

Manufacturing Skill Standards Checklist

Student Name		YA Student ID Numl	ber
YA Coordinator		YA Consortium	
School District		High School Gradua	tion Date
Required S Check ✓ co ☐ Core ☐ Safet	ion Areas Completed: kills - For EACH Pathway ompleted areas Skills ty ufacturing Fundamentals	Students must of Check ✓ com ☐ Required ☐ Minimum ☐ Minimum	
☐ Asse ☐ Manı ☐ Mach	m Pathway mbly and Packaging Unit ufacturing Processes Unit* nining Unit* ling Unit*	Students must of Check ✓ com ☐ Required	Requirements: complete ALL listed below pleted areas Skills for EACH pathway of TWO Units
Production	n Operations Management Pathway	_	of 4 semesters related instruction
	uction Operations Management Unit	<u> </u>	of 900 work hours completed two times IF different
Maintenar Pathway	ice, Installation, and Repair	processes an	e learneu
☐ Basio	Industrial Equipment Unit		
	nced Industrial Equipment Unit		
Total Hours			
	Commonwy Names		Talanhana Niverbara
Employed	Company Name		Telephone Number

DETW-16165-E (R. 08/2012)

Instructions for the Worksite Mentor(s) and Instructor(s)

The Skill Standards Checklist is a list of the competencies (tasks) to be achieved through mentoring and training at the worksite.

- The worksite mentor should rate each competency as the student acquires and demonstrates the skill according to the performance standards criteria.
- A competency may be revisited and the score raised as the student becomes more proficient at the worksite.
- The mentor and student should go over this checklist together on a regular basis to record progress and plan future steps to complete the required competencies.

I certify that this student has successfully completed the competencies required in my department. Circle your YA role, sign and print your name, and complete with the date signed and the department name.

SIGN this page IF you have been a mentor, trainer, or instructor of this student Mentor/Trainer/Instructor Signature Mentor/Trainer/Instructor Signature Printed Name Printed Name Department Department **Date Signed** Date Signed Mentor/Trainer/Instructor Signature Mentor/Trainer/Instructor Signature Printed Name Printed Name Department Department Date Signed **Date Signed** Mentor/Trainer/Instructor Signature Mentor/Trainer/Instructor Signature Printed Name Printed Name Department Department **Date Signed** Date Signed Mentor/Trainer/Instructor Signature Mentor/Trainer/Instructor Signature Printed Name **Printed Name** Department Department

Date Signed

Operational Program Notes for Skill Standards Checklist

Date Signed

1. Manufacturing Youth Apprenticeship Curriculum

- Definitions:
 - o Competency- The worksite skill to be performed
 - Performance Standards- How to assess skill performance as applicable to worksite.
 - Learning Objectives- Content knowledge recommended to learn these skills; may be taught by the employer, school district, and/or technical college.
 - o Skill Standards Checklist- The documented list of competencies completed by the YA student.
 - W/S- Listed after a skill indicates that skill performance may be learned and assessed at the
 worksite OR in the classroom in a simulated setting. However, a simulated setting should ONLY
 be used IF there is no possibility of skill performance at the worksite.
- Performance Standards and Learning Objectives are located in the applicable Appendices of the Program Guide for this Youth Apprenticeship.
- **2. ALL** Youth Apprentices **MUST** complete the Required Skills (Core Skills, Safety, and Manufacturing Fundamentals) competencies **for EACH Pathway** they are enrolled in.
 - The Required Skills competencies may be completed concurrently with the Technical Skills competencies.
 - The Required Skills are common skills specific to all manufacturing industry sub-sectors. These skills are aligned with the National States' Career Clusters standards for Manufacturing and the Manufacturing Skill Standards Council (MSSC).

3. Youth Apprenticeship choices (depending on job placement)

Worksites can be chosen from any number of the manufacturing SUB-INDUSTRIES such as:
 Chemical, Computers and Electronic, Electrical Equipment and Appliances, Food and Beverage,
 Furniture, Machine, Non-Metallic Minerals, Plastic and Rubber Production, Primary and Fabricated
 Metals, Printing, Textiles, Apparel and Leather, Transportation, Wood; or

PROCESSING any variety of manufacturing MATERIALS such as:

Metals (Ferrous, Non-Ferrous, Powdered), Polymers (Wood, Textiles, Leather, Plastic, Elastomer), Chemicals, Finishes (Wood Finishes, Metal Finishes), and Food and Beverage

AS LONG AS the competencies related to that SUB-INDUSTRY and MATERIAL are allowable by DWD Child Labor Laws. Contact the Department of Workforce Development's Equal Rights Division/Labor Standards Bureau at 608-266-6860 for questions regarding child labor laws.

