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Electrical Circuits Parallel and Series Batteries Activity Sheet

| Materials: | $1-\# 40$ bulb <br> $1-$ bulb holder | $8-15 \mathrm{~cm}$ copper wires <br> 4 battery holders | 4 batteries <br> 1 screwdriver | 1 switch |
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## Circuit A on page 13 of SAB

1. Construct Circuit A. Close the switch and observe.

Are the batteries connected in series or parallel? $\qquad$
How can you prove this? $\qquad$
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2. Predict what will happen to the brightness of the bulb if two more batteries are added to Circuit A in series.
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Add two more batteries in series to Circuit A. What do you observe about the bulb?
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Circuit B on page 13 of SAB
3. Construct Circuit B. Note the polarity of the batteries. Close the switch and observe.

Are the batteries connected in series or parallel? $\qquad$
How can you prove this? $\qquad$
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## Electrical Circuits Parallel and Series Batteries Activity Sheet (cont.)

4. Predict what will happen to the brightness of the bulb if two more batteries are added in parallel to Circuit B.
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Add two more batteries in parallel to Circuit B. What do you observe?
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5. What is the voltage of one battery?
6. When batteries are connected in series, the voltage of all batteries is added together.

How much voltage is in a series circuit with four batteries? $\qquad$
How much voltage is in a series circuit with seven batteries? $\qquad$
7. When batteries are connected in parallel, the voltage is the same as one battery.

How much voltage is in a parallel circuit with four batteries? $\qquad$
How much voltage is in a parallel circuit with seven batteries? $\qquad$
8. You are taking a battery powered nightlight with you camping. Would you want the batteries wired in series or parallel? Explain your answer.
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