



# Assembly and Packaging

Youth Apprenticeship

## ASSEMBLY AND PACKAGING

Assembly and Packaging youth apprentices follow processes to prepare goods and materials for shipping, including set up of assembly and packaging equipment and machinery. Apprentices must adhere to industry safety and security standards.

**Length of Apprenticeship:** One year

## COMPETENCIES

Assembly and Packaging youth apprentices must complete a **total of 19** competencies per year. All **7** Manufacturing Fundamentals Competencies must be complete. No substitutions to this list. **Eleven** of the 12 Assembly and Packaging competencies must be from the list below. If necessary, employers can substitute up to **1** competency with another occupationally appropriate skill. That skill 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

Manufacturing Fundamentals Competencies	Assembly and Packaging Competencies
<ol style="list-style-type: none"> <li>1. Focus on customer needs</li> <li>2. Use various instruments</li> <li>3. Operate tools and equipment safely</li> <li>4. Practice quality assurance principles</li> <li>5. Follow personal safety requirements</li> <li>6. Maintain a safe work environment</li> <li>7. Demonstrate professional role to be used in an emergency</li> </ol>	<ol style="list-style-type: none"> <li>1. Read technical drawings and work orders</li> <li>2. Interpret assembly and packaging symbols and procedures</li> <li>3. Identify set up for assembly</li> <li>4. Select tools and materials</li> <li>5. Perform safety checks</li> <li>6. Perform assembly set up</li> <li>7. Verify assembly set up</li> <li>8. Perform assembly</li> <li>9. Perform quality checks</li> <li>10. Build packaging</li> <li>11. Package product</li> <li>12. Process packaging documents</li> </ol>



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## ON-THE-JOB LEARNING PERFORMANCE STANDARDS GUIDE

### YOUTH APPRENTICE INFORMATION

<b>Youth Apprentice Name</b>	
<b>YA Coordinator</b>	<b>YA Consortium</b>
<b>School District</b>	<b>High School Graduation Date</b>

### REQUIREMENTS

#### Requirements

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

- Competency checklist
- Employability Skills checklist (in this job book) 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

### HOURS

Record the hours the youth apprentice worked.

