

Standards Correlations

Electronics Systems I (8416/8417)

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
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,</p>		

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
	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		
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		

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
	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 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		

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
	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 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		

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
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 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		

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
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	History and Social Science: GOVT.16		

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
issues related to an industry/organization.			
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 (WBL) opportunities.			

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
Reflect on lessons learned during the WBL experience.			
Explore career opportunities related to the WBL experience.			
Participate in a WBL experience, when appropriate.			
Introducing the Field of Electronics			
Demonstrate the safe and proper use of electronic lab equipment.	History and Social Science: GOVT.14 Science: CH.1, PH.1	12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies	Principles of Technology (Virginia only)
Describe techniques and methods for use of and care for soldering equipment.		16. Energy and Power Technologies	
Identify number systems used in electronics designs.	English: 9.3, 10.3, 11.3, 12.3 Mathematics: COM.15	1. The Characteristics and Scope of Technology 16. Energy and Power Technologies 19. Manufacturing Technologies	Engineering Design Principles of Technology (Virginia only) System Control Technology
Introducing Properties of Electricity			
Describe methods of generating electricity.	English: 9.5, 10.5, 11.5, 12.5	16. Energy and Power Technologies	

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
Describe atomic structure as it relates to electricity.	Science: CH.5, ES.6, PH.11 English: 9.5, 10.5, 11.5, 12.5 History and Social Science: VUS.8 Science: CH.2	1. The Characteristics and Scope of Technology 2. The Core Concepts of Technology 3. The Relationships Among Technologies and the Connections Between Technology and Other Fields 6. The Role of Society in the Development and Use of Technology 7. The Influence of Technology on History 8. The Attributes of Design 9. Engineering Design 10. The Role of Troubleshooting, Research and Development, Invention and Innovation, and Experimentation in Problem Solving 11. Apply the Design Processes 12. Use and Maintain Technological Products and Systems 13. Assess the Impact of Products and Systems 16. Energy and Power Technologies	Principles of Technology (Virginia only) System Control Technology Technology Bowl
Describe the law of charges.	Mathematics: A.4, A.8, AII.3, AII.10 Science: PH.6	1. The Characteristics and Scope of Technology 16. Energy and Power Technologies	Principles of Technology (Virginia only) Technology Bowl

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
		19. Manufacturing Technologies	
Describe the effects of magnetism on electricity.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.7	16. Energy and Power Technologies	
Describe the operation of electromagnetic devices.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.7	16. Energy and Power Technologies	
Describe the differences between conductors and insulators.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.11	1. The Characteristics and Scope of Technology 16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl
Describe current, including its unit of measurement and symbol.	English: 9.5, 10.5, 11.5, 12.5 History and Social Science: VUS.8 Mathematics: A.4, A.8, T.3, AII.3, AII.10 Science: PH.11	1. The Characteristics and Scope of Technology 16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl
Describe voltage, including its unit of measurement and symbol(s).	English: 9.5, 10.5, 11.5, 12.5 Mathematics: A.4, A.8, AII.3, AII.10 Science: PH.11	1. The Characteristics and Scope of Technology 16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl
Compare potential and electromotive forces.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.6, PH.11	1. The Characteristics and Scope of Technology 16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl
Describe resistance, including its unit of	English: 9.3, 10.3, 11.3, 12.3 Science: PH.11	1. The Characteristics and Scope of Technology	Principles of Technology (Virginia only)

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
measurement and symbol(s).		16. Energy and Power Technologies 19. Manufacturing Technologies	Technology Bowl
Describe the interrelationship among current, voltage, and resistance.	English: 9.5, 10.5, 11.5, 12.5 Mathematics: A.4, A.8, AII.3, AII.10 Science: PH.11	1. The Characteristics and Scope of Technology 16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl
Define Ohm's law.	English: 9.3, 10.3, 11.3, 12.3 Mathematics: A.4, A.8, AII.3, AII.10 Science: PH.11	1. The Characteristics and Scope of Technology 2. The Core Concepts of Technology 3. The Relationships Among Technologies and the Connections Between Technology and Other Fields 6. The Role of Society in the Development and Use of Technology 7. The Influence of Technology on History 8. The Attributes of Design 9. Engineering Design 10. The Role of Troubleshooting, Research and Development, Invention and Innovation, and Experimentation in Problem Solving 11. Apply the Design Processes 12. Use and Maintain Technological Products and Systems	Principles of Technology (Virginia only) System Control Technology Technology Bowl

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
		13. Assess the Impact of Products and Systems 16. Energy and Power Technologies	
Compute current, voltage, resistance, and power, using Ohm's law and Watt's law.	Mathematics: A.4, A.6, A.8, AII.3, AII.10 Science: PH.11	1. The Characteristics and Scope of Technology 2. The Core Concepts of Technology 3. The Relationships Among Technologies and the Connections Between Technology and Other Fields 6. The Role of Society in the Development and Use of Technology 7. The Influence of Technology on History 8. The Attributes of Design 9. Engineering Design 10. The Role of Troubleshooting, Research and Development, Invention and Innovation, and Experimentation in Problem Solving 11. Apply the Design Processes 12. Use and Maintain Technological Products and Systems 13. Assess the Impact of Products and Systems 16. Energy and Power Technologies	Principles of Technology (Virginia only) System Control Technology Technology Bowl

