

# Standards Correlations

## Plumbing II (8552)

Task	SOL Correlations	NCCER
<b>Demonstrating Personal Qualities and Abilities</b>		
Demonstrate creativity and innovation.	<p>English: 6.1, 6.3, 6.4, 6.6, 6.7, 6.9, 7.1, 7.3, 7.4, 7.6, 7.7, 7.9, 8.1, 8.3, 8.4, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8</p> <p>History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WG.4, WHI.1, WHII.1</p> <p>Mathematics: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.10, 6.11, 6.12, 7.2, 7.3, 7.8, 7.9, 8.2, 8.4, 8.6, 8.7, 8.11, 8.12, 8.17, 8.18, A.9, AFDA.3, AFDA.4, AFDA.5, AFDA.6, AFDA.7, AFDA.8, AII.9, COM.1, COM.3, COM.4, COM.5, COM.8, DM.7, DM.1*, DM.10, DM.2*, DM.3*, PS.3*, PS.4*, PS.7*, PS.9*, PS.10*</p>	

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	Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PS.1	
Demonstrate critical thinking and problem solving.	<p>English: 6.1, 6.3, 6.4, 6.5, 6.6, 6.7, 6.9, 7.1, 7.3, 7.4, 7.5, 7.6, 7.7, 7.9, 8.1, 8.3, 8.4, 8.5, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8</p> <p>History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WG.4, WHI.1, WHII.1</p> <p>Mathematics: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.10, 6.11, 7.2, 7.3, 7.8, 7.12, 7.13, 8.2, 8.4, 8.8, 8.9, 8.10, 8.11, A.8, A.9, G.1, G.13, G.14, AFDA.3, AFDA.5, AFDA.8, AII.9, AII.10, AII.11, COM.1, COM.3, COM.4, COM.5, COM.8, DM.4, DM.7, DM.1*, DM.2*, DM.3*, DM.9*, PS.9*, PS.10*</p> <p>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PS.1</p>	
Demonstrate initiative and self-direction.	English: 6.1, 6.4, 6.6, 6.7, 6.9, 7.1, 7.4, 7.6, 7.7, 7.9, 8.1, 8.4, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1,	

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	11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8 History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1	
Demonstrate integrity.	English: 6.1, 7.1, 8.1, 9.1, 9.5, 10.1, 10.5, 11.1, 11.5, 12.1, 12.5 History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1	
Demonstrate work ethic.	English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.4, CE.14, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Science: CH.1	
<b>Demonstrating Interpersonal Skills</b>		
Demonstrate conflict-resolution skills.	English: 6.1, 6.2, 6.4, 6.6, 6.7, 6.9, 7.1, 7.2, 7.4, 7.6, 7.7, 7.9, 8.1, 8.2, 8.4, 8.6, 8.7, 8.9, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.4, GOVT.1, USI.1, VUS.1	

<b>Task</b>	<b>SOL Correlations</b>	<b>NCCER</b>
Demonstrate listening and speaking skills.	English: 6.1, 6.2, 6.4, 6.6, 7.1, 7.2, 7.4, 7.6, 8.1, 8.2, 8.4, 8.6, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1	
Demonstrate respect for diversity.	English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, USII.9, VUS.1, VUS.13, WG.1, WHI.1, WHII.1	
Demonstrate customer service skills.	English: 6.1, 6.4, 6.7, 7.1, 7.4, 7.7, 8.1, 8.4, 8.7, 9.1, 9.5, 9.6, 10.1, 10.5, 10.6, 11.1, 11.5, 11.6, 12.1, 12.5, 12.6 History and Social Science: CE.1, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1	
Collaborate with team members	English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1	
<b>Demonstrating Professional Competencies</b>		

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Demonstrate big-picture thinking.	English: 6.1, 6.4, 7.1, 7.4, 8.1, 8.4, 9.1, 9.5, 10.1, 10.5, 11.1, 11.5, 12.1, 12.5 History and Social Science: CE.1, CE.4, CE.12, GOVT.1, GOVT.15, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1	
Demonstrate career- and life-management skills.	English: 6.1, 6.7, 7.1, 7.7, 8.1, 8.7, 9.1, 9.6, 10.1, 10.6, 11.1, 11.6, 12.1, 12.6 History and Social Science: CE.1, CE.4, CE.12, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: 8.4	
Demonstrate continuous learning and adaptability.	English: 6.1, 6.4, 6.7, 6.9, 7.1, 7.4, 7.7, 7.9, 8.1, 8.4, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8 History and Social Science: CE.1, CE.3, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Science: BIO.1, CH.1, LS.1, PH.1, PH.4, PS.1	
Manage time and resources.	English: 6.1, 6.2, 6.4, 6.7, 6.9, 7.1, 7.2, 7.4, 7.7, 7.9, 8.1, 8.2, 8.4, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.2,	

