

Welding

Merit Badge Workbook



This workbook can help you but you still need to read the merit badge pamphlet.

This Workbook can help you organize your thoughts as you prepare to meet with your merit badge counselor. You still must satisfy your counselor that you can demonstrate each skill and have learned the information. You should use the work space provided for each requirement to keep track of which requirements have been completed, and to make notes for discussing the item with your counselor, not for providing full and complete answers.

If a requirement says that you must take an action using words such as "discuss", "show", "teli", "explain", "demonstrate", "identify", etc, that is what you must do.

Merit Badge Counselors may not require the use of this or any similar workbooks.

No one may add or subtract from the official requirements found in Scouts BSA Requirements (Pub. 33216 – SKU 653801).

The requirements were last issued or revised in 2019 • This workbook was updated in June 2020.

Scout's Na	me:		Unit:	
Counselor's	s Name:	Phone No.;	Watery and the state of the sta	Email:
		http://www.USScouts.Org •	http://www.MeritBa	adge,Org
Com	Please subm ments or sugge	nit errors, omissions, comments or suggestions for changes to the requirements for	ons about this <u>workbook</u> the <u>merit badge</u> should t	to: <u>Workbooks@USScouts.Org</u> be sent to: <u>Merit.Badge@Scouting.Org</u>
1. Do the	following:			
١, ,	Explain to y	our counselor the hazards you are mos telp prevent, mitigate, or lessen these h	t likely to encounter whi azards.	le welding, and what you should do to
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(pg. 9)6.	electrical sho	ou know first aid for, and the prevention ock, eye injuries, burns, fume inhalation or metals and welding gases.	of, injuries or illnesses , dizziness, skin irritation	that could occur while welding, including n, and exposure to hazardous chemicals,
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Welding

Scout's Name: Eye Injuries: Burns: Fume inhalation: Dizziness: Skin irritation: Exposure to hazardous chemicals: Exposure to filler metals: Exposure to welding gases:

Weldi	ng	Scout's Name:
2. D	o the f	ollowing:
	a.	With your counselor, discuss general safety precautions and Safety Data Sheets related to welding. Explain the importance of the SDS.
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		TO THE PARTY THE PARTY OF THE P
	b.	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.
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	c. i	Explain and demonstrate the proper care and storage of welding equipment, tools, and protective clothing and footwear.
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Velding	Scout's Name:
. Explain the	terms welding, electrode, slag, and oxidation
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Electrode:	
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Slag:	
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Oddation	
Oxidation:	To be the second of the second
	F. A. C. A. C.
Describe the metal from the	e welding process, how heat is generated, what kind of filler metal is added (if any), and what protects the molter he atmosphere.
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		Scout's Name:
Choose one	method and describe	how to use the process.
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Discuss one	advantage and one lir	mitation of this process.
Advantage		
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Limitation		
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	en el militar de la companyamente del companyamente de la companyamente del companyamente de la companyamente de la companyamente de la companyamente del companyamente de la companyamente del companyamente	
Oo the followi	ng	
a. Selec	ct two welding proces	ses, and make a list of the different components of the equipment required for each
	∋ss. Discuss one aqva	
		antage and one limitation for each process.
	Process	antage and one limitation for each process.
		antage and one limitation for each process.
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5.

Welding						Scout's Name;		
			2.	Desagge				
			۷.	Process	; iponents			
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						The second district district of the second s		
		b.	filler		, and equipment	Set up the process you have chosen, including gas regulators, work clamps, cables, t settings. Have your counselor inspect and approve the area for the welding process		
6.	Afte	ក នប	•			ents 1 through 5, use the equipment you prepared for the welding process in 5b to do		
			wing:		Total of the state	onto I through of use the equipment you properties for the wording process in 52 to 45		
		a.		ng a metai ern of your		tone, sketch your initial onto a metal plate, and weld a bead on the plate following the		
		b.	Cov	er a small	plate (approxim	nately 3" x 3" x ¼") with weld beads side by side.		
		c.	Tack	two plate	s together in a ទ	square groove butt joint.		
		d.	Weld	I the two p	lates together fr	from 6c on both sides.		
				-	_	Γ joint, have your counselor inspect it, then weld a \top joint with fillet weld on both sides.		
		f.	Tack sides	-	s together in a la	ap joint, have your counseior inspect it, then weld a lap joint with fillet weld on both		
' .	Do th	ne f	ollowin	ng:				
		a.	Find	out about	three career op	portunities in the welding industry.		
			1.					
			2.					
			3.					
					nd out the educa	ation, training, and experience required for this profession.		
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Welding		Scout's Name:
	Training:	
	Experience:	
	Discuss this w	
	Discuss this w	ith your counselor, and explain why this profession might interest you.
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b.	Discuss the ro	le of the American Welding Society in the welding profession.
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When working on merit badges, Scouts and Scouters should be aware of some vital information in the current edition of the *Guide to Advancement* (BSA publication 33088). Important excerpts from that publication can be downloaded from http://usscouts.org/advance/docs/GTA-Excerpts-meritbadges.pdf,

You can download a complete copy of the Guide to Advancement from http://www.scouting.org/filestore/pdf/33088.pdf.

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