

Standards Correlations

Welding I (8672)

Task	SOL Correlations
Demonstrating Personal Qualities and Abilities	
Demonstrate creativity and innovation.	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 History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WG.4, WHI.1, WHII.1 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* Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PS.1
Demonstrate critical thinking and problem solving.	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 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 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,

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	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* Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PS.1
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, 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
Demonstrating Interpersonal Skills	
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
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

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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
Demonstrating Professional Competencies	
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, 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

Task	SOL Correlations
	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* Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PH.1, PS.1
Demonstrate an understanding of information security.	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 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: COM.10
Maintain working knowledge of current information-technology (IT) systems.	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 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: 7.8, COM.1, COM.2, COM.7, COM.9, COM.10, COM.11, COM.16, COM.18, PS.17 Science: BIO.1, CH.1, ES.1, PH.1
Demonstrate proficiency with technologies, tools, and machines common to a specific occupation.	History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1

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	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
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
Examining All Aspects of an Industry	
Examine aspects of planning within an	History and Social Science: GOVT.16

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industry/organization.	
Examine aspects of management within an industry/organization.	
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
Addressing Elements of Student Life	
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.	
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.	
Exploring Work-Based Learning	
Identify the types of work-based learning	

Task	SOL Correlations
(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.	
Applying Basic Safety Standards	
Comply with federal, state, and local safety requirements, including the Occupational Safety and Health Administration (OSHA), Virginia Occupational Safety and Health (VOSH) Program, and Environmental Protection Agency (EPA) regulations.	<p>English: 10.5, 10.8, 11.5, 11.8</p> <p>History: WHII 8 VUS 8 Govt 7, 8, 9</p> <p>Science: CH.1</p>
Maintain a safe working environment.	<p>English: 10.5, 11.5</p> <p>History: WHII 8 VUS 8</p> <p>Govt 7, 8, 9</p>
Explain safe working practices around electrical hazards.	<p>English: 10.5, 11.5</p> <p>History: WHII 8 VUS 8</p> <p>Govt 7, 8, 9</p>

Task	SOL Correlations
Identify emergency first aid procedures.	English: 10.5, 11.5 History: WHII 8 VUS 8 Govt 7, 8, 9
Identify the types of fires and the methods used to extinguish them.	English: 10.5, 11.5 History: WHII 8 VUS 8 Govt 7, 8, 9 Science: CH.1
Demonstrate the use of a fire extinguisher.	English: 10.5, 11.5 History: WHII 8 VUS 8 Govt 7, 8, 9
Identify personal protective equipment (PPE) requirements.	English: 10.5, 11.5 History: WHII 8 VUS 8

Task	SOL Correlations
	Govt 7, 8, 9
Inspect PPE to determine whether it is safe to use.	English: 11.5, 12.5 History: WHII 8 VUS 8 Govt 7, 8, 9
Describe ventilation requirements and regulations pertaining to welding.	English: 10.5, 11.5 History: WHII 8 VUS 8 Govt 7, 8, 9
Inspect hand and power tools to ensure safety and usability.	English: 10.5, 11.5 History: WHII 8 VUS 8 Govt 7, 8, 9
Demonstrate lifting and carrying techniques.	History: WHII 8 VUS 8 Govt 7, 8, 9
Identify types of ladders.	
Demonstrate safe laddering techniques for various types of ladders.	History: WHII 8 VUS 8

Task	SOL Correlations
Describe safe scaffolding techniques.	Govt 7, 8, 9 English: 10.5, 11.5 History: WHII 8 VUS 8 Govt 7, 8, 9
Report injuries.	English: 10.5, 10.6, 10.7, 11.5, 11.6, 11.7 History: WHII 8 VUS 8 Govt 7, 8, 9
Report personal, environmental, and equipment safety violations to the appropriate authority.	English: 10.5, 10.6, 10.7, 11.5, 11.6, 11.7 History: WHII 8 VUS 8 Govt 7, 8, 9
Earn the OSHA 10 card.	English: 10.5, 11.5 History: WHII 8 VUS 8 Govt 7, 8, 9
Pass the safety exam.	English: 10.5, 11.5

