



# Mechanical/HVAC Fundamentals

Youth Apprenticeship

## MECHANICAL/HVAC FUNDAMENTALS

Mechanical/Heating, Ventilation, and Air Conditioning (HVAC) Fundamentals youth apprentices gain skills related to the use of construction safety, drawings and blueprints, materials, tools, and general worksite procedures. 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. **Year 1:** A total of 15 fundamentals competencies and a minimum of 1 specialty competency must be learned for this occupation. **Year 2:** A total of 15 fundamentals competencies and a minimum of 2 different specialty competencies than the first year.

A specialty competency may be repeated only if the type of construction (residential or commercial) differs from the first year. Employers may substitute out one of these 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.

**Youth Apprentices must also complete the following during Year 1:**

- ☐ First Aid Certification
- ☐ Occupational Safety and Health Administration (OSHA) 10 or 30 Certification

**Select construction type and circle the applicable year:**

- ☐ Residential completed during Year: One and/or Two
- ☐ Commercial completed during Year: One and/or Two

Mechanical/HVAC Fundamentals Competencies	Mechanical/HVAC Specialty Competencies
<ol style="list-style-type: none"><li>1. Follow safety procedures</li><li>2. Read construction drawings and plans</li><li>3. Interpret symbols and procedures</li><li>4. Contribute to a job task plan</li><li>5. Work as a member of a construction team</li><li>6. Prepare work area for construction</li><li>7. Select construction materials</li><li>8. Use hand and light duty tools</li><li>9. Use power tools and equipment</li><li>10. Perform materials handling</li><li>11. Install materials per job specifications</li></ol>	<ol style="list-style-type: none"><li>16. Assist with basic equipment problem identification and diagnosis for heating and cooling systems</li><li>17. Assist with basic equipment repair for air conditioning systems</li><li>18. Assist with set up and fabrication of metals</li><li>19. Assist with the installation of fabricated parts</li></ol>

Mechanical/HVAC Fundamentals Competencies	Mechanical/HVAC Specialty Competencies
12. Perform construction measurements 13. Maintain a clean and safe work area 14. Clean up job site 15. Practice quality craftsmanship	

## REGISTERED APPRENTICESHIP BRIDGING OPPORTUNITIES

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

- Environmental Systems Technician and Mechanical/HVAC Installer-Technician
- Sheet Metal – Environmental Systems Technician
- Sheet Metal Worker-Commercial
- Sheet Metal Worker-Residential

## POST-SECONDARY PATHWAY OPPORTUNITIES

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There are several post-secondary pathway opportunities in this area. The following is a partial list.

- HVAC-R Technician



# Mechanical/HVAC Fundamentals

Youth Apprenticeship  
ON-THE-JOB LEARNING PERFORMANCE STANDARDS GUIDE

## YOUTH APPRENTICE INFORMATION

Youth Apprentice Name
YA Coordinator
YA Consortium
School District

## 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-Based 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

#### 1<sup>st</sup> Evaluation (Required)

#### 2<sup>nd</sup> Evaluation (Required)

Employer/Mentor Signature	Employer/Mentor Signature
Employer/Mentor	Employer/Mentor
Business/Company	Business/Company
Date Signed	Date Signed

#### 3<sup>rd</sup> Evaluation (Optional)

#### 4<sup>th</sup> 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**

**1<sup>st</sup> Evaluation (Required)**

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

**2<sup>nd</sup> Evaluation (Required)**

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

**3<sup>rd</sup> Evaluation (Optional)**

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

**4<sup>th</sup> Evaluation (Optional)**

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

**Youth Apprentice**

**1<sup>st</sup> Evaluation (Required)**

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

**2<sup>nd</sup> Evaluation (Required)**

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

**3<sup>rd</sup> Evaluation (Optional)**

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

**4<sup>th</sup> Evaluation (Optional)**

Youth Apprentice Signature
Youth Apprentice
School District / High School
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.

