### Circuit Design: LEDs in Series

If at any time one of your components gets **hot**, immediately disconnect your battery, consider the probable cause, and then discuss the issues and corrective action with one of the student instructors.

To ensure the predictable behavior of your LED Circuits, nothing is more important than considering the **voltage** requirement of your preferred arrangement. So, consider this.

1. *Kirchhoff’s Voltage Law* states that **all** the voltage in a working circuit must be used up!

2. An LED datasheet indicates the voltage and current requirements for optimum performance of the device.

3. Individual alkaline batteries (AAA, AA, C, D) provide **1.5V** each.

**Task**.

The table below is a screen capture of an Excel worksheet that can be used to design a LED Series circuit for optimum performance. Try to participate in the determination of these calculations as we develop them together in class.

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