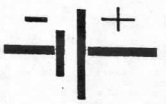
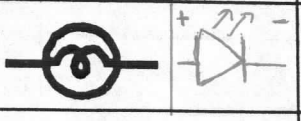
Schematic Diagrams

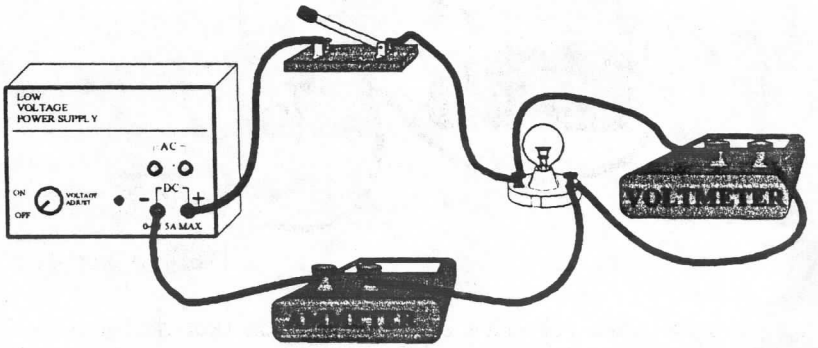
A Schematic Diagram is a short hand system for drawing an electric circuit. In order to simplify the diagrams, symbols are used instead of pictures and conductors are represented with horizontal or vertical lines.

1) Complete the table below with the names for the schematic symbols shown.

Schematic Symbol	Part Name
	
	
	
	
	
	

2) Draw the Schematic Circuit Diagram for the circuit below. Remember conductors are represented with horizontal or vertical lines.

Circuit Picture



Schematic Circuit Diagram

Light bulb

LED

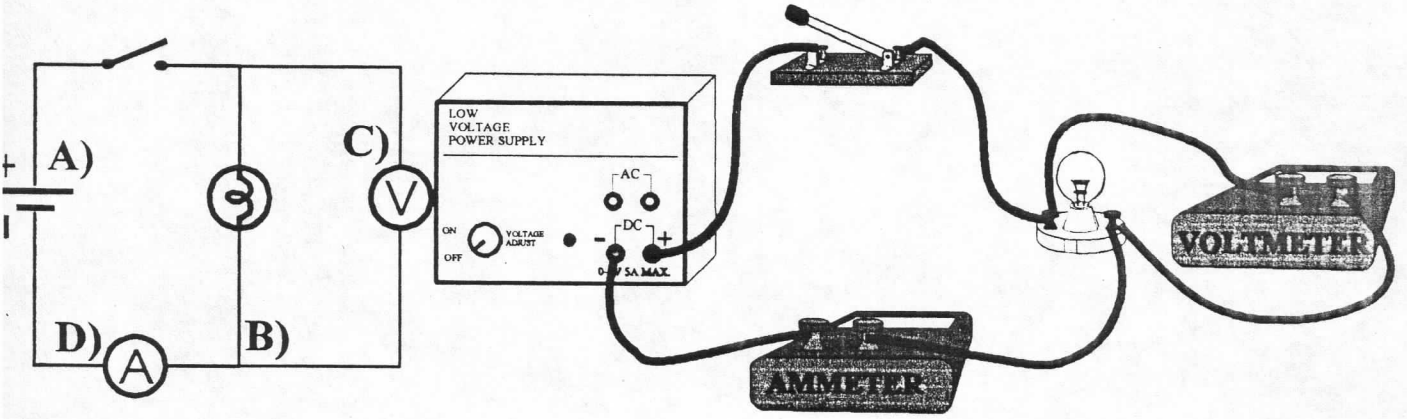
REALITY CHECK - Wiring Real Circuits

Models and theories are useful in explaining and predicting what happens in real circuits. But they must be checked to ensure they are always useful. Unfortunately wiring real electric circuits from schematics can be difficult. There are a few tricks that will help.

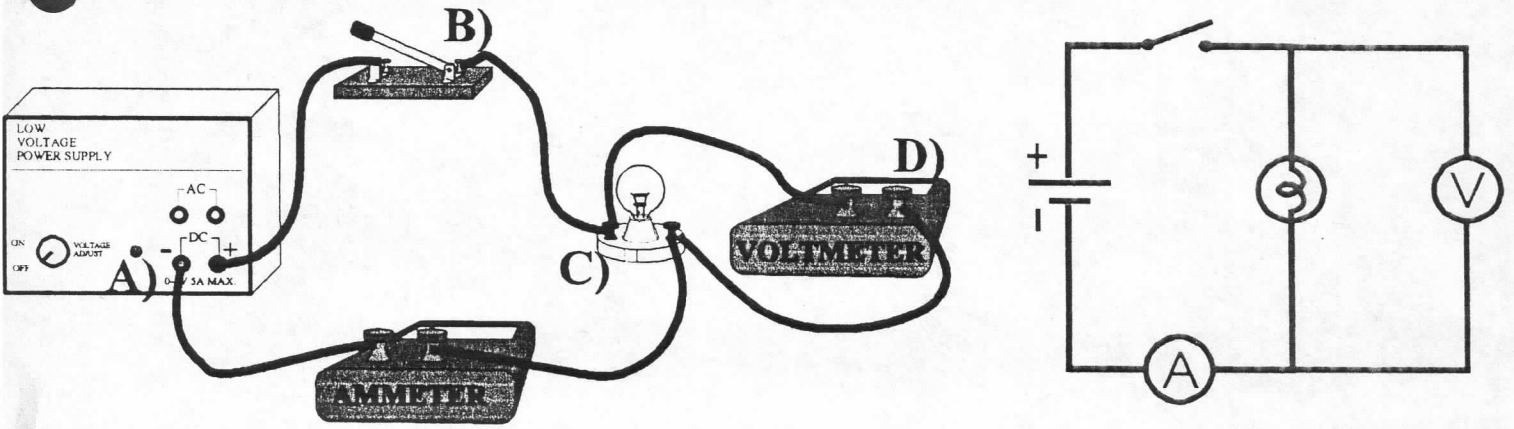
Trick #1 Place all the circuit parts in the same relative position that they are in the schematic diagram. This will help you locate where to connect the different meters later.

