

<USING THIS DOCUMENT>

Computer/Network Technician Crosswalk to the Missouri GLEs

The crosswalks for the Grade Level Expectations (GLEs) provided in this document are organized based on the Strand Legend provided below. Additionally, a GLE Legend is provided at the bottom of each page of the crosswalk. The GLE coding is organized by a letter and number system that indicates the primary components of the crosswalk. The first letter in the code indicates the “Strand;” the following number indicates the “Big Idea;” the next letter indicates the “Concept;” and the last number identifies the “Grade Level.” For example, a crosswalk identified as N.1.A.9 would be interpreted as:

N = Mathematics – Number and Operations

1 = Understand numbers, ways of representing numbers, relationships among numbers and number systems

A = Read, write and compare numbers

9 = Grade – in this case, students should develop these skills at the ninth grade level

The full listing of Grade Level Expectations is available on the Department of Elementary and Secondary Education Web-site at:
<http://dese.mo.gov/divimprove/curriculum/GLEDocuments.html>

Computer/Network Technician (15.1202)

Cross-Reference to Missouri Grade Level Expectations

STRAND LEGEND			
Communication Arts	Mathematics	Social Studies	Science
Information Literacy (I)	Number and Operations (N)	Economic Concepts and Principles (EC)	Matter and Energy (ME)
Listening and Speaking (L)	Algebraic Relationships (A)	Principles and Processes of Governance Systems (GS)	Force and Motion (FM)
Reading (R)	Geometric and Spatial Relationships (G)	Missouri, United States, and World History (HS)	Living Organisms (LO)
Writing (W)	Measurement (M)	Principles of Constitutional Democracy (PC)	Ecology (EC)
	Data and Probability (D)	Relationships of Individuals and Groups to Institutions and Traditions (RI)	Earth Systems (ES)
		Tools of Social Science Inquiry (TI)	Universe (UN)
		United States History (US)	Scientific Inquiry (IN)
		World History (WH)	Science, Technology, and Human Activity (ST)
		Elements of Geographical Study (EG)	

Computer/Network Technician (15.1202)

Cross-Reference to Missouri Grade Level Expectations

Measurable Learner Objective and Task Statement	CORE AREAS			
	Communication Arts	Mathematics	Social Studies	Science
A. Describe and safely interact with all computer systems, including ethics, communication, hardware, software, and tools				
1. Describe computer evolution (e.g., microcomputers and their relationship to current computing)	R.3.D.9-12 L.2.B.9-12			
2. Compare and contrast mainframes, minicomputers, scientific workstations, and microcomputers	R.3.D.9-12			
3. Compare and contrast centralized and decentralized computing	R.3.D.9-12			
4. Identify information system components (e.g., software, hardware, input, process, and output)	R.3.D.9-12			
5. Conduct every day procedures ethically (e.g., piracy, licensing, intellectual property, standards of conduct, privacy, organizational policies and procedures, and unauthorized access)	R.3.D.9-12		GS.3.C.9-12	
6. Communicate technical terms, solutions, and procedures to non-technical users	R.1.C.9-12 R.1.D.9-12 R.1.E.9-12 L.2.B.9-12 W.2.D.9-12 W.1.A.9-12			
7. Explain how software and hardware supports individuals with disabilities	W.1.A.9-12		RI.1.D.12	

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Example: N.1.A.10

Measurable Learner Objectives are bold font

Computer/Network Technician (15.1202)

Cross-Reference to Missouri Grade Level Expectations

Measurable Learner Objective and Task Statement	CORE AREAS			
	Communication Arts	Mathematics	Social Studies	Science
8. Create technical correspondence	R.1.C.9-12 R.1.D.9-12 R.1.E.9-12 W.1.A.9-12 W.2.B.9-12 W.2.C.9-12 W.2.D.9-12 W.2.E.9-12 W.3.A.9-12 W.3.E.9-12			
9. Demonstrate basic word processing skills (e.g., spreadsheet, slide presentation, database and Internet)	R.3.D.9-12 W.1.A.9-12			
Other:				
B. Appreciate and apply all personal and workplace safety procedures				
1. Comply with federal and state regulations (e.g., handling, storing, and disposing of hazardous materials)			GS.3.C.9-12	
2. Recognize when first aid is needed for occupational injuries and follow proper procedures	R.3.D.9-12			
3. Identify types, purposes, and the operation of fire extinguishers and suppression resources	R.3.D.9-12			
4. Demonstrate appropriate work place safety practices, (e.g., electrical, hand tools, power tools, fall protection, eye protection, PPE and environmental hazards)	R.3.D.9-12			
5. Identify hazard of RF radiation devices	R.3.D.9-12			
6. Operate AC line-operated equipment safely (e.g., isolation transformers, grounding, leakage current testing, and GFI)	R.3.D.9-12			

