

## Welding Merit Badge Workbook

# SCOUTMASTER BUCKY

Scouts participating in a Scoutmaster Bucky merit badge opportunity, whether online or in person, should consider using the Welding merit badge pamphlet for discovery and knowledge, along with the class preparation pages for clarifications, insights, and expectations.

<https://scoutmasterbucky.com/merit-badges/welding/welding-pamphlet.pdf>

<https://scoutmasterbucky.com/merit-badges/welding/welding-cpp.pdf>

**REQUIREMENT 1a:** Explain to your counselor the hazards you are most likely to encounter while welding, and what you should do to anticipate, help prevent, mitigate, or lessen these hazards.

### HAZARD #1

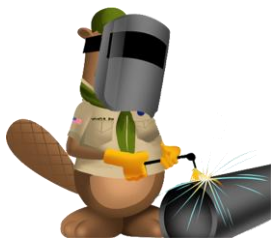
Description:

Anticipate:

Help Prevent:

Mitigate:

Lessen:



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## HAZARD #2

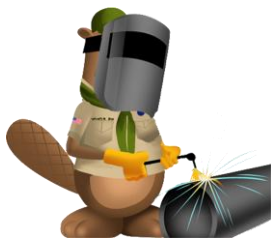
Description:

Anticipate:

Help Prevent:

Mitigate:

Lessen:



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## HAZARD #3

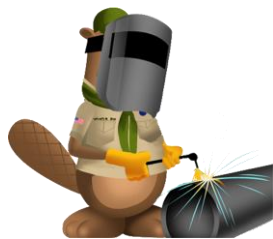
Description:

Anticipate:

Help Prevent:

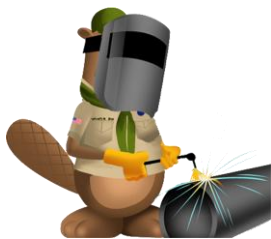
Mitigate:

Lessen:



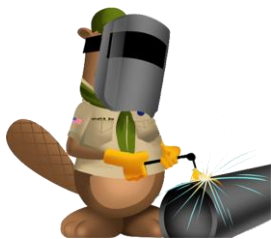
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HAZARD #4
Description:
Anticipate:
Help Prevent:
Mitigate:
Lessen:



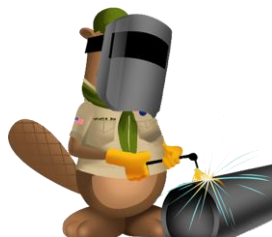
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HAZARD #5
Description:
Anticipate:
Help Prevent:
Mitigate:
Lessen:



# SCOUTMASTER BUCKY

HAZARD #6
Description:
Anticipate:
Help Prevent:
Mitigate:
Lessen:



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**REQUIREMENT 1b:**

Show that you know first aid for, and the prevention of, injuries or illnesses that could occur while welding, including electrical shock, eye injuries, burns, fume inhalation, dizziness, skin irritation, and exposure to hazardous chemicals, including filler metals and welding gases.

**ELECTRICAL SHOCK:**

Prevention:

Symptoms:

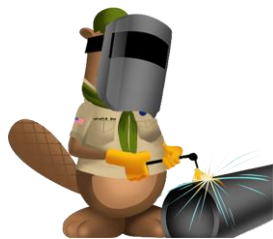
Treatment:

**EYE INJURIES:**

Prevention:

Symptoms:

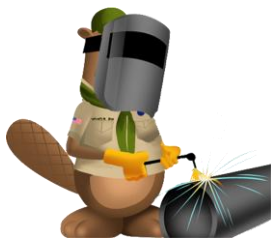
Treatment:



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<b>BURNS:</b>
Prevention:
Symptoms:
Treatment:
<b>FUME INHALATION:</b>
Prevention:
Symptoms:
Treatment:





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## DIZZINESS:

Prevention:

Symptoms:

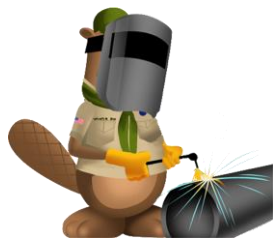
Treatment:

## SKIN IRRITATION:

Prevention:

Symptoms:

Treatment:



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## EXPOSURE TO HAZARDOUS CHEMICALS:

Prevention:

Symptoms:

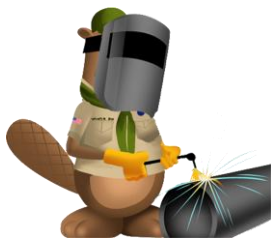
Treatment:

## EXPOSURE TO FILLER METALS AND WELDING GASES:

Prevention:

Symptoms:

Treatment:



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**REQUIREMENT 2a:** With your counselor, discuss general safety precautions and Safety Data Sheets related to welding.

Here is a [Typical Welding SDS](#) for your consideration.

Consider using the [Welding Merit Badge Pamphlet](#) for preparation information

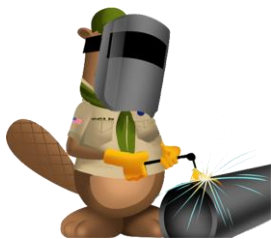
**This requirement must be reviewed with your merit badge counselor.**

**BE PREPARED!**

Notes:

**REQUIREMENT 2a:** Explain the importance of the SDS.

Notes:



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**REQUIREMENT 2b:** Describe the appropriate safety gear and clothing that must be worn when welding. Then, present yourself properly dressed for welding-in protective equipment, clothing, and footwear.

