Welding

Youth Apprenticeship

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

COMPETENCIES

Welding Production Operations youth apprentices must complete **a total of 25** competencies. All **7** Manufacturing Fundamentals Competencies must be complete. No substitutions to this list. **Seventeen** of the 18 Welding competencies listed below must be complete. Employers can substitute up to **1** competency with another occupationally appropriate skill. Substitutions must be added to the competency list for assessment. Note that where necessary, skills can be simulated.

NOTE: Students completing a 2-year welding youth apprenticeship must select different welding processes than the first year.

***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 2. Use various instruments 3. Operate tools and equipment safely 4. Practice quality assurance principles 5. Follow personal safety requirements 6. Maintain a safe work environment 7. Demonstrate professional role to be used in an emergency	1. Read welding technical drawings and work orders 2. Interpret welding symbols and procedures 3. Layout and plan work 4. Perform safety checks 5. Prepare base metal 6. Set up to fabricate base metal 7. Set up welding job 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. 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:

- Welding Fabricator
- Industrial Manufacturing Technician

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

WELDING

Youth Apprenticeship

ON-THE-JOB LEARNING PERFORMANCE STANDARDS GUIDE

YOUTH APPRENTICE INFORMATION

Youth Apprentice Name	
YA Coordinator	**YA Consortium**
School District	**High School Graduation Date**

REQUIREMENTS

Level One Requirements

Youth apprentices must complete ALL the items listed below. Check completed areas.

- ☐ Competency checklist (including both Manufacturing Fundamentals and Welding Competencies)
- ☐ Employability Skills checklist (in this OJL Guide) or the DPI Employability Skills Certificate
- ☐ Related instruction equal to 1 high school credit or at least 3 college credits
- ☐ Minimum of 450 work hours

Level Two Requirements

Youth apprentices must complete ALL the items listed below. Check completed areas.

- ☐ Competency checklist (must be different welding process than the first year)
- ☐ Employability Skills checklist (in this OJL Guide) or the DPI Employability Skills Certificate
- ☐ Related instruction equal to 2 high school credits or at least 6 college credits
- ☐ Minimum of 900 work hours

HOURS

Record the hours the youth apprentice worked.

Total Hours Employed	**Company Name**	**Telephone Number**

CAREER PREPARATION

Youth apprentices must complete **one** of the following during Youth Apprenticeship participation:

☐ 1. Student is participating in a local or regional career pathway*.

Identify the pathway below:

For more information contact the Wisconsin Department of Public Instruction. Additional help may be found on the WI DPI Wisconsin Pathways – Regional Career Pathways and DPI Career Clusters and Pathways web pages.

***Local and Regional career pathways** as defined by the WI DPI means that a student is participating in or has completed at least one CTE class in a cluster pathway sequence and has completed at least one of the other career pathway components: instructional related course, work-based learning, dual college credit, and/or career and technical student organization.

☐ 2. Student has completed one of the following certificates during their YA program or possess current certification earned previously.

A copy of the certificate must be uploaded with the completed checklist. Select the certificate from the list below.

- ☐ OSHA Safety Training (10 or 30)
- ☐ Leadership Certificate (DPI)
- ☐ American Welding Society (AWS)
- ☐ DWD-BAS: Wisconsin Department of Workforce Development, Bureau of (Adult) Apprenticeship Standards
- ☐ NIMS- National Institute for Metalworking Skills credentialing
- ☐ SNAP ON Certifications (i.e., precision measurement)
- ☐ Manufacturing Skill Standards Certification (MSSC)
- ☐ Other certificates identified by the CTE Approved Certifications List related to this occupational field (or related to this occupation) dwd.wisconsin.gov/det/cteincentive/ (YA certificates excluded)

Title of Certification:

☐ 3. Student is participating in a Dual Enrollment Course connected to any postsecondary education provider including UW System, Wisconsin Association of Independent Colleges and Universities (WAICU), and any of the 16 Wisconsin Technical Colleges (WTCS).

College Name:

College Course Title: Course Number:

For more information on Dual Enrollment opportunities, please click on one of the below resources:

- WTCS
- WAICU
- UW System – connect with the college of choice.

