

*Table 2.* Voltmeter measurements of batteries from the flashlights.

<b>Battery</b>	<b>Voltage (volts)</b>
1	1.05
2	0.82
3	1.22
4	0.24
5	0.47

The voltage of the first four batteries led me to think the Rayovac batteries had lower voltages than the other brands. But the voltage of the fifth battery did not fit that pattern. The new pattern I saw was that the alkaline batteries had higher voltages than the others did. But then I had another idea. Maybe the batteries with a lower voltage were older. Since I don't have that information, I need to be careful drawing conclusions from these data.

Next, I wondered about voltage when two or more batteries are put together, like in a flashlight. Kiko said that in a flashlight, the batteries are connected in series. Since I have five batteries, how many different series should I measure?

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I think I'll learn the most if I look at the extreme cases for each flashlight. I will first create two- and three-battery series using batteries with the lowest voltage. Then I will do the same using batteries with the highest voltages. Table 3 shows what I found.

*Table 3.* Measurements of the batteries connected in series.

<b>Battery Series</b>	<b>Voltage (volts)</b>
4, 5	0.69
2, 4, 5	1.49
1, 3	2.30
1, 2, 3	3.10

Claim:

¥ the voltage of batteries connected in series is the sum of the voltages of each battery in the series