

Unit 3 - Electricity

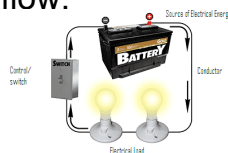
Chapter 8: Ohm's law describes the relationship of current, voltage, and resistance.

- Review
- Circuit Diagrams
- Assignment
- Challenge
- Homework

Sep 8-9:31 AM

Review

Electric circuit: A complete pathway that allows electrons to flow.

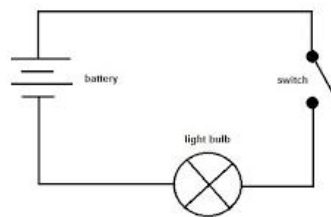


- 1) **source:** Where a form of energy is converted to electrical energy
- 2) **Electrical load:** Takes Electric energy and converts it into other forms of energy
- 3) **Control/switch :** Opens and closes the circuit
- Turns circuit on and off
- 4) **Conductor :** Wires made of good conductors
- conducts electrons around the circuit

Mar 4-8:12 AM

Circuit Diagram Symbols


















- Electricians often have to draw out a circuit
- Instead of drawing each part in detail, they use simple symbols























Mar 14-9:00 AM

Circuit Diagram Symbols

Circuit diagram symbols:

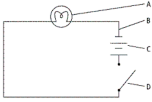
- **bulb/Load** : Uses the electrical energy
  OR 
- **cell**: single cell that provides electrical energy
 
- **battery**: multiple cells that provide electrical energy
 
Battery
- **wires**: Conductors that bring electrons around the circuit
 
- **resistors**: Create a certain voltage and current in a circuit
 
R
- **ammeter**: a machine that tells the current in a circuit
 
- **voltmeter**: a machine that tells the voltage in a circuit
 
- **open switch/closed switch**: stops or allows the current to flow in a circuit
 

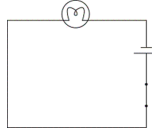
Mar 18-10:28 AM

Questions

1. Label the following:

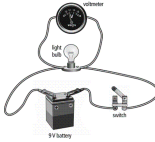


2. When the switch is opened, what happens to the electrons in the circuit?



3. Using the proper circuit symbols, draw and label a circuit that contains a single cell, a lamp, and a switch. Use arrows to indicate the flow of electrons.

4. Draw a circuit diagram for the circuit shown.



Mar 18-11:49 AM

/25.5 = ____%

Name: _____

Grade 9 Science Unit 3
Chapter 7 and 8 Assignment

1. Which best describes static electricity? (1 point)
 - A. charges that can be collected and held in one place
 - B. charges that exist on a neutral object
 - C. charges that power your computer
 - D. charges that travel through a conductor

2. An object contains 5 million electrons. It is neutral. How can this be? (1 point)
 - A. Electrons have no charge.
 - B. It also contains 5 million protons.
 - C. The electrons are spread out evenly in the object.
 - D. The object is an insulator.

3. In order for current to flow around the circuit, which condition must be satisfied? (1 point)
 - A. An ammeter must be placed in the circuit.
 - B. Both wires must be connected to the positive terminal of the battery.
 - C. The switch must be in the closed position.
 - D. The switch must be removed from the circuit.

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4. When the switch is opened, what happens to the electrons in the circuit? (1 point)

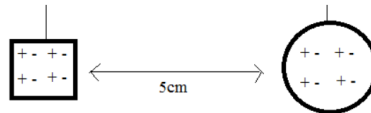
- A. More are added.
- B. Some are removed.
- C. They begin to move.
- D. They stop moving.

Short Answer

1. What are the correct charges on the particles of an atom? (1.5 points)

Proton	Electron	Neutron

2. Two charged objects are positioned 5 cm away from each other. (3 points)



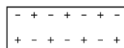
(a) The **charge** on one of the objects is **increased**. Does the **force** between the objects increase or decrease?

(b) The **distance** between the objects is **increased** to 10 cm. Does the **force** between the objects increase or decrease?

(c) The **charge on both** of the objects is **decreased**. Does the **force** between the objects increase or decrease?

Mar 21-2:18 PM

3. The diagram below represents a **neutral** solid object. (4 points)



Use (-) to represent electrons and (+) to represent protons to complete the diagrams.

(a) A **positive** rod is positioned **near** the original object. Draw what happens to the protons and electrons?



(b) A **positive** rod is **touched** to the original object. What happens to the protons and electrons?



4. Name 2 of the three Laws of electric charges. (2 points)

Mar 21-2:19 PM

Attachments

1206Attendance.xlsx