



WELDING

Welding youth apprentices practice welding fabrication processes in various industry environments. Apprentices must adhere to industry safety and security standards.

Length of Apprenticeship: One or two years

REQUIRED COMPETENCIES

Youth apprentices must become proficient in both general employability and occupation-specific competencies. All of these, and examples of how each can be demonstrated, are found in the following pages. A total of 25 occupational competencies must be learned for this occupation. (All 7 Manufacturing Fundamentals competencies with no substitutions, plus 18 Welding competencies.) Employers may substitute out one of these competencies per year and should write in the competency they are adding. Where necessary, skills can be simulated. Youth apprentices must be evaluated on these competencies at least two times each year of their apprenticeship.

Note: Students who completed a previous Manufacturing YA program do not need to repeat the Manufacturing Fundamentals Competencies.

Manufacturing Fundamentals Competencies		Welding Competencies				
1.	Focus on customer needs	1.	Read welding technical drawings and work orders			
2.	Use various instruments	2.	Interpret welding symbols and procedures			
3.	Operate tools and equipment safely	3.	Layout and plan work			
4.	Practice quality assurance principles	4.	Perform safety checks			
5.	Follow personal safety requirements	5.	Prepare base metal			
6.	Maintain a safe work environment	6.	Set up to fabricate base metal			
7.	Demonstrate professional role to be used	7.	Set up welding job			
	in an emergency	8.	Fabricate base metal			
		9.	Cut metal thermally/chemically			
		10.	Tack work pieces			
		11.	Weld metal			
		12.	Monitor product and process			
		13.	Assist inspection of completed metal piece			
		14.	Process production documents			
		15.	Clean up			
		16.	Monitor equipment for correct operation			
		17.	Perform routine preventive maintenance (PM)			
		18.	18. Document equipment use, PM, and/or			
			operational problems			

REGISTERED APPRENTICESHIP BRIDGING OPPORTUNITIES

Some of the related instruction courses can bridge into the following registered apprenticeship:

- Industrial Manufacturing Technician
- Sheet Metal
- Steamfitter
- Welding Fabricator

POST-SECONDARY PATHWAY OPPORTUNITIES

There are several post-secondary pathway opportunities in this area. Following is partial list.

- Welding Technical Diploma
- Welding and Metal Fabrication Technical Diploma
- Welding Fabrication Technical Diploma





Youth Apprenticeship ON-THE-JOB LEARNING PERFORMANCE STANDARDS GUIDE

YOUTH APPRENTICE INFORMATION	N
Youth Apprentice Name	
YA Coordinator	
YA Consortium	
School District	
SIGNATURES	
The On-the-Job Learning Performance Standar	rds Guide includes a list of competencies youth
apprentices learn through mentoring and train	ning at the worksite.
should be reviewed with the employer/mentor the youth apprentice to record progress and p competencies. Mentors, school-based/YA coor	ors and School-Based or YA coordinators: This document r, school-based or YA coordinator on a regular basis with lan future steps to ensure completion of the required rdinator, and the apprentice sign below.
בווון 1 st Evaluation (Required)	2 nd Evaluation (Required)
Employer/Mentor Signature	Employer/Mentor Signature
Employer/Mentor	Employer/Mentor
Business/Company	Business/Company
Date Signed	Date Signed
3 rd Evaluation (Optional)	4th Evaluation (Optional)
Employer/Mentor Signature	Employer/Mentor Signature
Employer/Mentor	Employer/Mentor
Business/Company	Business/Company
Date Signed	Date Signed

School-Based and/or YA Coordinator

1st Evaluation (Required)

2nd Evaluation (Required)

School-Based and/or YA Coordinator Signature	School-Based and/or YA Coordinator Signature
School-Based and/or YA Coordinator	School-Based and/or YA Coordinator
School District or Organization	School District or Organization
Date Signed	Date Signed

3rd Evaluation (Optional)

4th Evaluation (Optional)

School-Based and/or YA Coordinator Signature	School-Based and/or YA Coordinator Signature
School-Based and/or YA Coordinator	School-Based and/or YA Coordinator
School District or Organization	School District or Organization
Date Signed	Date Signed

Youth Apprentice

1st Evaluation (Required)

2nd Evaluation (Required)

Youth Apprentice Signature	Youth Apprentice Signature
Youth Apprentice	Youth Apprentice
School District / High School	School District / High School
Date Signed	Date Signed

3rd Evaluation (Optional)

4th Evaluation (Optional)

Youth Apprentice Signature	Youth Apprentice Signature
Youth Apprentice	Youth Apprentice
School District / High School	School District / High School
Date Signed	Date Signed

EMPLOYABILITY SKILLS (TO BE COMPLETED BY YA EMPLOYER/MENTOR)

All youth apprentices must demonstrate the key employability skills listed below in order to complete the YA program. They do so by earning at least a "Meets Expectation" rating in each. **At least two evaluations are required each year of a youth apprenticeship.** More columns are included below for those who choose to conduct more frequent reviews.