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

Employability Skills		Rating			
Competency and Rating Criteria		Initial	Mid Year 1	Mid Year 2	Final
1. Develops positive work relationships with others. <i>Examples of qualities and habits that the employee might exhibit include:</i>	<ul style="list-style-type: none"> <li>Interacts with others with respect and in a non-judgmental manner</li> <li>Responds to others in an appropriate and non-offensive manner</li> <li>Helps co-workers and peers accomplish tasks or goals</li> <li>Applies problem-solving strategies to improve relations with others</li> <li>When managing others, shows traits such as compassion, listening, coaching, team development, and appreciation</li> </ul>	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
2. Communicates effectively with others <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> <li>Adjusts the communication approach for the target audience, purpose, and situation to maximize impact</li> <li>Organizes messages/information in a logical and helpful manner</li> <li>Speaks clearly and writes legibly</li> <li>Models behaviors to show active listening</li> <li>Applies what was read to actual practice</li> <li>Asks appropriate questions for clarity</li> </ul>	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
3. Collaborates with others <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> <li>Works effectively in teams with people of diverse backgrounds regardless of sex, race, ethnicity, nationality, sexuality, religion, political views, and abilities</li> <li>Shares responsibility for collaborative work and decision making</li> <li>Uses the problem-solving process to work through differences of opinion in a constructive manner to achieve a reasonable compromise</li> <li>Avoids contributing to an unproductive group conflict</li> <li>Shares information and carries out responsibilities in a timely manner</li> </ul>	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3

Employability Skills		Rating			
Competency and Rating Criteria		Initial	Mid Year 1	Mid Year 2	Final
4. Maintains composure under pressure <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> <li>• Uses critical thinking to determine the best options or outcomes when faced with a challenging situation</li> <li>• Carries out assigned duties while under pressure</li> <li>• Acts in a respectful, professional, and non-offensive manner while under pressure</li> <li>• Applies stress management techniques to cope under pressure</li> </ul>	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
5. Demonstrates integrity <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> <li>• Carries out responsibilities in an ethical, legal and confidential manner</li> <li>• Responds to situations in a timely manner</li> <li>• Takes personal responsibility to correct problems</li> <li>• Models behaviors that demonstrate self-discipline, reliability, and dependability</li> </ul>	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
6. Performs quality work <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> <li>• Carries out written and verbal directions accurately</li> <li>• Completes work efficiently and effectively</li> <li>• Performs calculations accurately</li> <li>• Conserves resources, supplies, and materials to minimize costs and environmental impact</li> <li>• Uses equipment, technology, and work strategies to improve workflow</li> <li>• Applies problem-solving strategies to improve productivity</li> <li>• Adheres to worksite regulations and practices</li> <li>• Maintains an organized work area</li> </ul>	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
7. Provides quality goods or services (internal and external) <i>Examples of qualities and habits that the employee might exhibit include . . .</i>	<ul style="list-style-type: none"> <li>• Shows support for the organizational goals and principles by own personal actions</li> <li>• Displays a respectful and professional image to customers</li> <li>• Displays an enthusiastic attitude and desire to take care of customer needs</li> <li>• Seeks out ways to increase customer satisfaction</li> <li>• Produces goods to workplace specifications</li> </ul>	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3

Employability Skills		Rating			
Competency and Rating Criteria		Initial	Mid Year 1	Mid Year 2	Final
8. Shows initiative and self-direction <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"><li>• Prioritizes and carries out responsibilities without being told</li><li>• Responds with enthusiasm and flexibility to handle tasks that need immediate attention</li><li>• Reflects on any unsatisfactory outcome as an opportunity to learn</li><li>• Improves personal performance by doing something different or differently</li><li>• Analyzes how own actions impact the overall organization</li><li>• Supports own action with sound reasoning and principles</li><li>• Balances personal activities to minimize interference with work responsibilities</li></ul>		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
9. Adapts to change <i>Examples of qualities and habits that the employee might exhibit include . . . Shows flexibility and willingness to learn new skills for various job roles</i> <ul style="list-style-type: none"><li>• Uses problem-solving and critical-thinking skills to cope with changing circumstances</li><li>• Modifies own work behavior based on feedback, unsatisfactory outcomes, efficiency, and effectiveness</li><li>• Displays a "can do" attitude</li></ul>		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
10. Demonstrates safety and security regulations and practices <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"><li>• Follows personal safety requirements</li><li>• Maintains a safe work environment</li><li>• Demonstrates professional role in an emergency</li><li>• Follows security procedures</li><li>• Maintains confidentiality</li></ul>		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
11. Applies job-related technology, information, and media <i>Examples of qualities and habits that the employee might exhibit include . . .</i> <ul style="list-style-type: none"><li>• Applies technology effectively in the workplace</li><li>• Assesses and evaluates information on the job</li><li>• Assesses training manuals, website, and other media related to the job</li></ul>		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
12. Fulfills training or certification requirements for employment <i>Examples of this requirement may include . . .</i> <ul style="list-style-type: none"><li>• Participation in required career-related training and/or educational programs</li><li>• Passing certification tests to qualify for licensure and/or certification</li><li>• Participation in company training or orientation</li></ul>		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3
13. Sets personal goals for improvement <i>Examples of this requirement may include . . .</i> <ul style="list-style-type: none"><li>• Setting goals that are specific and measurable</li><li>• Setting work-related goals that align with the organization's mission</li><li>• Identifying strategies to reach goals</li><li>• Reflecting on goal progress to regularly evaluate and modify goals</li></ul>		<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3	<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3