SIGNATURES

The On-the-Job Learning Performance Standards Guide includes a list of competencies youth apprentices learn through mentoring and training at the worksite.

Instructions for the Worksite Employers/Mentors and School-Base or YA coordinators.

This document should be reviewed with the employer / mentor, school-based or YA coordinator on a regular basis with the youth apprentice to record progress and plan future steps to ensure completion of the required competencies. Mentors, school-based / YA coordinator, and the apprentice sign below.

Employer/Mentor Signature	Employer/Mentor Signature
Employer/Mentor	Employer/Mentor
Business/Company	Business/Company
Date Signed	Date Signed
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 Signature	Youth Apprentice Signature
Youth Apprentice	Youth Apprentice
School District / High School	School District / High School
Date Signed	Date Signed

EMPLOYABILITY SKILLS

Youth apprentices must demonstrate key employability skills.

The DWD YA program employability skills requirement may be attained and demonstrated through two processes. (See options listed below.) Employability skills must be completed for every year a student is in the program. The DPI Employability Skills Certificate may be counted as meeting one of those two years, provided the certificate is earned in the same year the student is enrolled in youth apprenticeship or they can complete the YA Employability Skills in the OJL. The Employability Skills Certificate must be obtained through the DPI.

1. If a student has successfully completed a Wisconsin Department of Public Instruction (DPI) State-Certified Cooperative Education, Co-Op Employability Skill certification then they have met the YA Employability Skills requirement for that year. A copy of the student's DPI Co-Op Employability Skill Certificate must be maintained on file with their YA regional consortium.

   ☐ Earned Wisconsin Employability Skills Certificate (checked if applicable) or,

2. Completed and rated "Employability Skills" through this YA OJL guide as described below.

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

The following skills are required of all youth apprentices.

Employability Skills	**Rating**		
Competency and Rating Criteria	**Minimum Rating of 2 for EACH Check Rating**		
	1	**2**	**3**
1. 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	**Year 1 Rating**		
	☐	☐	☐
	Year 2 Rating		
	☐	☐	☐

Employability Skills	Rating		
Competency and Rating Criteria	**Minimum Rating of 2 for EACH Check Rating**		
	1	**2**	**3**
2. Communicates effectively with others *Examples of qualities and habits that the employee might exhibit include . . .* • Adjust 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	**Year 1 Rating**		
	☐	☐	☐
	Year 2 Rating		
	☐	☐	☐
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 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	**Year 1 Rating**		
	☐	☐	☐
	Year 2 Rating		
	☐	☐	☐
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	**Year 1 Rating**		
	☐	☐	☐
	Year 2 Rating		
	☐	☐	☐
5. Demonstrates integrity *Examples of qualities and habits that the employee might exhibit include . . .* • Carries our 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	**Year 1 Rating**		
	☐	☐	☐
	Year 2 Rating		
	☐	☐	☐

Employability Skills	Rating		
Competency and Rating Criteria	**Minimum Rating of 2 for EACH Check Rating**		
	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 • Preforms 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	**Year 1 Rating**		
	☐	☐	☐
	Year 2 Rating		
	☐	☐	☐
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	**Year 1 Rating**		
	☐	☐	☐
	Year 2 Rating		
	☐	☐	☐
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	**Year 1 Rating**		
	☐	☐	☐
	Year 2 Rating		
	☐	☐	☐

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

COMPETENCIES

Welding Production Operations youth apprentices must complete **a total of 25** competencies. All **7** Manufacturing Fundamentals Competencies must be complete. No substitutions to this list. **Seventeen** of the 18 Welding competencies listed below must be complete. Employers can substitute up to **1** competency with another occupationally appropriate skill. Substitutions must be added to the competency list for assessment. Note that where necessary, skills can be simulated.