1	Working to Meet Expectations: Needs improvement; requires much assistance and supervision;
	rarely displays this behavior
2	Meets Expectations: Meets entry-level criteria; requires some supervision; often displays this
	behavior
3	Exceeds Expectations: Exceeds entry-level criteria; requires minimal supervision; consistently
	displays this behavior

	Employability Skills		Rati	ing	
	Competency and Rating Criteria	Initial	Mid Year 1	Mid Year 2	Final
,	Develops positive work relationships with others. Examples of qualities and habits that the employee might exhibit include: Interacts with others with respect and in a non-judgmental manner Responds to others in an appropriate and non-offensive manner Helps co-workers and peers accomplish tasks or goals Applies problem-solving strategies to improve relations with others When managing others, shows traits such as compassion, listening, coaching, team development, and appreciation	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	□ 1 □ 2 □ 3	☐ 1 ☐ 2 ☐ 3
	 Communicates effectively with others Examples of qualities and habits that the employee might exhibit include Adjusts the communication approach for the target audience, purpose, and situation to maximize impact Organizes messages/information in a logical and helpful manner Speaks clearly and writes legibly Models behaviors to show active listening Applies what was read to actual practice Asks appropriate questions for clarity 	☐ 1 ☐ 2 ☐ 3	□1 □2 □3	□1 □2 □3	☐ 1 ☐ 2 ☐ 3
,	 Collaborates with others Examples of qualities and habits that the employee might exhibit include Works effectively in teams with people of diverse backgrounds regardless of sex, race, ethnicity, nationality, sexuality, religion, political views, and abilities Shares responsibility for collaborative work and decision making Uses the problem-solving process to work through differences of opinion in a constructive manner to achieve a reasonable compromise Avoids contributing to an unproductive group conflict Shares information and carries out responsibilities in a timely manner 	☐ 1 ☐ 2 ☐ 3			

	Employability Skills		Rating			
	Competency and Rating Criteria	Initial	Mid Year 1	Mid Year 2	Final	
4.	 Maintains composure under pressure Examples of qualities and habits that the employee might exhibit include Uses critical thinking to determine the best options or outcomes when faced with a challenging situation Carries out assigned duties while under pressure Acts in a respectful, professional, and non-offensive manner while under pressure Applies stress management techniques to cope under pressure 	☐ 1 ☐ 2 ☐ 3	□ 1 □ 2 □ 3	☐ 1 ☐ 2 ☐ 3	□1 □2 □3	
5.	Demonstrates integrity Examples of qualities and habits that the employee might exhibit include Carries out responsibilities in an ethical, legal and confidential manner Responds to situations in a timely manner Takes personal responsibility to correct problems Models behaviors that demonstrate self-discipline, reliability, and dependability	□ 1 □ 2 □ 3	□ 1 □ 2 □ 3	□ 1 □ 2 □ 3	□1 □2 □3	
6.	Performs quality work Examples of qualities and habits that the employee might exhibit include Carries out written and verbal directions accurately Completes work efficiently and effectively Performs calculations accurately Conserves resources, supplies, and materials to minimize costs and environmental impact Uses equipment, technology, and work strategies to improve workflow Applies problem-solving strategies to improve productivity Adheres to worksite regulations and practices Maintains an organized work area	☐ 1 ☐ 2 ☐ 3				
7.	 Provides quality goods or services (internal and external) Examples of qualities and habits that the employee might exhibit include Shows support for the organizational goals and principles by own personal actions Displays a respectful and professional image to customers Displays an enthusiastic attitude and desire to take care of customer needs Seeks out ways to increase customer satisfaction Produces goods to workplace specifications 	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	□1 □2 □3	
8.	 Shows initiative and self-direction Examples of qualities and habits that the employee might exhibit include Prioritizes and carries out responsibilities without being told Responds with enthusiasm and flexibility to handle tasks that need immediate attention Reflects on any unsatisfactory outcome as an opportunity to learn Improves personal performance by doing something different or differently Analyzes how own actions impact the overall organization Supports own action with sound reasoning and principles Balances personal activities to minimize interference with work responsibilities 	☐ 1 ☐ 2 ☐ 3	□ 1 □ 2 □ 3	☐ 1 ☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	

