🧪 PiezoPop™ Exploration Worksheet

Name: _____
Date: _____

Instructions

Documentation of your experiments is key to learning any new technology, as it will provide a reference for you to build on. In this worksheet you will write down the initial configuration of your piezo device before you begin to make changes. This way you can get back to a known working configuration as you explore the boundaries of what is possible!

🔧 Device Initial Working Configuration

Parameter	Value / Notes
Serial/ID Number	_____
Number of BBs	_____
Capacitor C1 Value	_____
Capacitor C2 Value (if any)	_____
Resistor R1 Value	_____
Color of LED	_____
Assembled Properly? (Y/N)	_____
Notes on Assembly / Condition	_____ _____

📊 Test Group 1 – Default Test (Baseline)

Instructions

Validate the baseline functionality of your PiezoPop device. Write down three test runs. Three data points will help average out any variations in your data and can provide insights into reliability for a given configuration.

Parameter	Test Run 1	Test Run 2	Test Run 3
Number of Shakes	_____	_____	_____
Total Time Shaking (sec) (*optional*)	_____	_____	_____
LED Brightness (1–5 or mcd) (*optional*)	_____	_____	_____
LED On-Time (ms) *(optional)*	_____	_____	_____
LED Voltage Level *(optional)*	_____	_____	_____
Observations / Notes	_____ _____	_____ _____	_____ _____

📊 Test Group 2 – Modified Mass / BBs

Instructions

Change the number of BBs in the tube (aka, the mass that will strike the piezo surface). Write down three test runs. Three data points will help average out any variations in your data and can provide insights into reliability for a given configuration.

Parameter	Test Run 1	Test Run 2	Test Run 3
Number of BBs	_____	_____	_____
Number of Shakes	_____	_____	_____
Total Time Shaking (sec)	_____	_____	_____
LED Brightness (1–5 or mcd) (*optional*)	_____	_____	_____
LED On-Time (ms) *(optional)*	_____	_____	_____
LED Voltage Level *(optional)*	_____	_____	_____
Observations / Notes	_____ _____	_____ _____	_____ _____

📊 Test Group 3 – Circuit Component Variations (Advanced)

Instructions

Change the resistor, capacitor, or LED in the circuit and see what happens! Write down three test runs. Three data points will help average out any variations in your data and can provide insights into reliability for a given configuration.

Parameter	Test Run 1	Test Run 2	Test Run 3
Component Values			
R1 (Ohms)	_____	_____	_____
C1 (uF)	_____	_____	_____
C2 (uF)	_____	_____	_____
Number of Shakes	_____	_____	_____
Total Time Shaking (sec)	_____	_____	_____
LED Brightness (1–5 or mcd) (*optional*)	_____	_____	_____
LED On-Time (ms) *(optional)*	_____	_____	_____
LED Voltage Level *(optional)*	_____	_____	_____
Observations / Notes	_____ _____	_____ _____	_____ _____

📈 Wrap-Up

Which configuration gave the brightest light?

Which stored energy the longest?

What would you try next and why?
