



Battery Power Test



Science project

Introduction

Our experiment is a Battery Power Test. We were testing to see which battery brand made the light bulb brighter. We decided to use Rayovac, Procell (Duracell), and Amazonbasics. Rayovac batteries are generally considered a strong budget and power buy, while Amazonbasics products are generally considered reliable for the price, offering decent, functional quality for basic needs. Duracell batteries are widely considered strong, reliable, & long-lasting, particularly for high-drain devices, as they often outperform competitors & feature durable, leak-resistant designs.

Testable Question

How does the battery brand affect how bright a light bulb is?

Independent Variable: We are changing the battery brand.

Control: We are comparing batteries Procell (Duracell) & Amazonbasics AA to our change from Rayovac

Dependent Variable: We are measuring which battery makes the light bulb brighter.

Constant Variables:

1. 1 Procell AA Battery
2. 1 1.5V Light Bulb
3. Length of Wires
4. Type of Wires 24 AWG
5. 1 Rayovac AA Battery
6. 1 Amazonbasics AA Battery

Hypothesis

The hypothesis for this experiment is: If we change the battery brand to Rayovac, then it will make a bulb brighter than our AA Procell & Amazonbasics.

We think this because the batteries we were going to use don't work that much or last as long. We also think the batteries we are going to use now are better because research shows it is a strong power buy.

Materials List

1. Battery attacher with 24 AWG wires attached
2. 2 Amazonbasics AA batteries (the second is a backup battery)
3. 2 Procell AA batteries (the second is a backup battery)
4. 2 Rayovac AA batteries (the second is a backup battery)
5. 2 Red & 1 Black 24 AWG Wire (15 cm)
6. 1 Mini circuit light switch
7. 1 Light Bulb 1.5V
8. 1 Light Bulb 1.5V Holder
9. Paper and Pencil to record the data

Procedure List

First, take the AA battery holder with the wires attached & loop the red wire with the light bulb holder.

Second, take the second red wire & loop it with the other side of the light bulb holder.

Third, take the other side of the red wire and loop it with the light switch.

Fourth, use the black wire on the battery holder and loop it with the other side of the light switch.

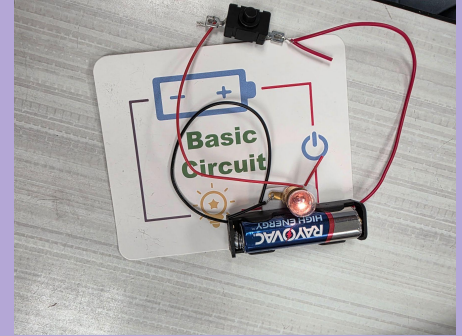
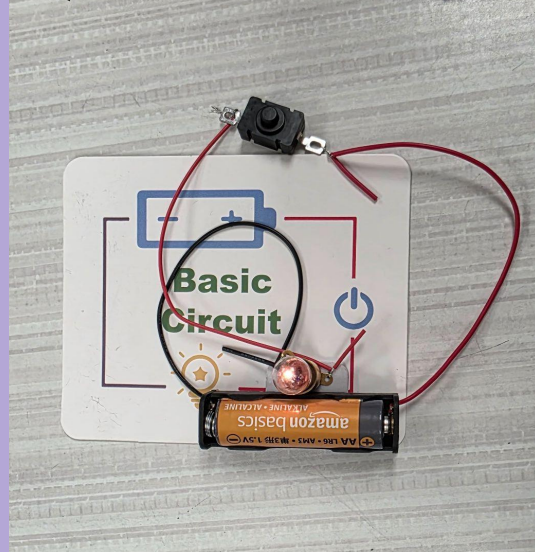
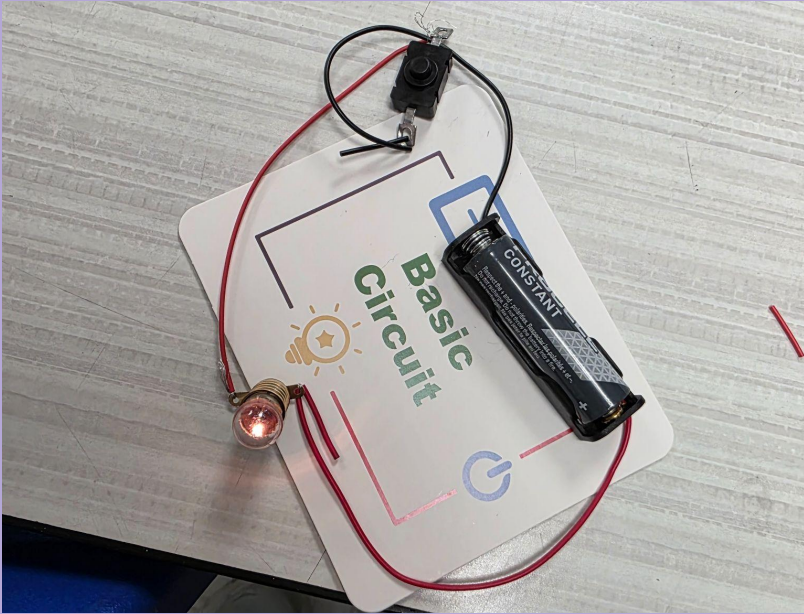
Fifth, put in the AA battery.

Sixth, use the paper and pencil to record the data.

Seventh, repeat steps 1-6 until all batteries are tested.

Eighth, test the experiment 3 times with each battery & done.

Experiment Pictures/Data Table



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Battery Type	Light Bulb Brightness
Rayovac AA batteries	Very bright
Amazonbasics AA batteries	Much less brighter than Rayovac.
Procell AA batteries	Brighter than Amazonbasics but not brighter than Rayovac.

Conclusion

The data did support our hypothesis. The data shows Rayovac is the brightest one, while Procell AA batteries are very bright but not that much. Rayovac batteries are brighter than Procell AA, so Procell AA is not an option anymore. Amazonbasics is not as bright as Rayovac or Procell AA, but Rayovac is brightest, so Rayovac wins.

Research Sources

<https://duracell.com/technology/battery-care-use-and-disposal>

<https://www.amazon.com/ask/questions/Tx1E2KJHO7VXVMI/>

<https://rayovac.com/product/aa-high-energy-alkaline-batteries/>