

Standards Correlations

Programming (6640)

Task	SOL Correlations	FBLA Competitive Events and Activities Areas (Note: Event topics change from year to year. Refer to the current Virginia FBLA State Handbook to ensure correlations.)	NBEA Achievement Standards
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,		

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	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, AII.11, COM.1, COM.3, COM.4, COM.5, COM.8, DM.4, DM.7, DM.1*, DM.2*, DM.3*,		

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	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,		

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	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	English: 6.1, 6.4, 6.7, 7.1, 7.4, 7.7, 8.1, 8.4, 8.7, 9.1,		

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skills.	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		

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	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,		

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	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,		

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	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,		

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	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,		

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	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,		

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	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	History and Social Science:		

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related to an industry/organization.	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			

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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.			

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Exploring Programming Concepts			
Describe the development of computers and current industry trends in the programming field.	English: 10.5, 11.5, 12.5 History and Social Science: GOVT.9, GOVT.12, GOVT.15, VUS.13, VUS.14, WG.17, WHII.14	Computer Applications Computer Game & Simulation Programming Computer Problem Solving Economics Introduction to Information Technology Management Information Systems Network Design Networking Concepts	Information Technology: Analyze and compare society's influence on information technology and information technology's influence on society. Analyze how developments in information technology affect the supply/demand characteristics of the job market.
Describe the development of programming languages and applications.	English: 10.5, 11.5, 12.5 History and Social Science: GOVT.9, GOVT.12, GOVT.15, VUS.13, VUS.14, WG.17, WHII.14	Computer Applications Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Management Information Systems Network Design Networking Concepts	Information Technology: Analyze and compare society's influence on information technology and information technology's influence on society. Analyze the potential societal effect of widespread reliance on information technology. Assess the impact of information technology in a global society. Describe the impact of technology on the knowledge and skills needed for

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Describe the functions of computer hardware, computer software, and computer system components.	English: 10.5, 11.5, 12.5 Mathematics: COM.15, COM.16	Computer Applications Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Management Information Systems Network Design Networking Concepts	success in the workplace. Information Technology: Describe current and emerging hardware; configure, install, and upgrade hardware; diagnose problems; and repair hardware. Describe interrelationships between hardware components and supportive software. Evaluate and recommend hardware to solve specific problems. Explain the nature and interrelationships of bytes, fields, records, and databases. Explain the purpose, operation, and care of hardware components. Identify components of hardware.
Compare computer operating systems.	English: 10.5, 11.5, 12.5	Computer Applications Computer Game & Simulation Programming Computer Problem Solving Introduction to Information	Information Technology: Compare and contrast the functions, features, and limitations of different operating systems and utilities (e.g., open source, mobile, and proprietary

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		Technology Network Design Networking Concepts	operating systems). Describe emerging operating systems. Describe features of operating systems that can be personalized.
Identify the software development life cycle (SDLC).	English: 10.5, 11.5, 12.5 History and Social Science: GOVT.1 Mathematics: COM.1, COM.2, COM.3, COM.4, COM.5, COM.6, COM.8, COM.17, COM.18	Computer Applications Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Management Information Systems Mobile Application Development Network Design Networking Concepts	Information Technology: Choose the appropriate language or application development tool for specific tasks. Create a project to solve a business problem integrating mobile platforms.
Describe the integrated development environment (IDE) for a specific programming language.	English: 10.5, 11.5, 12.5	Computer Applications Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Management Information Systems Network Design Networking Concepts	Information Technology: Apply design principles to programming tasks. Choose the appropriate language or application development tool for specific tasks. Code a program solution in more than one programming language.

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			Identify and explain programming structures.
Describe basic concepts of a programming language.	English: 10.5, 11.5, 12.5 Mathematics: COM.6, COM.7, COM.10, COM.11, COM.13, COM.14, COM.15, COM.16, COM.18		
Using Algorithmic Procedures			
Analyze the problem statement.	English: 10.5, 11.5, 12.5 Mathematics: COM.1, COM.4	Computer Applications Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Management Information Systems Network Design Networking Concepts	Information Technology: Apply design principles to programming tasks. Choose the appropriate language or application development tool for specific tasks.
Create possible solutions to the problem.	English: 10.2, 10.5, 11.2, 11.5, 12.2, 12.5 History and Social Science: GOVT.1 Mathematics: COM.1, COM.3, COM.4, DM.9*	Computer Applications Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Management Information Systems Network Design	Information Technology: Apply design principles to programming tasks. Choose the appropriate language or application development tool for specific tasks.