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	11.5, 11.6, 11.8, 12.2, 12.5, 12.6, 12.8 History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: 6.10, 6.11, 6.12, 7.2, 7.3, 7.8, 7.9, 7.10, 7.11, 7.12, 7.13, 8.4, 8.11, 8.12, 8.13, 8.14, 8.17, 8.18, A.4, A.5, A.8, A.9, AFDA.3, AFDA.4, AFDA.5, AFDA.6, AFDA.7, AFDA.8, COM.1, COM.3, COM.5, COM.8	
Demonstrate information-literacy skills.	English: 6.1, 6.2, 6.4, 6.6, 6.7, 6.9, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 7.9, 8.1, 8.2, 8.3, 8.4, 8.6, 8.7, 8.9, 9.2, 9.5, 9.6, 9.8, 10.2, 10.5, 10.6, 10.8, 11.2, 11.5, 11.6, 11.8, 12.2, 12.5, 12.6, 12.8 History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: 6.10, 6.11, 7.8, 7.9, 8.11, 8.12, A.8, A.9, AFDA.3, AFDA.4, AFDA.6, AFDA.7, AFDA.8, DM.8, PS.1*, PS.2*, PS.3*, PS.4*, PS.7*, PS.8*, PS.9*, PS.10*	

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	Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PH.1, PS.1	
Demonstrate an understanding of information security.	<p>English: 6.1, 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 7.8, 7.9, 8.1, 8.2, 8.3, 8.4, 8.6, 8.7, 8.8, 8.9, 9.1, 9.2, 9.5, 9.6, 9.8, 10.1, 10.2, 10.5, 10.6, 10.8, 11.1, 11.2, 11.5, 11.6, 11.8, 12.1, 12.2, 12.5, 12.6, 12.8</p> <p>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p> <p>Mathematics: COM.10</p>	
Maintain working knowledge of current information-technology (IT) systems.	<p>English: 6.1, 6.3, 6.4, 6.6, 6.9, 7.1, 7.3, 7.4, 7.6, 7.9, 8.1, 8.3, 8.4, 8.6, 8.9</p> <p>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p> <p>Mathematics: 7.8, COM.1, COM.2, COM.7, COM.9, COM.10, COM.11, COM.16, COM.18, PS.17</p> <p>Science: BIO.1, CH.1, ES.1, PH.1</p>	
Demonstrate proficiency with	History and Social Science: CE.1, CE.4, CE.14, GOVT.1,	

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technologies, tools, and machines common to a specific occupation.	USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: 6.10, 6.11, 7.9, 8.4, A.7, A.8, A.9, AFDA.1, AFDA.3, AFDA.5, AII.4, AII.7, AII.9, COM.1, COM.7, COM.10, COM.11, COM.12, COM.16 Science: CH.1, ES.1, LS.1, PH.1, PS.1	
Apply mathematical skills to job-specific tasks.	English: 6.4, 6.6, 6.7, 7.4, 7.6, 7.7, 8.4, 8.6, 8.7, 9.5, 9.6, 10.5, 10.6, 11.5, 11.6, 12.5, 12.6 History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: 6.1, 6.2, 6.5, 6.6, 6.12, 6.13, 6.14, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.8, 7.9, 7.11, 7.12, 7.13, 8.4, 8.5, 8.6, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, 8.15, 8.16, 8.17, 8.18, A.1, A.3, A.4, A.5, A.7, A.8, A.9, AFDA.1, AFDA.3, AFDA.5, AFDA.8, AII.3, AII.7, AII.9, AII.10, COM.1, COM.7 Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PH.1, PS.1	



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Demonstrate professionalism.	English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1	
Demonstrate reading and writing skills.	English: 6.1, 6.6, 6.7, 7.1, 7.6, 7.7, 8.1, 8.6, 8.7, 9.1, 9.5, 9.6, 9.7, 10.1, 10.5, 10.6, 10.7, 11.1, 11.5, 11.6, 11.7, 12.1, 12.5, 12.6, 12.7 History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Science: 6.1, PH.1, PS.1	
Demonstrate workplace safety.	English: 6.4, 7.4, 8.4, 9.5, 10.5, 11.5, 12.5 History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Science: CH.1	
<b>Examining All Aspects of an Industry</b>		
Examine aspects of planning within an industry/organization.	History and Social Science: GOVT.16	
Examine aspects of management within an industry/organization.		