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

Rating Scale

3: Exceeds entry level criteria | Requires minimal supervision | Consistently displays this behavior
2: Meets entry level criteria | Requires some supervision | Often displays this behavior
1: Needs improvement | Requires much assistance and supervision | Rarely displays behavior

Manufacturing Fundamentals – Complete all competencies

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
1. Focus on customer needs • Identify internal and external customers impacted by the production process • 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	☐	☐	☐

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
2. Use various instruments • Consider the degree of precision required by the part feature • Choose correct measuring instrument for task • Verify equipment is available for use and in working order • Verify equipment preventative maintenance and/or calibration • Inspect tools and work area for safety considerations • Clean 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	☐	☐	☐
3. 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	☐	☐	☐

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	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	☐	☐	☐
5. Follow personal safety requirements (safety) • Participate in required safety training • Follow all worksite guidelines for personal safety • Apply principles of proper body mechanics • 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	☐	☐	☐

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
6. Maintain a safe work environment (safety) • Comply with posted safety warnings and symbols • Identify unsafe conditions and/or work habits • Report unsafe conditions and/or work habits • 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) • Participate in emergency safety simulations and drills • Describe company's policy and procedures for work site incidents, accidents, electrical, fire, tornado, bomb threats, robbery, hostage 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	☐	☐	☐
Comments:			

Welding

Select welding processes practiced by the Youth Apprentice.

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

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
1. Read welding technical drawings and work orders • Review technical drawing • Gather reference materials • Determine type of weld required • Determine location of weld required • Determine filler metal required • Determine welding process • Analyze supplementary data • Determine product/job instructions and specifications • Interpret welding symbols and procedures	☐	☐	☐
2. Interpret welding symbols and procedures • Interpret job task technical drawings accurately • Use appropriate terminology • Identify lines, views, symbols, and representations on the drawings • Interpret dimensions, tolerances, and scale on the drawings • 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	☐	☐	☐

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
3. Layout and plan work • Read welding technical drawings and work orders • Interpret welding symbols and procedure • Review appropriate welding, cutting and/or fabricating procedures • Determine equipment, work pieces, and supplies needed • Determine metal type, electrode type, welding position, and metal thickness • Select jigs, holding fixtures, guides and stops • Obtain materials for work • Measure and mark weld or cut points and positions of components on work pieces • Plan sequencing of work • Document measurements and layout	☐	☐	☐
4. Perform safety checks • Review welding procedure to be used • Review safety requirements of procedure • Verify safety equipment and Personal Protective Equipment (PPE) needed for welding process • Verify equipment is available for use and in working order • Verify equipment is current for preventative maintenance and/or calibration • Conduct required safety checks prior to performing procedure • Ensure area is dry and facilitates circulation of clean air • 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	☐	☐	☐

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
5. Prepare base metal • Review procedures • Determine base metal or work piece preparation requirements • Obtain correct base metal type and thickness • Prepare base metal surfaces as required • Use cleaning solutions if needed • Examine edges of prepared base metal parts • Grind base carbon steel metal to bevel and/or remove surface irregularities • Check uniformity, proper fit-up, and base metal preparation • Pre-heat metal as specified • Fit and preheat parts as specified	☐	☐	☐
6. Set up to fabricate base metal • Prepare base metal • Set up to fabricate base metal • Add or adjust safety guards • Verify machine settings for material • Verify blades, shears, dies, etc., appropriate for metal fabrication to be completed • Perform equipment pre-check • Make test cuts • Adjust holding devices, blade speeds, and metal positions safely as 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 professional immediately • Document cutting process • Layout and plan work • Perform safety checks • 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	☐	☐	☐

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
• Determine the order for the part or subassembly placement • 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 • Select torch tips, alloys, flux, coil, tubing, and wire, according to metal types and thicknesses, data charts, and records • 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 • 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 • Review technique and weld bead sequence • Determine joint requirements • Determine pre-heat and post-heat requirements	☐	☐	☐

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
8. Fabricate base metal • Prepare base metal • Set up to fabricate base metal • Add or adjust safety guards • Verify machine settings for material • Verify blades, shears, dies, etc., appropriate for metal fabrication to be completed • Perform equipment pre-check • Make test cuts • Adjust holding devices, blade speeds, and metal positions safely as 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	☐	☐	☐
9. Cut metal thermally/chemically • Prepare base metal • Set up to fabricate base metal • Adjust voltage and/or amperage per procedure • Select appropriate program • Set wire feed rate OR shielding gas flow/pressure at correct value • Make test cuts • Adjust pressures, amperage, voltage, flow rates, torch angles, flame sizes, travel speed • Operate tools and equipment safely • Complete cuts • Remove any slag or residue • 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	☐	☐	☐

