

---

# WELDING



State 4-H O-Rama

Senior 4-H'ers



## OVERVIEW

The welding contest is designed to give youth an opportunity to demonstrate their knowledge and skills in arc welding. Safety will be stressed throughout the contest.

## TARGETED LIFE SKILLS

Provided through this project area include: *Wise use of resources, planning/organizing, goal setting, critical thinking, problem solving, decision making, learning to learn, self-esteem, leadership, cooperation, social skills, time management, career exploration*

## OBJECTIVES

1. To show skill(s) in the safe handling and application of Arc Welding, equipment and supplies.
2. To show skills in selecting and utilizing Arc Welding equipment and supplies.
3. To show skills in making a weld bead in the flat position, a square groove welded, butt joint in the flat position, and fillet welded, corner joint in the vertical position - up direction.

## ELIGIBILITY

Each county may enter no more than two senior 4-H members in the 4-H Welding contest at the Arkansas 4-H O-Rama. No individual who has previously won first place in this activity is eligible to compete. Scores of the competitors will be ranked individually.

## ACTIVITY

This contest will include (*time limits as shown*):

1. Written Examination (*20 minutes*)
2. Shielded Arc Metal Welding skills event (*30 minutes*)
3. Identification (*15 minutes*)

Designated judges will preside over the event and their decisions will be final.

**EVENTS**

Written Examination  
SMAW Skills Event  
Identification Test

**PENALTY POINTS**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Event No. I - Written Examination**

Will consist of 25-30 multiple choice, true-false and/or fill in the blank questions. Included will be questions on safety, equipment, methods, power sources, weld types and weld quality. The questions will be based on the reference source: Arcs and Sparks, Shielded Metal Arc Welding (4-H 573) from The Ohio State University Extension. The reference materials can be obtained from the 4-H State Office or directly from Ohio State University Extension.

**Rules:**

1. Four penalty points will be given for each question answered incorrectly or unanswered.
2. Time limit is 20 minutes.

**Scoring:** Number of Questions Missed x 4 = Penalty Points

**Event No. II - SHIELDED METAL ARC WELDING CONTEST (SMAW Skills)**

For the SMAW skills event each welding contestant will demonstrate their SMAW ability by making **two** of the following welds: a 3" long bead on plate weld, a 3" long double square groove weld and a 3" long fillet weld. Welding will be done using a Shielded Metal Arc Welding Power Source and 1/8" diameter, AWS type E-6011 electrodes. The power sources, base metal, electrodes and fully equipped welding stations will be provided. Each contestant will be given a copy of **Welding Procedure for Event No. II - SMAW SKILLS** for study and use during event II.

**NOTE:** Each contestant will be suitably attired for SMAW, by wearing industrial quality eye protection, long sleeve shirt, long pants and high top foot protection (no athletic foot wear). Gauntlet leather welding gloves and welding helmets with a #10 filter plate will be provided but any welding contest participant may bring and use their own welding equipment. Contestants wearing shorts, short sleeved shirt or any inappropriate clothing or footwear will not be permitted to weld. Industrial quality eye protection (clear or shaded) will be worn in the contest area where the Weldment is being created and especially under the welding helmet during welding.

**Rules:**

1. One penalty point will be given for each evaluation point missed (100 - total evaluation points awarded).
2. Time limit is 30 minutes.

**Scoring:** Evaluation Points Missed x 1 = Penalty Points

## **Event No. III – Material & Parts Identification**

The proper identification of welding industry items will consist of 10 materials, tools, and/or parts to be identified by each contestant. There will be a predetermined list of materials, tools, and parts used for the contest (attached). The resource materials listed below will assist in the study process for this event.

### **SUGGESTED RESOURCES**

*4-H Arcs and Sparks, Shielded Metal Arc Welding (4-H 573)* from the Ohio State University Extension

*Lincoln Electric Guide for Safe Arc Welding*, [www.lincolnelectric.com](http://www.lincolnelectric.com)

### **AWARDS**

The high-point individual will receive a trophy. Individuals scoring second-, third-, fourth-, and fifth-place will receive ribbons. All others will receive participation ribbons.

### **PREPARED BY**

Committee Members:

Noah Washburn –

Keith Gresham –

Les Walz –

Adam Willis –

Revised 2015

4-H Program Director

CEA Dallas Co.

CEA Cleveland Co.

CEA Newton Co.