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Examine aspects of financial responsibility within an industry/organization.		
Examine technical and production skills required of workers within an industry/organization.		
Examine principles of technology that underlie an industry/organization.		
Examine labor issues related to an industry/organization.	History and Social Science: GOVT.16	
Examine community issues related to an industry/organization.	History and Social Science: GOVT.16	
Examine health, safety, and environmental issues related to an industry/organization.	History and Social Science: GOVT.16	
<b>Addressing Elements of Student Life</b>		
Identify the purposes and goals of the student organization.		
Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.		

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Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.		
Identify Internet safety issues and procedures for complying with acceptable use standards.		
<b>Exploring Work-Based Learning</b>		
Identify the types of work-based learning (WBL) opportunities.		
Reflect on lessons learned during the WBL experience.		
Explore career opportunities related to the WBL experience.		
Participate in a WBL experience, when appropriate.		
<b>Applying Basic Construction Safety Standards (Core Safety)</b>		
Comply with federal, state, and local safety legal requirements.	<p>English: 11.5, 11.8, 12.5, 12.8</p> <p>History and Social Science: GOVT.1, GOVT.7, GOVT.8, GOVT.9, GOVT.14, GOVT.15, GOVT.16</p> <p>Science: CH.1</p>	<p>NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety</p> <p>Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of</p>

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		<p>this module will award a Construction Site Safety Orientation credential.</p> <p>NCCER Plumbing Standards Level 1, Module 02102-12: Plumbing Safety</p> <p>This module reviews the common causes of plumbing-related accidents and injuries. Trainees will learn how to identify hazardous situations and unsafe conditions as well as how to handle and respond to these situations and conditions.</p>
Identify PPE (personal protective equipment) requirements.	English: 11.5, 12.5	<p>NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety</p> <p>Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential.</p> <p>NCCER Plumbing Standards Level 1, Module 02102-12: Plumbing Safety</p> <p>This module reviews the common causes of plumbing-related accidents and injuries. Trainees will learn how to identify hazardous situations and unsafe conditions as well as how to handle and respond to these situations and conditions.</p>
Maintain a safe working environment.	<p>English: 11.5, 12.5</p> <p>History and Social Science: GOVT.7, GOVT.8, GOVT.9, GOVT.14, GOVT.15, GOVT.16</p>	<p>NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety</p> <p>Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with</p>

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		<p>elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential.</p> <p>NCCER Plumbing Standards Level 1, Module 02102-12: Plumbing Safety This module reviews the common causes of plumbing-related accidents and injuries. Trainees will learn how to identify hazardous situations and unsafe conditions as well as how to handle and respond to these situations and conditions.</p>
<p>Explain safe working practices around electrical hazards.</p>	<p>English: 11.5, 12.5</p> <p>History and Social Science: GOVT.1, GOVT.7, GOVT.8, GOVT.9, GOVT.14, GOVT.15, GOVT.16</p>	<p>NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential.</p> <p>NCCER Plumbing Standards Level 1, Module 02102-12: Plumbing Safety This module reviews the common causes of plumbing-related accidents and injuries. Trainees will learn how to identify hazardous situations and unsafe conditions as well as how to handle and respond to these situations and conditions.</p>
<p>Identify emergency first-aid procedures.</p>	<p>English: 11.5, 12.5</p>	<p>NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and</p>

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		<p>how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential.</p>
<p>Identify the types of fires and the methods used to extinguish them.</p>	<p>English: 11.5, 12.5  Science: CH.1</p>	<p>NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential.</p>
<p>Inspect course-specific hand and power tools to visually identify defects.</p>	<p>English: 11.5, 12.5</p>	<p>NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential.  NCCER Plumbing Standards Level 1, Module 02102-12: Plumbing Safety This module reviews the common causes of plumbing-related accidents and injuries. Trainees will learn how to identify</p>

