

Kansas FFA ATM CDE

CDE Coordinator: John Bergin, john.bergin@case4learning.org

Cell phones: Not permitted

Event location(s): Wamego HS and TBA

Required materials:

- Student attire: Closed-toed shoes or boots, long pants, and long shirt or welding jacket
- Safety glasses
- Digital multimeter
- Clipboard
- Tape measure
- Pencils
- Calculator, non-programmable

Provided equipment:

- Welding helmet
- Welding gloves
- Carpenters square
- Precision equipment

Written Examination (100 points)

- 25 questions (problem solving or multiple choice)
- Five questions from each event area listed below, plus five questions from general shop safety
- Students will need a non-programmable calculator
- Unit conversions provided

Event Areas (Four areas, 100 points each)

- Machinery and Equipment
 - **Parts ID:** ZTR Lawn Mower. Parts can include parts tagged on equipment or a table.
 - **Service Manual:** Identify items, schematics, part numbers from service manual
 - **Precision measurement:** Measure parts with a micrometer, dial caliper, and/or feeler gauge
- Electricity
 - **Residential electricity:** Identify errors within a residential wiring board.
 - **Electrical testing:** Test equipment, circuits, and components with a DMM. Potential readings include: Battery testing, voltage drop, current draw, resistance, voltage, diode testing, continuity.
 - Current draw test will have a supplied [multimeter](#) with an Amp clamp.
 - For the remaining tests, **students should supply their own DMM**. A \$20 one from Walmart will work fine. Cheaper versions from discount stores are not precise enough.

- Structures
 - **Carpentry:** Stair layout, layout a wall from a plan, rafter layout. Students draw layout on a piece of butcher paper.
 - **Bill of materials:** Calculate the cost of a project (drawing and prices provided)
- Metal Fabrication
 - **Welding skill:** SMAW welding. Demonstrate skills to produce a product in specs with a CAD drawing.
 - **Welding prints:** Identify welding symbols, check parts to a schematic, check items if they are square.

Resources

- Agricultural Mechanics Fundamentals and Applications, 7th Edition
- How to Read Shop Drawings, Lincoln Electric
- [Fluke Digital Multimeter Basics Online Course](#)
- Heavy Equipment Power Trains and Systems
- [Minnesota Schools Laboratory/Shop Safety Manual](#)

Team Score

- Team of four students.
- Top four individual scores are added for the total team score.
- Individual score (500 points possible, 400 points from skills, 100 points from test)

Tie Breakers

- Team—Ties will be broken in this order:
 1. Team test score
 2. Team metal fabrication score
 3. Highest individual drop score
- Individual— Ties will be broken in this order:
 1. Individual test score
 2. Highest practicum score (from all four areas)
 3. Individual welding score

Event Schedule

7:15 am – 7:45 am	Registration (TBD)
7:45 am – 1:00 pm	CDE
1:15 pm	Pick up (TBD)