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
10. Tack work pieces • Position the work pieces • Tack-weld them together lightly • Weld just enough to pin the work pieces together • Adjust and re-align assemblies as needed to keep pieces positioned • Remove slag or other material • Check that all required work pieces are tacked before attempting full welds • Check the pieces for appropriate geometry by measuring	☐	☐	☐
11. Weld metal • Prepare base metal • Set up to fabricate base metal • Verify and adjust settings for required process • Select appropriate program where required • Make test welds • Adjust pressures, amperage, voltage, flow rates, torch angles, flame sizes, travel speed, etc. • Hold the welding gun appropriately to prevent weld wandering • Operate tools and equipment safely • 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 • Monitor metal for appropriate welds	☐	☐	☐
12. Monitor product and process • Monitor piece/product produced for specification • Recheck type of metal to be welded • Monitor the process and equipment for performance • Check condition of consumables • Recheck required positioning of the weld gun or torch • Adjust the process for quality and/or productivity as needed • Take corrective actions to resolve problems as they occur • Replenish processing materials as needed • Label pieces/products for compliance or non-compliance • Document quality control checks • Pieces are fabricated to specified tolerances	☐	☐	☐

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
13. Assist inspection of completed metal piece • Ensure conformance to specifications, using visual inspection, measuring and testing devices • Examine edges and geometry of cut pieces Examine tacks, root passes, intermediate layers, and completed welds • Check for weld discontinuity and defects visually • Check for proper weld size • Perform destructive or non-destructive checks as required • Label pieces/products for compliance or non-compliance • Document inspection and testing as required	☐	☐	☐
14. Process production documents • Document processing data on items such as labor, quality, quantity, and time • Verify fabrication and welding documentation is completed • Verify documentation is legible • Verify documentation is complete • Verify documentation is in appropriate format • Verify documentation is stored or forwarded as required • Review documentation with work site professional	☐	☐	☐
15. Clean up • Select appropriate cleaning tools and equipment • Clean tools/equipment as required • Clean work area as required • Store tools safely in proper location • Store materials in safe manner • Identify unsafe conditions and report them promptly • Take corrective action to correct unsafe conditions • Ensure that workstation is clean and clear of safety hazards • Ensure workstation is organized for efficiency • Dispose of waste appropriately as required	☐	☐	☐

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
16. Monitor equipment for correct operation • Review equipment quality measures for trends and problems as required • Compare current equipment performance to optimal equipment operations on a regular basis • Report any noted deviations from expected performance • Assist worksite professional to investigate abnormal equipment 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	☐	☐	☐
17. Perform routine preventive maintenance (PM) • Perform preventative maintenance (PM) according to facility schedule • Communicate PM to production • Assure that alternative equipment is available if needed by production • Gather supplies to perform PM • Ensure that equipment is properly labeled and pulled from production use • 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, 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 • Verify all internal and external communication with appropriate parties in a timely manner • Communicate maintenance and repair needs clearly • Use the correct reporting formats for communication • Document use, maintenance, and repair activities accurately • Report back and document any maintenance and repair issues in a timely manner • Maintenance communication is timely and accurate • Maintenance communication is documented	☐	☐	☐

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
Competency Substitute (if you replaced a competency above, note the competency and rating)	☐	☐	☐
Comments:			

RELATED INSTRUCTION

Indicate which related instruction courses the youth apprentice completed:

Year 1

Course Title	Credits	Location

Year 2 (if applicable)

Course Title	Credits	Location

Post-Program Completion Survey

Youth Apprenticeship

YA POST-PROGRAM COMPLETION SURVEY

The Post-Program Completion Survey form is to be provided to each student completing the Youth Apprenticeship program to capture information on the student's plans after leaving the program. The form should be filled out during the final meeting between the student, mentor, and Local Youth Apprenticeship Coordinator, when the final checklist if filled out and signed. Information captured on this form must be entered online using the Youth Apprenticeship Online Data Application (YODA) System.