

# Computer Systems Networking and Telecommunications, Classification of Instructional Program (CIP) 11.0901

*Units of Instruction and Task Grid Linked to Pennsylvania Core Standards*

## 100 Personal and Environmental Safety

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
<p><b>101</b> List common causes of accidents and injuries in a computer facility.</p> <p><b>102</b> Wear personal protective equipment.</p> <p><b>103</b> List and identify safety hazard symbols.</p> <p><b>104</b> Review Safety Data Sheets (SDS) and explain their requirements in handling hazardous materials.</p> <p><b>105</b> Describe types of fire extinguishers and explain which types to use for extinguishing various fires.</p> <p><b>106</b> Demonstrate safe procedures to follow when lifting and carrying heavy objects.</p> <p><b>107</b> Describe the importance of safety as it relates to environmental issues.</p> <p><b>108</b> Identify potential hazards when working with power supplies.</p> <p><b>109</b> Identify proper disposal procedures for batteries and display devices.</p> <p><b>110</b> Identify proper disposal procedures for chemical solvents and pressurized cans.</p> <p><b>111</b> Identify and prevent Electro Static Discharge conditions.</p> <p><b>112</b> Describe the meaning and importance of the Energy Star Rating System.</p> <p><b>113</b> Configure a computer's power management settings to maximize energy efficiency.</p> <p><b>114</b> Maintaining a safe work area to avoid common accidents and injuries.</p>	<p><b>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster</b> (Choose Standards) 1-2-3-4-5-6 <b>PATHWAYS INCLUDE: A. Telecommunications Career Pathway</b> (Choose Standards) 1-2-3</p> <p><b>CAREER CLUSTER 2: Information Technology</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10 <b>PATHWAYS INCLUDE: Information Support and Services Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10 <b>Network Systems Career Pathway</b> (Choose Standards) 1-2-3-4-5 <b>Programming and Software Development Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> Analyze the author's purpose in</p>		

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	<p><b>Web and Digital Communications Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>NOTE:</b> Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local area.</p>	<p>providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). <b>Standard CC.3.5.9-10. H</b> Assess the reasoning in a text to support the author's claim for solving a technical problem. <b>Standard CC.3.5.9-10. I</b> Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 11-12</b> <b>Standard CC.3.5.11-12. G</b> Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. <b>Standard CC.3.5.11-12. H</b> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. <b>Standard CC.3.5.11-12. I</b> Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J</b></p>		

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		By the end of grades 9-10, AND 11-12, read and comprehend technical texts independently and proficiently.		

## 200 Computer Hardware

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
<p><b>201</b> Categorize storage devices and backup media.</p> <p><b>202</b> Categorize the different types of computer cases.</p> <p><b>203</b> Explain motherboard components, types and features.</p> <p><b>204</b> Categorize power supplies types and characteristics.</p> <p><b>205</b> Explain the purpose and characteristics of CPUs and their features.</p> <p><b>206</b> Explain cooling methods and devices.</p> <p><b>207</b> Compare and contrast memory types, characteristics and their purpose.</p> <p><b>208</b> Distinguish between the different display devices and their characteristics.</p> <p><b>209</b> Summarize the function and types of adapter cards.</p> <p><b>210</b> Install and configure peripherals and input devices.</p> <p><b>211</b> Install, configure and optimize laptop components and features.</p> <p><b>212</b> Install and configure printers.</p> <p><b>213</b> Given a scenario, install, configure and maintain personal computer components.</p> <p><b>214</b> Given a scenario, detect problems, troubleshoot, and repair/replace desk top and laptop computer components.</p> <p><b>215</b> Given a scenario, diagnose, and repair common printer issues.</p>	<p><b>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>PATHWAYS INCLUDE: A. Telecommunications Career Pathway</b> (Choose Standards) 1-2-3</p> <p><b>CAREER CLUSTER 2: Information Technology</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>PATHWAYS INCLUDE: Information Support and Services Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Network Systems Career Pathway</b> (Choose Standards) 1-2-3-4-5</p> <p><b>Programming and Software Development Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Web and Digital Communications Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>NOTE:</b> Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc.</p> <p><b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc.</p> <p><b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words.</p> <p><b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc.</p> <p><b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into</p>		<p><b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p><b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p><b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p><b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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	area.	<p>visual form (e.g. a table or chart).</p> <p><b>Standard CC.3.5.9-10. H</b> Assess the reasoning in a text to support the author's claim for solving a technical problem.</p> <p><b>Standard CC.3.5.9-10. I</b> Compare and contrast findings presented in a text to those from other sources, etc.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 11-12</b> <b>Standard CC.3.5.11-12. G</b> Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.</p> <p><b>Standard CC.3.5.11-12. H</b> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</p> <p><b>Standard CC.3.5.11-12. I</b> Synthesize information from a range of sources into a coherent understanding.</p> <p><b>RANGE OF READING</b> <b>GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J</b> By the end of grades 9-10, AND 11-12, read and comprehend technical texts independently and proficiently.</p>		

