**Circuit Lab 2**

Our question is:

How does the **number of batteries** impact the **brightness of the bulbs?**

The variable we are changing (independent variable):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Variables that need to be controlled *(List as many as necessary)*:

*
*
*
*

We will measure (dependent variable):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Tools we need to use *(List as many as necessary)*:

* Three battery packs with batteries
* Three lightbulbs in holders
* Extra wire

Our Prediction:

As you increase the number of batteries, the brightness will: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Procedure:**

1. Create a circuit with three lightbulbs and one battery pack.
2. Create another circuit with three lightbulbs and TWO battery packs.
3. Create another circuit with three lightbulbs and THREE battery packs.

**Data**

*In the first column, list the three variations of the INDEPENDENT VARIABLE. Record your observations of the circuit in the second column.*

|  |  |
| --- | --- |
| Number of Bulbs | Observations: Which circuit was **BRIGHTEST**? **DIMMEST**? |
| One battery pack |  |
| Two battery packs |  |
| Three battery packs |  |

**Conclusions:**

What happens when you add more batteries to a series circuit?

As you add batteries to a series circuit, the brightness of the bulbs (INCREASES / DECREASES).

We saw that with one battery pack…..

With two battery packs….

With three battery packs….

We think this happens because…..