#573 - ARCS AND SPARKS: Shielded Metal Arc Welding

General 4-H Project

**NOTE: State & County Requirement:**

*All welding projects must be done using Shielded Metal Arc Welding (SMAW), “stick welding”.*

- Member MUST participate in County Project/Interview Judging or 4-H Project will be INCOMPLETE.
- Member must attend **General 4-H Project Judging Day** to be eligible for County Placement and State Fair Selection (if applicable).
- If the member cannot attend Project Judging, your project can be judged at Early Judging. However, Early Judging participants will not qualify for County Placement or State Fair.
- Project must be displayed at the Ross County Fair to receive fair premiums.
- **For Project Judging Dates & Times & Details:**
  - ASK your Club Advisor
  - READ the May Family HOTLINE sent to every 4-H family
  - LOOK on the 4-H website [http://ross.osu.edu](http://ross.osu.edu)

**Skill Level:** Intermediate. **Designed for members 12 years of age and older. Grades 6 – 12.**

This project should take between 3 and 6 months to complete and may be repeated. Members repeating this project should read #8 under "Project Guidelines" in the front of the book (pg 3).

**Completion:**

1. **All welding projects must be done using Shielded Metal Arc Welding (SMAW), “stick welding”.
2. Complete Project Book –
   a. Recommended number of areas, building skills, and ‘developing knowledge’ questions for your year
   b. At least 2 Organized Project Activities
   c. At least 2 Leadership/Citizenship activities
3. Build Welding projects – You MUST FOLLOW the size requirements listed on other side of this paper.
   a. Build at least 2 welding projects from the ‘Arcs & Sparks Book’
   b. Build at least one other project (of your choice)

**Judging:**

1. Interview on skills learned and items made.
2. Bring completed project book and **at least 2 weldment/items built** (either 2 weldments from the book OR 1 from book and 1 of your choice) to interview on General Project Judging Day.
3. **Wear/bring appropriate clothing** for welding to judging including – long pants, boots, welding helmet, gloves.

**County Fair Exhibit:**

Display in a fair booth an educational exhibit including at least 1 weldment/item built.

**State Competition:** see other side for project size requirements. There are 2 classes based on size.

1. **Projects must be done using Shielded Metal Arc Welding (SMAW), “stick welding”.
2. State Fair participants selected during county-level competition on General 4-H Project Judging Day.
   - Bring - Completed project book, appropriate gear, other equipment and/or supplies, and welding project.
Welding Project Size Requirements

IMPORTANT: State Fair Requirements –
The following 4-H Welding Project Guidelines are used for State Fair.

1. Counties may select a maximum of one participant in each class.
2. All welding on projects exhibited must be completed using Shielded Metal Arc Welding (SMAW).
3. Type of Evaluation: Skill-a-thon
   - 10% Completed Project Book
   - 20% Welding Project from Project Book
   - 20% On-Site Weldment
   - 20% Welding Project Optional Design
   - 20% On-site Interview
   - 10% Personal Safety
4. Participants:
   - MUST bring Completed Project book
   - will have an interview based on knowledge and skills
   - are responsible for supplying and monitoring any equipment and/or supplies needed to aid in completion of their project
   - MUST bring and wear industrial quality eye protection, long sleeve shirts, long pants, and high-top leather foot protection (example: work boots but NO athletic foot wear).
   - It is encouraged for each welding contest participant to bring and use their own welding PPE (personal protective equipment). However, industrial quality eye protection, gauntlet leather welding gloves, and auto-darkening welding helmets will be available, if needed.
   - Contestants wearing shorts, short-sleeved shirts or any inappropriate clothing or footwear will NOT be permitted to weld.
5. Classes: There are 2 Classes for the State Fair Welding Project judging – which are based on the SIZE of the project.

   CLASS J-1
   For welding projects that would have to fit in an imaginary box 6 ft. x 6 ft. x 3 ft.
   Every participant shall bring and exhibit two welding projects:
   One will be from the recommended projects in the 4-H Arcs & Sparks Project Book and the other will be of an optional design which in no larger than that which can be wheeled into or around the building on a hand dolly by the welding contest participant.
   All welding contest participants will demonstrate their SMAW ability by making the following welds:
   - a 3" double square groove weld
   - a 3" double fillet weld
   - All 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, and electrodes will be provided.

   CLASS J-2 (Bigger Weldment)
   For welding projects that are bigger that 6 ft. x 6 ft. x 3 ft.
   In this class, participants will follow and meet all requirements and criteria listed for J-1, except for the size of the optional design project.
   - This class is for larger dimension projects.
   - It is preferred that he projects be no larger than 8 ft. x 8 ft. and 20 ft.
   - For a project exceeding any of these dimensions, you will need to call the Extension office (740-702-3200) at least one week before our COUNTY JUDGING – GENERAL 4-H PROJECT JUDGING DAY in JULY. This will allow us enough time to contact the state fair welding supervisor.

6. Location: The State Fair Welding judging is held at OSU Campus – Agricultural Engineering Building