## 300 Troubleshooting, Repair, and Maintenance

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<p><b>301</b> Describe and explain the troubleshooting theory.</p> <p><b>302</b> Describe and explain and interpret common hardware and operating system symptoms and their causes.</p> <p><b>303</b> Describe and determine the troubleshooting methods and tools for printers.</p> <p><b>304</b> Describe and interpret common laptop issues and determine the appropriate basic troubleshooting method.</p> <p><b>305</b> Given a scenario, integrate common preventative maintenance techniques.</p> <p><b>306</b> Compare and contrast network troubleshooting with hardware/software troubleshooting.</p>	<p><b>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>PATHWAYS INCLUDE: A. Telecommunications Career Pathway</b> (Choose Standards) 1-2-3</p> <p><b>CAREER CLUSTER 2: Information Technology</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>PATHWAYS INCLUDE: Information Support and Services Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Network Systems Career Pathway</b> (Choose Standards) 1-2-3-4-5</p> <p><b>Programming and Software Development Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Web and Digital Communications Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>NOTE:</b> Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12. A</b> Cite specific textual evidence, etc.</p> <p><b>Standard CC.3.5.9-10. B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc.</p> <p><b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words.</p> <p><b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc.</p> <p><b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into</p>		<p><b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p><b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p><b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p><b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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## 400 Operating Systems and Software

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<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><b>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>PATHWAYS INCLUDE:</b> <b>A. Telecommunications Career Pathway</b> (Choose Standards) 1-2-3</p> <p><b>CAREER CLUSTER 2: Information Technology</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>PATHWAYS INCLUDE:</b> <b>Information Support and Services Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Network Systems Career Pathway</b> (Choose Standards) 1-2-3-4-5</p> <p><b>Programming and Software Development Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Web and Digital Communications Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>NOTE:</b> Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12 A</b> Cite specific textual evidence, etc.</p> <p><b>Standard CC.3.5.9-10 B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc.</p> <p><b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words.</p> <p><b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc.</p> <p><b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> Analyze the author’s purpose in providing an explanation, describing a procedure...and</p> <p>Analyze the structure of the relationships among concepts in a text.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into</p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content.</p> <p><b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12 C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p><b>Standard CC.3.6.9-10 D</b> <b>Standard CC.3.6.11-12.D</b> 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> <p><b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> <b>Conduct short and more sustained research to answer a question or solve a problem.</b></p>	<p><b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p><b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p><b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p><b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>