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		hazardous situations and unsafe conditions as well as how to handle and respond to these situations and conditions.
Demonstrate lifting and carrying techniques.	English: 11.5, 12.5	NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential.
Demonstrate safe laddering techniques.	English: 11.5, 12.5	NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential. NCCER Plumbing Standards Level 1, Module 02102-12: Plumbing Safety This module reviews the common causes of plumbing-related accidents and injuries. Trainees will learn how to identify hazardous situations and unsafe conditions as well as how to handle and respond to these situations and conditions.
Demonstrate safe scaffolding techniques.		NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety

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		Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential.
Report personal injuries and environmental and equipment safety violations to the appropriate authority.	English: 11.1, 12.1  History and Social Science: GOVT.1, GOVT.7, GOVT.8, GOVT.9, GOVT.15, GOVT.16	NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential.
Pass a safety exam for lab/site safety and the use of tools and equipment specific to the construction industry.	English: 11.5, 12.5	NCCER Core Curriculum: Introductory Craft Skills, 2015 00101-15 Basic Safety Module One (00101-15) explains the importance of safety in the construction and industrial crafts. Trainees will learn how to identify and follow safe work practices and procedures and how to properly inspect and use safety equipment. Trainees will be able to describe the safety practices associated with elevated work; energy release; and various hazards encountered on job sites. NOTE: The successful completion of this module will award a Construction Site Safety Orientation credential.
<b>Applying Basic Mathematics to the Plumbing Profession</b>		



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Calculate the area of a room and the volume of a tank.	Mathematics: G.9, G.13	NCCER Plumbing Standards Level 2, Module 02201-13: Plumbing Math Two Module one (02201-13) explains the Pythagorean theorem, reviews methods for laying out square corners, and discusses the techniques used to calculate simple and rolling offsets, as well as offsets on parallel runs of pipe.
Calculate the slope of a pipe.	English: 11.5, 12.5  Mathematics: G.3	NCCER Plumbing Standards Level 2, Module 02201-13: Plumbing Math Two Module one (02201-13) explains the Pythagorean theorem, reviews methods for laying out square corners, and discusses the techniques used to calculate simple and rolling offsets, as well as offsets on parallel runs of pipe.
<b>Reading Drawings for the Plumbing Profession</b>		
Develop fitting/material lists based on drawings.	Mathematics: A.1	NCCER Plumbing Standards Level 2, Module 02202-13: Reading Commercial Drawings Module two (02202-13) provides instruction in the identification and interpretation of civil, architectural, structural, HVAC/mechanical, plumbing, and electrical drawings, as well as how to use them to ensure accurate dimensions, generate RFIs, locate plumbing entry points, and establish piping routes and fixture locations.
Lay out plumbing systems and fixture rough-ins.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02202-13: Reading Commercial Drawings Module two (02202-13) provides instruction in the identification and interpretation of civil, architectural, structural, HVAC/mechanical, plumbing, and electrical drawings, as well as how to use them to ensure accurate dimensions, generate RFIs, locate plumbing entry points, and establish piping routes and fixture locations.
Complete a material takeoff for drain, waste, and vent (DWV) and water supply systems.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02202-13: Reading Commercial Drawings

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		Module two (02202-13) provides instruction in the identification and interpretation of civil, architectural, structural, HVAC/mechanical, plumbing, and electrical drawings, as well as how to use them to ensure accurate dimensions, generate RFIs, locate plumbing entry points, and establish piping routes and fixture locations.
<b>Performing Pipe Cutting and Joining</b>		
Join copper pipe (tubing) to fittings using the flare method.	English: 11.5, 12.5	
Join dissimilar materials.	English: 11.5, 12.5	
<b>Supporting and Hanging Pipe</b>		
Identify types of anchors and straps.		
Install backing and ledger supports for various plumbing fixtures.		
Describe the installation of pipe sleeves through a concrete or masonry wall.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02203-13: Structural Penetrations, Insulation, and Fire-Stopping Module three (02203-13) covers how to cut, bore, and sleeve structural members using the appropriate tools including proper locations, restrictions, and reinforcement techniques; how to install fiberglass and flexible foam insulation on pipe; and how to install fire-stopping on walls, floors, and ceiling according to code.
Identify common types of fire-stopping materials and assemblies.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02203-13: Structural Penetrations, Insulation, and Fire-Stopping Module three (02203-13) covers how to cut, bore, and sleeve structural members using the appropriate tools including proper locations, restrictions, and reinforcement techniques;

