

Computer Systems Networking and Telecommunications (CIP 11.0901)
Units of Instruction and Task Grid Linked To PA Common Core Standards

Secondary Competency Task List With Unit and Task Numbers:	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
100 DEMONSTRATE KNOWLEDGE OF PERSONAL AND ENVIRONMENTAL SAFETY				
<p>101 List common causes of accidents and injuries in a computer facility .</p> <p>102 Wear personal protective equipment.</p> <p>103 List and identify safety hazard symbols.</p> <p>104 Review Material Safety Data Sheets (MSDS) and explain their requirements in handling hazardous materials.</p> <p>105 Describe types of fire extinguishers and explain which types to use for extinguishing various fires.</p> <p>106 Demonstrate safe procedures to follow when lifting and carrying heavy objects.</p> <p>107 Describe the importance of safety as it relates to environmental issues.</p> <p>108 Identify potential hazards when working with power supplies.</p> <p>109 Identify proper disposal procedures for batteries and display devices.</p> <p>110 Identify proper disposal procedures for chemical solvents and pressurized cans.</p> <p>111 Identify and prevent Electro Static Discharge conditions.</p> <p>112 Describe the meaning and importance of the Energy Star Rating System.</p> <p>113 Configure a computer's power management settings to maximize energy efficiency.</p> <p>114 Maintaining a safe work area to avoid common accidents and injuries.</p>	<p>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE: A. Telecommunications Career Pathway (Choose Standards) 1-2-3</p> <p>CAREER CLUSTER 2: Information Technology (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>PATHWAYS INCLUDE: Information Support and Services Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Network Systems Career Pathway (Choose Standards) 1-2-3-4-5</p> <p>Programming and Software Development Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p>	<p>KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12 A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10 B • Standard CC.3.5.11-12. B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p>CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author's purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G <p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p>		

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	<p>Web and Digital Communications Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>NOTE: Refer to the Common Core Technical Standards Booklet if you wish to add more Pathways, for your local area.</p>	<ul style="list-style-type: none"> • Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author’s claim for solving a technical problem. • Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc. <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem. • Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. • Standard CC.3.5.11-12. I Synthesize info. from a range of sources into a coherent understanding . <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently. 		

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200 DEMONSTRATE KNOWLEDGE OF COMPUTER HARDWARE	<p>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE: A. Telecommunications Career Pathway (Choose Standards) 1-2-3</p> <p>CAREER CLUSTER 2: Information Technology (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>PATHWAYS INCLUDE: Information Support and Services Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Network Systems Career Pathway (Choose Standards) 1-2-3-4-5</p> <p>Programming and Software Development Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p>	<p>KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12. A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. B • Standard CC.3.5.11-12. B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. C • Standard CC.3.5.11-12. C <p>Follow precisely a complex multistep procedure, etc..</p> <p>CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12. D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. E • Standard CC.3.5.11-12. E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. F • Standard CC.3.5.11-12. F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. G <p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p>		<p>STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p>Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>
<p>201 Categorize storage devices and backup media.</p> <p>202 Categorize the different types of computer cases.</p> <p>203 Explain motherboard components, types and features.</p> <p>204 Categorize power supplies types and characteristics.</p> <p>205 Explain the purpose and characteristics of CPUs and their features.</p> <p>206 Explain cooling methods and devices.</p> <p>207 Compare and contrast memory types, characteristics and their purpose.</p> <p>208 Distinguish between the different display devices and their characteristics.</p> <p>209 Summarize the function and types of adapter cards.</p> <p>210 Install and configure peripherals and input devices.</p> <p>211 Install, configure and optimize laptop components and features.</p> <p>212 Install and configure printers.</p> <p>213 Given a scenario, install, configure and maintain personal computer components.</p> <p>214 Given a scenario, detect problems, troubleshoot, and repair/replace desk top and laptop computer components.</p> <p>215 Given a scenario, diagnose and repair common printer issues.</p>				

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	<p>Web and Digital Communications Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>NOTE: Refer to the Common Core Technical Standards Booklet if you wish to add more Pathways, for your local area.</p>	<ul style="list-style-type: none"> • Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author’s claim for solving a technical problem. • Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc. <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem. • Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. • Standard CC.3.5.11-12. I Synthesize info. from a range of sources into a coherent understanding . <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently. 		