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## 500 Network Technologies

Secondary Competency Task Grid with Unit and Task Numbers	Common Career Technical Core Standards	Pennsylvania Core Standards for Reading for Technical Subjects Standard 3.5	Pennsylvania Core Standards for Writing for Technical Subjects Standard 3.6	Pennsylvania Core Standards for Mathematics Standard 2.1
<p><b>501</b> Explain the function of common networking protocols, such as FTP, TCP/IP suite, DHCP, DNS, etc.</p> <p><b>502</b> Identify commonly used TCP and UDP default ports, including TCP ports: FTP – 20, 21, SSH – 22, TELNET – 23, HTTP – 80, etc.</p> <p><b>503</b> Identify the following address formats, including IPv6, IPv4, MAC addressing.</p> <p><b>504</b> 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><b>505</b> Identify common IPv4 and IPv6 routing protocols, including link state, distance vector, and hybrid protocols.</p> <p><b>506</b> 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><b>507</b> Compare the characteristics of wireless communication standards, including 802.11 standards: speeds, distance, channels, frequency, authentication and encryption.</p>	<p><b>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>PATHWAYS INCLUDE: A. Telecommunications Career Pathway</b> (Choose Standards) 1-2-3</p> <p><b>CAREER CLUSTER 2: Information Technology</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>PATHWAYS INCLUDE: Information Support and Services Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Network Systems Career Pathway</b> (Choose Standards) 1-2-3-4-5</p> <p><b>Programming and Software Development Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Web and Digital Communications Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>NOTE:</b> Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12. A</b> Cite specific textual evidence, etc.</p> <p><b>Standard CC.3.5.9-10. B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc.</p> <p><b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words.</p> <p><b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc.</p> <p><b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> Analyze the author’s purpose in providing an explanation, describing a procedure...and</p> <p>Analyze the structure of the relationships among concepts in a text.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into</p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content.</p> <p><b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12. C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p><b>Standard CC.3.6.9-10. D</b> <b>Standard CC.3.6.11-12.D</b> 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> <p><b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> <b>Conduct short and more sustained research to answer a question or solve a problem.</b></p>	<p><b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p><b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p><b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p><b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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## 600 Network Media and Topologies

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<p><b>601</b> 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><b>602</b> Identify common connector types, including UTP, STP, coaxial, and fiber.</p> <p><b>603</b> Identify common physical network topologies.</p> <p><b>604</b> Given a scenario, differentiate and implement appropriate wiring standards, including 568A, 568B, and loopback.</p> <p><b>605</b> Categorize common WAN technology types and properties.</p> <p><b>606</b> Categorize common LAN technology types and ethernet properties: CSMA/CD, broadcast, collision, bonding, speed, distance.</p> <p><b>607</b> Explain common logical network topologies and their characteristics, including peer to peer and client/server.</p> <p><b>608</b> Install components of wiring distribution, including vertical and horizontal cross connects, verify installation and termination.</p>	<p><b>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>PATHWAYS INCLUDE: A. Telecommunications Career Pathway</b> (Choose Standards) 1-2-3</p> <p><b>CAREER CLUSTER 2: Information Technology</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>PATHWAYS INCLUDE: Information Support and Services Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Network Systems Career Pathway</b> (Choose Standards) 1-2-3-4-5</p> <p><b>Programming and Software Development Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Web and Digital Communications Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>NOTE:</b> Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12. A</b> Cite specific textual evidence, etc.</p> <p><b>Standard CC.3.5.9-10. B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc.</p> <p><b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words.</p> <p><b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc.</p> <p><b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into</p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content.</p> <p><b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12. C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p><b>Standard CC.3.6.9-10. D</b> <b>Standard CC.3.6.11-12.D</b> 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> <p><b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> <b>Conduct short and more sustained research to answer a question or solve a problem.</b></p>	<p><b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p><b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p><b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p><b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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## 700 Network Devices

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<p><b>701</b> Install, configure, and differentiate between common network connectivity devices.</p> <p><b>702</b> 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><b>703</b> Explain the advanced features of a switch such as, PoE, spanning tree, VLAN, trunking, port mirroring, port authentication, etc.</p> <p><b>704</b> Implement a basic wireless network, including client configuration, access point placement and Installation.</p> <p><b>705</b> Configure appropriate encryption, configure channels and frequencies, set ESSID and beacon, verify installation.</p>	<p><b>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>PATHWAYS INCLUDE:</b> <b>A. Telecommunications Career Pathway</b> (Choose Standards) 1-2-3</p> <p><b>CAREER CLUSTER 2: Information Technology</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>PATHWAYS INCLUDE:</b> <b>Information Support and Services Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Network Systems Career Pathway</b> (Choose Standards) 1-2-3-4-5</p> <p><b>Programming and Software Development Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Web and Digital Communications Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>NOTE:</b> Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12. A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10. B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS</b> <b>GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into</p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12. C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10. D</b> <b>Standard CC.3.6.11-12.D</b> 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. <b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> <b>Conduct short and more sustained research to answer a question or solve a problem.</b></p>	<p><b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>



