



Science Fair Projects 6th Grade to 8th Grade

Title: Consumer Science

"Dead Batteries"

Stating the Problem - The Big Question

Television and radio advertisements always tell us to buy certain brands of dry cell batteries because they last longer. In your project, you may want to find out which brand of battery has the "longest live" or you may want to find out which battery is the best value for its money. Write a question that asks what you want to find out from your experiment.

Forming a Hypothesis - A Smart Guess

What do you think you will find out? Television advertisements tell us which battery is the best, but what do you think? It's time to make a smart guess. Write a sentence, or hypothesis, which states what you think will be the answer to the Big Question.

Planning the Procedure

Before you plan your experiment, do some research on batteries. How do batteries work? When was the first battery developed? Your librarian will help you find information in books and encyclopedic articles. Write a step-by-step description of your experiment. There are many different ways that you could design your test. You could test batteries by finding how long a flashlight bulb would glow. Radios, tapeplayers, remote-controlled cars and mechanical toys could also be tested. Remember to include the following in your description:

- ❖ A detailed list of materials.
- ❖ The kinds of batteries to be compared.
- ❖ The procedure that you will use to test your batteries.

This project is from Daryl Vriesenga's book, *Science Fair Projects, Grades 4-6*, Michigan, Schaffer Publications, 1990. The Guide is available on line at: SchooDoodle.com

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Make a chart or table to record the results of your experiment. Here is a sample of what you might use.

Chart

Type of Battery	Cost of Battery	Starting Time	Stopping Time	Minutes of Operation

Recording Results

Turn on the power! It's time to do your experiment. Use the table or chart that you have prepared to record all of the results. After the experiment is completed and the data collected, you may want to find out which battery is the best value for the money. The best value can be reported as "Minutes of operation per penny." To calculate this value, use the following formula:

$$\frac{\text{Minutes of Operation}}{\text{Cost of battery in Cents}} = \text{Minutes of Operation Per Penny}$$

To make the comparison of the different kinds of batteries easier to understand, the results of your tests can be written on bar graphs as shown here.



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Drawing a Conclusion

Before you perform your experiments, you formed a hypothesis. Was your hypothesis correct? Did you choose the battery that lasted the longest? Did you get the most minutes per penny?

Write a report that explains what you learned from comparing different kinds of dry cell batteries. Your report should include the Big Question, the hypothesis, a detailed description of your experiment, the tables that show your results, and your conclusion.

Display

The best way to share the results of your test with others is to make a display. A series of charts and graphs that show your results will let people know at a glance which battery is the best value. Because people would be very interested to see how you performed your tests, you should include examples of the batteries tested and the equipment used.

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