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		Networking Concepts	
Determine the best solution to the problem.	English: 10.5, 11.5, 12.5 History and Social Science: GOVT.1 Mathematics: COM.1, COM.4, DM.8	Computer Applications Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Management Information Systems Network Design Networking Concepts	Information Technology: Apply design principles to programming tasks. Choose the appropriate language or application development tool for specific tasks.
Implementing Programming Procedures			
Design a program, using an algorithm, pseudocode, a flowchart, and/or a decision table.	English: 11.5, 12.5 Mathematics: G.1, COM.1, COM.2, COM.4, COM.8	Computer Applications Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Management Information Systems Network Design Networking Concepts	Information Technology: Apply design principles to programming tasks. Design, develop, test, and implement programs.
Code the program, using a programming language.	Mathematics: COM.1, COM.2, COM.4, COM.6, COM.8	Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Network Design Networking Concepts	Information Technology: Code a program solution in more than one programming language. Code common tasks (e.g., creating, adding, deleting, sorting, and updating records).

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			Identify and define the coding task. Maintain and reengineer existing code. Use application development tools to create code.
Test the program with sample data.	English: 10.5, 11.5, 12.5 Mathematics: COM.2, COM.17	Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Network Design Networking Concepts	Information Technology: Design, develop, test, and implement programs. Test, debug, and document code.
Debug the program.	English: 10.5, 11.5, 12.5 Mathematics: COM.2, COM.17, COM.18	Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Network Design Networking Concepts	Information Technology: Test, debug, and document code.
Document the program.	English: 10.2, 10.6, 11.2, 11.6, 12.2, 12.6 Mathematics: COM.2	Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology	Information Technology: Test, debug, and document code.

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		Network Design Networking Concepts	
Implement the program.	Mathematics: COM.10, COM.11		
Describe maintenance procedures.	English: 10.5, 11.5, 12.5	Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Network Design Networking Concepts	Information Technology: Maintain and reengineer existing code.
Mastering Programming Fundamentals			
Identify syntax errors of a given programming language.	English: 10.5, 11.5, 12.5 Mathematics: COM.2, COM.17, COM.18	Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology Network Design Networking Concepts	Information Technology: Code a program solution in more than one programming language. Use application development tools to create code.
Identify industry standards for a graphical user interface (GUI).	English: 10.5, 11.5, 12.5	Computer Game & Simulation Programming Computer Problem Solving Network Design Networking Concepts	
Create a graphical user interface that	Mathematics: COM.10	Computer Game & Simulation Programming	Information Technology: Code a program solution in more

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adheres to industry standards.		Computer Problem Solving Network Design Networking Concepts	than one programming language.
Code a program that will produce formatted output.	Mathematics: COM.11	Computer Game & Simulation Programming Computer Problem Solving Network Design Networking Concepts	Information Technology: Code a program solution in more than one programming language. Code common tasks (e.g., creating, adding, deleting, sorting, and updating records).
Code a program that uses mathematical operators and built-in functions.	Mathematics: COM.1, COM.6, COM.7, COM.16	Computer Game & Simulation Programming Computer Problem Solving Network Design Networking Concepts	Information Technology: Code a program solution in more than one programming language. Code common tasks (e.g., creating, adding, deleting, sorting, and updating records).
Write a program that uses variables and constants.	Mathematics: COM.4, COM.15, COM.16	Computer Game & Simulation Programming Computer Problem Solving	Information Technology: Apply design principles to programming tasks. Choose the appropriate language or application development tool for specific tasks.
Write a program that accepts user input.	Mathematics: COM.10, COM.11	Computer Game & Simulation Programming Computer Problem Solving	Information Technology: Apply design principles to programming tasks.