## 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. **Year 1:** A total of 15 fundamentals occupational competencies and a minimum of 1 specialty competency. **Year 2:** A total of 15 fundamentals occupational competencies and a minimum of 2 specialty competencies different that first year.

A specialty competency may be repeated only if the type of construction (residential or commercial) differs from the first year. Employers may substitute out one of these and should write in the competency they are adding. 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.

**Youth Apprentices must also complete the following during Year 1:**

- ☐ First Aid Certification
- ☐ Occupational Safety Health Administration (OSHA) 10 or 30

**Select construction type and circle the applicable year:**

- ☐ Residential completed during Year: One and/or Two
- ☐ Commercial completed during Year: One and/or Two

## MECHANICAL/HVAC FUNDAMENTALS

Occupational Competencies		Rating			
Competency and Rating Criteria		Evaluation			
		Minimum Rating of 2 for EACH Check Rating			
		Initial	Mid Year 1	Mid Year 2	Final
<b>1. Follows safety procedures</b> <ul style="list-style-type: none"><li>select and use appropriate clothing and personal protective equipment (PPE)</li><li>comply with job site safety and security rules and regulations</li><li>maintain a clean and organized work environment</li><li>identify and report unsafe job conditions</li><li>report injuries and damage to property</li></ul>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3

Occupational Competencies		Rating			
Competency and Rating Criteria		Evaluation			
		Minimum Rating of 2 for EACH Check Rating			
		Initial	Mid Year 1	Mid Year 2	Final
<b>2. Read construction drawings and plans</b>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
<b>3. Interprets symbols and procedures</b>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
<b>4. Contributes to a job task plan</b>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
<b>5. Works as a member of a construction team</b>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3