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300 DEMONSTRATE KNOWLEDGE OF TROUBLESHOOTING, REPAIR AND MAINTENANCE				
<p>301 Describe and explain the troubleshooting theory.</p> <p>302 Describe and explain and interpret common hardware and operating system symptoms and their causes.</p> <p>303 Describe and determine the troubleshooting methods and tools for printers.</p> <p>304 Describe and interpret common laptop issues and determine the appropriate basic troubleshooting method.</p> <p>305 Given a scenario, integrate common preventative maintenance techniques.</p> <p>306 Compare and contrast network troubleshooting with hardware/software troubleshooting.</p>	<p>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE: A. Telecommunications Career Pathway (Choose Standards) 1-2-3</p> <p>CAREER CLUSTER 2: Information Technology (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>PATHWAYS INCLUDE: Information Support and Services Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Network Systems Career Pathway (Choose Standards) 1-2-3-4-5</p> <p>Programming and Software Development Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Web and Digital</p>	<p>KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.A • Standard CC.3.5.11-12.A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.B • Standard CC.3.5.11-12.B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p>CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G <p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p>	<p>STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p>Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>	

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400 DEMONSTRATE KNOWLEDGE OF OPERATING SYSTEMS AND SOFTWARE				
<p>401 Compare and contrast the different Operating Systems and their features.</p> <p>402 Given a scenario, demonstrate proper use of user interfaces.</p> <p>403 Explain the process and steps to install and configure an operating system.</p> <p>404 Explain the basics of boot sequences, methods and startup utilities.</p> <p>405 Select the appropriate commands and options to troubleshoot and resolve problems.</p> <p>406 Differentiate between various operating system directory structures.</p> <p>407 Identify and use system utilities/tools and evaluate the results.</p> <p>408 Evaluate and resolve common OS and software issues.</p> <p>409 Explain the administration of local users, groups and institute local security policy.</p> <p>410 Compare and contrast a network operating system (NOS) with a workstation operating system (OS)</p>	<p>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE: A. Telecommunications Career Pathway (Choose Standards) 1-2-3</p> <p>CAREER CLUSTER 2: Information Technology (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>PATHWAYS INCLUDE: Information Support and Services Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Network Systems Career Pathway (Choose Standards) 1-2-3-4-5</p> <p>Programming and Software Development Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Web and Digital</p>	<p>KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. A • Standard CC.3.5.11-12 A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10 B • Standard CC.3.5.11-12. B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p>CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10. D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G <p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p>	<p>TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12.C <p>-Produce clear and coherent writing ... appropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10 D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E <p>Use technology, including the Internet, to produce, publish, and update individual or shared writing products.</p>	<p>STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p>Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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500 DEMONSTRATE KNOWLEDGE OF NETWORK TECHNOLOGIES				
<p>501 Explain the function of common networking protocols, such as FTP, TCP/IP suite, DHCP, DNS, etc.</p> <p>502 Identify commonly used TCP and UDP default ports, including TCP ports: FTP – 20, 21, SSH – 22, TELNET – 23, HTTP – 80, etc.</p> <p>503 Identify the following address formats, including IPv6, IPv4, MAC addressing.</p> <p>504 Given a scenario, evaluate the proper use of addressing technologies and addressing schemes, including: Subnetting: Classful vs. classless, NAT, PAT, SNAT, Public vs. private, DHCP, Addressing schemes: Unicast, Multicast, Broadcast., etc.</p> <p>505 Identify common IPv4 and IPv6 routing protocols, including Link state, Distance Vector, and Hybrid protocols.</p> <p>506 Explain the purpose and properties of routing, including IGP vs. EGP, Static vs. dynamic, Next hop, interpret routing tables and how they pertain to path selection, Explain convergence (steady state).</p> <p>507 Compare the characteristics of wireless communication standards, including 802.11 standards: Speeds, Distance, Channels, Frequency, Authentication and encryption.</p>	<p>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE: A. Telecommunications Career Pathway (Choose Standards) 1-2-3</p> <p>CAREER CLUSTER 2: Information Technology (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>PATHWAYS INCLUDE: Information Support and Services Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Network Systems Career Pathway (Choose Standards) 1-2-3-4-5</p> <p>Programming and Software Development Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Web and Digital</p>	<p>KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.A • Standard CC.3.5.11-12.A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.B • Standard CC.3.5.11-12.B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p>CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G <p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p>	<p>TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12.C <p>-Produce clear and coherent writing ... appropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E <p>Use technology, including the Internet, to produce, publish, and update individual or shared writing products.</p>	<p>STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p>Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