Task	SOL Correlations	NCCER
		how to install fiberglass and flexible foam insulation on pipe; and how to install fire-stopping on walls, floors, and ceiling according to code.
<b>Installing Waste and Soil Pipes</b>		
Construct a no-hub cast-iron pipe assembly.		NCCER Plumbing Standards Level 2, Module 02204-13: Installing and Testing DWV Piping Module four (02204-13) provides instruction in locating, installing, connecting, and testing a complete drain, waste, and vent (DWV) system including how to develop material takeoffs, set up and use levels, locate building sewers and building drains, locate fixtures, and test a DWV system.
Rough-in a DWV assembly of PVC/ABS, for the following: water closet, lavatory, bathtub, shower, kitchen or bar sink, washing machine, indirect waste.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02204-13: Installing and Testing DWV Piping Module four (02204-13) provides instruction in locating, installing, connecting, and testing a complete drain, waste, and vent (DWV) system including how to develop material takeoffs, set up and use levels, locate building sewers and building drains, locate fixtures, and test a DWV system.
Calculate and set waste and soil pipes to level and gradient.	English: 11.5, 12.5  Mathematics: G.3	NCCER Plumbing Standards Level 2, Module 02204-13: Installing and Testing DWV Piping Module four (02204-13) provides instruction in locating, installing, connecting, and testing a complete drain, waste, and vent (DWV) system including how to develop material takeoffs, set up and use levels, locate building sewers and building drains, locate fixtures, and test a DWV system.
Install a water closet flange.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02204-13: Installing and Testing DWV Piping

Task	SOL Correlations	NCCER
		Module four (02204-13) provides instruction in locating, installing, connecting, and testing a complete drain, waste, and vent (DWV) system including how to develop material takeoffs, set up and use levels, locate building sewers and building drains, locate fixtures, and test a DWV system.
Describe the use of a backwater valve.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02204-13: Installing and Testing DWV Piping Module four (02204-13) provides instruction in locating, installing, connecting, and testing a complete drain, waste, and vent (DWV) system including how to develop material takeoffs, set up and use levels, locate building sewers and building drains, locate fixtures, and test a DWV system.
Demonstrate the boring and notching of structural members of the building.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02204-13: Installing and Testing DWV Piping Module four (02204-13) provides instruction in locating, installing, connecting, and testing a complete drain, waste, and vent (DWV) system including how to develop material takeoffs, set up and use levels, locate building sewers and building drains, locate fixtures, and test a DWV system.
Test a drainage system by performing a standing water test.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02204-13: Installing and Testing DWV Piping Module four (02204-13) provides instruction in locating, installing, connecting, and testing a complete drain, waste, and vent (DWV) system including how to develop material takeoffs, set up and use levels, locate building sewers and building drains, locate fixtures, and test a DWV system.
Install various types of bathtubs, shower stalls, and shower pans.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02204-13: Installing and Testing DWV Piping

Task	SOL Correlations	NCCER
		Module four (02204-13) provides instruction in locating, installing, connecting, and testing a complete drain, waste, and vent (DWV) system including how to develop material takeoffs, set up and use levels, locate building sewers and building drains, locate fixtures, and test a DWV system.
<b>Roughing-in Water Distribution Components</b>		
Rough-in a water distribution system of hard-drawn copper, CPVC (chlorinated polyvinyl chloride), and PEX (cross-linked polyethylene) for the following fixtures: washing machine, lavatory, kitchen sink, tank-type water closet, bathtub and/or shower, ice maker, hose bib.	English: 11.5, 12.5	
Identify procedures and materials for installing a building's water service.	English: 11.5, 11.6, 12.5, 12.6	
Identify types of main shutoff valves.	English: 11.5, 12.5	
Install a main shutoff valve.		
Perform an air- or water-pressure test.		
Insulate water lines.		
Identify the need for backflow prevention devices.	English: 11.5, 12.5	
Install nail guards for the protection of piping.		
<b>Installing Fixtures and Trim</b>		
Install lavatory (wall hung and cabinet installation).	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02208-13: Installing Fixtures and Valves