Employability Skills	Rating			
Competency and Rating Criteria	Initial	Mid	Mid	Final
· · · · · ·		Year 1	Year 2	
9. Adapts to change Examples of qualities and habits that the employee might exhibit include Shows	<u></u> 1	<u></u>	∐ 1	∐1
flexibility and willingness to learn new skills for various job roles	□ 2	□ 2	□ 2	□ 2
Uses problem-solving and critical-thinking skills to cope with changing	□ 3	□ 3	□ 3	□ 3
circumstances				
Modifies own work behavior based on feedback, unsatisfactory outcomes,				
efficiency, and effectiveness				
Displays a "can do" attitude				
10. Demonstrates safety and security regulations and practices	□1	□1	□1	□1
Examples of qualities and habits that the employee might exhibit include			 □ 2	 □ 2
Follows personal safety requirements	☐ -	□ -		□- □3
Maintains a safe work environment				
Demonstrates professional role in an emergency Callagae acquaity assessing the second role. The second role is a second role in an emergency and role in an emergency are second role in an emergency and role in an emergency are second role in a second role in				
Follows security proceduresMaintains confidentiality				
·				
11. Applies job-related technology, information, and media	□ 1	□ 1	□ 1	□ 1
Examples of qualities and habits that the employee might exhibit include	□ 2	□ 2	□ 2	□ 2
 Applies technology effectively in the workplace Assesses and evaluates information on the job 	□ 3	□ 3	□ 3	□ 3
Assesses and evaluates information on the job Assesses training manuals, website, and other media related to the job				
, issesses training mandais, website, and other media related to the job				
12. Fulfills training or certification requirements for employment	□ 1	□ 1	□ 1	□ 1
Examples of this requirement may include	□ 2	□ 2	□ 2	□ 2
Participation in required career-related training and/or educational programs Passing postification tests to gualify for live postification.	3	3	3	3
 Passing certification tests to qualify for licensure and/or certification Participation in company training or orientation 				
Farticipation in company training of orientation				
13. Sets personal goals for improvement	□ 1	□ 1	1	
Examples of this requirement may include				
Setting goals that are specific and measurable				□ ² □ 3
Setting work-related goals that align with the organization's mission	□ 3		∐ 3	3
Identifying strategies to reach goals				
Reflecting on goal progress to regularly evaluate and modify goals				

OCCUPATIONAL COMPETENCIES (TO BE COMPLETED BY YA EMPLOYER/MENTOR)

Youth apprentices must earn a rating of at least "MEETS EXPECTATIONS" in each competency by the conclusion of the apprenticeship. A total of 15 competencies. (All 7 Manufacturing Fundamentals competencies with no substitutions, plus 18 Welding competencies, 17 must be from the list below. Employers may substitute one Welding competency with another occupationally appropriate skill. That skill should be added to the competency list for assessment. Where necessary, skills can be simulated. At least two evaluations are required each year of a youth apprenticeship. More columns are included below for those who choose to conduct more frequent reviews.

Note: Students who completed a previous Manufacturing YA program do not need to repeat the Manufacturing Fundamentals Competencies.

	Manufacturing Fundamentals Occupational Competencies		Rati	ing	
			ion - Min		_
	Competency and Rating Criteria	2 fo	r EACH C	heck Rati	ng
	Competency and Rating Criteria	Initial	Mid	Mid	Final
			Year 1	Year 2	
1.	Focus on customer needs	□ 1	□ 1	□ 1	□ 1
	identify internal and external customers impacted by the production	□ 2	□ 2	□ 2	□ 2
	processsatisfy internal and external customer's expectations	□ 3	□ 3	□ 3	□ 3
	 satisfy internal and external customer's expectations collaborate with team 				
	 assist work site professional to keep internal and/or external customers 				
	informed of project progress and decisions that may affect them				
	define the impact of the Voice of the Customer				
	determine the impact of your work to the internal and external				
	customer		ļ		
2.	Use various instruments				
	consider the degree of precision required by the part feature	□ 2	□ 2	□ 2	□ 2
	choose correct measuring instrument for task choose correct measuring instrument for t	□ 3	☐ 3	☐ 3	☐ 3
	verify equipment is available for use and in working order				
	verify equipment preventative maintenance and/or calibration inspect tools and work area for sefety considerations.				
	inspect tools and work area for safety considerationsclean and adjust measuring instrument prior to use				
	 use gauges, calipers, and micrometer instruments 				
	 use semi-precision and precision layout tools 				
	 use digital gauges, checking fixtures 				
	 use digital scales, thermometers 				
	confirm measurement accuracy				
	 record measurement correctly including unit of measurement at proper 				
	interval				
	 calibrate, clean, and store measuring instruments properly 				
	• convert standard to metric – metric to standard measurement units				
			1	i !	1