- Competencies have been reviewed by the Department of Workforce Development for Child Labor Laws.
 Contact the Department of Workforce Development's Equal Rights Division/Labor Standards Bureau at 608-266-6860 for questions regarding child labor laws. SEE Appendix A for special Child Labor Law considerations in this YA Program.
- Students will complete a MINIMUM of one Manufacturing unit for a Level ONE Manufacturing YA and a
 MINIMUM of two Manufacturing units for a Level TWO Manufacturing YA. The Manufacturing Processes,
 Machining, or Welding units may be completed two times for a Level TWO program; however different
 processes must be taught and learned.
- The Department of Workforce Development Occupational Certificate will indicate "Manufacturing" attained when the program is completed.

4. Competency Ratings

- Rate the student on the competencies regularly and revisit the competencies with the student periodically to offer the opportunity for an improved rating.
- Arrangements must be made to ensure that the student learns, practices, AND performs each competency even if that competency is not part of their regular job function.
- "Entry Level" criteria should be interpreted to mean "able to do the task satisfactorily."
- "Assist" in front of a skill indicates that the student should perform the skill as indicated in the curriculum "while assisting a worksite professional." Training should go beyond "observation only" for these skills. It will be up to the employer to determine the criticality of each specific task, training completed, and the actual level of supervision required. See curriculum details for requirements.

Required Skills

Required of **ALL** Manufacturing YA Students Copy this page **FOR EACH** unit to be completed

CORE SKILLS	Minim	Minimum rating of 2 for EACH Check Rating		
	1	2	3	
Apply academic knowledge				
Apply career knowledge				
Apply manufacturing industry knowledge				
Communicate effectively				
5. Act professionally				
6. Cooperate with others in a team setting				
7. Think critically				
Exhibit regulatory and ethical responsibilities				
9. Use resources wisely				
10. Use basic technology				

SAFETY		Minimum rating of 2 for EACH Check Rating				
	1	2	3			
Follow personal safety requirements						
Maintain a safe work environment						
3. Demonstrate professional role to be used in an emergency						

MANUFACTURING FUNDAMENTALS	Minimum rating of 2 for EACH Check Rating		
	1	2	3
Focus on customer needs			
Measure using various instruments			
Operate tools and equipment safely			
Practice quality assurance principles			

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

Assembly and Packaging Unit			rating of 2 theck Ratin	
		1	2	3
Read technical drawings and work ord	ers			
2. Interpret assembly and packaging sym	bols and procedures			
3. Identify set up for assembly				
Select tools and materials				
5. Perform safety checks				
6. Perform assembly set up				
7. Verify assembly set up				
8. Perform assembly				
Perform quality checks				
10. Build packaging				
11. Package product				
12. Process packaging documents				
13. Clean up				
14. Monitor equipment for correct operatio	n			
15. Document equipment use and/or opera	ational problems			

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Manufacturing Processes Unit

Check the appropriate Process.

Copy pages 6-7 if unit is repeated for a Level TWO.

☐ Casting	☐ Forming
Conditioning	☐ Joining/Combining
Filling	
Finishing	☐ Separating

Manufacturing Processes Examples

1. Casting

Examples: Metal, Sand, Die, Plaster, Slush, Static, Centrifugal, Continuous

2. Conditioning

Examples: Heat Treating, Annealing, Hardening, Tempering

3. Filling

Examples: Aseptic, Canning, Bottling

4. Finishing

Examples: Barrel, Sanding, Deburring, Buffing, Brushing, Polishing, Electropolishing, Chemical cleaning, Ultrasonic cleaning, Vapor degreasing, Painting, Coating, Dipping, Electroplating, Engraving, Plating

5. Forming

Examples: Forging, Open/Closed Die, Extrusion, Pressing, Punching, Blanking, Drawing, Piercing

6. Joining/Combining

Examples: Welding, Brazing, Soldering, Sintering, Adhesive Bonding, Thermosetting, Fastening, Stitching, Stapling, Press-Fitting, Chemical

7. Molding

Examples: Powder Compaction, Sintering, Injection, Blow, Liquid Resin, Thermoforming, Extrusion, Foam, Vacuum forming, Compression, Shrink filling

8. Separating

Examples: Cutting, Sawing, Centrifuging, Filtration, Pressing, Distillation, Evaporation, Fractionalization, Chemical

Ма	nufacturing Processes Unit		rating of 2 heck Ratin	
		1	2	3
1.	Read technical drawings and work orders			
2.	Interpret symbols and procedures			
3.	Identify set up			
4.	Select tools and materials			
5.	Perform safety checks			
6.	Assist to perform set up			
7.	Verify set up			
8.	Perform start up			
9.	Operate equipment			
10.	Monitor product and process specifications			
11.	Process production documents			
12.	Shutdown process			
13.	Clean up			
14.	Monitor equipment for correct operation			
15.	Document equipment use and/or operational problems			