Practice comparing locations on the schematic and real circuits with the pictures below

1) Label all the points indicated on the schematic diagram on the circuit picture.



2) Label all the points indicated on the circuit picture on the schematic diagram.



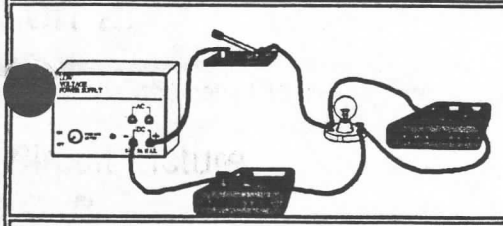
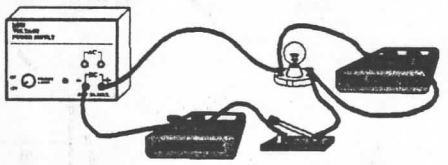
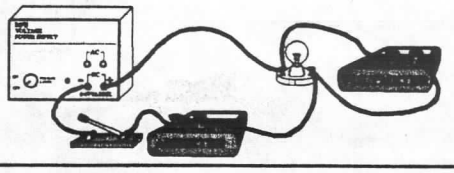
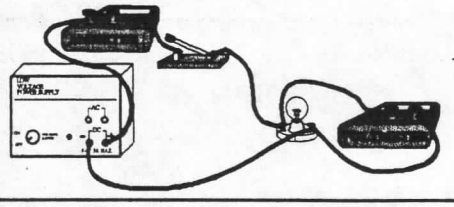
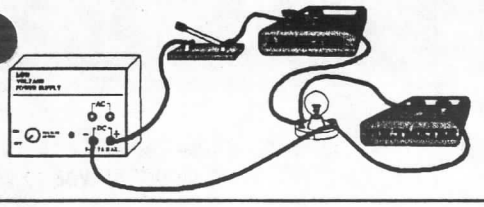
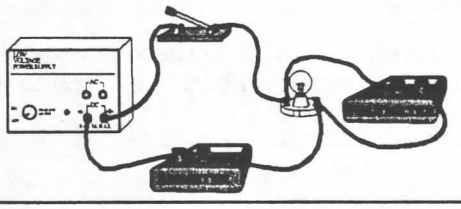
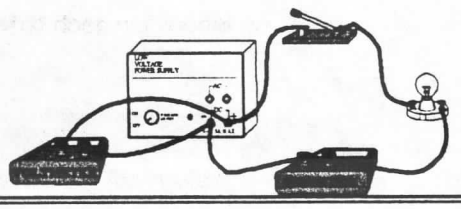
Trick #2 If the light bulb does not light when the switch is closed, there are a number of things you should do.

- Check the bulb to make sure it is screwed in tightly and not burned out
- Check all connections to see if they are loose by gently shaking them. Sometimes loose connections act like little open switches that you can not see.

Wire the circuits shown and complete the table.

Name:

Date:

Circuit Picture	Schematic Diagram	Ammeter	Voltmeter
			
			
			
			
			
			
			

Complete these statements.

1) In these circuits, the amount of current measured anywhere in the circuit is about _____ .

2) In a circuit containing ONE bulb, the voltage drop across the bulb is about _____ the voltage gain across the source.

3) In these circuits, a switch placed _____ will control the light bulb.

Answer pg 141 #1-3

Designing Circuits

Goal • To help you draw circuit diagrams.

What to Do

Use information from section 11.3 to help you draw the circuit diagrams described below.

Be sure to use the proper circuit symbols and label your drawings, including the positive and negative terminals of the battery, ammeter, and voltmeter. In each diagram, include an arrow to indicate the direction in which the current flows.

1. Draw a diagram of a circuit that consists of a 9 V battery, an ammeter, and a 25 Ω resister in series. Include a voltmeter that is measuring the potential difference across the resistor.

2. Draw an electric circuit consisting of a battery made up of two 1.5 V cells, a switch, two lamps, and an ammeter in series.

3. Draw an electric circuit consisting of a battery made up of four 1.5 V cells, one switch, one lamp, two 0.50 Ω resistors in series, and a voltmeter connected across the resistor that the current flows through first.

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