Task	SOL Correlations
	History: WHII 8 VUS 8 Govt 7, 8, 9
Exploring the Basics of Welding	
Identify common metals used in the welding profession.	English: 10.5, 11.5
Identify the main regulatory bodies and regulations affecting the welding profession in the United States.	English: 10.5, 10.8, 11.5, 11.8 History: WHII 8 VUS 8 Govt 7, 8, 9
Identify minor external repairs to all equipment and accessories.	English: 10.5, 10.8, 11.5, 11.8 History: WHII 8 VUS 8 Govt 7, 8, 9
Working with Welding Documents, Drawings and Measurements	
Identify basic elements of a drawing or sketch.	English: 10.5, 11.5 Mathematics: G.2, G.3
Identify welding symbol information.	English: 10.5, 11.5
Follow the instructions on a job specifications sheet.	English: 10.5, 11.5

Task	SOL Correlations
Apply basic measuring skills to welding operations.	English: 10.5, 11.5
Convert basic measurements.	English: 10.5, 11.5
Interpret dimensions from a drawing with incomplete dimensions.	English: 10.5, 11.5 Mathematics: G.8, G.9, AII.3
Demonstrating Shielded Metal Arc Welding (SMAW)	
Describe the theories behind SMAW.	English: 10.5, 11.5
Perform safety inspections of all equipment and accessories.	History: WHII 8 VUS 8 Govt 7, 8, 9
Identify minor external repairs to all equipment and accessories.	English: 10.5, 11.5
Set up for SMAW operations and base metal preparation on carbon steel.	English: 10.5, 11.5
Operate SMAW equipment.	
Perform single-pass fillet welds, 1F and 2F, on carbon steel.	English: 10.5, 11.5
Perform groove welds, 1G and 2G, on carbon steel, limited thickness.	English: 10.5, 11.5
Demonstrating Gas Metal Arc Welding (GMAW)	
Describe the theories behind GMAW and GMAW-S.	English: 10.5, 11.5
Perform safety inspections of all equipment and accessories.	English: 10.5, 11.5
Identify minor external repairs to all equipment and accessories.	English: 10.5, 11.5
Set up for GMAW and GMAW-S operations and base metal preparation on carbon steel.	English: 10.5, 11.5
Operate GMAW and GMAW-S equipment.	English: 10.5, 11.5
Perform single-pass fillet welds, all positions, on carbon steel, using different modes of transfer.	English: 10.5, 11.5
Perform groove welds, all positions, on carbon steel, using different modes of transfer.	English: 10.5, 11.5
Demonstrating Flux-cored Arc Welding	

Task	SOL Correlations
Describe the theories behind FCAW-G.	English: 10.5, 11.5
Perform safety inspections of all equipment and accessories.	English: 10.5, 11.5
Identify minor external repairs to all equipment and accessories.	English: 10.5, 11.5
Set up for FCAW-G operations and base metal preparation on carbon steel.	English: 10.5, 11.5
Operate FCAW-G equipment.	English: 10.5, 11.5
Describe the theories behind FCAW-S.	English: 10.5, 11.5
Perform single-pass welds on carbon steel, using different modes of transfer.	English: 10.5, 11.5
Demonstrating Thermal Cutting	
Explain why one form of cutting is preferable to another.	English: 10.5, 11.5
Describe the theories behind manual thermal cutting.	English: 10.5, 11.5
Perform safety inspections of all equipment and accessories.	English: 10.5, 11.5
Identify minor external repairs to all equipment and accessories.	English: 10.5, 11.5
Set up for manual OFC operations and base metal preparation on carbon steel.	English: 10.5, 11.5
Operate manual OFC equipment.	English: 10.5, 11.5
Operate PAC.	English: 10.5, 11.5
Operate CAC.	English: 10.5, 11.5
Perform straight-cutting operations on carbon steel.	English: 10.5, 11.5
Describe the theories behind machine OFC track burner.	English: 10.5, 11.5
Perform safety inspections of all equipment and accessories.	English: 10.5, 11.5
Identify minor external repairs to all equipment and accessories.	English: 10.5, 11.5
Set up for machine OFC track burner operations on carbon steel.	English: 10.5, 11.5
Operate machine OFC track burner equipment.	English: 10.5, 11.5
Demonstrating Visual Examination Procedures	
Examine cut surfaces and edges of prepared base metal parts.	English: 10.5, 11.5
Examine tack, intermediate layers, and completed welds.	English: 10.5, 11.5