Arc Welding Assignment – Butt Joint

Name:	 _
Date:	 -

Description:

An arc welding assignment sheet with a single weld.

Materials:

See assignment for materials and electrode.

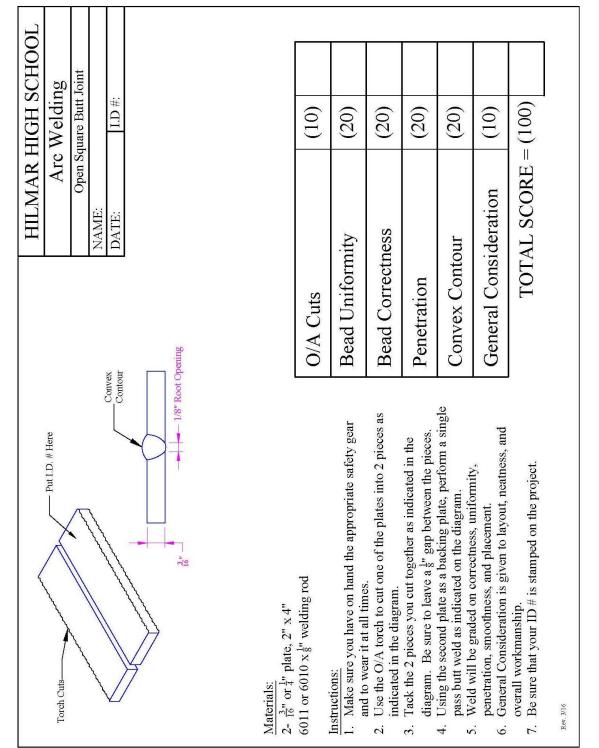
Tools:

SMAW Welder Hydraulic Shear Chipping Hammer Wire Brush Soapstone

Procedure:

- 1. Review the attached plan and rubric.
- 2. Follow the instructions on the plan.
- 3. Dress in appropriate welding safety gear, leather gloves, welding helmet, welding jacket
- 4. Make sure to label with your project and turn in your paper for grading.

Notes:



Drawing:

Arc Welding Worksheet

Name: _____ Date: _____

Complete before you start:

- 1. What materials will you be using?
- 2. What position and electrode will you be using?
- 3. How will you prepare the metal for welding?
- 4. Why is it important to tack the project before welding?

Grading Rubric:

(See assignment sheet)

Arc Welding Teachers Notes:

This is designed to be a summative exercise to demonstrate welding ability.

Agricultural Standards Met:

- B7.0 Students understand oxy-fuel cutting and welding:
 - B7.1 Understand the role of heat and oxidation in the cutting process.
 - B7.2 Know how to properly set up, adjust, shut down, and maintain an oxy-fuel system.
 - B7.3 Know how to flame-cut metal with an oxy-fuel cutting torch
- B8.0 Students understand electric arc welding processes:
 - B8.1 Know how to select, properly adjust, safely employ, and maintain appropriate welding equipment (e.g., gas metal arc welding, shielded metal arc welding, gas tungsten arc welding).
 - B8.2 Apply gas metal arc welding, shielded metal arc welding, or flux core arc welding processes to fusion-weld mild steel with appropriate welding electrodes and related equipment.
 - B8.3 Weld a variety of joints in various positions.
 - B8.4 Know how to read welding symbols and plans, select electrodes, fit-up joints, and control heat and distortion.
- B1.0 Students understand personal and group safety:
 - B1.1 Practice the rules for personal and group safety while working in an agricultural mechanics environment.
 - B1.2 Know the relationship between accepted shop management procedures and a safe working environment.

Objectives:

By properly completing this project, students will be able to:

- Read a plan and layout dimensions
- Be proficient in arc welding
- Constructing a sound, neat and correct project

Alternative Tools/Methods/Materials:

- All steel could be cut with a Chop Saw or a torch used for more pieces.
- Oxy Cutting could be omitted (use 2" pieces).

Safety Review:

- Welding attire
- Oxy- Acetylene torch use
- Arc Welding
- Hydraulic Shear
- Chop Saw

Project Time:

Demonstration:	10 minutes
Build:	2 hours

Demonstration Notes

- 1. Demonstrate the preparation for welding
- 2. Demonstrate tacking.
- 3. Demonstrate the weld.
- 4. Show a finished project.

Project from Hilmar High School (Dick Piersma)