Task	SOL Correlations	NCCER
		Module Eight (02208-13) provides instruction on how to install basic plumbing fixtures, including bathtubs, shower stalls, lavatories, sinks, water closets, and urinals; reviews the installation of associated valves, faucets, and components; and discusses how to connect appliances such as dishwashers, food-waste disposers, refrigerators and ice makers, and washing machines.
Install tank-type water closet.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02208-13: Installing Fixtures and Valves Module Eight (02208-13) provides instruction on how to install basic plumbing fixtures, including bathtubs, shower stalls, lavatories, sinks, water closets, and urinals; reviews the installation of associated valves, faucets, and components; and discusses how to connect appliances such as dishwashers, food-waste disposers, refrigerators and ice makers, and washing machines.
Install a kitchen sink.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02208-13: Installing Fixtures and Valves Module Eight (02208-13) provides instruction on how to install basic plumbing fixtures, including bathtubs, shower stalls, lavatories, sinks, water closets, and urinals; reviews the installation of associated valves, faucets, and components; and discusses how to connect appliances such as dishwashers, food-waste disposers, refrigerators and ice makers, and washing machines.
Install a garbage disposal.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02208-13: Installing Fixtures and Valves Module Eight (02208-13) provides instruction on how to install basic plumbing fixtures, including bathtubs, shower stalls, lavatories, sinks, water closets, and urinals; reviews the installation of associated valves, faucets, and components; and discusses how to connect appliances such as dishwashers,

Task	SOL Correlations	NCCER
		food-waste disposers, refrigerators and ice makers, and washing machines.
Install a dishwasher.		NCCER Plumbing Standards Level 2, Module 02208-13: Installing Fixtures and Valves Module Eight (02208-13) provides instruction on how to install basic plumbing fixtures, including bathtubs, shower stalls, lavatories, sinks, water closets, and urinals; reviews the installation of associated valves, faucets, and components; and discusses how to connect appliances such as dishwashers, food-waste disposers, refrigerators and ice makers, and washing machines.
Install a gas water heater.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02209-13: Installing Water Heaters Module Nine (02209-13) provides an introduction to gas-fired, electric, tankless, heat pump, and indirect water heaters, components, and applications; reviews proper installation and testing techniques; and covers the latest code requirements for water heaters.
Install an electric water heater.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02209-13: Installing Water Heaters Module Nine (02209-13) provides an introduction to gas-fired, electric, tankless, heat pump, and indirect water heaters, components, and applications; reviews proper installation and testing techniques; and covers the latest code requirements for water heaters.
Trim a tub and shower valve.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02207-13: Types of Valves Module Seven (02207-13) provides trainees with an overview of the many types of valves, their components, and valve applications, and explains how to service common valves. Level 2, Module 02208-13: Installing Fixtures and Valves

Task	SOL Correlations	NCCER
		Module Eight (02208-13) provides instruction on how to install basic plumbing fixtures, including bathtubs, shower stalls, lavatories, sinks, water closets, and urinals; reviews the installation of associated valves, faucets, and components; and discusses how to connect appliances such as dishwashers, food-waste disposers, refrigerators and ice makers, and washing machines.
Install various fixture shutoff valves.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02207-13: Types of Valves Module Seven (02207-13) provides trainees with an overview of the many types of valves, their components, and valve applications, and explains how to service common valves.
Connect icemaker lines.		
Install kitchen sink continuous waste.	English: 11.5, 12.5	
Describe the installation and operation of a tankless water heater.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02209-13: Installing Water Heaters Module Nine (02209-13) provides an introduction to gas-fired, electric, tankless, heat pump, and indirect water heaters, components, and applications; reviews proper installation and testing techniques; and covers the latest code requirements for water heaters.
<b>Exploring Basic Electricity Concepts Related to Plumbing</b>		
Identify how voltage, current, resistance, and power are related.	English: 11.5, 12.5  Science: PH.11	NCCER Plumbing Standards Level 2, Module 02210-13: Basic Electricity Module Ten (02210-13) provides an introduction to electrical safety and the principles of electricity, including voltage, current, resistance, and power. Trainees will learn about important electrical formulas, circuitry, and common plumbing-related electrical applications.
Describe the use of an electricity testing meter.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02210-13: Basic Electricity