Total Hours Employed	Company Name	Telephone Number

## COMPETENCIES

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### 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
<p><b>1. Focus on customer needs</b></p> <ul style="list-style-type: none"> <li>• Identify internal and external customers impacted by the production process</li> <li>• Satisfy internal and external customer's expectations</li> <li>• Collaborate with team</li> <li>• Assist work site professional to keep internal and/or external customers informed of project progress and decisions that may affect them</li> <li>• Define the impact of the Voice of the Customer</li> <li>• Determine the impact of your work to the internal and external customer</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
<p><b>2. Use various instruments</b></p> <ul style="list-style-type: none"> <li>• Consider the degree of precision required by the part feature</li> <li>• Choose correct measuring instrument for task</li> <li>• Verify equipment is available for use and in working order</li> <li>• Verify equipment preventative maintenance and/or calibration</li> <li>• Inspect tools and work area for safety considerations</li> <li>• Clean and adjust measuring instrument prior to use</li> <li>• Use gauges, calipers, and micrometer instruments</li> <li>• Use semi-precision and precision layout tools</li> <li>• Use digital gauges, checking fixtures</li> <li>• Use digital scales, thermometers</li> <li>• Confirm measurement accuracy</li> <li>• Record measurement correctly including unit of measurement at proper interval</li> <li>• Calibrate, clean, and store measuring instruments properly</li> <li>• Convert standard to metric – metric to standard measurement units</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>3. Operate tools and equipment safely</b></p> <ul style="list-style-type: none"> <li>• Operate only tool/equipment that he/she is trained on</li> <li>• Choose correct tool/equipment for the task</li> <li>• Follow tool check list</li> <li>• Verify tool/equipment is available for use and in working order</li> <li>• Verify tool/equipment is current for preventative maintenance and/or calibration</li> <li>• Wear appropriate Personal Protective Equipment (PPE)</li> <li>• Inspect tool/equipment and work area for safety considerations</li> <li>• Prepare tool/equipment for safe operation</li> <li>• Operate tool/equipment safely with guarding devices</li> <li>• Monitor tool/equipment for safe operation while operating</li> <li>• Compare tool/equipment performance regularly to optimal equipment operations</li> <li>• Follow facility procedures for clean-up and shut down after use</li> <li>• Perform required preventative maintenance procedures</li> <li>• Report abnormal tool/equipment conditions</li> <li>• Properly shuts down and labels any tool/equipment that is not operating as expected</li> <li>• Follow Lock Out/Tag Out procedures as applicable</li> <li>• Document use and maintenance</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
<p><b>4. Practice quality assurance principles</b></p> <ul style="list-style-type: none"> <li>• Inspect materials/piece/product at all stages of production</li> <li>• Identify quality or condition of materials/piece/product</li> <li>• Monitor materials, processes, equipment, tools, and products throughout the production process</li> <li>• Inspect final product/piece to ensure it meets specifications</li> <li>• Identify and segregate materials and/or product that do not meet specification</li> <li>• Communicate with work site professional if materials/product do not meet requirements</li> <li>• Document all quality checks</li> <li>• Participate in root-cause analysis of process/product</li> <li>• Take ownership of work</li> <li>• Collaborate with work site professional on corrective action</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>5. Follow personal safety requirements (safety)</b></p> <ul style="list-style-type: none"> <li>• Participate in required safety training</li> <li>• Follow all worksite guidelines for personal safety</li> <li>• Apply principles of proper body mechanics</li> <li>• Report exposures, injuries, near misses, or accidents, personal or to others immediately</li> <li>• Locate key information on Material Safety Data Sheets (MSDS)</li> <li>• Handle and dispose of any hazardous materials appropriately</li> <li>• Operate equipment that he/she is trained on</li> <li>• Adhere to equipment safety standards</li> <li>• Visually inspect equipment before operation</li> <li>• Wear required Personal Protective Equipment (PPE) at all times</li> <li>• Follow company emergency action plan</li> <li>• Identify hazardous conditions and restricted areas in the workplace</li> <li>• Avoid pinch points</li> <li>• Be aware of surroundings</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
<p><b>6. Maintain a safe work environment (safety)</b></p> <ul style="list-style-type: none"> <li>• Comply with posted safety warnings and symbols</li> <li>• Identify unsafe conditions and/or work habits</li> <li>• Report unsafe conditions and/or work habits</li> <li>• Help maintain a clean and safe working environment free of debris and obstacles</li> <li>• Maintain clean, organized work area</li> <li>• Use hazardous materials according to company procedure</li> <li>• Report any indications of insects or pests, if necessary</li> <li>• Follow appropriate Lock out – tag out procedures</li> <li>• Adhere to Occupational Safety and Health Administration (OSHA) Safety guidelines</li> <li>• Follow rules for operating equipment (Powered Industrial Vehicle PIV)</li> <li>• Identify applicable Emergency Stops</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>7. Demonstrate professional role to be used in an emergency (safety)</b></p> <ul style="list-style-type: none"> <li>• Participate in emergency safety simulations and drills</li> <li>• Describe company’s policy and procedures for work site incidents, accidents, electrical, fire, tornado, bomb threats, robbery, hostage situations, and other emergency situations</li> <li>• Identify the closest fire alarms and emergency exits</li> <li>• Identify the fire extinguishers</li> <li>• Identify appropriate alarms and procedures for using alarms</li> <li>• Contact emergency personnel in the event of an emergency</li> <li>• Contribute to emergency incident documentation</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## ASSEMBLY AND PACKAGING

