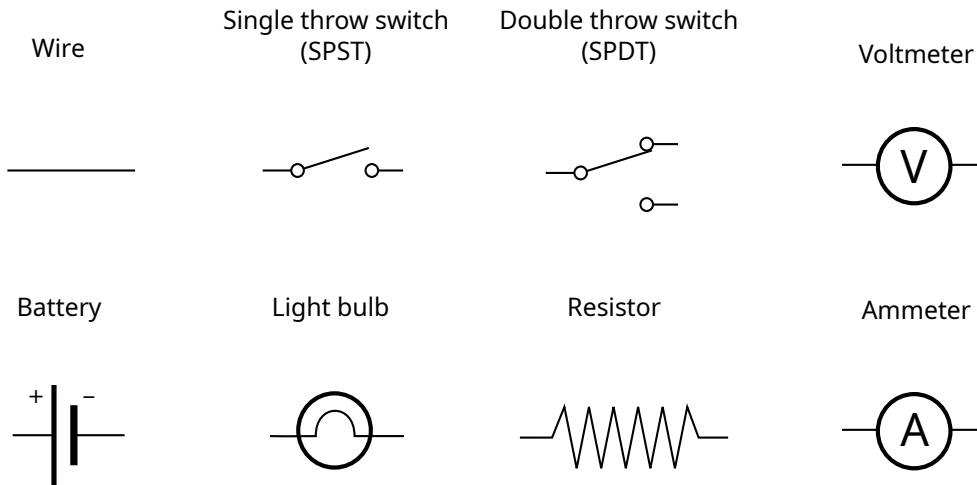


Worksheet: Electrical Circuits I

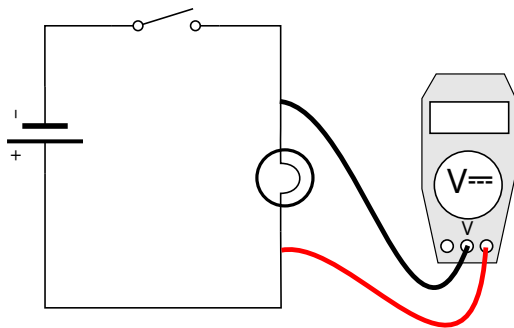
Name: _____ Group name: _____

In this lab you will build circuits and draw the associated **circuit diagrams**. In circuit diagrams, each device is represented by a symbol. Circuit diagrams are not to scale, they just specify in a clear way which component is connected to which. Here is a list of symbols commonly used:

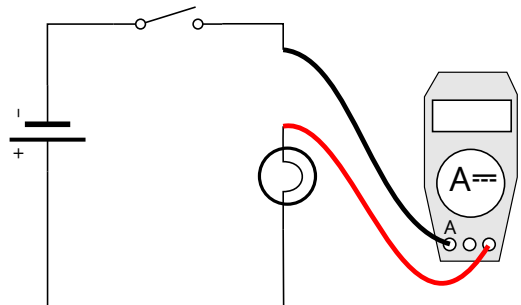


You will also measure **voltage** and **current**. Remember that you measure voltage **between** two points in the circuit (the difference in energy per charge between two points), while you measure current **through** a piece of circuit. **Never measure current without either a resistor or a lightbulb in series**, you can damage the multimeter!

Measuring Voltage



Measuring Current



4. Build a circuit with two bulbs and batteries to provide 3 V so that one bulb stays lit when the other bulb is unscrewed.

- Draw the schematic below.

- How are the two bulbs connected? Series Parallel (circle one)

5. Use a double-pole switch to build a circuit so that one bulb is lit when the switch is closed to the right, and the second bulb is lit when the switch is closed to the left. Draw the schematic for this circuit below.

6. Wire a 3-way switch (see circuit diagram). A three-way switch allows allows two switches to control one light bulb such that either switch can turn the bulb on or off. This is common in houses etc. where switches at two doors control the lights in a room. Use two SPDT switches from two boards.