Computer Systems Networking and Telecommunications (CIP 11.0901)
Units of Instruction and Task Grid Linked To PA Common Core Standards

Secondary Competency Task List With Unit and Task Numbers:	Common Career Technical Core Standards	CCS Standards For Reading for Technical Subjects Standard 3.5	CCS Standards For Writing for Technical Subjects - Standard 3.6	CCS Standards For Mathematics Standard 2.0
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	<p>Communications Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>NOTE: Refer to the Common Core Technical Standards Booklet if you wish to add more Pathways, for your local area.</p>	<ul style="list-style-type: none"> • Standard CC.3.5.9-10. H Assess the reasoning in a text to support the author’s claim for solving a technical problem. • Standard CC.3.5.9-10. I Compare and contrast findings presented in a text to those from other sources, etc. <p>INTEGRATE KNOWLEDGE & IDEAS FOR GRADES 11-12</p> <ul style="list-style-type: none"> • Standard CC.3.5.11-12. G Integrate and evaluate multiple sources of information presented in diverse formats... to solve a problem. • Standard CC.3.5.11-12. H Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. • Standard CC.3.5.11-12. I Synthesize info. from a range of sources into a coherent understanding . <p>RANGE OF READING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J By the end of grades 9- 10, AND 11-12, read and comprehend technical texts independently and proficiently. 	<p>RESEARCH (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.F • Standard CC.3.6.11-12.F Conduct short and more sustained research to answer a question or solve a problem. • Standard CC.3.6.9-10.G • Standard CC.3.6.11-12.G Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. • Standard CC.3.6.9-10.H • Standard CC.3.6.11-12.H Draw evidence from informational texts to support analysis, reflection, and research. <p>RANGE OF WRITING (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.I & • Standard CC.3.5.11-12.I Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc. 	
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600 DEMONSTRATE KNOWLEDGE OF NETWORK MEDIA AND TOPOLOGIES				
<p>601 Categorize standard cable types and their properties including: UTP, STP, Coaxial, Fiber; Plenum vs. Non-plenum Properties: Transmission speeds, Distance, Duplex, Noise immunity, Frequency.</p> <p>602 Identify common connector types, including UTP, STP, Coaxial, and Fiber</p> <p>603 Identify common physical network topologies.</p> <p>604 Given a scenario, differentiate and implement appropriate wiring standards, including 568A, 568B, and Loopback.</p> <p>605 Categorize common WAN technology types and properties.</p> <p>606 Categorize common LAN technology types and Ethernet properties: CSMA/CD, Broadcast, Collision, Bonding, Speed, Distance.</p> <p>607 Explain common logical network topologies and their characteristics, including Peer to peer and Client/server.</p> <p>608 Install components of wiring distribution, including Vertical and horizontal cross connects, Verify installation and termination.</p>	<p>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE: A. Telecommunications Career Pathway (Choose Standards) 1-2-3</p> <p>CAREER CLUSTER 2: Information Technology (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>PATHWAYS INCLUDE: Information Support and Services Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Network Systems Career Pathway (Choose Standards) 1-2-3-4-5</p> <p>Programming and Software Development Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p>	<p>KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.A • Standard CC.3.5.11-12.A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.B • Standard CC.3.5.11-12.B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p>CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G <p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p>	<p>TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12.C <p>-Produce clear and coherent writingappropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E <p>Use technology, including the Internet, to produce, publish, and update individual or shared writing products.</p>	<p>STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p>Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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Units of Instruction and Task Grid Linked To PA Common Core Standards