Manufacturing Fundamentals Occupational Competencies		Rat	ing	
	Evaluation - Minimum Rating of		_	
Competency and Rating Criteria	2 fc	r EACH C	heck Rat	ing
Competency and Rating Criteria	Initial	Mid Year 1	Mid Year 2	Final
 Operate tools and equipment safely operate only tool/equipment that he/she is trained on choose correct tool/equipment for the task follow tool check list verify tool/equipment is available for use and in working order verify tool/equipment is current for preventative maintenance and/or calibration wear appropriate Personal Protective Equipment (PPE) inspect tool/equipment and work area for safety considerations prepare tool/equipment for safe operation operate tool/equipment safely with guarding devices monitor tool/equipment for safe operation while operating compare tool/equipment performance regularly to optimal equipment operations follow facility procedures for clean-up and shut down after use perform required preventative maintenance procedures report abnormal tool/equipment conditions properly shuts down and labels any tool/equipment that is not operating as expected follow Lock Out/Tag Out procedures as applicable document use and maintenance 	□1 □2 □3	□ 1 □ 2 □ 3	□ 1 □ 2 □ 3	□ 1 □ 2 □ 3
4. Practice quality assurance principles • inspect materials/piece/product at all stages of production • identify quality or condition of materials/piece/product • monitor materials, processes, equipment, tools, and products throughout the production process • inspect final product/piece to ensure it meets specifications • identify and segregate materials and/or product that do not meet specification • communicate with work site professional if materials/product do not meet requirements • document all quality checks • participate in root-cause analysis of process/product • take ownership of work • collaborate with work site professional on corrective action	□ 1 □ 2 □ 3	□ 1 □ 2 □ 3	□ 1 □ 2 □ 3	☐ 1 ☐ 2 ☐ 3

	Manufacturing Fundamentals Occupational Competencies		Rati	ing	
		Evaluation - Minimum Rating (2 for EACH Check Rating			_
	Competency and Rating Criteria	2 fc		heck Rati	ing
	competency and nating enteria	Initial	Mid	Mid	Final
_	Fallers are and refets are referred to feet.		Year 1	Year 2	
5.	 Follow personal safety requirements (safety) participate in required safety training 		<u> </u> 1		□1
	follow all worksite guidelines for personal safety	2	<u></u>	2	□ 2
	apply principles of proper body mechanics	□ 3	3	3	3
	 report exposures, injuries, near misses, or accidents, personal or to 				
	others immediately				
	 locate key information on Material Safety Data Sheets (MSDS) 				
	 handle and dispose of any hazardous materials appropriately 				
	 operate equipment that he/she is trained on 				
	adhere to equipment safety standards				
	visually inspect equipment before operation				
	wear required Personal Protective Equipment (PPE) at all times				
	follow company emergency action plan				
	• identify hazardous conditions and restricted areas in the workplace				
	avoid pinch points				
	• be aware of surroundings				
6.	Maintain a safe work environment (safety)				
0.	 comply with posted safety warnings and symbols 			∐ 1 □ 2	
	 identify unsafe conditions and/or work habits 	<u></u>	<u> </u> 2	<u></u>	□2
	report unsafe conditions and/or work habits	3	∐3	∐ 3	∐ 3
	 help maintain a clean and safe working environment free of debris and obstacles 				
	maintain clean, organized work area				
	 use hazardous materials according to company procedure 				
	 report any indications of insects or pests, if necessary 				
	 follow appropriate Lock out – tag out procedures 				
	 adhere to Occupational Safety and Health Administration (OSHA) Safety guidelines 				
	• follow rules for operating equipment (Powered Industrial Vehicle PIV)				
	identify applicable Emergency Stops				
7.	Demonstrate professional role to be used in an emergency (safety)	□ 1	□ 1	1	
	 participate in emergency safety simulations and drills 	☐ <u>1</u>		□ 1 □ 2	
	 describe company's policy and procedures for work site incidents, 			□ ²	□ 2
	accidents, electrical, fire, tornado, bomb threats, robbery, hostage	3	🗆 🌣	3	
	situations, and other emergency situations				
	 identify the closest fire alarms and emergency exits 				
	• identify the fire extinguishers				
	 identify appropriate alarms and procedures for using alarms 				
	contact emergency personnel in the event of an emergency				
	contribute to emergency incident documentation				

Manufacturing Fundamentals Occupational Competencies	Rating				
Commenter and Pating Critaria		Evaluation - Minimum Rating of 2 for EACH Check Rating			
Competency and Rating Criteria	Initial	Mid Year 1	Mid Year 2	Final	
Comments:					

Welding (TO BE COMPLETED BY YA EMPLOYER/MENTOR)

Select welding processes practiced by the Youth Apprentice.