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Check the appropriate Process.		
Copy this page if unit is repeate	d for a Level TWO.	
copy and page a mass represent		
Grinder	☐ Lathe	
Machine Center	Other:	

Machining Unit		rating of 2	
	1	2	3
Read machining technical drawings and work orders			
Interpret machining symbols and procedures			
3. Identify set up			
Select tools and materials			
5. Perform safety checks			
6. Assist to perform set up			
7. Verify set up			
8. Perform start up			
Operate machining equipment			
10. Monitor machining product and process specifications			
11. Process production documents			
12. Shutdown machining process			
13. Clean up			
14. Use hand tools			
15. Use CNC equipment (W/S)			
16. Monitor equipment for correct operation			
17. Document equipment use and/or operational problems			

W/S = Worksite Experience or In Simulation

Rating Scale:

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Check the appropriate Processes.

Copy this page if unit is repeated for a Level TWO.

\	Velding Processes	Thermal	/Chemic	al Cutting	Processe	es:	
	☐ Flux-cored arc welding (FCAW)		Air Carb	on Arc			
	Gas metal arc welding		Laser				
	(GMAW (MIG))		0 ()				
	Gas tungsten arc welding	Ш	Oxy-fuel	Manual			
	(GTAW (TIG)) ☐ Submerged arc welding (SAW)		Ovv-fuel	Machine			
	Shielded metal arc welding	H	Plasma I				
	(SMAW (Stick))		i idomia i	Mariaar			
	Other:		Plasma I	Machine			
			Other:				
							_
We	lding Unit				rating of 2 f		
				1	2	3	_
1.	Read welding technical drawings and work or	ders					
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.	Fabricate base metal						
8.	Thermally/chemically cut metal						
9.	Tack work pieces						
10.	Weld metal						
	Monitor product and process						
12.	Assist to inspect, measure, and/or test comple	ted metal	pieces			ı	
	Welding Standard or Code Used:						
13.	Process production documents						
14.	Clean up						
15.	Monitor equipment for correct operation						
16.	Perform routine preventive maintenance (PM)						
17.	Document equipment use, PM, and/or operation	onal probl	ems				

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Production Operations Management Pathway

Pro	duction Operations Management Unit		rating of 2 heck Ratin	
Inve	ntory	1	2	3
1.	Assist to purchase materials and supplies			
2.	Receive inventory			
3.	Manage inventory levels			
4.	Distribute materials and products			
5.	Assist to develop inventory forecasts (W/S)			
6.	Maintain inventory records			
Res	ources			
7.	Assist to develop a production plan for customer order (W/S)			
8.	Assist to record and summarize financial data			
9.	Assist to coordinate work schedules and duty assignments			
Qua	lity Management			
10.	Use quality tools			
11.	Calibrate tools and equipment (W/S)			
12.	Assist to analyze production process for productivity (W/S)			
13.	Monitor operations for product and process quality			
	Assist to investigate root causes of product and/or process failure			
15.	Take corrective action to restore or maintain quality			
16.	Participate in quality improvement processes			

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Maintenance, Installation, and Repair Pathway

Basic Industrial Equipment Unit		n rating of 2 fo	
	1	2	3
Read technical drawings and work orders			
Interpret equipment symbols and procedures			
3. Maintain schedules, communication, and documentation			
4. Monitor equipment for correct operation			
5. Identify maintenance requirements			
6. Layout and plan work			
7. Perform safety checks			
8. Use hand tools			
9. Perform preventive maintenance (PM)			
10. Perform lubrication procedures			
11. Assist with basic equipment problem identification and diagnosis			
12. Assist with basic equipment repair			
13. Assist to re-qualify equipment			

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

Maintenance, Installation, and Repair Pathway

Advanced Industrial Equipment Unit	Minimum rating of 2 for EACH Check Rating		
	1	2	3
Calibrate tools and equipment (W/S)			
Set up and fabricate metal			
3. Mount a bearing			
Install mechanical fasteners			
5. Assist with electrical circuit problem identification and diagnosis			
6. Assist with motor control problem identification and diagnosis			
Assist with hydraulic and/or pneumatic problem identification and diagnosis			
Maintain and repair mechanical drive system components			
Maintain and repair electrical control system components			
Maintain and repair hydraulic and/or pneumatic system components			
11. Assist to install and qualify equipment			

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Additional Certifications, Training, Seminars and Projects

Please list in detail any additional certifications earned, any training and seminars attended, and/or any projects completed during the course of the Manufacturing Youth Apprenticeship.

Description					
Notes/Comments					
Date Completed	Signature		Date Signed		
Description					
Notes/Comments					
Date Completed	Signature		Date Signed		
Description					
Notes/Comments					
Date Completed	Signature		Date Signed		
Other Notes or Comments					