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Measurable Learner Objective and Task Statement	CORE AREAS			
	Communication Arts	Mathematics	Social Studies	Science
7. Practice accepted anti-static (ESD) procedures	R.3.D.9-12			
8. Identify electrical, mechanical, chemical, and environmental hazards	R.3.D.9-12			
Other:				
C. Basic Electronics				
1. Evaluate and test source of DC and AC signals and power	R.3.D.9-12			
2. Apply Ohm's law by evaluating series and parallel circuits	R.3.D.9-12			
3. Measure voltage, current, and resistance using multimeters (e.g., VOM, EVM, and DVM)	R.3.D.9-12			
4. Make recommendations for computer device related power sources and power supplies	R.3.D.9-12 L.2.B.9-12			
5. Discuss digital logic circuits	R.3.D.9-12			
Other:				
D. Hardware				
1. Describe computer parts and functions (e.g., ports)	R.3.D.9-12 L.2.B.9-12			
2. Assemble and configure a microcomputer from constituent parts	R.3.D.9-12			
3. Compare and contrast merits of various microprocessors for various architectures	R.3.D.9-12			
4. Compare and contrast current industry-standard busses	R.3.D.9-12			

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Measurable Learner Objective and Task Statement	CORE AREAS			
	Communication Arts	Mathematics	Social Studies	Science
5. Identify industry-standard workstation and server hardware systems	R.3.D.9-12			
6. Install and remove common peripherals	R.3.D.9-12			
7. Verify operation of common peripherals	R.3.D.9-12			
8. Install and verify device drivers	R.3.D.9-12			
9. Perform burn-in/diagnostics	R.3.D.9-12			
10. Troubleshoot and repair subsystems	R.3.D.9-12			
11. Troubleshoot electromagnetic interference problems (EMI)	R.3.D.9-12			
12. Adapt hardware for people with special needs	R.3.D.9-12		RI.6.A.K-12	
13. Compare and contrast standard memory types	R.3.D.9-12			
14. Perform preventive maintenance on computer/network systems and peripherals	R.3.D.9-12			
15. Identify and diagnose current printing technology problems	R.3.D.9-12			
Other:				
E. Software				
1. Identify, install, and configure common operating systems (e.g., Windows XP Pro, Windows Server 2003, Linux, and UNIX)	R.3.D.9-12			
2. Analyze and modify system configuration files	R.3.D.9-12			
3. Perform and interpret diagnostics	R.3.D.9-12			

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Measurable Learner Objective and Task Statement	CORE AREAS			
	Communication Arts	Mathematics	Social Studies	Science
4. Support special needs access (e.g., install software and operating systems)	R.3.D.9-12		RI.6.A.K-12	
5. Utilize existing technical resources for problem resolution (e.g., news groups, online references, service manuals, and read me files)	R.3.D.9-12			
6. Use file compression programs	R.3.D.9-12			
7. Summarize system and network security practices (e.g., passwords, user accounts, and design and implementation of policies)	R.3.D.9-12			
8. Implement asynchronous connectivity (e.g., Internet, Intranet, dial-up, SLIP, and PPP)	R.3.D.9-12			
9. Install application software and suites successfully (e.g., office productivity and industry specific)	R.3.D.9-12			
10. Troubleshoot software integration problems	R.3.D.9-12			
Other:				
F. Connectivity				
1. Discuss network wiring systems capabilities	R.3.D.9-12			
2. Explain current wiring technologies (copper and fiber) according to current standards (e.g., TIA/EIA, IEEE, and ANSI)	R.3.D.9-12 L.2.B.9-12			
3. Explain wireless technologies advantages and disadvantages	R.3.D.9-12 L.2.B.9-12			
4. Explain network communication equipment functions (e.g., modems, DSU/CSU, bridges, switches, routers, and hubs)	R.3.D.9-12 L.2.B.9-12			
5. Install and configure switches and routers on a network	R.3.D.9-12			