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## 800 Network Management

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<p><b>801</b> Explain, compare, and contrast the layers of the TCP/IP and OSI models.</p> <p><b>802</b> Identify types of configuration management documentation such as, wiring schematics, physical and logical network diagrams, baselines, policies, procedures and configurations, regulations.</p> <p><b>803</b> Given a scenario, evaluate the network based on configuration management documentation; such as: wiring schematics; physical and logical network diagrams; baselines; policies, procedures, and configurations to network devices and infrastructure; wiring schematics; physical and logical network diagrams; and, configurations and job logs as needed.</p> <p><b>804</b> 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><b>805</b> Explain different methods and rationales for network performance optimization.</p>	<p><b>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>PATHWAYS INCLUDE: A. Telecommunications Career Pathway</b> (Choose Standards) 1-2-3</p> <p><b>CAREER CLUSTER 2: Information Technology</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>PATHWAYS INCLUDE: Information Support and Services Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Network Systems Career Pathway</b> (Choose Standards) 1-2-3-4-5</p> <p><b>Programming and Software Development Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Web and Digital Communications Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>NOTE:</b> Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12. A</b> Cite specific textual evidence, etc.</p> <p><b>Standard CC.3.5.9-10. B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc.</p> <p><b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words.</p> <p><b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc.</p> <p><b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> Analyze the author's purpose in providing an explanation, describing a procedure...and</p> <p>Analyze the structure of the relationships among concepts in a text.</p> <p><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into</p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content.</p> <p><b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12. C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience.</p> <p><b>Standard CC.3.6.9-10. D</b> <b>Standard CC.3.6.11-12.D</b> 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> <p><b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> <b>Conduct short and more sustained research to answer</b></p>	<p><b>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems.</p> <p><b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems.</p> <p><b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.</p> <p><b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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## 900 Network Tools and Troubleshooting

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<p><b>901</b> Given a scenario, select the appropriate command line/graphical tools and interpret the output to verify functionality such as, Traceroute, Ipconfig, Ifconfig, Ping, Arp ping, Arp, Nslookup, Hostname, Dig, Mtr, Route, Nbtstat, Netstat.</p> <p><b>902</b> Explain the purpose of network scanners such as, packet sniffers, intrusion detection software, Intrusion prevention software, port scanners.</p> <p><b>903</b> Given a scenario, select the appropriate hardware tools such as, cable testers, protocol analyzer, certifiers, TDR, OTDR, multimeter, toner probe, butt set, punch down tool, cable stripper, snips, voltage event recorder, temperature monitor.</p> <p><b>904</b> Given a scenario, implement network troubleshooting methodologies, including Information gathering – identify symptoms and problems, Identify the affected areas of the network.</p> <p><b>905</b> Describe and create an action plan and solution identifying potential effects, implement and test the solution, identify the results and effects of the solution, document the solution and the entire process.</p> <p><b>906</b> Given a scenario, troubleshoot common wired and wireless connectivity issues and select an appropriate solution to include physical and logical issues.</p>	<p><b>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>PATHWAYS INCLUDE: A. Telecommunications Career Pathway</b> (Choose Standards) 1-2-3</p> <p><b>CAREER CLUSTER 2: Information Technology</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>PATHWAYS INCLUDE: Information Support and Services Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Network Systems Career Pathway</b> (Choose Standards) 1-2-3-4-5</p> <p><b>Programming and Software Development Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Web and Digital Communications Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>NOTE:</b> Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12. A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10. B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into</p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12. C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10. D</b> <b>Standard CC.3.6.11-12.D</b> 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. <b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> <b>Conduct short and more sustained research to answer</b></p>	<p><b>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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# 1000 Security Fundamentals