Consider using the [Welding Merit Badge Pamphlet](#) for preparation information

**This requirement must be reviewed with your merit badge counselor.**

**BE PREPARED!**

Notes:

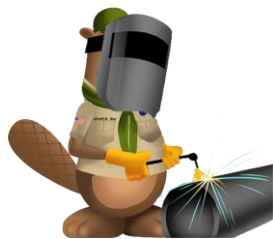
**REQUIREMENT 2c:** Explain and demonstrate the proper care and storage of welding equipment, tools, and protective clothing and footwear.

Consider using the [Welding Merit Badge Pamphlet](#) for preparation information

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Notes:



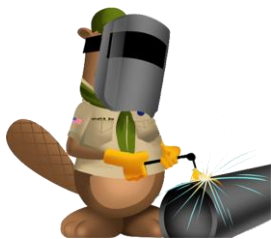
**REQUIREMENT 3:** Explain the terms welding, electrode, slag, oxidation.

Welding:

Electrode:

Slag:

Oxidation:



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**REQUIREMENT 3:** Describe the welding process and how heat is generated.

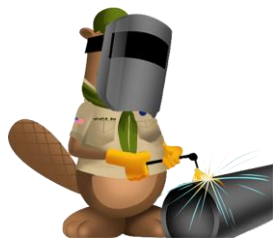
Notes:

**REQUIREMENT 3:** Describe the welding process and what kind of filler metal is added (if any).

Notes:

**REQUIREMENT 3:** Describe the welding process and what protects the molten metal from the atmosphere.

Notes:



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**REQUIREMENT 4:** Name the different mechanical and thermal cutting methods.

Notes:

**REQUIREMENT 4:** Choose one (cutting) method.

Selected Cutting Method:

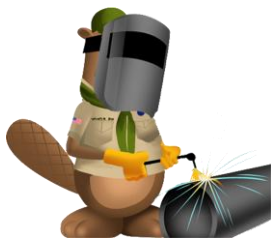
**REQUIREMENT 4:** Describe your selected cutting method and how to use the process.

Notes:

**REQUIREMENT 4:** Discuss one advantage and one limitation of your selected process.

Advantage:

Limitation:



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**REQUIREMENT 5a:** Select two welding processes, and make a list of the different components of the equipment required for each process. Discuss one advantage and one limitation for each process.

### WELDING PROCESS #1:

Selected Welding Process:

Equipment Components Required:

Advantage:

Limitation:

### WELDING PROCESS #1:

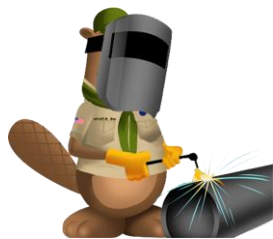
Selected Welding Process:

Equipment Components Required:

Advantage:

Limitation:





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**REQUIREMENT 5b:** Choose one welding process. Set up the process you have chosen, including gas regulators, work clamps, cables, filler materials, and equipment settings. Have your counselor inspect and approve the area for the welding process you have chosen.

Selected Welding Process:

Consider using the [Welding Merit Badge Pamphlet](#) for preparation information

**This requirement must be reviewed with your merit badge counselor.**

**BE PREPARED!**

Notes:

**REQUIREMENT 6:** After successfully completing requirements 1 through 5, use the equipment you prepared for the welding process in 5(b) to do the following:

**REQUIREMENT 6a:** Using a metal scribe or soapstone, sketch your initial onto a metal plate, and weld a bead on the plate following the pattern of your initial.

**REQUIREMENT 6b:** Cover a small plate (approximately 3" x 3" x 1/4") with weld beads side by side.

**REQUIREMENT 6c:** Tack two plates together in a square groove butt joint.

**REQUIREMENT 6d:** Weld the two plates together from 6(c) on both sides.

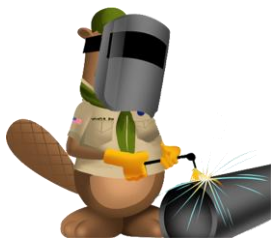
**REQUIREMENT 6e:** Tack two plates together in a T joint, have your counselor inspect it, then weld a T joint with fillet weld on both sides.

**REQUIREMENT 6f:** Tack two plates together in a lap joint, have your counselor inspect it, then weld a lap joint with fillet weld on both sides.

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**This requirement must be reviewed with your merit badge counselor.**

**BE PREPARED!**



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**REQUIREMENT 7a:** Find out about three career opportunities in the welding industry.

Career Opportunity #1:

Career Opportunity #2:

Career Opportunity #3:

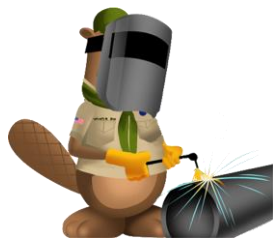
**REQUIREMENT 7a:** Pick one and find out the education, training, and experience required for this profession. Discuss this with your counselor.

Selected Career Opportunity:

Education Requirements:

Training Requirements:

Experience Requirements:



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**REQUIREMENT 7a:** Explain why the profession might interest you.

Notes:

**REQUIREMENT 7b:** Discuss the role of the American Welding Society in the welding profession.

Notes: