Standards Correlations

Electronics Systems II

8412 36 weeks

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
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		

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
	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		
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		

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
	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 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		

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
	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,		

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
	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 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		

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

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
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.			

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
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.			
Introducing the Electronics Industry			

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
Research occupational opportunities.	English: 10.5, 10.8, 11.5, 11.8, 12.5, 12.8 History and Social Sciences: WHII.1 VUS.1 GOVT.1	5J. Design an appropriate technology for use in a different culture. 6A. Discuss how the way people live and work has changed throughout history because of technology.	STEM Careers (Virginia TSA only)
Demonstrate the use of electronic lab equipment.	English: 10.1, 11.1, 12.1 Science: PH.1	8P. Apply appropriate methods to diagnose, adjust, and repair systems to ensure precise, safe and proper functionality.	
Identify schematic symbols for circuit components.	English: 10.5, 11.5, 12.5 Science: PH.1, PH.8	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Technology Bowl Principles of Technology (Virginia TSA only)
Exploring Semiconductor Devices			
Describe the characteristics, operation, and applications of basic semiconductor devices.	English: 10.1, 11.1, 12.1 History and Social Sciences: WHII.1 VUS.1 GOVT.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Technology Bowl Principles of Technology (Virginia TSA only)

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
Identify semiconductor materials and the rationale behind their use.	English: 10.1, 11.1, 12.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Identify types of semiconductor memory.	English: 10.1, 10.5, 10.8, 11.1, 11.5, 11.8, 12.1, 12.5, 12.8	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Technology Bowl Principles of Technology (Virginia TSA only)
Describe the types of diodes and their applications.	English: 10.5, 11.5, 12.5 History and Social Sciences: WHII.1 VUS.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Exploring Transistors			

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
Describe the types of transistors and their functions.	English: 10.5, 11.5, 12.5 History and Social Sciences: WHII.1 VUS.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Animatronics Principles of Technology (Virginia TSA only)
Describe transistor materials, components, and construction techniques.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Animatronics Principles of Technology (Virginia TSA only)
Describe transistor configurations.	English: 10.1, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Reconfigure a transistor.		1R. Develop a plan that incorporates knowledge from science, mathematics, and	Animatronics

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Describe transistor circuit characteristics.	English: 10.1, 11.1, 12.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Senior Solar Sprint
Compare transistor ratings.	English: 10.1, 11.1, 12.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Test a transistor.		1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system.	Principles of Technology (Virginia TSA only)

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Working with Amplifiers			
Describe the basic characteristics of amplifiers.	English: 10.1, 11.1, 12.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Animatronics Audio Podcasting
Describe the types and functions of amplifiers.	English: 10.1, 11.1, 12.1 History and Social Sciences: WHII.1 VUS.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Technology Bowl
Describe common amplifier applications.	English: 10.1, 11.1, 12.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system.	Animatronics Digital Video Production

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	On Demand Video Principles of Technology (Virginia TSA only)
Describe the characteristics of amplifier circuits.	English: 10.1, 11.1, 12.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Technology Bowl
Reconfigure an amplifier's biasing.	English: 10.1, 11.1, 12.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Apply an amplifier coupling.	Mathematics: AII.3	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system.	Principles of Technology (Virginia TSA only)

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Construct an amplifier circuit.		1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Connect a P-N (positive-negative) junction.		1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Technology Bowl Principles of Technology (Virginia TSA only)
Compare AC and DC waveforms, using an oscilloscope.	English: 10.5, 11.5, 12.5 History and Social Sciences: WHII.1 VUS.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge.	Technology Bowl Principles of Technology (Virginia TSA only)

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
	Science: PH.5	4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Describe the characteristics, operation, and applications of power-supply circuits.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Animatronics Senior Solar Sprint Principles of Technology (Virginia TSA only)
Describe capacitance.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Technology Bowl
Describe inductance.	English: 10.5, 11.5, 12.5 Mathematics: AII.3	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge.	Principles of Technology (Virginia TSA only)

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Construct a power-supply circuit.		1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Animatronics Senior Solar Sprint Principles of Technology (Virginia TSA only)
Describe modulation methods.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Technology Bowl Principles of Technology (Virginia TSA only)
Describe integrated circuit (IC) chip transistor type and terminals.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge.	Principles of Technology (Virginia TSA only)

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Classify integrated circuits.	English: 10.5, 11.5, 12.5 History and Social Sciences: WHII.1 VUS.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Test the amplifier circuits.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Music Production Animatronics Digital Video Production Senior Solar Sprint
Design circuits containing integrated circuit components.		1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge.	Animatronics Senior Solar Sprint

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Implementing Digital Microprocessors and Microcontrollers			
Compare analog and digital devices.	English: 10.5, 11.5, 12.5 History and Social Sciences: WHII.1 VUS.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Describe the function of major components used in implementing digital circuits.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only) Technology Bowl
Describe the input and output interfaces of microprocessors and microcontrollers.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system.	Principles of Technology (Virginia TSA only)

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Design a device to be controlled by a microcontroller.	English: 10.5, 11.5, 12.5 History and Social Sciences: WHII.1 VUS.1 GOVT.1	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only) CAD Engineering
Manipulate the microcontroller device.	English: 10.5, 11.5, 12.5 Mathematics: COM.1, COM.2, COM.3, COM.4, COM.5, COM.6, COM.8, COM.10, COM.11, COM.14, COM.15, COM.17, COM.18	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only) Senior Solar Sprint
Investigating Digital Electronics and Logic Circuits			
Convert between the most used numbering systems in digital electronics.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and	Principles of Technology (Virginia TSA only)

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Describe Boolean logic and its role in logic circuits.	English: 10.5, 11.5, 12.5 Mathematics: COM.8	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Describe the basic types of logic circuits.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Describe logic gates and their functions.	English: 10.5, 11.5, 12.5 Mathematics: COM.8	1R. Develop a plan that incorporates knowledge from science, mathematics, and	Principles of Technology (Virginia TSA only)

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Describe the characteristics of sequential and combinational logic circuits.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Compare combinational and sequential logic.	English: 10.5, 11.5, 12.5 History and Social Sciences: WHII.1 VUS.1 Mathematics: G.1, DM.9	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Describe the function of AND, OR, BUFFER, and inverter gates.	English: 10.5, 11.5, 12.5 Mathematics: COM.8, DM.9	1R. Develop a plan that incorporates knowledge from science, mathematics, and	

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Design a basic logic circuit.		1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only) Senior Solar Sprint
Simulate a simple, combinational logic circuit designed with AND, OR, and inverter gates.	Mathematics: COM.8	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Construct a functional, combinational logic circuit, using logic gates.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and	Principles of Technology (Virginia TSA only)

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Describe the function of a D flip-flop.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Simulate a simple, sequential logic circuit design with D flip-flops.		1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Construct logic circuits to meet design-brief goals.	Mathematics: DM.9	1R. Develop a plan that incorporates knowledge from science, mathematics, and	

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Analyze values in AC circuits.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Construct AC circuits from schematics.		1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)
Describe the operation and function of a transformer.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and	

Task	SOL Correlations	ITEEA Correlations	TSA Correlation
		other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	
Describe the operation of electromagnetic devices.	English: 10.5, 11.5, 12.5	1R. Develop a plan that incorporates knowledge from science, mathematics, and other disciplines to design or improve a technological product or system. 3J. Connect technological progress to the advancement of other areas of knowledge. 4R. Assess a technology that minimizes resource use and resulting waste to achieve a goal.	Principles of Technology (Virginia TSA only)