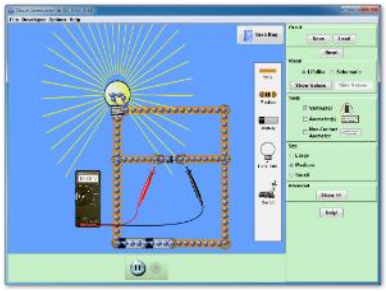
Circuits Lab: Prelab

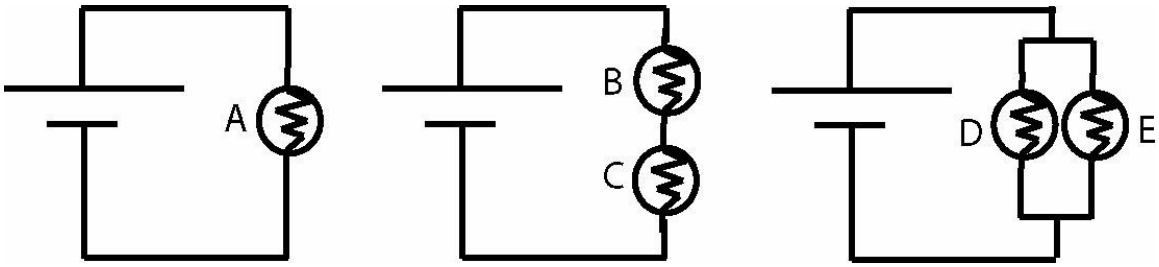


You'll be doing some work with the *Circuit Construction Kit* simulation from PhET.colorado.edu.

Hint: You can right click to disconnect components or to change the values of certain components.

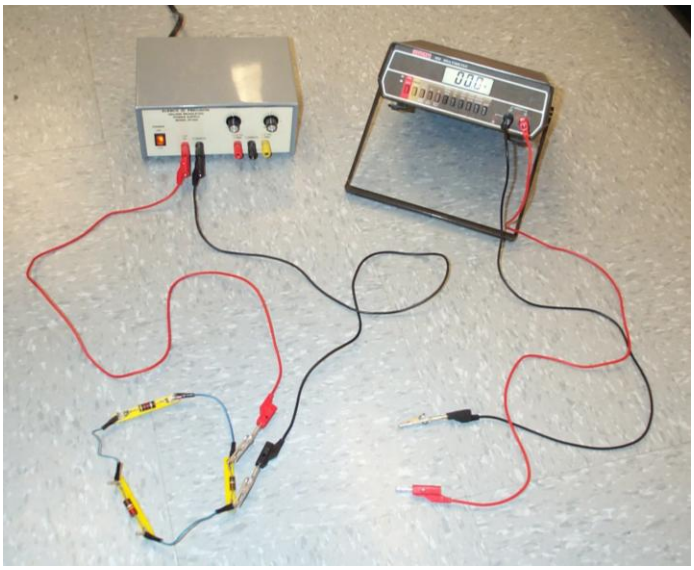
2. Once you've familiarized yourself with the simulation reset the screen. Using a SINGLE lightbulb SINGLE battery and SINGLE wire, see if you can get the lightbulb to light. Once you're successful, print the result.

3. For the circuits below rank the relative bulb brightness from brightest to dimmest (use CCK if you like). Note all batteries are identical and ideal. All lightbulbs are identical and ideal. Bulb brightness reflects the power dissipated in the bulb and that the bulb is a resistor.



4. In 50 words OR MORE describe WHY the bulbs are ranked as they are. Present your reasoning in every day language so that a friend who has never taken physics would understand your reasoning for why you ranked the bulbs as you did (you can use words like voltage difference, current, energy etc, but no explicit formulas).

5. Look at the picture below. Draw a *schematic* diagram (like the diagrams in 3.) of the resistors and power supply on the left side of the picture below.



6. Choose the schematic below that you think best represents the circuit in 5. above.