Welding Processes	Thermal /Chemical Cutting Processes				
☐ Flux-cored Arc Welding (FCAW)	☐ Air Carbon Arc				
☐ Gas Metal Arc Welding (GMAW-MIG)	☐ Laser				
☐ Gas Tungsten Arc Welding (GTAW-TIG)	☐ Oxy-fuel Manual				
☐ Submerged Arc Welding (SAW)	Oxy-fuel Machine				
☐ Shielded Metal Arc Welding (SMAW-Stick)	☐ Plasma Manual				
☐ Other:	☐ Plasma Machine				
	☐ Other:				

Occupational Competencies	Occupational Competencies Rating			
	Evaluat	ion - Min	imum Ra	ting of
Competency and Rating Criteria	2 fc	r EACH C	heck Rati	ng
Competency and Nating Criteria	Initial	Mid	Mid	Final
	IIIIciai	Year 1	Year 2	IIIIai
 Read welding technical drawings and work orders 		Year 1	Rating	T
 review technical drawing 	□ 1	□ 1	□ 1	□ 1
 gather reference materials 	□ 2	□ 2	□ 2	□ 2
 determine type of weld required 	 	_ ☐3	_ 3	_
 determine location of weld required 				
 determine filler metal required 		Year Ra	ting 2	
 determine welding process 				□1
 analyze supplementary data 				
 determine product/job instructions and specifications 	2	2	□ 2	<u> </u>
 interpret welding symbols and procedures 		3	□ 3	□ 3
2. Interpret welding symbols and procedures		Year 1 Rating		
 interpret job task technical drawings accurately 	□ 1	□ 1	□ 1	□ 1
 use appropriate terminology 	□ 2	□ 2	□ 2	□ 2
 identify lines, views, symbols, and representations on the drawings 	□3	□ 3	□3	
 interpret dimensions, tolerances, and scale on the drawing interpre 	t			—
the welding process plan from a technical drawing which includes		Year 2	Rating	<u> </u>
 identify required welding tools 		1		1
 identify required welding equipment 				
 identify required welding speeds 	☐ 2	<u> </u> 2	□ 2	
 identify required welding feeds 		3	□ 3	□ 3
 identify required welding fixtures identify required welding holders 				
 interpret the welding process plan from a technical drawing which 				
includes				
 identify required welding tools 				
 identify required welding equipment 				
 identify required welding speeds 				
 identify required welding feeds 				
 identify required welding fixtures identify required welding holders 				
•				1

Occupational Competencies			Rati	ing	
		Evaluat	ion - Min	imum Ra	ting of
	Competency and Rating Criteria	2 fo	r EACH C	heck Rati	ing
	Competency and Rating Criteria	Initial	Mid Year 1	Mid Year 2	Final
3.	Layout and plan work		Year 1		<u> </u>
	 read welding technical drawings and work orders 	□1		1	□ 1
	 interpret welding symbols and procedure 	☐ 2	☐ 2		
	 review appropriate welding, cutting and/or fabricating procedures 				
	determine equipment, work pieces, and supplies needed	3	□ 3	3	3
	 determine metal type, electrode type, welding position, and metal 				
	thickness		Year 2	Rating	
	 select jigs, holding fixtures, guides and stops 	□ 1	□ 1	∐1	□ 1
	obtain materials for work	□ 2	□ 2	□ 2	□ 2
	• measure and mark weld or cut points and positions of components on	☐ 3	□ 3	□ 3	☐ 3
	work pieces				
	 plan sequencing of work 				
	 document measurements and layout 				
	•				
4.	Perform safety checks		Year 1	Rating	1
	 review welding procedure to be used 	□ 1	□ 1	□ 1	□ 1
	 review safety requirements of procedure 	□ 2	□ 2	□ 2	□ 2
	verify safety equipment and Personal Protective Equipment (PPE)	□ 3	□3	□3	□ 3
	needed for welding process				
	verify equipment is available for use and in working order		Year 2	Rating	I
	verify equipment is current for preventative maintenance and/or verify equipment is current for preventative maintenance and/or	1	□ 1		□ 1
	calibration			☐ 2	2
	 conduct required safety checks prior to performing procedure ensure area is dry and facilitates circulation of clean air 	☐ _ 3	☐ 3		
	ensure workspace is clear and free of flammable materials				
	assure safety equipment is close by and operational				
	 check valves, valve protection, thread type and wrenches 				
	 check grounding, cables, voltage/current transformation components 				
	 check ventilation and fume reduction requirements 				
	 ensure compressed gas protector cap is secure when moving cylinder 				
	secure compressed gas cylinder in vertical position				
	inspect compressed gas valve, regulator and gauges for damage				
	connect and adjust compressed gas tank pressure according to				
	manufacturer specifications				
	 report wear, damage or failure of safety checks to work site 				
	professional immediately				

