

**S90 Unit 4**

**Electrical Principles and Technologies  
Topic 2: Electricity Within a Circuit**

**Circuit Elements and Diagrams p. 272- 3**

☐ Do "Light That Bulb" Activity p. 272 and fill out lab sheet

☐ Read p. 273 and complete the following notes:

Even the most complex circuits are made up of only \_\_\_\_\_ components:

1) Source: \_\_\_\_\_ ex. battery

2) Conductor: \_\_\_\_\_

3) Load: \_\_\_\_\_ ex. bulb or other resistor

4) Control: \_\_\_\_\_

☐ Label the 1<sup>st</sup> 5 symbols on the practice sheet "Circuit Diagrams"

☐ How do we make our circuit diagrams simple and easy to read?

1) Draw with a \_\_\_\_\_

2) \_\_\_\_\_

3) \_\_\_\_\_

4) \_\_\_\_\_

☐ Choose two of your circuits in #2 "Find that Bulb" and turn them into proper circuit diagrams.

**Measuring Current p. 274**

Electric current ( $I$ ) is the amount of charge that \_\_\_\_\_

We measure electric current with a:

- galvanometer (measures very \_\_\_\_\_ current, mA), or a

• **ammeter** or **milliammeter** (measures \_\_\_\_\_ currents, A).  
To measure current we need the wires of the galvanometer or ammeter to be part of your circuit.

☐ **Identify and label the galvanometer and ammeter symbols on the "Circuit Diagrams" practice sheet.**

**Measuring Voltage p. 275 - 278**

Energy for pushing electrons is available if \_\_\_\_\_ and \_\_\_\_\_ charges are separated.

Batteries use energy from \_\_\_\_\_ to energize and force electrons to the negative terminal (connection), leaving a positive terminal on the other side.

These energized electrons can now do work such as lighting a \_\_\_\_\_.

We measure energy by measuring the **potential difference** or \_\_\_\_\_ (V) between two points in the circuit using a \_\_\_\_\_. (voltmeter wires go over the circuit)

☐ **Complete both sides of the "Circuit Diagrams" practice sheet.**

☐ **Do "Electricity Within a Circuit" Lab and complete the lab sheet.**