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700 DEMONSTRATE KNOWLEDGE OF NETWORK DEVICES				
<p>701 Install, configure and differentiate between common network connectivity devices.</p> <p>702 Identify the functions of specialized network devices such as, Multilayer switch, Content switch, IDS/IPS, Load balancer, Multifunction network devices, DNS server, Bandwidth shaper, Proxy server, CSU/DSU.</p> <p>703 Explain the advanced features of a switch such as, PoE, Spanning tree, VLAN, Trunking, Port mirroring, Port authentication, etc.</p> <p>704 Implement a basic wireless network, including Client configuration, Access point placement and Installation.</p> <p>705 Configure appropriate encryption, Configure channels and frequencies, Set ESSID and beacon, verify installation.</p>	<p>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE: A. Telecommunications Career Pathway (Choose Standards) 1-2-3</p> <p>CAREER CLUSTER 2: Information Technology (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>PATHWAYS INCLUDE: Information Support and Services Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Network Systems Career Pathway (Choose Standards) 1-2-3-4-5</p> <p>Programming and Software Development Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Web and Digital</p>	<p>KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.A • Standard CC.3.5.11-12.A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.B • Standard CC.3.5.11-12.B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p>CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G <p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p>	<p>TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12.C <p>-Produce clear and coherent writing ...</p> <p>...appropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E <p>Use technology, including the Internet, to produce, publish, and update individual or shared writing products.</p>	<p>STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p>Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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800 DEMONSTRATE KNOWLEDGE OF NETWORK MANAGEMENT				
<p>801 Explain, compare and contrast the layers of the TCP/IP and OSI models.</p> <p>802 Identify types of configuration management documentation such as, Wiring schematics, Physical and logical network diagrams, Baselines, Policies, procedures and configurations, Regulations.</p> <p>803 Given a scenario, evaluate the network based on configuration management documentation such as, Compare wiring schematics, physical and logical network diagrams, baselines, policies and procedures and configurations to network devices and infrastructure, Update wiring schematics, physical and logical network diagrams, configurations and job logs as needed.</p> <p>804 Conduct network monitoring to identify performance and connectivity issues such as, packet sniffers, connectivity software, load testing, throughput testers, System logs, history logs, event logs.</p> <p>805 Explain different methods and rationales for network performance optimization.</p>	<p>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards) 1-2-3-4-5-6</p> <p>PATHWAYS INCLUDE: A. Telecommunications Career Pathway (Choose Standards) 1-2-3</p> <p>CAREER CLUSTER 2: Information Technology (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>PATHWAYS INCLUDE: Information Support and Services Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Network Systems Career Pathway (Choose Standards) 1-2-3-4-5</p> <p>Programming and Software Development Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p>Web and Digital</p>	<p>KEY IDEAS/DETAILS (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.A • Standard CC.3.5.11-12.A <p>Cite specific textual evidence, etc..</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.B • Standard CC.3.5.11-12.B <p>Determine the central ideas or conclusions of a text; etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.C • Standard CC.3.5.11-12.C <p>Follow precisely a complex multistep procedure, etc..</p> <p>CRAFT & STRUCTURE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.D • Standard CC.3.5.11-12.D <p>Determine the meaning of symbols, key terms, and other domain-specific words.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.E • Standard CC.3.5.11-12.E <p>Analyze the structure of the relationships among concepts in a text, etc.</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.F • Standard CC.3.5.11-12.F <p>Analyze the author’s purpose in providing an explanation, describing a procedure... and Analyze the structure of the relationships among concepts in a text.</p> <p>INTEGRATE KNOWLEDGE & IDEAS (FOR GRADES 9-10)</p> <ul style="list-style-type: none"> • Standard CC.3.5.9-10.G <p>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</p>	<p>TEXT TYPES AND PURPOSE (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.A • Standard CC.3.6.11-12.A <p>Write arguments focused on discipline-specific content.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.B • Standard CC.3.6.11-12.B <p>Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p>PRODUCTION & DIST. OF WRITING- (FOR GRADES 9-10-11-12)</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.C • Standard CC.3.6.11-12.C <p>-Produce clear and coherent writing ...</p> <p>...appropriate to task, purpose, and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.D • Standard CC.3.6.11-12.D <p>Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience.</p> <ul style="list-style-type: none"> • Standard CC.3.6.9-10.E • Standard CC.3.6.11-12.E <p>Use technology, including the Internet, to produce, publish, and update individual or shared writing products.</p>	<p>STANDARD AREA: NUMBERS AND OPERATIONS (FOR H.S.)</p> <p>Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p>Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multi-step problems.</p> <p>Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p>Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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Units of Instruction and Task Grid Linked To PA Common Core Standards

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