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			Choose the appropriate language or application development tool for specific tasks.
Write a program that uses arrays.	Mathematics: COM.13, COM.14	Computer Game & Simulation Programming Computer Problem Solving	Information Technology: Apply design principles to programming tasks. Choose the appropriate language or application development tool for specific tasks.
Write a modular program that uses functions or methods.	Mathematics: COM.5	Computer Game & Simulation Programming Computer Problem Solving	Information Technology: Apply design principles to programming tasks. Choose the appropriate language or application development tool for specific tasks.
Write a program that uses conditional structures.	Mathematics: COM.3, COM.7, COM.8, COM.13, COM.14	Computer Game & Simulation Programming Computer Problem Solving	Information Technology: Apply design principles to programming tasks. Choose the appropriate language or application development tool for specific tasks.
Write a program that uses looping	Mathematics: COM.3, COM.8, COM.13	Computer Game & Simulation Programming	Information Technology: Apply design principles to

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structures.		Computer Problem Solving	programming tasks. Choose the appropriate language or application development tool for specific tasks.
Write a program that uses counters and accumulators.	Mathematics: COM.3, COM.13	Computer Game & Simulation Programming Computer Problem Solving	Information Technology: Apply design principles to programming tasks. Choose the appropriate language or application development tool for specific tasks.
Developing Interactive Multimedia Applications			
Code a program to display graphics.	Mathematics: COM.11, COM.12	Computer Game & Simulation Programming Computer Problem Solving	Information Technology: Code a program solution in more than one programming language. Code common tasks (e.g., creating, adding, deleting, sorting, and updating records).
Code a program to incorporate multimedia.	Mathematics: COM.10, COM.11, COM.12	Computer Game & Simulation Programming Computer Problem Solving	Information Technology: Code a program solution in more than one programming language. Code common tasks (e.g., creating, adding, deleting, sorting, and updating records).

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Code a program to animate objects.	Mathematics: COM.10, COM.12, COM.13, COM.14	Computer Game & Simulation Programming Computer Problem Solving	Information Technology: Code a program solution in more than one programming language. Code common tasks (e.g., creating, adding, deleting, sorting, and updating records).
Examine the history of game design and development.	English: 10.5, 11.5, 12.5 History and Social Science: GOVT.12, VUS.14, WG.17, WHII.14	Computer Game & Simulation Programming Computer Problem Solving	
Analyze the effect of intellectual property law on game design.	English: 10.5, 11.5, 12.5 History and Social Science: GOVT.7, GOVT.8, GOVT.14, GOVT.15	Business Law Computer Game & Simulation Programming Computer Problem Solving	
Identify the target markets for game applications.	English: 10.5, 11.5, 12.5	Computer Game & Simulation Programming Computer Problem Solving Marketing	
Identify game genres.	English: 10.5, 11.5, 12.5	Computer Game & Simulation Programming Computer Problem Solving Introduction to Information Technology	

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Examine a variety of game programming platforms.		Computer Game & Simulation Programming Introduction to Information Technology Mobile Application Development	
Create a storyboard.	English: 10.5, 11.5, 12.5	Computer Game & Simulation Programming Introduction to Information Technology Mobile Application Development	
Code a game program from the storyboard.	Mathematics: COM.3, COM.4	Computer Game & Simulation Programming Introduction to Information Technology Mobile Application Development	
Create a game object.	Mathematics: COM.12	Computer Game & Simulation Programming Introduction to Information Technology Mobile Application Development	
Specify behaviors of a game object.	Mathematics: COM.5, COM.14	Computer Game & Simulation Programming Introduction to Information Technology Mobile Application Development	
Develop a game	Mathematics: COM.3,	Computer Game & Simulation	

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program that uses a scoring method.	COM.13	Programming Mobile Application Development	
Create a game program with multiple levels.	Mathematics: COM.2, COM.7	Computer Game & Simulation Programming Mobile Application Development	
Using Web Technology			
Explain how to locate resources and references to aid program development.	English: 10.5, 11.5, 12.5	Computer Game & Simulation Programming Mobile Application Development	Information Technology: Connect web servers to application servers for interoperability. Identify and explain various types of online resources. Use application development tools associated with a database system to create solutions for organization problems. Use database application development tools to create information systems to solve organization problems. Use, plan, develop, and maintain database management systems.
Evaluate sample code obtained from the	Mathematics: COM.2, COM.17	Computer Game & Simulation Programming	Information Technology: Design, develop, test, implement,

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Internet and/or other sources.		Mobile Application Development	update, and evaluate web solutions. Identify and explain various types of online resources. Identify good design concepts by reviewing various websites. Test, implement, and evaluate the website.
Develop a web page, using hypertext markup language (HTML) and cascading style sheets (CSS) and/or JavaScript.	Mathematics: COM.18	Computer Game & Simulation Programming Mobile Application Development Website Design	Information Technology: Build a comprehensive website using collaborative tools. Create a comprehensive website using good design. Design and create web pages incorporating various types of media (e.g., text, image, video, and audio). Design and create websites incorporating navigation and linking. Design, develop, and deliver advanced web content and applications using authoring tools.