	Occupational Competencies		Rat	ing	
		Evaluat	ion - Min	_	ting of
			r EACH C		-
	Competency and Rating Criteria		Mid	Mid	
		Initial	Year 1	Year 2	Final
5.	Prepare base metal		Year 1		
	review procedures	□ 1			□ 1
	determine base metal or work piece preparation requirements				
	obtain correct base metal type and thickness		□ 2	2	
	 prepare base metal surfaces as required 			3	□ 3
	 use cleaning solutions if needed 				
	 examine edges of prepared base metal parts 		Year 2	Rating	
	 grind base carbon steel metal to bevel and/or remove surface 	□ 1	□ 1	□ 1	□ 1
	irregularities		_ 2	_ 2	_ 2
	 check uniformity, proper fit-up, and base metal preparation 			□ 3	
	 pre-heat metal as specified 				
	fit and preheat parts as specified				
	itt and preneat parts as specified				
6	Set up to fabricate base metal		Year 1	Rating	
0.	prepare base metal				□ 1
	set up to fabricate base metal				
	add or adjust safety guards	<u> </u>		<u></u>	2
	 verify machine settings for material 	□ 3		3	
	 verify flacinite settings for flaterial verify blades, shears, dies, etc., appropriate for metal fabrication to be 				
	completed		Year 2	Rating	
	perform equipment pre-check	□ 1	□ 1	□ 1	1
	make test cuts			 □ 2	_ 2
	 adjust holding devices, blade speeds, and metal positions safely as 			□ 3	
	needed				
	operate tools and equipment safely				
	fabricate base metal				
	use hand tools such as brakes and hammers				
	 use equipment such as such as grinders, saws, drills, drill presses, or 				
	brakes				
	• complete cuts				
	 inspect, measure, or test completed metal pieces 				
	·				
	shut down and secure equipment				
	clean up report any discrepancies or equipment concerns to work site.				
	 report any discrepancies or equipment concerns to work site professional immediately 				
	·				
	document cutting processlayout and plan work				
	· · · · · · · · · · · · · · · · · · ·				
	perform safety checks assemble tools and aguinment as required.				
	assemble tools and equipment as required				
	place parts and assemblies into fixtures				
	set up equipment for fabrication				
	document set up procedure if required				
	locate parts or subassemblies needed				
	 determine the order for the part or subassembly placement 				

Occupational Competencies	Rating			
	Evaluation - Minimum Rating			ting of
Compatency and Bating Critaria	2 for EACH Check Rat		heck Rati	ing
Competency and Rating Criteria	Initial	Mid	Mid	Final
	IIIILIAI	Year 1	Year 2	Fillal
 position, align, and bolt jigs, holding fixtures, guides, and stops onto machines 				
 position, align and/or clamp work pieces into jigs and/or holding fixtures tighten all holding and positioning clamps inspect assembly select torch tips, alloys, flux, coil, tubing, and wire, according to metal types and thicknesses dress electrodes with tip dressers, files, emery cloths, or dressing wheels move switch to correct polarity or change electrode and ground cable positions adjust voltage and/or amperage per procedure select appropriate program where required set wire feed rate OR shielding gas flow/pressure at correct value adjust saw safety guards 				
 adjust saw holding device as needed place material in holding device allow for proper part ejection adjust saw blade velocity 				
7. Set up welding job		Year 1	Rating	<u> </u>
 select torch tips, alloys, flux, coil, tubing, and wire, according to metal 	□ 1	□ 1	1	□ 1
types and thicknesses, data charts, and records	☐ 2	□ <u>1</u>	□ <u>1</u> □ 2	
 dress electrodes with tip dressers, files, emery cloths, or dressing 				
wheels	3	∐ 3		3
 move switch to correct polarity or change electrode and ground cable 				j
positions		Year 2		
 adjust voltage and/or amperage per procedure 	☐ 1	∐1	∐1	
select appropriate program	☐ 2	<u></u>	<u> </u>	2
 set wire feed rate or shielding gas flow/pressure at correct value fill hoppers and position spouts to direct flow of flux or complete manually 	□ 3	□ 3	3	3
review technique and weld bead sequence				
determine joint requirements				
determine pre-heat and post-heat requirements				

