**Basic Residential Construction Wiring**

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| **Purpose**  The Basic Residential Construction Wiring event will allow each contestant the opportunity to perform in a practical work environment. The project will be less complex than the next level competition. Each contestant will have the opportunity to the use their acquired electrical wiring skills to construct an electrical wiring design, using electrical blue prints, written specifications and verbal instructions based on the National Electrical Construction Wiring standards in accordance with the National Electrical Code.  **CLOTHING REQUIREMENT**  Official SkillsUSA khaki (or plain khaki) work shirt and pants, black or brown leather work shoes, safety gloves and safety glasses with side shields or goggles. (Prescription glasses can be used only if they are equipped with side shields. If not, they must be covered with goggles.)  **We have not required official contest uniforms in the past.**  **ELIGIBILITY**  Open to active SkillsUSA members enrolled in programs with electrical wiring or electrical trades as the occupational objective. **Student must NOT have more than 540 hours in an electrical trade class and provide verification at contest.**  **EQUIPMENT AND MATERIALS**  1. Supplied by the technical committee:  **a.** 8 x 4 foot wall with holes predrilled.  **b.** All necessary materials including cable, boxes, fixtures, and wiring plan. | 2. Supplied by the contestant:   1. All necessary tools. A tool list will be provided to each instructor.   **b.**  The most recent two editions of the National Electrical Code may be used during the written test.  **c.** All competitors must create a one-page résumé and submit a hard copy to the technical committee chair at orientation. Failure to do so will result in a 10-point penalty.  **Note:** Your contest may also require a hard copy of your résumé as part of the actual contest. Check the Contest Guidelines and/or the updates page on the SkillsUSA website: updates.skillsusa.org.  **SCOPE OF THE CONTEST**  The contest will assess the ability to perform jobs or skills selected from the following list of competencies as determined by the SkillsUSA Championships technical committee.  **Knowledge Performance**  The contest will include a written knowledge exam assessing general knowledge of electrical construction wiring. Written portions may also exist during the skills portion of the contest. Knowledge of terms and principles used in residential wiring will be required for the skill demonstration portion of the contest.  **Skill Performance**  The skills portion of the contest will include a series of workstations that have information and instruction sheets for wiring a residence or completing a commercial installation. All work must conform to the specifications of the latest edition of the National Electrical Code as of the January prior to the SkillsUSA Championships |

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| **Standards and Competencies**  **ECW 1.0 — Define and apply safety rules and practices in residential wiring according to NEC standards**  1.1 Apply shop rules and regulations to work stations  1.2 List the techniques and practices used to prevent fires  1.3 Use electrical and hand tools correctly  1.4 Discuss the appropriate methods for lifting and climbing ladders  1.5 Explain appropriate clothing for electrical wiring construction  1.6 Outline the safety requirements for installing temporary electrical services  **ECW 2.0 — Apply knowledge of basic wiring theory according to NEC standards**  2.1 Use wiring diagrams, schematic diagrams and prints successfully in a scenario  **ECW 3.0 — Discuss important trade information and standards according to the NEC**  3.1 Explain the purpose and use of the National Electric Code  3.2 Sketch and diagram effectively  3.3 Plan the layout of an electrical installation  3.5 Correlate specifications, prints and job sites  **ECW 4.0 — Use basic equipment and procedures defined by industry standards**  4.1 Discuss techniques of residential wiring | **ECW 7.0 — Install switch boxes and outlet boxes to meet NEC standards**  7.1 Install box hangers  7.2 Install recess boxes for outlets  7.3 Install hangable boxes  7.4 Install octagon boxes  7.5 Install surface mount boxes  7.6 Install recessed fixture housing in a ceiling  7.7 Install outlet boxes in dry wall, lath plaster or paneled walls  7.8 Install telephone boxes in dry wall, lath plaster or paneled walls  **ECW 9.0 — Rough in, connect and install electrical devices to meet NEC standards**  9.1 Rough in, connect and install a single pole switch  9.2 Rough in, connect and install a three-way switch  9.3 Rough in, connect and install a four-way switch  9.4 Rough in, connect and install a duplex grounded receptacle    Rough in, connect, and install a split wired receptacle.  9.6 Rough in, connect and install a door chime system  9.7 Rough in, connect and install a ground fault interrupting device Electrical Construction Wiring, 2018 • 2  9.8 Rough in, connect and install an emergency warning system  9.9 Rough in, connect and install a photoelectric cell control  9.11 Rough in, connect and install an exterior lighting fixture  9.12 Rough in, connect and install lighting dimmers |

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The purposes of the Electrical Construction I Contest are:

1. Provide a contest for students who have not completed more than 540 hours of Electrical Training. This allows the student to compete at a level that more closely matches his or her skill set at this time.

2. Provide a contest for students that tests their ability to wire basic circuits such as receptacles, single pole switches, three way switches, four way switches, GFCI receptacles, split wired receptacles, and keyless light fixtures that would be used in residential wiring.

3. Provide a contest for students that tests their ability to measure distances and install device boxes correctly.

4. Provide a contest for students that tests their ability to correctly support nonmetallic sheath cable using staples and other support methods as would be found in a residential application.

5. Provide a contest for students that tests their ability to correctly choose the correct type of cable, install the cable correctly, and terminate the cable correctly.

6. Provide a contest for students that tests their ability to wire branch circuits that may contain any combination of devices from the previous list of devices.

7. Provide a contest for students that tests their knowledge of the National Electric Code and tests their ability to find information in the NEC code.

NOTE: CONDUIT BENDING WILL NOT BE A REQUIREMENT FOR THIS CONTEST.

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|  | **Tool List 2020** |  |
| 1 | 9'' Linesman Pliers |  |
| 1 | 16 oz. Claw Hammer |  |
| 1 | Torpedo Level |  |
| 1 | 603-4B Phillips Screwdriver #2 |  |
| 1 | 605-6 1/4'' Screwdriver 6'' |  |
| 1 | Hard Hat |  |
| 1 | 25' tape Measure |  |
| 1 | 11045 Wire Stripper/Cutter |  |
| 1 | 1550-11Electricians knife |  |
| 1 | Tool Pouch |  |
| 1 | Tool Belt |  |
| 1 | Hammer Holder |  |
| 1 | Safety Glasses |  |
| 1 | 2014 NEC Code Book |  |
| 1 | Cordless drill |  |
| 1 | Wood boring bits |  |
| 1 | Assorted Screwdriver bits |  |
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**BASIC RESIDENTIAL WIRING**

**CONTEST VERIFICATION FORM**

Contestant: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

School: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Contest: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*\_\_\_\_\_\_ I do hereby acknowledge that the contestant listed above has less than 540 hours of Electrical Instruction.*

**Signatures:**

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(Student Signature) (Print Name)

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(Advisor Signature) (Print Name)

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Date

*This completed and signed form MUST accompany contestant to the contest orientation. Failure to provide this Verification Form to contest chairperson will result in a point deduction.*