



WELDING



WHAT'S IT ALL ABOUT?

Joining metal together can be a skill that can help you to repair or create items needed for work. In addition, metal can be joined to create amazing art pieces. In this project you will explore several techniques for joining metal together by welding. To start you will focus on safety and then move to learning the skills needed to create or repair needed items.

HERE'S WHAT YOU CAN LEARN...

STARTING OUT

- ✿ Identify equipment.
- ✿ Learn safety precautions.
- ✿ Learn the role of electrodes in welding.
- ✿ Identify the meaning of electrode markings and select the proper electrode.

LEARNING MORE

- ✿ Join two pieces of metal: butt joints welded with groove welds and T, and lap joints welded with fillet welds.
- ✿ Follow welding procedures.
- ✿ Complete a welding project that is part of the curriculum.

GOING FURTHER

- ✿ Make welds in the horizontal position.
- ✿ Weld in the vertical position.
- ✿ Weld in the overhead position.
- ✿ Weld high carbon, spring steel and alloy steels.
- ✿ Weld with low-hydrogen electrodes.
- ✿ Cut with an oxyacetylene torch.
- ✿ Weld with an oxyacetylene torch.

RESOURCES

- ✿ Arcs and Sparks: Shield Metal Arc Welding (573)
(<https://extensionpubs.osu.edu/arcs-and-sparks-shielded-metal-arc-welding>)

TAKE IT FURTHER!

- ✿ Visit a welding shop. Talk to the welders about how they learned to weld. Discuss the type of welds they make.
- ✿ Visit an architectural or mechanical design firm that uses structural steel.
- ✿ Visit a steel plant or local steel business.
- ✿ Visit a local body shop to see how they use welding.
- ✿ Interview a welder in your area to find out more about how they trained for their career.
- ✿ Research different types of careers related to welding.
- ✿ Do an assessment of your home or farm. Look to see what items are made by welding. Create a list of items that need repair.
- ✿ Read articles in the Welding Journal to find out what is going on in the world of welding.
- ✿ Find someone in your area who using welding to make crafts and interview them about their creative process and how they market their business.
- ✿ Tour your town or neighborhood to get ideas for outdoor art that you can create.
- ✿ Invite someone to come and talk to your club about welding safety or careers in welding.
- ✿ Learn the history of welding.
- ✿ Visit a farm supply or welding supply store. Gain a better understanding of material costs.
- ✿ Talk with your local fire department about fire hazards in welding.

EXHIBIT IDEAS

- ✿ Make a display of fillet welds vs. electrode.
- ✿ Prepare an educational exhibit on welding safety.
- ✿ Prepare samples of different beads to teach the different techniques and how each is used.
- ✿ Create an exhibit using all used items such as scrap metal and horse shoes.
- ✿ Make a display of careers related to welding.
- ✿ Make a display of different weld joints.
- ✿ Build a shelf.
- ✿ Make a window flower box.
- ✿ Make a chipping hammer or other needed equipment.
- ✿ Repair an item (show before and after pictures).

ENHANCE YOUR COMMUNICATION SKILLS

Give a demonstration on how to create a good bead. Use aerosol cheese and crackers.

Give a speech on the history of welding.

Share how you can turn your project into a money making adventure.

GET INVOLVED IN CITIZENSHIP AND SERVICE

Repair metal items at a farm or local non profit.

Create shepherd hooks for the local community garden.

Build gates for the fairgrounds.

LEARN ABOUT LEADERSHIP

Arrange for your club to tour a welding shop.

Set up a welding workshop and create simple projects for your club members to weld.

Create a business with your welding skills, weld and sell lawn ornaments.

Issued in furtherance of extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Kelly Crane, director, University of Wyoming Extension, University of Wyoming, Laramie, Wyoming 82071. The University's policy has been, and will continue to be, one of nondiscrimination, offering equal opportunity to all employees and applicants for employment on the basis of their demonstrated ability and competence without regard to such matters as race, sex, gender, color, religion, national origin, disability, age, veteran status, sexual orientation, genetic information, political belief, or other status protected by state and federal statutes or University Regulations. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by University of Wyoming is implied.