	Occupational Competencies	Rating			
		Evaluat	Evaluation - Minimum Rating on EACH Check Rating		
	Competency and Rating Criteria	2 fo	r EACH C	heck Rati	ng
	Competency and Rating Criteria	Initial	Mid Year 1	Mid Year 2	Final
8.	Fabricate base metal		Year 1		
	prepare base metal	□1	1	□ 1	□ 1
	set up to fabricate base metal				
	add or adjust safety guards		☐ 2	<u> </u> 2	□ 2
	verify machine settings for material	<u></u> 3	3		3
	 verify hades, shears, dies, etc., appropriate for metal fabrication to be 				
	completed		Year 2	Rating	
	perform equipment pre-check	□ 1	□ 1	□ 1	□ 1
	make test cuts	□2	□2	□2	□ 2
	 adjust holding devices, blade speeds, and metal positions safely as 	 3		 □3	 3
	needed				
	 operate tools and equipment safely 				
	 use hand tools such as brakes and hammers 				
	 use equipment such as such as grinders, saws, drills, drill presses, or brakes 				
	• complete cuts				
	 inspect, measure, or test completed metal pieces 				
	shut down and secure equipment				
	• clean up				
	report any discrepancies or equipment concerns to worksite				
	professional immediately				
	 document cutting process if required 				
	Cut metal thermally/chemically		Voor 1	Datina	
Э.	prepare base metal		Year 1		
	· ·		<u> </u> 1	∐1	∐1
	set up to fabricate base metaladjust voltage and/or amperage per procedure	2	<u></u>	<u></u>	<u></u>
		□ 3	□ 3	□ 3	☐ 3
	select appropriate program set wire feed rate or chieffing as flow (assessment value).				
	set wire feed rate or shielding gas flow/pressure at correct valuemake test cuts		Year 2	Rating	
	 adjust pressures, amperage, voltage, flow rates, torch angles, flame 	□ 1	□ 1	□ 1	□ 1
	sizes, travel speed	_ 2	_ 2	_ 2	_ 2
	operate tools and equipment safely		 3		 ☐ 3
	complete cuts				
	remove any slag or residue				
	• •				
	inspect, measure, or test completed metal pieces shut down and source againment				
	shut down and secure equipment				
	clean up report any discrepancies or agricument concerns to worksite				
	 report any discrepancies or equipment concerns to worksite professional immediately 				
	 document cutting process 				
		1	i '	1	

Occupational Competencies		Rati	ing	
· ·	Evaluat	ion - Min	imum Ra	ting of
Occupation of Bullion Office			heck Rati	_
Competency and Rating Criteria	la:4:al	Mid	Mid	Final.
	Initial	Year 1	Year 2	Final
10. Tack work pieces		Year 1	Rating	
 position the work pieces 	□ 1	□ 1	□ 1	□1
 tack-weld them together lightly 	2		 2	 2
 weld just enough to pin the work pieces together 	□ 2	□ - □ 3		□3
 adjust and re-align assemblies as needed to keep pieces positioned 	3	3	3	3
remove slag or other material				
 check that all required work pieces are tacked before attempting full 		Year 2	Rating	
welds	1	□ 1	□ 1	1
 check the pieces for appropriate geometry by measuring 	2	□ 2	□ 2	☐ 2
	□ 3	□3	□ 3	☐ 3
11. Weld metal		Year 1	Rating	
prepare base metal	□1	□1	□1	□ 1
set up to fabricate base metal	□ 1			
 verify and adjust settings for required process 	=	<u></u>	<u></u>	□2
select appropriate program where required	∐ 3	∐ 3	∐3	☐ 3
make test welds				
 adjust pressures, amperage, voltage, flow rates, torch angles, flame 		Year 2	Rating	
sizes, travel speed, etc.	□ 1	□ 1	□ 1	□ 1
 hold the welding gun appropriately to prevent weld wandering 	□2	□2	□2	□ 2
 operate tools and equipment safely 	 3	 3	 □3	 3
]			
 make fillet welds on plain carbon steel, stainless steel or aluminum in required positions 				
·				
make groove welds on plain carbon steel, stainless steel or aluminum in required positions.				
in required positions				
 monitor metal for appropriate welds 				
12. Monitor product and process		Year 1	Rating	
monitor piece/product produced for specification	□ 1		1	□ 1
recheck type of metal to be welded				
monitor the process and equipment for performance	☐ 2	<u></u>	□ 2	□2
check condition of consumables	<u> </u>	□ 3	∐ 3	3
recheck required positioning of the weld gun or torch				
adjust the process for quality and/or productivity as needed		Year 2	Rating	
take corrective actions to resolve problems as they occur	□ 1	□ 1	□ 1	□ 1
replenish processing materials as needed	□ 2	□ 2	□ 2	□ 2
label pieces/products for compliance or non-compliance	□3	□3	□3	П3
document quality control checks				
 pieces are fabricated to specified tolerances 				
- pieces are rapricated to specified tolerances				

