

Standards Correlations

Welding II (8673)

Task	SOL Correlations
Demonstrating Personal Qualities and Abilities	
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> <p>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PS.1</p>
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.	<p>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</p>

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	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
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

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	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 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

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	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 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

Task	SOL Correlations
	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 industry/organization.	History and Social Science: GOVT.16
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.	

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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 (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: 11.5, 11.8, 12.5, 12.8</p> <p>History: WHII 8 VUS 8 Govt 7, 8, 9</p>

Task	SOL Correlations
	Science: CH.1
Maintain a safe working environment.	English: 11.5, 12.5 History: WHII 8 VUS 8 Govt 7, 8, 9
Explain safe working practices around electrical hazards.	English: 11.3, 11.5, 12.3, 12.5 History: WHII 8 VUS 8 Govt 7, 8, 9
Identify emergency first aid procedures.	English: 11.5, 12.5 History: WHII 8 VUS 8 Govt 7, 8, 9
Identify the types of fires and the methods used to extinguish them.	English: 11.5, 12.5 History: WHII 8 VUS 8

Task	SOL Correlations
	Govt 7, 8, 9 Science: CH.1
Demonstrate the use of a fire extinguisher.	History: WHII 8 VUS 8 Govt 7, 8, 9
Identify personal protective equipment (PPE) requirements.	English: 11.5, 12.5 History: WHII 8 VUS 8 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: 11.5, 12.5 History: WHII 8 VUS 8 Govt 7, 8, 9

Task	SOL Correlations
Inspect hand and power tools to visually identify defects.	<p>English: 11.5, 12.5</p> <p>History: WHII 8 VUS 8</p> <p>Govt 7, 8, 9</p>
Demonstrate lifting and carrying techniques.	<p>English: 11.5, 12.5</p> <p>History: WHII 8 VUS 8</p> <p>Govt 7, 8, 9</p>
Identify types of ladders.	English: 11.5, 12.5
Demonstrate safe laddering techniques for various types of ladders	<p>English: 11.5, 12.5</p> <p>History: WHII 8 VUS 8</p> <p>Govt 7, 8, 9</p>
Describe safe scaffolding techniques.	<p>English: 11.5, 12.5</p> <p>History: WHII 8 VUS 8</p> <p>Govt 7, 8, 9</p>
Report injuries.	English: 11.1, 11.5, 11.6, 11.7, 12.1, 12.5, 12.6, 11.7

Task	SOL Correlations
	History: WHII 8 VUS 8 Govt 7, 8, 9
Report personal, environmental, and equipment safety violations to the appropriate authority.	English: 11.1, 11.5, 11.6, 11.7, 12.1, 12.5, 12.6, 12.7 History: WHII 8 VUS 8 Govt 7, 8, 9
Pass the safety exam.	English: 11.5, 12.5 History: WHII 8 VUS 8 Govt 7, 8, 9
Working with Documents and Drawings	
Interpret elements of a drawing or sketch.	English: 11.5, 12.5
Interpret welding symbol information.	English: 11.5, 12.5
Convert metric system measurements to and from U.S. customary (standard) system measurements.	English: 11.5, 12.5 Science: CH.1
Apply basic measuring skills to welding operations.	English: 11.5, 12.5

Task	SOL Correlations
Calculate dimensions from a drawing with incomplete dimensions.	English: 11.5, 12.5 Mathematics: G.8, G.9, G.11, G.14, AII.3
Follow the instructions on a job specifications sheet.	English: 11.5, 12.5
Interpret dimensions from a drawing with incomplete dimensions.	English: 11.5, 12.5 Mathematics: G.8, G.9, G.11, G.14, AII.3
Fabricate simple parts from a drawing or a sketch.	English: 11.5, 12.5
Oxyfuel Gas Gutting (OFC Track Burner)	
Describe the theories behind machine OFC track burner.	English: 11.5, 12.5
Perform safety inspections of all equipment and accessories.	English: 11.5, 12.5
Identify minor external repairs to all equipment and accessories.	English: 11.5, 12.5
Set up for machine OFC track burner operations on carbon steel.	English: 11.5, 12.5
Operate machine OFC track burner equipment.	English: 11.5, 12.5
Perform straight-cutting operations on carbon steel.	English: 11.5, 12.5
Perform bevel-cutting operations on carbon steel.	English: 11.5, 12.5
Demonstrating Thermal Cutting for Oxyfuel, Plasma, and Carbon Arc Cutting	
Describe the theories behind thermal cutting processes.	English: 11.5, 12.5

Task	SOL Correlations
Explain why one form of cutting is preferable to another.	English: 11.5, 12.5
Perform safety inspections of all equipment and accessories.	English: 11.5, 12.5
Identify minor external repairs to all equipment and accessories.	English: 11.5, 12.5
Set up for manual OFC operations and base metal preparation on carbon steel.	English: 11.5, 12.5
Operate manual OFC equipment.	English: 11.5, 12.5
Set up for plasma arc operations and base metal preparation on various metals.	English: 11.5, 12.5
Operate plasma arc equipment.	English: 11.5, 12.5
Set up for manual air carbon arc cutting (CAC-A) equipment.	English: 11.5, 12.5
Operate carbon arc equipment.	English: 11.5, 12.5
Perform metal removal operations on carbon steel.	English: 11.5, 12.5
Demonstrating Gas Tungsten Arc Welding (GTAW)	
Describe the theories behind GTAW.	English: 11.5, 12.5
Perform safety inspections of all equipment and accessories.	English: 11.5, 12.5
Identify minor external repairs to all equipment and accessories.	English: 11.5, 12.5
Set up for GTAW operations and base metal preparation on ferrous and non-ferrous materials.	English: 11.5, 12.5
Operate GTAW equipment.	English: 11.5, 12.5
Perform 1F and 2F fillet welds on various materials.	English: 11.5, 12.5
Perform 1G-groove welds on carbon steel, limited thickness.	English: 11.5, 12.5

Task	SOL Correlations
Perform 1F–2F welds on aluminum.	English: 11.5, 12.5
Perform 1G welds on aluminum.	English: 11.5, 12.5
Perform 1F–2F welds on stainless steel.	English: 11.5, 12.5
Perform 1G–2G welds on stainless steel.	English: 11.5, 12.5
Demonstrating Shielded Metal Arc Welding (SMAW)	
Perform single-pass and multi-pass fillet welds on carbon steel in various positions.	English: 11.5, 12.5
Perform groove welds on carbon steel, limited thickness, in various positions.	English: 11.5, 12.5
Demonstrating Gas Metal Arc Welding (GMAW)	
Perform single and multi-pass pass welds on carbon steel, limited thickness, in various positions.	English: 11.5, 12.5
Perform groove welds on carbon steel, limited thickness, using various modes of transfer and in various positions.	English: 11.5, 12.5
Demonstrating Visual Examination	
Evaluate cut surfaces and edges of prepared base metal parts.	English: 11.1, 11.5, 12.1, 12.5
Evaluate tack, intermediate layers, and completed welds.	English: 11.1, 11.5, 12.1, 12.5