Simple Circuit - Battery Type

Introduction

We are testing a simple circuit with a battery and changing battery type to see if the light bulb is brighter. We chose to use a 9V Super Heavy Duty battery and a AA Super Heavy Duty battery.

According to our research, “An electrical circuit provides pathways along which current can flow to do work. Current is driven by a power source, such as a BATTERY” (Fact Monster). We chose a 9V battery because we think it will be brighter since it is stronger than the AA battery.

Testable Question: How does the type of battery (AA or 9V) affect how bright a bulb lights.

Independent Variable: The type of battery

Control: We are comparing our change to the AA battery.

Dependent Variable: How bright the light is

Constant Variables:

- The Wire Type (Insulated 24 AWG)
- The Wire Length (15 cm)
- The 1.5V Light Bulb
- The 1.5V Light Bulb Holder

Hypothesis

The hypothesis for this experiment is: If I change the battery from AA to 9V, it will be brighter than the one with the AA.

We think this because our research shows the 9V has more energy, so it will make the the light bulb brighter. It says, “A lithium 9V battery delivers over 500mA for 1.2 hours, maintaining a voltage of 6.8V” (Large Battery). This means that it gives a lot of energy.

Materials List

2 Incandescent 1.5 V light bulbs

1 Light bulb holder for 1.5V

2 Super Heavy Duty AA batteries (The second battery is extra)

2 Super Heavy Duty 9V batteries (The second battery is extra)

AA Battery Holder with 15 cm of Red & Black Insulated Wire (24 AWG)

9V Battery Holder with 15 cm of Red & Black Insulated Wire (24 AWG)

Paper and Pencil to record data

Procedure List

1: Attach one wire to the light bulb holder.

2: Attach the other wire to the other side of the light bulb holder.

3: Put in the light bulb.

4: Connect the 9V battery to the wired battery holder.

5: See how bright the light bulb is.

6: Record the data with the paper and pencil.

Procedure List

1: Attach one wire to the light bulb holder.

2: Attach the other side to the battery holder.

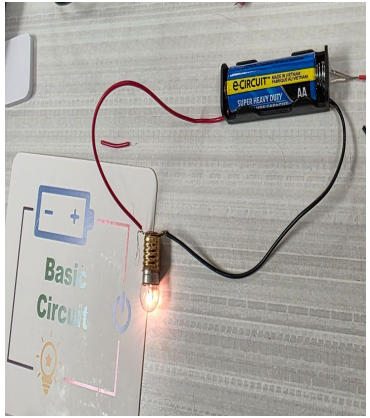
3: Put in the light bulb.

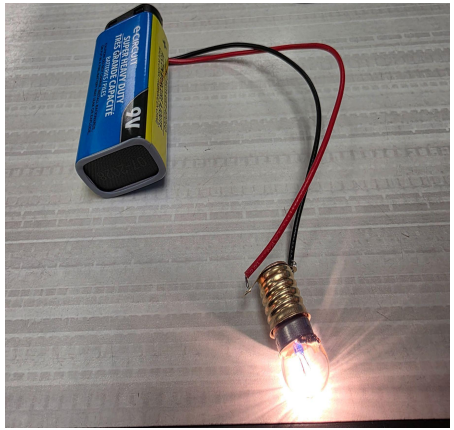
4: Connect the AA battery to the battery holder.

5: See how bright the light bulb is.

6: Record the data with the paper and pencil.

Experiment Pictures/Data Table





Battery Type	Bulb Brightness
Super Heavy Duty 9V	Really bright.
Super Heavy Duty AA	Not that bright.

Conclusion

The data did support our hypothesis. The data shows the 9V battery is what made the light brighter.

Research Sources

https://www.factmonster.com/dk/encyclopedia/science/circuits

https://www.large-battery.com/blog/understanding-amps-of-9v-battery/