

# Standards Correlations

## Advanced Drawing and Design (8438)

Task	SOL Correlations	ITEEA	TSA Competitive Events
<b>Demonstrating Personal Qualities and Abilities</b>			
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		

Task	SOL Correlations	ITEEA	TSA Competitive Events
	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, 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		
<b>Demonstrating Interpersonal Skills</b>			

<b>Task</b>	<b>SOL Correlations</b>	<b>ITEEA</b>	<b>TSA Competitive Events</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		
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>			
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		

Task	SOL Correlations	ITEEA	TSA Competitive Events
Demonstrate information-literacy skills.	<p>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</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: 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*</p> <p>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PH.1, PS.1</p>		
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>		

Task	SOL Correlations	ITEEA	TSA Competitive Events
	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		

Task	SOL Correlations	ITEEA	TSA Competitive Events
	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.			
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.			

<b>Task</b>	<b>SOL Correlations</b>	<b>ITEEA</b>	<b>TSA Competitive Events</b>
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.			
Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.			

Task	SOL Correlations	ITEEA	TSA Competitive Events
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>Focusing on Design</b>			
Research design-related fields.	English: 11.5, 11.8, 12.5, 12.8 Social Studies: VUS 14; Govt 9, 12, 15	STEL 3	STEM Careers (Virginia only event)
Identify advanced drawing and design terminology.	English: 9.5, 10.5, 11.5, 12.5	STEL 8	Architecture Design CAD Engineering CAD Architecture Technology Bowl

<b>Task</b>	<b>SOL Correlations</b>	<b>ITEEA</b>	<b>TSA Competitive Events</b>
Explain the engineering design process.	English: 9.5, 10.5, 11.5, 12.5	STEL 7	CAD Architecture CAD Engineering
Analyze design solutions.	English: 9.5, 10.5, 11.5, 12.5	STEL 7	CAD Architecture CAD Engineering
Implement a design process.	English: 9.1, 10.1, 11.1, 12.1	STEL 7	CAD Architecture CAD Engineering Computer Integrated Manufacturing (CIM)
Justify calculations and assumptions made during the design process.	English: 9.5, 9.8, 10.5, 10.8, 11.5, 11.8, 12.5, 12.8 Mathematics: G.8, G.9, G.11, G.13, G.14	STEL 3, 7	
Prepare freehand and electronic preliminary sketches.	English: 9.5, 9.6, 9.7, 10.5, 10.6, 10.7, 11.5, 11.6, 11.7, 12.5, 12.6, 12.7 Mathematics: G.2, G.3, G.8, G.9, G.11, G.13, G.14	STEL 2, 8	CAD Architecture CAD Engineering
Develop skills related to using scale.	English: 9.5, 10.5, 11.5, 12.5	STEL 3, 8	CAD Architecture CAD Engineering
Use measuring skills.		STEL 3, 8	CAD Architecture CAD Engineering Computer Integrated Manufacturing (CIM)

<b>Task</b>	<b>SOL Correlations</b>	<b>ITEEA</b>	<b>TSA Competitive Events</b>
Create a 3D design model of an object.	English: 9.2, 9.5, 10.2, 10.5, 11.2, 11.5, 12.2, 12.5 Mathematics: G.3, G.7, G.8, G.9, G.13, G.14	STEL 8	CAD Engineering
Analyze multi-drawing sets.	English: 9.5, 10.5, 11.5, 12.5	STEL 8	CAD Architecture CAD Engineering Computer Integrated Manufacturing (CIM)
Present design ideas.	English: 9.1, 9.5, 10.1, 10.5, 11.1, 11.5, 12.1, 12.5	STEL 3, 8	CAD Engineering
Reverse engineer products.	English: 9.5, 10.5, 11.5, 12.5	STEL 8	Computer Integrated Manufacturing (CIM)
Construct physical models of designs.	English: 9.5, 10.5, 11.5, 12.5	STEL 7, 8	Dragster Design
Develop proficiency reading working drawings.	English: 9.5, 10.5, 11.5, 12.5	STEL 2, 8	CAD Architecture CAD Engineering
<b>Focusing on Drawing</b>			
Create 3D model parts using CAD.	English: 9.2, 10.2, 11.2, 12.2	STEL 8	CAD Engineering