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
Describe a circuit as a system.	Science: PH.7, PH.11	1. The Characteristics and Scope of Technology 16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl
Describe direct current in circuits.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.11	1. The Characteristics and Scope of Technology 16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl
Determine the direction of current flow in DC circuits.	Science: PH.11	1. The Characteristics and Scope of Technology 2. The Core Concepts of Technology 3. The Relationships Among Technologies and the Connections Between Technology and Other Fields 6. The Role of Society in the Development and Use of Technology 7. The Influence of Technology on History 8. The Attributes of Design 9. Engineering Design 10. The Role of Troubleshooting, Research and Development, Invention and Innovation, and Experimentation in Problem Solving 11. Apply the Design Processes	Principles of Technology (Virginia only) System Control Technology Technology Bowl

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
		12. Use and Maintain Technological Products and Systems 13. Assess the Impact of Products and Systems 16. Energy and Power Technologies	
Introducing Circuit Components			
Describe batteries as voltage sources.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.6	16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl
Describe the role of conductors in a circuit.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.7, PH.11	16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl
Describe the role of insulators in a circuit.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.7, PH.11	16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl
Explain how common electrical and electronic devices work.	English: 9.5, 10.5, 11.5, 12.5	16. Energy and Power Technologies	
Identify control devices of electrical and electronic devices.	English: 9.5, 10.5, 11.5, 12.5	16. Energy and Power Technologies	
Describe resistors by type and value.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.11	1. The Characteristics and Scope of Technology 16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
Describe the purpose and components of protected circuits.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.11	16. Energy and Power Technologies 19. Manufacturing Technologies	Animatronics Principles of Technology (Virginia only) Technology Bowl
Describe the operation of variable resistors.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.11	16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Bowl
Identify different types of transistors and terminals of transistors.		16. Energy and Power Technologies	
Exploring Circuits as Systems			
Construct simple electronic circuits from a schematic.	Science: PH.11	11. Apply the Design Processes 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies 19. Manufacturing Technologies	Animatronics System Control Technology
Describe series circuits, using modeling components.	Science: PH.11	12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies 19. Manufacturing Technologies	System Control Technology
Describe the flow of current in series circuits, using the systems model.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.11	12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies 19. Manufacturing Technologies	System Control Technology

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
Construct parallel circuits, using modeling components.	Science: PH.11	11. Apply the Design Processes 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies 19. Manufacturing Technologies	Animatronics System Control Technology
Describe the flow of current in parallel circuits, using the systems model.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.11	12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies 19. Manufacturing Technologies	System Control Technology
Construct series-parallel circuits, using modeling components.	Science: PH.11	11. Apply the Design Processes 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies 19. Manufacturing Technologies	Animatronics System Control Technology
Describe the flow of current in series-parallel circuits, using the systems model.	English: 9.5, 10.5, 11.5, 12.5 Science: PH.11	12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies 19. Manufacturing Technologies	System Control Technology
Compute electrical power in circuits.	Mathematics: A.1, A.4, AII.3 Science: PH.11	8. The Attributes of Design 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies 19. Manufacturing Technologies	Animatronics System Control Technology

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
Examining Current, Voltage, and Resistance			
Measure current in series and parallel circuits, using a multimeter.	Science: PH.1, PH.11	1. The Characteristics and Scope of Technology 10. The Role of Troubleshooting, Research and Development, Invention and Innovation, and Experimentation in Problem Solving 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Problem Solving
Compare computed values of circuits to the measured value of circuits.	Science: PH.1, PH.11	1. The Characteristics and Scope of Technology 10. The Role of Troubleshooting, Research and Development, Invention and Innovation, and Experimentation in Problem Solving 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies 19. Manufacturing Technologies	Principles of Technology (Virginia only) Technology Problem Solving
Constructing DC Analog Circuits			
Design series circuits.	Science: PH.1, PH.11	2. The Core Concepts of Technology 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies	Animatronics Engineering Design System Control Technology

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
Construct series circuits.	Science: PH.11	2. The Core Concepts of Technology 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies	Animatronics Engineering Design System Control Technology
Design parallel circuits.	Science: PH.1, PH.11	2. The Core Concepts of Technology 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies	Animatronics Engineering Design System Control Technology
Construct parallel circuits.	Science: PH.11	2. The Core Concepts of Technology 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies	Animatronics Engineering Design System Control Technology
Design series-parallel circuits.	Science: PH.1, PH.11	2. The Core Concepts of Technology 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies	Animatronics Engineering Design System Control Technology
Construct series-parallel circuits.	Science: PH.11	2. The Core Concepts of Technology 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies	Animatronics Engineering Design System Control Technology
Construct circuits that satisfy design briefs,	Science: PH.11	2. The Core Concepts of Technology	Animatronics

Task	SOL Correlations	ITEEA National Standards	TSA Competitive Events
using solderless circuit boards/breadboards.		3. The Relationships Among Technologies and the Connections Between Technology and Other Fields 8. The Attributes of Design 9. Engineering Design 11. Apply the Design Processes 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies	Computer Integrated Manufacturing (CIM) Engineering Design Scientific Visualization (SciVis) System Control Technology
Design a circuit to be soldered on a circuit board.	Science: PH.1, PH.11	2. The Core Concepts of Technology 9. Engineering Design 12. Use and Maintain Technological Products and Systems 16. Energy and Power Technologies	Animatronics Engineering Design System Control Technology
Exploring AC Circuits			
Describe the process and application of troubleshooting procedures.	English: 9.5, 10.5, 11.5, 12.5		