

Project Title: COUNTY: Welding

Description: The welding project is intended to give participants a fundamental background in the major aspects of electric arc welding and oxy-acetylene welding. The emphasis is for each member to develop hand manipulative skills, to learn successful welding techniques, and to also gain an understanding of the equipment and specialized tools being used in the welding field. Each member progresses at his/her own rate as demonstrated by his/her ability and application. A major focus of this project will be on safety, individual instruction, demonstration, and application.

Project Objectives:

First Year

- To acquaint the 4-H member with the skills and knowledge of basic welding.
- To acquire a working knowledge of the machines and equipment used in the welding trade.
- To understand safety procedures and practices.

Second Year

- To understand the proper care and maintenance of welding equipment and accessories. To obtain a basic knowledge of the correct practices and usages of equipment and accessories.
- To acquire a knowledge of the techniques involved in arc and gas welding and oxygen cutting.
- In exceptional circumstances, welding projects other than those listed in the 4-H Arcs & Sparks: Shielded Metal Arc Welding manual may be completed with advance permission from the Superintendent. Requests for Superintendent permission must include hard copies of plans and must be submitted to Superintendent at least sixty (60) days before the date of project entry.

Third Year & Up

- To understand the proper care and maintenance of welding equipment and accessories.
- To be familiar with the terms and definitions of welding.

• To acquire a knowledge of the techniques involved in arc and gas welding and oxygen cutting.

Techniques to be Outlined & Exhibition:

See "4-H Poster Requirements" located in the front of this Book.

First Year

- Learn the safety procedures and practices in welding (clothing, gloves, shoes, helmet, safety glasses, etc.
- To acquaint the 4-H member with basic skills and knowledge of welding (striking an arc, running a <u>straight weld, setting</u> heat range, learning electrodes and current flow, etc.)
- Some 4-H members will need extra help in the use of measurement tools used in welding.
- If a MIG welder is available, the beginning 4-H member will learn to compare MIG welding versus stick (or TIG is available) welding.
- Learn joint preparation.
- 4-H members may tour various metal fabrication facilities in the local community.
- First year project is a poster showing what you learned during this project may be anything welding-related.

Second Year

- Review first year materials, practice to get used to welding again.
- Start working with multiple past fillet welds.
- Reading basic welding symbols on a blueprint.
- Flame cutting (if available), learn parts, safety, starting and stopping torch.
- Start out-of-position welding single beads.
- Posters should be more advanced than first year, or 4-H participant can complete a basic welding project out of the 4-*H Arcs & Sparks: Shielded Metal Arc Welding* manual.

Third Year and Up

• 4-H member should be doing some our-of-position welding, flame cutting and fitting for project.

- Projects should have some degree of difficulty (cutting, grinding weld).
- Blue print and list of materials for project should be made before starting and submitted with final project.