Task	SOL Correlations	NCCER
		Module Ten (02210-13) provides an introduction to electrical safety and the principles of electricity, including voltage, current, resistance, and power. Trainees will learn about important electrical formulas, circuitry, and common plumbing-related electrical applications.
Identify the purpose and operation of the various electrical components used in plumbing equipment.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02210-13: Basic Electricity Module Ten (02210-13) provides an introduction to electrical safety and the principles of electricity, including voltage, current, resistance, and power. Trainees will learn about important electrical formulas, circuitry, and common plumbing-related electrical applications.
<b>Servicing and Repairing Plumbing and Fixtures</b>		
Replace and adjust the water closet fill valve.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02208-13: Installing Fixtures and Valves Module Eight (02208-13) provides instruction on how to install basic plumbing fixtures, including bathtubs, shower stalls, lavatories, sinks, water closets, and urinals; reviews the installation of associated valves, faucets, and components; and discusses how to connect appliances such as dishwashers, food-waste disposers, refrigerators and ice makers, and washing machines.
Troubleshoot a flushometer.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02208-13: Installing Fixtures and Valves Module Eight (02208-13) provides instruction on how to install basic plumbing fixtures, including bathtubs, shower stalls, lavatories, sinks, water closets, and urinals; reviews the installation of associated valves, faucets, and components; and discusses how to connect appliances such as dishwashers, food-waste disposers, refrigerators and ice makers, and washing machines.

<b>Task</b>	<b>SOL Correlations</b>	<b>NCCER</b>
Repair or replace a two-handled faucet, both compression and washerless types.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02208-13: Installing Fixtures and Valves Module Eight (02208-13) provides instruction on how to install basic plumbing fixtures, including bathtubs, shower stalls, lavatories, sinks, water closets, and urinals; reviews the installation of associated valves, faucets, and components; and discusses how to connect appliances such as dishwashers, food-waste disposers, refrigerators and ice makers, and washing machines.
Repair or replace various single-lever faucets.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02208-13: Installing Fixtures and Valves Module Eight (02208-13) provides instruction on how to install basic plumbing fixtures, including bathtubs, shower stalls, lavatories, sinks, water closets, and urinals; reviews the installation of associated valves, faucets, and components; and discusses how to connect appliances such as dishwashers, food-waste disposers, refrigerators and ice makers, and washing machines.
Repair or replace a tub diverter.		NCCER Plumbing Standards Level 2, Module 02208-13: Installing Fixtures and Valves Module Eight (02208-13) provides instruction on how to install basic plumbing fixtures, including bathtubs, shower stalls, lavatories, sinks, water closets, and urinals; reviews the installation of associated valves, faucets, and components; and discusses how to connect appliances such as dishwashers, food-waste disposers, refrigerators and ice makers, and washing machines.
Troubleshoot a gas or electric water heater.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02209-13: Installing Water Heaters Module Nine (02209-13) provides an introduction to gas-fired, electric, tankless, heat pump, and indirect water heaters, components, and applications; reviews proper installation and

Task	SOL Correlations	NCCER
		testing techniques; and covers the latest code requirements for water heaters.
<b>Installing Natural Gas Piping Systems</b>		
Identify the local gas code for installation requirements.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02211-13: Fuel Gas and Fuel Oil Systems Module Eleven (02211-13) provides trainees with an introduction to the techniques required for the safe handling of natural gas, liquefied petroleum gas, and fuel oil, and also reviews fuel gas and fuel oil safety precautions and potential hazards, applications, systems installation, and testing.
Identify the different types of natural gas distribution materials.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02211-13: Fuel Gas and Fuel Oil Systems Module Eleven (02211-13) provides trainees with an introduction to the techniques required for the safe handling of natural gas, liquefied petroleum gas, and fuel oil, and also reviews fuel gas and fuel oil safety precautions and potential hazards, applications, systems installation, and testing.
Describe testing and purging procedures.	English: 11.5, 12.5	
Describe the installation of a gas appliance.	English: 11.5, 12.5	NCCER Plumbing Standards Level 2, Module 02211-13: Fuel Gas and Fuel Oil Systems Module Eleven (02211-13) provides trainees with an introduction to the techniques required for the safe handling of natural gas, liquefied petroleum gas, and fuel oil, and also reviews fuel gas and fuel oil safety precautions and potential hazards, applications, systems installation, and testing.