Basic Wiring

Module 5, Task 1	Course of Study Crosswalk:	BW 13
Module	AC Fundamentals	
Task / Topic	Identify electrical terms, componer	nts and symbols
Content Standard	The student will identify electrical terms, components, and symbols.	
Overview/Annotation		
Evaluation	Given a handout of electrical symb resistors capacitors, fuses, bells, lig SPDT switch, DPST switch, DPDT time for practice, the student will d of symbols.	ols (that includes as a minimum thts, batteries, cells, SPST switch Switch, rectifier, transformers) and raw and correctly identify at least 90%
Resources	Handouts Blueprints Wiring diagrams	
Lesson Length		
Instructional Method		
Lecture	Class Discussion Team	Work Review
Demonstration	MultimediaIndivi	dual Work Other
Assessment Strategy		
Homework	Written Test Teach	her Observation Other
Class work	Performance Test On-T	ask Ability Other
Integrated Content Code		
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Module 5,	Task 1	
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- 1. Discuss different types/terms of symbols.
 - a. Schematic
 - b. Pictorial
 - c. Architectural
 - d. Industrial
- 2. Explain use of symbols.
- 3. Explain why symbols must be standard and approved.
- 4. Identify circuit components.
 - a. Conductor control the movement of current in a circuit.
 - b. Semiconductor allow a limited movement of current in a circuit.
 - c. Insulator allow very little movement of current in a circuit.
 - d. Transducer converts one type energy to another type.
 - e. Battery a group of cells connected together.
 - f. Cell a single-unit of a battery that produces DC voltage by converting chemical energy into electrical energy.
 - g. Resistor does not change value regardless of current or voltage flowing through the device.
 - h. Thermocouple devices that convert heat energy into electric energy.
 - i. Inductor a coil of wire wound around a core that stores energy in the form of a magnetic field.
 - j. Capacitor a device consisting of two parallel conductor plates separated by an insulator; stores energy.
 - k. Switch conductors which open or close a circuit.
 - 1. Fuse protective device to protect circuits from excessive current or overloads. Opens by melting or blowing.
 - m. Circuit Breaker protective device to protect circuits from excessive current or overloads. Opens by magnetism or bimetallic principle.
 - n. Ground Fault Interrupter a special type of circuit breaker designed to protect people.
- 5. Explain the identifying characteristics of each component.
- 6. Define AC electrical terms.
 - Alternating Current the polarity of the energy source changes periodically.
 - Ammeter an instrument for measuring electrical current.
 - Ampere basic unit of electrical current.
 - Amplitude the peak of a signal.
 - Anode the terminal by which the electrons exit from a device.
 - o Battery an assembly of cells maintaining a potential difference (voltage) between its terminals.
 - Capacitance the property of a component to oppose any change in voltage across its terminals, by storing and releasing energy in an internal electric field.
 - Cell a single-unit of a battery that produces DC voltage by converting chemical energy into electrical energy.
 - Circuit the path followed by the flowing electrons (current) from the point where they leave the electricity generating facility until they return to it in a closed loop or path.
 - Conductance the ability of a substance to carry electrical current.
 - Conductor a substance having many free electrons.
 - Contactor a switch that is closed or opened by the magnetic pull of an energized relay through the external circuit.
 - Coulomb a great number of electrons equivalent to 6.25×10^{18} electrons.
 - Current the rate of flow of electrical charges (electrons).
 - Cycle a complete reversal of an alternating current, from positive to negative and back to the starting point.

- Electron a very small negatively charged particle which can flow from one atom to another in a conducting material.
- Farad a unit to measure capacitance.
- Frequency the number of cycles in one second.
- Henry a unit used to measure inductance.
- Hertz the unit that measures frequency.
- Inductance the property of a component to oppose any change in current through itself, by storing and releasing energy in a magnetic field surrounding itself.
- Multimeter an all-in-one meter. Measures volts, ohms, watts, amps, resistance, etc.
- National Electric Code (NEC) published minimum standards to encourage effective safe electric wiring procedures, and types of materials.
- Oscilloscope an electronic device that observes waveforms.
- Peak maximum or highest amplitude level.
- Period the time required to complete one full cycle.
- Power the rate of doing work.
- Programmable controller an electronic device, using microprocessors, for the control of electrical machinery.
- Resistance the property of a component to oppose the flow of electrical current through itself.
- \circ Sine wave a uniform that is generated by a single frequency.
- Transformer a device that converts voltage and current level.
- Voltage the difference in potential energy between two electrical points.
- Voltmeter an instrument for measuring potential differences in volts.
- Watt the unit of electrical power.
- Waveform the shape of a wave.

Module 5, Task 1	Provision for Individual Differences	
Extension		
Remediation		
Assemmedation		
Accommodation		
Modification		
Definitions and Suggested M	lodifications	
Attention Deficit Disc	order	
Autism		
Deaf-Blindness		
Deafness/Hearing Impairment		
Emotional Disturbance		
Mild Intellectual Disability		
Orthopedic Impairment		
Speech or Language Impeirment		
Speech of Language Impairment		
Traumatic Brain Injury		
Visual Impairment		
v isuar impairment		