Electrical Circuits – Interactive Computer Lab

You will visit various sites to complete this interactive circuitry lab.

- ☐ Please go the following Electricity website:
  http://www.woodlands-junior.kent.sch.uk/revision/Science/electricity.htm

- ☐ Click on "Simple Circuits" and work your way through the module. This will serve as a quick review for you. Answer the questions below based on the module.

  1. What 2 things are required for electricity to flow?

  2. What is the purpose of the battery in a circuit?

  3. What is the purpose of a switch in the circuit?

  4. Does it matter where the switch is placed in the circuit?

- ☐ Go back to the homepage and click on "Test Yourself" for "Simple Circuits" and record your score: Score: _____/_____

- ☐ Go back to the homepage and click on "Building Circuits" and work your way through the module. Answer the questions below based on the module.

  1. What is the symbol for an open switch?

  2. What is the symbol for a light bulb?

  3. Draw out the circuit diagram you created for the fan.

  4. Draw out the circuit diagram you created for the alarm system.

  5. Record your answers for the Summary Page:
     a.
     b.
     c.
     d.

- ☐ Go back to the homepage and click on "Test Yourself" for "Building Circuits" and record your score: Score: _____/_____

- ☐ Go back to the homepage and click on "Circuit Experiments" and work your way through the module. Answer the questions below based on the module.

    1. A series circuit has…_____
    2. What happens when you add a second bulb to the series circuit? Why does that occur?
    3. What happens when you add another load (light bulb, motor, etc) to a series circuit?
    4. Record your answers for the Summary Page:
        a.
        b.
        c.

- ☐ Go back to the homepage and click on "Test Yourself" for "Circuit Experiments" and record your score: Score: _____/_____

- ☐ Please go the following website: http://www.learnalberta.ca/content/seg/gizmoLauncher.html?URL=http://www.explorelearning.com/index.cfm?method=cExtAccessSecure.dspResource&ResourceID=398
- ☐ Complete the following activities:

Series Circuits

1. Create a series circuit that can light two bulbs with a switch. Draw the circuit you created below.

    Insert the ammeter before and after the light bulbs and record the current flowing –
    before:_____A after :_____A

2. Is it possible to control only one bulb with your switch?
3. Increase the voltage of the battery, how does that impact the intensity of the light?
4. What happens to the intensity of the light from each bulb if you add 2 more bulbs to your circuit. Try it! Draw the circuit you created below.

    Insert the ammeter before and after the light bulbs and record the current flowing –
    before:_____A after :_____A

5. Draw a parallel circuit that can light two bulbs with one switch. Draw the circuit you created below.

Insert the ammeter and record the current flowing at the following points –

Negative battery terminal :_____A Positive Battery Terminal :_____A
Lightbulb 1 :_____ A Lightbulb 2 :_____A

6. Using the same circuit you created above add another switch that would allow you to turn off one of the light bulbs while one remains on. Draw the circuit you created below.

7. Using the same circuit you created above insert some resistors. What happens to the intensity of the light as you move from a resistor with a low value to one with a high value?

8. Find a way to have one light bulb shining brightly while the other one is dull. Draw the circuit you created below.

Insert the ammeter and record the current flowing at the following points –

Negative battery terminal :_____A Positive Battery Terminal :_____A
Lightbulb 1 :_____ A Lightbulb 2 :_____A

☐ Complete the Assessment Questions 1-4 (don't worry about your answer to #5 as it is beyond the scope of our unit). Record your score for questions 1-4
Score_____/4

- ☐ Please go the following website:
  http://wonderville.ca/v1/activities/energy/energy.html

- ☐ Be sure to listen to the introduction and work through the Energy Street activity

Build 3 different streets and for each one record the following:

Street 1	Street 2	Street 3
Street Rating:	Street Rating:	Street Rating:
Efficiency:	Efficiency:	Efficiency:
Happiness:	Happiness:	Happiness:
City Planner Rank:	City Planner Rank:	City Planner Rank:

If you have time work your way through Energy Meter Madness and then Save the World found in the Games and Activities Menu.