Occupational Competencies		Rating					
Competency and Rating Criteria		Evaluation					
		Minimum Rating of 2 for EACH Check Rating					
		Initial	Mid Year 1	Mid Year 2	Final		
<b>6. Prepares work area for construction</b> <ul style="list-style-type: none"> <li>remove debris</li> <li>clean up sites</li> <li>dispose of waste and hazardous materials</li> </ul>		<b>Year 1 Rating</b>					
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1		
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2		
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
		<b>Year 2 Rating</b>					
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1		
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2		
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
		<b>7. Selects construction materials</b> <ul style="list-style-type: none"> <li>consider usefulness and portability</li> <li>consider minimizing cost</li> <li>consider performance goals</li> </ul>		<b>Year 1 Rating</b>			
				<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
<input type="checkbox"/> 2	<input type="checkbox"/> 2			<input type="checkbox"/> 2	<input type="checkbox"/> 2		
<input type="checkbox"/> 3	<input type="checkbox"/> 3			<input type="checkbox"/> 3	<input type="checkbox"/> 3		
<b>Year 2 Rating</b>							
<input type="checkbox"/> 1	<input type="checkbox"/> 1			<input type="checkbox"/> 1	<input type="checkbox"/> 1		
<input type="checkbox"/> 2	<input type="checkbox"/> 2			<input type="checkbox"/> 2	<input type="checkbox"/> 2		
<input type="checkbox"/> 3	<input type="checkbox"/> 3			<input type="checkbox"/> 3	<input type="checkbox"/> 3		
<b>8. Uses hand and light duty tools</b> <ul style="list-style-type: none"> <li>wear appropriate personal protective equipment (PPE)</li> <li>select the correct tool for the job</li> <li>inspect tool</li> <li>operate the tool safely</li> <li>perform routine maintenance on hand tools</li> <li>store tool</li> </ul>				<b>Year 1 Rating</b>			
				<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2		
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
		<b>Year 2 Rating</b>					
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1		
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2		
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
		<b>9. Uses power tools and equipment</b> <ul style="list-style-type: none"> <li>wear appropriate personal protective equipment (PPE)</li> <li>select the correct tool for the job</li> <li>inspect tool</li> <li>operate the tool safely</li> <li>perform routine maintenance on power tools</li> <li>store tool</li> </ul>		<b>Year 1 Rating</b>			
				<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
<input type="checkbox"/> 2	<input type="checkbox"/> 2			<input type="checkbox"/> 2	<input type="checkbox"/> 2		
<input type="checkbox"/> 3	<input type="checkbox"/> 3			<input type="checkbox"/> 3	<input type="checkbox"/> 3		
<b>Year 2 Rating</b>							
<input type="checkbox"/> 1	<input type="checkbox"/> 1			<input type="checkbox"/> 1	<input type="checkbox"/> 1		
<input type="checkbox"/> 2	<input type="checkbox"/> 2			<input type="checkbox"/> 2	<input type="checkbox"/> 2		
<input type="checkbox"/> 3	<input type="checkbox"/> 3			<input type="checkbox"/> 3	<input type="checkbox"/> 3		

Occupational Competencies		Rating			
Competency and Rating Criteria		Evaluation			
		Minimum Rating of 2 for EACH Check Rating			
		Initial	Mid Year 1	Mid Year 2	Final
<b>10. Performs materials handling</b> <ul style="list-style-type: none"> <li>identify materials necessary to complete the task</li> <li>conserve resources and materials</li> <li>retrieve equipment and materials needed</li> <li>load and unload materials, tools, equipment, and supplies</li> <li>lift, position, and secure materials during installation</li> </ul>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
<b>11. Installs materials per job specifications</b> <ul style="list-style-type: none"> <li>retrieve equipment and materials needed</li> <li>unload materials, tools, equipment, and supplies</li> <li>lift, position, and secure materials during installation</li> </ul>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
<b>12. Performs construction measurements</b> <ul style="list-style-type: none"> <li>select measuring tool</li> <li>read measurement accurately</li> <li>scale proportions</li> <li>convert units of measurement</li> <li>estimate resources, materials, and supplies needed for a project</li> <li>record measurements</li> </ul>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
<b>13. Maintains a clean and safe work area</b> <ul style="list-style-type: none"> <li>clean and maintain materials and tools</li> <li>clean, organize, and put away items in the work area</li> <li>store materials and tools <i>after use</i></li> <li>follow facility procedures for clean-up and shut down</li> </ul>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		

Occupational Competencies		Rating					
Competency and Rating Criteria		Evaluation					
		Minimum Rating of 2 for EACH Check Rating					
		Initial	Mid Year 1	Mid Year 2	Final		
<b>14. Cleans up job site</b> <ul style="list-style-type: none"> <li>• clean and maintain materials and tools</li> <li>• store materials and tools <i>after use</i></li> <li>• follow facility procedures for clean-up and shut down</li> </ul>		<b>Year 1 Rating</b>					
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1		
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2		
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
		<b>Year 2 Rating</b>					
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1		
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2		
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
		<b>15. Practices quality craftsmanship</b> <ul style="list-style-type: none"> <li>• inspect and test work to determine quality</li> <li>• monitor throughout for safety and quality</li> <li>• identify impact of building codes on quality of work</li> <li>• verify work meets job expectation</li> </ul>		<b>Year 1 Rating</b>			
				<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
<input type="checkbox"/> 2	<input type="checkbox"/> 2			<input type="checkbox"/> 2	<input type="checkbox"/> 2		
<input type="checkbox"/> 3	<input type="checkbox"/> 3			<input type="checkbox"/> 3	<input type="checkbox"/> 3		
<b>Year 2 Rating</b>							
<input type="checkbox"/> 1	<input type="checkbox"/> 1			<input type="checkbox"/> 1	<input type="checkbox"/> 1		
<input type="checkbox"/> 2	<input type="checkbox"/> 2			<input type="checkbox"/> 2	<input type="checkbox"/> 2		
<input type="checkbox"/> 3	<input type="checkbox"/> 3			<input type="checkbox"/> 3	<input type="checkbox"/> 3		
<b>Competency Substitute</b> (if you replaced a competency above, note the competency and rating)				<b>Year 1 Rating</b>			
				<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2		
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
		<b>Year 2 Rating</b>					
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1		
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2		
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
		<b>Comments:</b>					