<b>Task</b>	<b>SOL Correlations</b>	<b>ITEEA</b>	<b>TSA Competitive Events</b>
Generate multi-view orthographic projections from a 3D design model.	English: 9.2, 10.2, 11.2, 12.2	STEL 8	CAD Engineering
Create working drawings and sheet sets.	English: 9.5, 9.6, 9.7, 10.5, 10.6, 10.7, 11.5, 11.6, 11.7, 12.5, 12.6, 12.7	STEL 8	CAD Architecture CAD Engineering
Generate schedules.		STEL 3, 8	
Render presentation designs.	English: 9.5, 10.5, 11.5, 12.5	STEL 3, 8	CAD Architecture CAD Engineering
Generate sectional views.	English: 9.5, 9.6, 9.7, 10.5, 10.6, 10.7, 11.5, 11.6, 11.7, 12.5, 12.6, 12.7	STEL 8	CAD Architecture CAD Engineering
Draw a thread detail.	English: 9.5, 10.5, 11.5, 12.5  Mathematics: G.8, AII.3	STEL 3, 8	CAD Architecture CAD Engineering
Design parts and assembly drawings using coordinate systems.	English: 9.5, 10.5, 11.5, 12.5	STEL 3, 8	CAD Architecture CAD Engineering
Dimension drawings, according to the standards of ANSI (American National Standards Institute), ISO (International Standards Organization), U.S.	English: 9.5, 10.5, 11.5, 12.5	STEL 5, 8	CAD Architecture CAD Engineering

<b>Task</b>	<b>SOL Correlations</b>	<b>ITEEA</b>	<b>TSA Competitive Events</b>
military standard (MIL), U.S. Department of Defense (DOD) and NCS (National CAD Standards).			
Demonstrate the use and manipulation of styles.	English: 9.5, 10.5, 11.5, 12.5	STEL 3, 8	CAD Architecture CAD Engineering Computer Integrated Manufacturing (CIM)
<b>Focusing on Documentation</b>			
Develop specification data.	English: 9.5, 9.6, 10.5, 10.6, 11.5, 11.6, 12.5, 12.6	STEL 8	CAD Architecture CAD Engineering Computer Integrated Manufacturing (CIM)
Use technical writing style in documentation.	English: 9.6, 9.7, 10.6, 10.7, 11.6, 11.7, 12.6, 12.7	STEL 3, 8	Technology Bowl
Create a multimedia presentation of a finished design, incorporating animation files.	English: 9.2, 9.5, 10.2, 10.5, 11.2, 11.5, 12.2, 12.5	STEL 3, 8	Animatronics Digital Video Production Music Production On Demand Video Promotional Design
Investigate inventive methods of documentation.	English: 9.5, 9.8, 10.8, 10.5, 11.8, 11.5, 12.8, 12.5	STEL 3, 8	
<b>Maintaining Professionalism</b>			
Describe ethical issues in the design industry.	English: 9.5, 10.5, 11.5, 12.5	STEL 3, 8	Technology Bowl

<b>Task</b>	<b>SOL Correlations</b>	<b>ITEEA</b>	<b>TSA Competitive Events</b>
Identify the role of advanced drawing and design in manufacturing and construction industry processes.	English: 9.5, 10.5, 11.5, 12.5	STEL 2, 8	CAD Architecture CAD Engineering
Characterize what collaboration is necessary among the design trades/fields.	English: 9.5, 10.5, 11.5, 12.5	STEL 5, 8	STEM Careers
Present a complete electronic work portfolio.	English: 9.5, 9.6, 9.7, 10.5, 10.6, 10.7, 11.5, 11.6, 11.7, 12.5, 12.6, 12.7	STEL 3, 8	CAD Architecture CAD Engineering Computer Integrated Manufacturing (CIM)