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
<b>1. Read technical drawings and work orders</b> <ul style="list-style-type: none"> <li>Review technical drawing</li> <li>Gather reference materials as needed</li> <li>Determine type of print and views used</li> <li>Determine material specifications</li> <li>Determine critical dimensions and tolerances</li> <li>Analyze supplementary data</li> <li>Determine product or job instructions and specifications</li> <li>Interpret assembly and packaging symbols and procedures</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>2. Interpret assembly and packaging symbols and procedures</b> <ul style="list-style-type: none"> <li>Interpret technical drawings accurately as needed for job task</li> <li>Use appropriate terminology</li> <li>Identify lines, views, symbols, and representations on the drawings</li> <li>Interpret dimensions, tolerances, and scale on the drawings</li> <li>Interpret threads, tapers, and shop notes on the drawings</li> <li>Interpret the assembly and packaging plan from a technical drawing which includes tools, equipment, speeds, feeds, fixtures, and holders as applicable</li> </ul>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<b>3. Identify set up for assembly</b> <ul style="list-style-type: none"> <li>Locate and review applicable technical drawings, work orders, and/or procedures for assembly processing</li> <li>Plan sequencing, tools, and equipment needed for assembly</li> <li>Identify set up needed</li> <li>Consult with worksite professional to verify assembly schedule, deadlines, and timeframes</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>4. Select tools and materials</b> <ul style="list-style-type: none"> <li>Select tools and assembly equipment to be used</li> <li>Check assembly pieces needed against work order</li> <li>Verify assembly pieces and materials meet specifications</li> <li>Gather all resources needed at the workstation</li> <li>Notify work site professional of any discrepancies</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
<p><b>5. Perform safety checks</b></p> <ul style="list-style-type: none"> <li>• Review assembly procedure to be used</li> <li>• Review safety requirements of assembly procedure</li> <li>• Verify safety equipment and Personal Protective Equipment (PPE) needed for assembly process</li> <li>• Inspect tools and work area for safety considerations</li> <li>• Examine assembly equipment labeling and safeguarding</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>6. Perform assembly set up</b></p> <ul style="list-style-type: none"> <li>• Assemble and adjust tools and assembly equipment as required</li> <li>• Verify assembly equipment is available for use and in working order</li> <li>• Verify assembly equipment is current for preventative maintenance and/or calibration</li> <li>• Set assembly equipment parameters as required for the procedure</li> <li>• Stage pieces and materials for assembly</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>7. Verify assembly set up</b></p> <ul style="list-style-type: none"> <li>• Verify set up meets assembly requirements and product specifications</li> <li>• Examine first assembled final product for visual and/or dimensional specification</li> <li>• Make adjustments to ensure final assembly meets specification if needed</li> <li>• Verify repeatability of set up if applicable</li> <li>• Document assembly set up procedure for repeatability if applicable</li> <li>• Document startup/set up procedure</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<p><b>8. Perform assembly</b></p> <ul style="list-style-type: none"> <li>• Operate assembly equipment safely in the manner required for the job task</li> <li>• Operate assembly equipment according to machine requirements</li> <li>• Wear Personal Protective Equipment (PPE) required for the operation of the equipment</li> <li>• Monitor equipment for safe operation while operating</li> <li>• Inspect final assembled product</li> <li>• Make adjustments ensuring assembled product meets specification</li> <li>• Document assembly procedure</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Competency and Rating Criteria	Minimum Rating of 2 for EACH Check Rating		
	1	2	3
<b>9. Perform quality checks</b> <ul style="list-style-type: none"> <li>• Test assembled product for function and/or compliance</li> <li>• Label assembled products for compliance or non-compliance</li> <li>• Document quality control checks</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>10. Build packaging</b> <ul style="list-style-type: none"> <li>• Verify testing of assembled product(s) is complete</li> <li>• Identify package needed</li> <li>• Assemble package</li> <li>• Inspect package</li> <li>• Stage finished package</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>11. Package product</b> <ul style="list-style-type: none"> <li>• Verify proper packaging procedure</li> <li>• Retrieve packaging</li> <li>• Use required protective packaging materials</li> <li>• Place final compliant product in packaging</li> <li>• Seal package</li> <li>• Inspect package for relevant work order information</li> <li>• Handle package to prevent damage</li> <li>• Verify label meets regulatory and safety specifications</li> <li>• Verify package meets shipping specifications</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>12. Process packaging documents</b> <ul style="list-style-type: none"> <li>• Verify packaging documentation included matches the final packaged product</li> <li>• Apply shipping documentation</li> <li>• Communicate package availability to proper parties</li> <li>• Verify documentation is legible</li> <li>• Complete package documentation in appropriate format</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Competency Substitute</b> (if you replaced a competency above, note the competency and rating)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Comments:</b>			