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Measurable Learner Objective and Task Statement	CORE AREAS			
	Communication Arts	Mathematics	Social Studies	Science
6. Troubleshoot basic telecommunications problems (e.g., place device in loop-back model)	R.3.D.9-12			
7. Identify the differences between standard analog and digital lines	R.3.D.9-12			
8. Install basic telecommunication systems	R.3.D.9-12			
9. Trace wiring and repair defects	R.3.D.9-12			
10. Certify wiring infrastructure to standards	R.3.D.9-12		GS.3.C.9-12	
11. Connect asynchronous communication devices	R.3.D.9-12			
12. Describe possible problems with asynchronous communication devices	R.3.D.9-12 L.2.B.9-12			
Other:				
G. Network basics, protocols, and standards				
1. Explain telecommunications infrastructure (e.g., LATA, LEC, and CO)	R.3.D.9-12 L.2.B.9-12			
2. Differentiate areas of responsibilities between the telecommunications provider and their clients	R.3.D.9-12			
3. Explain current network standards and pseudo-standards (e.g., IEEE, RFCs, and ISO)	R.3.D.9-12			
4. Draw, label, and explain networking layers (e.g., OSI)	R.3.D.9-12			
5. Compare and contrast network topologies (e.g., star, bus, ring, broadband, and baseband)	R.3.D.9-12			
6. Diagram and explain network topologies	R.3.D.9-12			
7. Summarize and implement protocols (e.g., TCP/IP, IPX/SPX, NETBEUI, and DHCP)	R.3.D.9-12			

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	Communication Arts	Mathematics	Social Studies	Science
8. Differentiate between routing and switching/bridging	R.3.D.9-12			
9. Explain network security principles (e.g., IP spoofing, packet sniffing, password compromise, and encryption)	R.3.D.9-12			
Other:				
H. Network operating systems and protocols				
1. Specify network server internal components	R.3.D.9-12			
2. Install and configure network operating systems	R.3.D.9-12			
3. Install and configure network hardware (e.g., NICs)	R.3.D.9-12			
4. Establish client environments and network resources	R.3.D.9-12			
5. Describe procedures that are executed through login scripts	R.3.D.9-12			
6. Verify client access to network resources	R.3.D.9-12			
7. Provide secured access to network resources	R.3.D.9-12			
8. Summarize the importance of network security (e.g., passwords and user accounts)	R.3.D.9-12			
Other:				
I. Risk management				
1. Perform site survey	R.3.D.9-12			
2. Recommend security procedures	R.3.D.9-12			
3. Verify secured access to network resources	R.3.D.9-12			

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	Communication Arts	Mathematics	Social Studies	Science
4. Explain firewall usage	R.3.D.9-12			
5. Recommend backup procedures	R.3.D.9-12			
6. Perform backup and restore operations	R.3.D.9-12			
8. Discuss and implement virus protection and removal procedures (e.g., workstations and networks)	R.3.D.9-12			
9. Implement different levels of fault tolerance [e.g., transaction tracking and logging, auditing, uninterruptible power sources (UPS), mirroring, duplexing, and redundant array of inexpensive disks (RAID)]	R.3.D.9-12			
Other:				
J. Technical support				
1. Document cable infrastructure	R.3.D.9-12			
2. Document network configurations (e.g., workstation, server, and router)	R.3.D.9-12			
3. Maintain maintenance logs (e.g., document actions taken)	R.3.D.9-12			
4. Specify security procedures	R.3.D.9-12			
5. Analyze system log files	R.3.D.9-12			
6. Explain the need for network policy documentation	R.3.D.9-12			
7. Provide basic user and/or network administrator documentation	R.3.D.9-12			
8. Practice constructive problem solving with customers	R.3.D.9-12			
9. Explain remote access and phone support concepts	R.3.D.9-12			7.1.E.9-11

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	Communication Arts	Mathematics	Social Studies	Science
10. Implement customer support remote access	R.3.D.9-12			
Other:				
K. Demonstrate leadership skills in the classroom, industry, and society				
1. Demonstrate an understanding of SkillsUSA, its structure and activities	R.3.D.9-12			
2. Demonstrate an understanding of one's personal values	R.3.D.9-12			
3. Perform tasks related to effective personal management skills	R.3.D.9-12			
4. Demonstrate interpersonal skills	R.3.D.9-12 L.1.A.9-12 L.2.A.9-12			
5. Demonstrate etiquette and courtesy	R.3.D.9-12 L.2.A.9-12			
6. Demonstrate effectiveness in oral and written communication	R.3.D.9-12 W.1.A.9-12 W.2.D.9-12 W.2.E.9-12 W.2.F.9-12 L.1.A.9-12 L.2.A.9-12			
7. Develop and maintain a code of professional ethics	R.3.D.9-12 W.1.A.9-12			
8. Maintain an appropriate professional appearance	R.3.D.9-12			
9. Perform basic tasks related to securing and terminating employment	R.3.D.9-12 W.1.A.9-12 W.2.D.9-12 W.2.E.9-12 W.2.F.9-12 W.3.A.9-12 W.3.E.9-12			

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	Communication Arts	Mathematics	Social Studies	Science
10. Perform basic parliamentary procedures in a group meeting	R.3.D.9-12		GS.3.A.K-12	
Other:				
L. Explain and demonstrate skills in a specialization area identified by the instructor	To be developed by instructors and crosswalked to the GLEs at the local level.			
1.				
2.				
3				
Other:				

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