# Anoka-Hennepin Secondary Curriculum Unit Plan

| Department: | Career Technical Education | Course: | Construction Careers: Building Trades | Unit 5 Title: | Electricity | Grade Level(s): | 11-12 |
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| Assessed Trimester: | | Pacing: | 10 Days | Date Created: | | Last Revision Date: | |

**Course Understandings**: *Students will understand that:*

- The field of construction trades and its area of specialization.
- Organizational skill, problem solving, critical thinking, and assessment skills are the essential tools used in construction trades.
- Math, in its various forms, are foundational to the construction trades.
- Attention to detail, resulting in a safe work environment and a high quality product, is the driving force within construction trades.

## DESIRED RESULTS (Stage 1) - WHAT WE WANT STUDENT TO KNOW AND BE ABLE TO DO?

### Established Goals

**Minnesota State/Local/Technology Standard(s) addressed:**

- **Professional Attributes** - A1 Displays high standards for attendance and punctuality, A2 Displays a positive attitude, A3 Displays appropriate behavior, A4 Works effectively as a team member, A5 Applies listening skills, A6 Applies speaking skills
- **Fundamental Carpentry Skills** - E9 Uses squares, measuring tapes or rules to measure materials or distances, E11 Performs mathematical calculations
- **Hand Tools** – F1 Identifies and correctly uses hammers, F2 Identifies and correctly uses handsaws
- **Power Tools** – G1 Identifies and correctly uses power drills, G2 Identifies and correctly uses power saws, G3 Identifies and correctly uses sanders, G7 Identifies and correctly uses pneumatic nailer
- **Reading Plans** – H4 Reads and interprets elevation view drawings
- **Electrical Technology** – G1 Plans location of electrical boxes, panels and conduit runs, G7 Mounts electrical boxes, panels and conduit, G14 Identifies and pull conductors, G15 Splices wires, G23 Installs single pole, 3-way and 4-way switching circuits, G26 Installs receptacles, pilot lights and GFCIs
- **Estimating Materials** – J1 Estimates rough framing materials, J3 Estimates roofing materials, J11 Estimates siding
- **Rough Framing** – L3 Installs sill plate, L6 Lays out and constructs floor assembly, L8 Installs floor joists, L9 Installs subflooring, L11 Constructs and erects wall sections, L13 Cuts studs, trimmers, cripples, and headers to dimensions, L21 Lays out rafter locations on a top plate, L22 Cuts and installs rafters, L23 Applies roof sheathing
- **Installing Exterior Finishes** – N1 Installs air and vapor barrier, N2 Installs box cornices, N3 Installs rake cornices, N4 Installs wood or vinyl fascia, N5 Installs wood or vinyl soffits

### Transfer

**Students will be able to independently use their learning to: (product, high order reasoning)**

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### Meaning

| Unit Understanding(s): | Essential Question(s): |
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| **Students will understand that:**<br>● The application of basic construction concepts is foundational to all types of construction projects<br>● Mastery of basic construction concepts is required to be successful in construction trades<br>● Mastery of basic construction concepts is required to be able to work in conjunction with other carpenters<br>● Basic construction concepts apply to both new construction and remodeling projects | **Students will keep considering:**<br>● What is electricity?<br>● Why are there electrical codes?<br>● How do you work with electricity safely?<br>● What is a circuit?<br>● What tools do you use in electrical wiring? |

### Acquisition

| **Knowledge - Students will:** | **Skills - Students will:** |
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| ● Know the terminology used in electrical work<br>● Know the procedures used in wiring control circuits<br>● Know electrical codes and safety protocol<br>● Know the correct use of electrical tools<br>**Reasoning - Students will:**<br>● | ● Apply basic construction concepts to electrical projects<br>● Demonstrate electrical tool safety<br>● Demonstrate safety with electricity<br>● Explain the reason for electrical codes<br>● Estimate cost of materials for an electrical project<br>● Interpret a wiring schematic to complete an electrical circuit |

| **Common Misunderstandings** | **Essential new vocabulary** |
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| ● Inability to do math<br>● Illiteracy in either or both reading and writing<br>● How to read a schematic<br>● Deciding on the correct tools for the job<br>● Construction codes for electrical wiring | ● |