Occupational Competencies		Rat	ing	
	Evaluation - Minimum Rating of			ting of
	2 for EACH Check Rating			_
Competency and Rating Criteria		Mid	Mid	
	Initial	Year 1	Year 2	Final
13. Assist inspection of completed metal piece		Year 1	Rating	ı
 ensure conformance to specifications, using visual inspection, 	□1	□ 1		□ 1
measuring, and testing devices	☐ 2		☐ _	
 examine edges and geometry of cut pieces examine tacks, root passes, 				
intermediate layers, and completed welds	_	∐3		3
check for weld discontinuity and defects visually		l		
check for proper weld size		Year 2	Rating	T
 perform destructive or non-destructive checks as required 	□ 1	□ 1	□ 1	
label pieces/products for compliance or non-compliance	☐ 2	□ 2	□ 2	□ 2
 document inspection and testing as required 	☐ 3	☐ 3	☐ 3	☐ 3
14. Process production documents		Year 1	Rating	
 document processing data on items such as labor, quality, quantity, 	□ 1	□ 1	□ 1	
and time	2	_ 2	2	2
 verify fabrication and welding documentation is completed 				<u> </u>
 verify documentation is legible 				
verify documentation is complete		Year 2	Dating	
 verify documentation is in appropriate format 		_		
 verify documentation is stored or forwarded as required 	□ 1	□ 1	□1	
 review documentation with work site professional 	2	<u></u>	□ 2	□ 2
	3	3	□ 3	3
15. Clean up		Year 1	Rating	1
select appropriate cleaning tools and equipment	□ 1	□ 1	□ 1	
clean tools/equipment as required	□ 2	□ 2	□ 2	□ 2
clean work area as required	□ 3	□ 3	□ 3	□3
store tools safely in proper location				
store materials in safe manner		Year 2	Rating	ı
identify unsafe conditions and report them promptly	□ 1	□ 1	<u> </u>	□ 1
take corrective action to correct unsafe conditions	□ - □ 2		☐ -	
ensure that workstation is clean and clear of safety hazards				
ensure workstation is organized for efficiency	3	□ 3	□ 3	3
dispose of waste appropriately as required		<u> </u>		
16. Monitor equipment for correct operation		Year 1		
review equipment quality measures for trends and problems as	□ 1	□ 1	□ 1	
required	□ 2	2	□ 2	□ 2
compare current equipment performance to optimal equipment concrations on a regular basis.	☐ 3	□ 3	□ 3	☐ 3
operations on a regular basis				
report any noted deviations from expected performance assist worksite professional to investigate abnormal equipment		Year 2	Rating	•
assist worksite professional to investigate abnormal equipment conditions in a timely manner.	1	□ 1		1
conditions in a timely manner	☐ -		☐ -	
 assist worksite professional to follow up on repaired equipment to ensure that corrective action solved the problem 				
	🗆 🌣	🗀 🍮		🗆 🍮
document all monitoring activities				

Occupational Competencies	Rating			
		Evaluation - Minimum Rating (2 for EACH Check Rating		
Competency and Rating Criteria	2 fo			ng
	Initial	Mid Year 1	Mid Year 2	Final
17. Perform routine preventive maintenance (PM)		Year 1	Rating	
 perform preventative maintenance (PM) according to facility schedule 	□ 1	□1	□ 1	□ 1
communicate PM to production	 2	 2	 2	 2
 assure that alternative equipment is available if needed by production gather supplies to perform PM 	□3	3	3	3
 ensure that equipment is properly labeled and pulled from production 		Voor 2		
use		Year 2 I		
follow appropriate lock coil break, wire de-reeler, flowmeter, wire guides, and drive rollers on gas metal arc and flux core welding equipment. remove weld spatter and foreign material from guns, torshes, and foreign material from guns, torshes, and foreign material from guns.	☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3	☐ 2 ☐ 3	☐ 1 ☐ 2 ☐ 3
 remove weld spatter and foreign material from guns, torches, and/or electrode holders 				
 inspect hand tools, fixtures, and/or tables 				
 mount wire electrode coils if applicable 				
inspect and clean work areas				
 report any damage, wear, or missing safety equipment to worksite professional 				
 re-qualify equipment for operation 				
document PM and preventative actions taken				
18. Document equipment use, PM, and/or operational problems		Year 1	Rating	
verify all internal and external communication with appropriate	□1	1	1	□ 1
parties in a timely manner		□ 1	□ 1	☐ 2
 communicate maintenance and repair needs clearly 				
 use the correct reporting formats for communication 	∐ 3	□ 3	□ 3	3
 document use, maintenance, and repair activities accurately 				<u> </u>
report back and document any maintenance and repair issues in a		Year 2 I	Rating	
timely manner	□ 1	□ 1	□ 1	
maintenance communication is timely and accurate	□ 2	□ 2	□ 2	□ 2
maintenance communication is documented	□3	□ 3	□ 3	□ 3
Competency Substitute (if you replaced a competency above, note the		Year 1	Rating	
competency and rating)	1	1	□ 1	□ 1
		 □ 2	 2	_ 2
	□ -	□ -	□- □3	
		3		
		Year 2 I	Rating	
	□ 1	□ 1	□ 1	□ 1
	□2	□ 2	□2	□ 2
		٦٠	۔ ا	

Occupational Competencies Rating							
		Evaluation - Minimum Rating of					
Competency and Rating Criteria	2 fo		heck Rati	ng			
Competency and Nating Criteria	Initial	Mid	Mid	Final			
	miciai	Year 1	Year 2				
Comments:							

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