

Electricity & Electronics Activity Guide

Objectives

In this unit, students will:

1. Develop and describe electrical systems and their components
2. Describe the elements and concerns of electrical safety and practices.
3. Use and apply electronic graphical symbols used in electrical schematics.
4. Demonstrate a working knowledge of the proper use of an electrical multi-meter.
5. Determine the interrelationship of electricity and magnetism
6. Use Ohm's Law to calculate formulas pertaining to electrical circuits

Day #	Activity #	Activity Description	Type of Activity
1	1	Static Electricity	Project
1	2	Electronics Trainer	Reading
1	3	Multi-meter Learn function and proper use of the multi-meter	Project
2	1	Ohm's Law 3 basic electrical properties: voltage, current and resistance	Project
2	2	Measure Voltage and Current Measure voltage and current of a circuit and its components	Project
3	1	Magnetism Be able to describe magnetism and its effects on objects	Project
3	2	Electromagnetism Demonstrate the effects of controllable magnetic force fields	Project
4	1	Electricity Explore information about various topics related to electricity. Write in journal	Internet
4	2	Potentiometers Explore potentiometers, both in fixture and variable status	Project
4	3	DC Series Circuit Understanding basic series circuits and its relationship to voltage, current and resistance	Project
5	1	Narrative Writing activity/on-screen multiple-choice test Explain magnetism and the potentials for transportation	Test
5	2	Parallel Circuits Understanding parallel circuits and their relationship to voltage, current and resistance	Project
6	1	Electricity and energy Explore internet site. Write in journal.	Internet
7	1	DC Motors and Generators Study characteristics of motors and generators	Project
7	2	Switches Become familiar with the most common switches used within a circuit	Project
8	1	Voltage Circuit Determine the relationship between voltage, amperage and resistance. Explain in journal how the circuit was completed.	Internet
10	1	Design Brief	Project
10	1	Persuasive Writing activity/on-screen multiple-choice test Explain what it would be like to live without electricity	Test

NOTE:

- There are many small parts such as magnets that need to be kept locked up at all times.
- Make sure students turn multi-meter switch to off position after use; this extends battery life.
- When students use the color code chart for resistors, they may need a little help understanding how resistor values are calculated using the color bands painted on the resistors.

Modified by Mae Thomas, Tech Lab Instructor

1/29/08