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			Test, implement, and evaluate the website.
Preparing for Industry Certification			
Describe the process and requirements for obtaining industry certifications related to the Programming course.	English: 10.5, 11.5, 12.5 History and Social Science: GOVT.7, GOVT.8	Job Interview	
Identify testing skills/strategies for a certification examination.	English: 10.5, 11.5, 12.5 History and Social Science: GOVT.7, GOVT.8	Job Interview	
Demonstrate ability to successfully complete selected practice examinations (e.g., practice questions similar to those on certification exams).	English: 10.5, 11.5, 12.5 History and Social Science: GOVT.7, GOVT.8	Job Interview	
Successfully complete an industry certification examination representative of	English: 10.5, 11.5, 12.5 History and Social Science: GOVT.7, GOVT.8	Computer Applications Database Design & Applications Spreadsheet Applications Word Processing	

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skills learned in this course (e.g., MCP, IC3).			
Developing Employability Skills			
Identify careers in the information technology industry.	English: 10.5, 10.8, 11.5, 11.8, 12.5, 12.8 History and Social Science: GOVT.7, GOVT.8	Computer Game & Simulation Programming Electronic Career Portfolio Job Interview Mobile Application Development Website Design	<p>Career Development: Analyze a specific career cluster, using a variety of research tools (e.g., college career centers/counselors, professional and trade associations, career fairs, informational interviews, print media, and the Internet).</p> <p>Describe the impact of the global economy on jobs and careers.</p> <p>Evaluate several occupational interests, based on various criteria (e.g., educational requirements, starting salaries, and career ladder opportunities).</p> <p>Identify employment opportunities in international trade.</p> <p>Relate career interests to opportunities in the global economy.</p>

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			<p>Use a variety of research tools (e.g., computer-assisted programs, newspapers, books, professional and trade associations, informational interviews, job shadowing, career fairs, and the Internet) in the career exploration process.</p> <p>Information Technology: Describe education, experience, skills and personal requirements for careers in information technology.</p>
Describe ways that computer programs can be used in business and industry.	<p>English: 10.5, 11.5, 12.5</p> <p>History and Social Science: GOVT.9, GOVT.15</p>	<p>E-Business Electronic Career Portfolio Emerging Business Issues Job Interview Management Information Systems Website Design</p>	<p>Career Development: Explain how the needs and functions of society influence the nature and structure of work.</p> <p>Explain the concept of transferable skills within and between career clusters.</p> <p>Identify community businesspeople and describe career opportunities in their professional fields.</p> <p>List and describe the contributions of various types of occupations in the community (e.g., banker, realtor,</p>

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			<p>police officer, teacher, and firefighter).</p> <p>Use a variety of research tools (e.g., computer-assisted programs, newspapers, books, professional and trade associations, informational interviews, job shadowing, career fairs, and the Internet) in the career exploration process.</p>
Create or update a résumé.	English: 10.6, 10.7, 11.6, 11.7, 12.6, 12.7	Electronic Career Portfolio Job Interview	<p>Career Development: Develop a career portfolio of items including resumes, sample cover letters, letters of recommendation, examples of work and technical skills, awards, and documentation of extracurricular activities and community service activities.</p>
Investigate information technology educational and job opportunities.	English: 10.5, 10.8, 11.5, 11.8, 12.5, 12.8 History and Social Science: GOVT.7, GOVT.8	Electronic Career Portfolio Job Interview	<p>Career Development: Conduct the job search.</p> <p>Demonstrate the ability to research prospective employers and jobs using all available resources (e.g., print media, on-site and telephone interviews, job shadowing, internships, job fairs, and Internet</p>

