coding.



Color	1st Band	2nd Band	3rd Band	Multiplier	Tolerance
Black	0	0	0	x 1 Ω	
Brown	1	1	1	x 10 Ω	+/- 1%
Red	2	2	2	x 100 Ω	+/- 2%
Orange	3	3	3	x 1K Ω	
Yellow	4	4	4	x 10K Ω	
Green	5	5	5	x 100K Ω	+/- .5%
Blue	6	6	6	x 1M Ω	+/- .25%
Violet	7	7	7	x 10M Ω	+/- .1%
Grey	8	8	8		+/- .05%
White	9	9	9		
Gold				x .1 Ω	+/- 5%
Silver				x .01 Ω	+/- 10%

With the table above give the resistance of:

Resister 1_____

Resister 2_____

Resister 3_____

Setup the Multimeter on the Resistance  setting, with the black and red probe measure following:

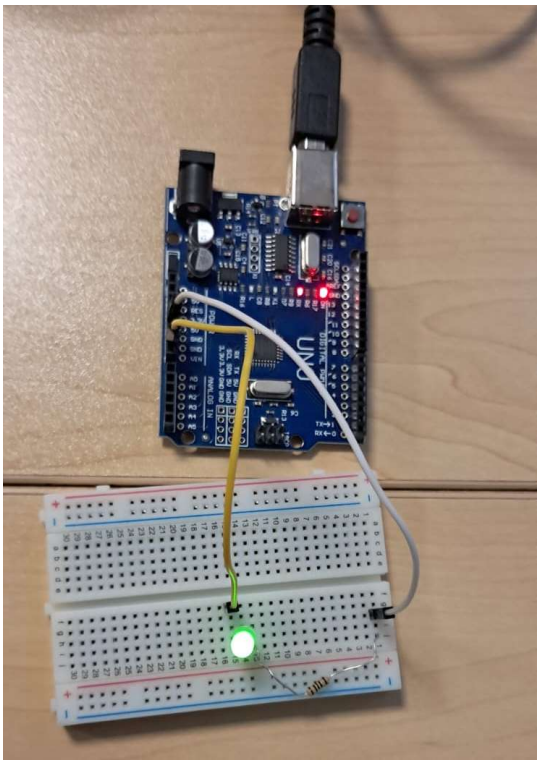
Resister 1_____

Resister 2_____

Resister 3_____

3. Circuit Measurements

   Connect the White wire to pin 5V
   Connect the Yellow wire to pin GND



With the multimeter:

Measure the resistance of the resistor_____

Measure the voltage across the resister_____