## MECHANICAL/HVAC SPECIALTY SKILLS

### (TO BE COMPLETED BY YA EMPLOYER/MENTOR)

- ☐ Year 1: Select 1
- ☐ Year 2: Select 1 different specialty skills or type of construction (residential vs. commercial) identified by employer

Occupational Competencies		Rating			
Competency and Rating Criteria		Minimum Rating of 2 for EACH Check Rating			
		Initial	Mid Year 1	Mid Year 2	Final
<b>16. Assists with basic equipment problem identification and diagnosis for heating and cooling systems</b> <ul style="list-style-type: none"> <li>assist with preventive maintenance procedures on heating and cooling units</li> <li>identify the electrical components of a heating and cooling system</li> <li>use temperature and pressure measuring instruments to make readings at key points in the refrigeration cycle</li> <li>measure temperatures in an operating air conditioning system</li> <li>identify cylinder by color or codes</li> <li>identify function of compressors, condensers, evaporators, metering devices, controls, and accessories</li> </ul>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
<b>17. Assists with basic equipment repair for air conditioning systems</b> <ul style="list-style-type: none"> <li>assist with troubleshooting operational problems</li> <li>provide preventive maintenance procedures such as: including filter replacement, cleaning of components, and temperature measurements</li> <li>demonstrate proper use of testing equipment</li> </ul>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
<b>18. Assists with set up and fabrication of metals</b> <ul style="list-style-type: none"> <li>complete general set up for fabrication</li> <li>layout and plan work</li> <li>perform safety checks</li> <li>assemble tools and equipment as required</li> <li>place parts and assemblies into fixtures</li> <li>fabricate metal to meet the specific project requirements</li> </ul>		<b>Year 1 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3
		<b>Year 2 Rating</b>			
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3

Occupational Competencies		Rating					
Competency and Rating Criteria		Minimum Rating of 2 for EACH Check Rating					
		Initial	Mid Year 1	Mid Year 2	Final		
<b>19. Assists with the installation of fabricated parts</b> <ul style="list-style-type: none"> <li>• verify that the metal is fabricated to meet the specific project requirements</li> <li>• assist with the installation of various duct shapes to allow for proper flow</li> <li>• assist with loading unloading of materials, tools, equipment, and supplies</li> <li>• assist in lifting, position, and securing of materials and work pieces during installation</li> <li>• examine how to create and install in the most efficient manner possible (Shop versus site installation)</li> <li>• perform minor maintenance or cleaning of tools and equipment</li> <li>• identify the different strategies to procure materials for fabrication vs. construction.</li> </ul>		<b>Year 1 Rating</b>					
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1		
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2		
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
		<b>Year 2 Rating</b>					
		<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1		
		<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2	<input type="checkbox"/> 2		
		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		
		<b>Competency Substitute</b> (if you replaced a competency above, note the competency and rating)		<b>Year 1 Rating</b>			
				<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1	<input type="checkbox"/> 1
<input type="checkbox"/> 2	<input type="checkbox"/> 2			<input type="checkbox"/> 2	<input type="checkbox"/> 2		
<input type="checkbox"/> 3	<input type="checkbox"/> 3			<input type="checkbox"/> 3	<input type="checkbox"/> 3		
<b>Year 2 Rating</b>							
<input type="checkbox"/> 1	<input type="checkbox"/> 1			<input type="checkbox"/> 1	<input type="checkbox"/> 1		
<input type="checkbox"/> 2	<input type="checkbox"/> 2			<input type="checkbox"/> 2	<input type="checkbox"/> 2		
<b>Comments:</b>		<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3	<input type="checkbox"/> 3		

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