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			<p>research).</p> <p>Describe electronic and telecommunication job search tools (e.g., Internet job banks; electronic resumes; and electronic, telephone, and videoconferencing interviews).</p> <p>Maintain an organizational and tracking database for the job search.</p> <p>Communication: Use the Internet to research the job market and specific potential employers.</p>
Assemble a professional portfolio.	English: 10.1, 10.6, 10.7, 11.1, 11.6, 11.7, 12.1, 12.6, 12.7	Electronic Career Portfolio Job Interview	<p>Career Development: Develop a career portfolio of items including resumes, sample cover letters, letters of recommendation, examples of work and technical skills, awards, and documentation of extracurricular activities and community service activities.</p>
Describe basic employment activities.	English: 10.1, 10.6, 10.7, 11.1, 11.6, 11.7, 12.1, 12.6, 12.7	Electronic Career Portfolio Job Interview	<p>Career Development: Create a personal website for the presentation of the career portfolio.</p>

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			<p>Demonstrate appropriate interviewing techniques through participation in mock or actual interviews.</p> <p>Demonstrate the ability to complete an online job application accurately.</p> <p>Demonstrate the ability to describe personal skills to interviewers.</p> <p>Demonstrate the ability to prepare and transmit electronic resumes and cover letters that meet business standards.</p> <p>Describe electronic and telecommunication job search tools (e.g., Internet job banks; electronic resumes; and electronic, telephone, and videoconferencing interviews).</p> <p>Describe strategies for negotiating conditions of employment.</p> <p>Describe the criteria for evaluating job offers.</p>

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			<p>Discuss effective strategies for handling rejection.</p> <p>Experience paid/unpaid work opportunities in one or more career clusters through various opportunities (e.g., job shadowing, mentoring, e-mentoring, internships, cooperative work experiences, and community service).</p> <p>Explain the importance of appropriate interview follow-up techniques.</p> <p>Explain the importance of personal appearance and grooming in the workplace.</p> <p>Identify appropriate factors for evaluating job offers and deciding whether to accept or reject them.</p> <p>Identify steps to prepare for an interview.</p> <p>Identify techniques for negotiating monetary and benefit compensation.</p>

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			<p>Model behavior that contributes to a successful interview.</p> <p>Prepare paper and electronic resumes and cover letters.</p> <p>Communication: Participate in a variety of interview rehearsals, both as an interviewer and as an interviewee.</p> <p>Role-play interview situations for simulated job opportunities.</p> <p>Write a formal application message, resume, and follow-up message for a job opportunity.</p>
Deliver an oral presentation of the professional portfolio.	English: 10.1, 11.1, 12.1	Electronic Career Portfolio Job Interview	<p>Career Development: Present the career portfolio.</p> <p>Use evolving technologies to enhance the career portfolio.</p> <p>Communication: Deliver extemporaneous and planned speeches with confidence.</p>

Task	SOL Correlations	FBLA Competitive Events and Activities Areas (Note: Event topics change from year to year. Refer to the current Virginia FBLA State Handbook to ensure correlations.)	NBEA Achievement Standards
			<p>Demonstrate ability to speak persuasively for a specific cause.</p> <p>Discuss the preliminary steps involved in creating spoken presentations.</p> <p>Evaluate media and spoken presentations analytically and critically.</p> <p>Explain career-specific terminology.</p> <p>Organize thoughts to reflect logical thinking before speaking.</p> <p>Plan and present short presentations, individually or as a member of a group.</p> <p>Present findings of capstone projects in a formal individual or team presentation using appropriate graphics, media, and support materials.</p> <p>Use technology appropriately to enhance spoken presentations.</p>

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Identify potential education and employment barriers for nontraditional groups and ways to overcome those barriers.	English: 10.5, 11.5, 12.5	Electronic Career Portfolio Job Interview	<p>Career Development: Demonstrate appropriate interpersonal skills for working with and for others.</p> <p>Demonstrate personal qualities related to employability (e.g., promptness, ability to get along with others, dependability, willingness to ask questions, respect for diversity, and communication skills).</p> <p>Describe different cultural behaviors and expectations.</p> <p>Describe how physical, intellectual, and cultural diversity can strengthen workplace effectiveness.</p> <p>Describe ways tasks and the workplace environment can be structured to accommodate the diverse needs of workers.</p> <p>Discuss advantages and disadvantages of entering nontraditional occupations.</p>

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			<p>Discuss and demonstrate the skills necessary to function as a member of a diverse workforce (e.g., diplomacy, patience, willingness to compromise, and ability to listen).</p> <p>Discuss social and economic factors that have resulted in changing career patterns for a diverse workforce.</p>