Name _____ Date _____ Class _____

Lesson Outline

LESSON 2

Electric Current and Simple Circuits

A. Electric Current and Electric Circuits

1. A(n) _____ is the movement of electrically charged particles.

2. An electric current can flow in a(n) _____ path to and from a source of electric energy.

a. A(n) _____ is a closed path in which an electric current travels.

b. If the circuit is broken, or _____, then electrons do not flow.

3. The number of electrons leaving a power source _____ the number of electrons entering it.

4. Electrons are counted using a unit called the _____.

a. The SI unit for electric current is the _____.

b. An ampere is about 1 _____ of electrons flowing past a point in a circuit every _____.

B. What is electrical resistance?

1. _____ is a measure of how difficult it is for an electric current to flow in a material.

2. The unit of electric resistance is the _____.

3. A good conductor has _____ electric resistance, and a good insulator has _____ electric resistance.

4. Electric resistance depends on the _____ and the thickness of the material.

a. When the thickness of a conductor increases, its electric resistance _____.

b. When the length of a conductor increases, its electric resistance _____.

Lesson Outline continued

D. Ohm's Law

1. The _____ and the resistance of a circuit are related. When the resistance of a circuit increases, the current in the circuit _____.

2. _____ is a mathematical equation that describes the relationship among _____, current, and _____.

a. According to Ohm's law, voltage equals _____ times resistance.

b. When using Ohm's law, voltage has units of _____, current has units of _____, and resistance has units of _____.

3. When current is constant, devices that have _____ resistance use more electric energy.