SNC 1P ELECTRICITY REVIEW

1. Use the words below to complete the following sentences.

charged	**electricity**	**electroscope**	**insulator**	**metals**	**stronger**
repel	**pith**	**negatively**	**object**	**ebonite rod**	**fur**
rubbed	**conductor**	**neutral**	**attract**	**lightning**	

1. Like charges ___repel__.
2. Opposite charges ___attact___.
3. Charged objects attract ___neutral__ objects.
4. A(n) __conductor___ permits the flow of electrons.
5. A substance that does not allow the flow of electrons is a(n) __insulator__
6. When an object has electrons added to it, it becomes __negatively_ charged.
7. A positively __charged_ object has lost electrons.
8. A __lightning__ rod provides a safe path for electrons to the ground
9. An object that has a _weak__ hold for electrons when 2 objects are ___rubbed__ together will become the one with the negative charge.
10. _Metals_ are good conductors of ___electricity_____ since they permit the flow of electrons
11. A(n) __electroscope__ detects the presence of electrical charge
12. Charging a _pith__ ball by contact involves touching the neutral pith ball with a charged __object_____.
13. A(n) ___ebonite___ will become negatively charged if it is rubbed with _fur_.

2. Matching: Match circuit symbols on the right with the description on the left.

Use the web site to practice the matching activity

3. Match the electricity term on the left with the description on the right.

_E_ potential difference	A. measures potential difference in a circuit
_B_ current	B. I
_D_ resistance	C. A
_A_ voltmeter	D. unit is ohms
_F_ ammeter	E. V
_C_ ampere	F. measures current in a circuit

Ohm's Law

4a) Write an equation for Ohm's Law.

$V=I \times R$

b) Given: V = 6 V and I = 3 A, Calculate R.

R = V/I
R= 6/3
R=2 ohms

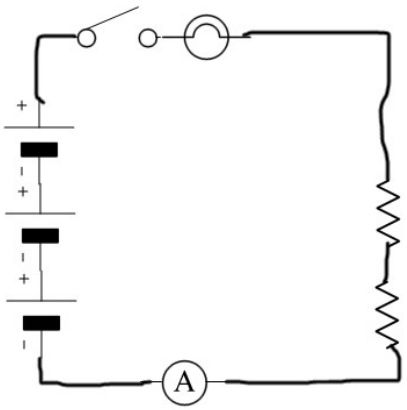
c) Given R = 2 ohms, and V = 8 volts, Calculate I.

I=V/R
I=8/2
I=4 amps

d) Given R = 3 ohms, and I = 5 amps, Calculate V.
V=I*R
V=5*3
V=15 volts

Circuits

5. Draw a series diagram with: 1 light bulb, an open switch, connecting wires and a 3 cell battery, an ammeter, with 2 resistors, one 15 ohm and one 25 ohm.



Questions

a) In order for electric current to flow around this circuit, what must happen?
The switch must be closed

b) In making a complete circuit, how do you connect the 2 wires to the battery?
A different wire to each end

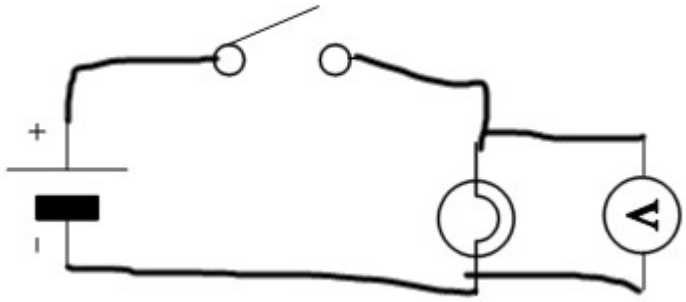
c) Which terminal of the battery do the electrons flow from?
Electrons flow from the negative end of the battery

d) What will happen if you have made a circuit using a dead battery?
There will be no current flow

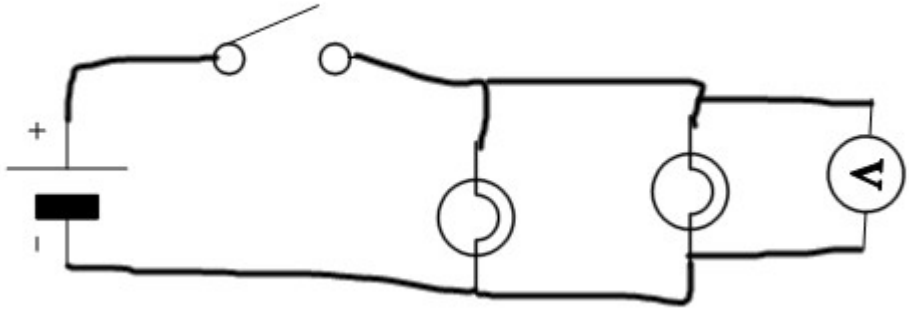
e) How was the ammeter connected in this circuit? (in series or parallel)?
Ammeters are connected in series

f) State how you would connect a voltmeter in a circuit. Draw a basic circuit with one cell, one lamp, a switch, connecting wires, and voltmeter to show how.

Voltmeters are connected in parallel



g) Draw a parallel circuit. Use a 12 V battery, a voltmeter, a switch, connecting wires, and 2 light bulbs connected in parallel.



6. True or False. Comparing Series and Parallel Circuits. Read the following statements. Write "T" for true, and "F" for false.

a) In a parallel circuit, the potential difference across each load is the same __T____
b) In a series circuit, the current traveling through each load is equal ___T___
c) In a series circuit, if one bulb goes out, the rest stay on __F____
d) In a parallel circuit, all bulbs stay on if one goes out ___T___
e) Wiring in parallel cost more money since they require more metal ___T___
f) In a series circuit, there are many pathways for electrons to travel ___F___
g) In a parallel circuit, there is only 1 pathway for electrons to travel ___F___

7. What are renewable resources?
Wind, Biomass, Tidal, solar, Hydroelectric, Geothermal, Fuel Cells

b) Non renewable?
Coal, Nuclear Fission, Oil, Methane

c) Give examples of 2 renewable and 2 non-renewable resources that are used in the generation of electricity.
All of each above are used to produce electricity

d) Why is the shortage of energy a problem?
Huge amounts of batteries would be required to store enough energy

e) Give examples of energy sources that can be used in Canada? Outside Canada?

All are appropriate for use in Canada.