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<p><b>1001</b> Explain, compare, and contrast the function of hardware and software security devices such as, network based firewall, host based firewall, DMZ, IDS, IPS, VPN concentrator.</p> <p><b>1002</b> Explain common features of a firewall such as, application layer vs. network layer, stateful vs. stateless, scanning services, content filtering, signature identification, zones.</p> <p><b>1003</b> Explain the methods of network access security such as, ACL: MAC filtering, IP filtering tunneling and encryption: SSL VPN, VPN, L2TP, PPTP and related others.</p> <p><b>1004</b> Explain methods of user authentication such as, PKI, Kerberos, AAA: RADIUS, TACACS+, network access control: 802.1x, CHAP, MS-CHAP, EAP.</p> <p><b>1005</b> Explain issues that affect device security such as, physical security, restricting local and remote access, secure methods vs. unsecure methods: SSH, HTTPS, SNMPv3, SFTP, SCP; TELNET, HTTP, FTP, RSH, RCP, SNMPv1/2.</p> <p><b>1006</b> Identify common security threats and mitigation techniques.</p> <p><b>1007</b> Identify security features including BIOS security, password management, locking workstations, and biometrics.</p>	<p><b>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster</b> (Choose Standards) 1-2-3-4-5-6</p> <p><b>PATHWAYS INCLUDE:</b> <b>A. Telecommunications Career Pathway</b> (Choose Standards) 1-2-3</p> <p><b>CAREER CLUSTER 2: Information Technology</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>PATHWAYS INCLUDE:</b> <b>Information Support and Services Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Network Systems Career Pathway</b> (Choose Standards) 1-2-3-4-5</p> <p><b>Programming and Software Development Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>Web and Digital Communications Career Pathway</b> (Choose Standards) 1-2-3-4-5-6-7-8-9-10</p> <p><b>NOTE:</b> Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local</p>	<p><b>KEY IDEAS/DETAILS GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. A</b> <b>Standard CC.3.5.11-12. A</b> Cite specific textual evidence, etc. <b>Standard CC.3.5.9-10. B</b> <b>Standard CC.3.5.11-12. B</b> Determine the central ideas or conclusions of a text; etc. <b>Standard CC.3.5.9-10.C</b> <b>Standard CC.3.5.11-12.C</b> Follow precisely a complex multistep procedure, etc.</p> <p><b>CRAFT &amp; STRUCTURE GRADES 9-10-11-12</b> <b>Standard CC.3.5.9-10. D</b> <b>Standard CC.3.5.11-12.D</b> Determine the meaning of symbols, key terms, and other domain specific words. <b>Standard CC.3.5.9-10.E</b> <b>Standard CC.3.5.11-12.E</b> Analyze the structure of the relationships among concepts in a text, etc. <b>Standard CC.3.5.9-10.F</b> <b>Standard CC.3.5.11-12.F</b> 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><b>INTEGRATE KNOWLEDGE &amp; IDEAS GRADES 9-10</b> <b>Standard CC.3.5.9-10.G</b> Translate quantitative or technical information expressed in a text into</p>	<p><b>TEXT TYPES AND PURPOSE GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.A</b> <b>Standard CC.3.6.11-12.A</b> Write arguments focused on discipline specific content. <b>Standard CC.3.6.9-10.B</b> <b>Standard CC.3.6.11-12.B</b> Write informative or explanatory texts, including the narration of technical processes, etc.</p> <p><b>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.C</b> <b>Standard CC.3.6.11-12. C</b> Produce clear and coherent writing...appropriate to task, purpose, and audience. <b>Standard CC.3.6.9-10. D</b> <b>Standard CC.3.6.11-12.D</b> 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. <b>Standard CC.3.6.9-10.E</b> <b>Standard CC.3.6.11-12.E.</b> Use technology, including the internet, to produce, publish, and update individual or shared writing products.</p> <p><b>RESEARCH GRADES 9-10-11-12</b> <b>Standard CC.3.6.9-10.F</b> <b>Standard CC.3.6.11-12.F</b> <b>Conduct short and more sustained research to answer</b></p>	<p><b>NUMBERS AND OPERATIONS</b> <b>Standard 2.1.HS.F.2</b> Apply properties of rational and irrational numbers to solve real world or mathematical problems. <b>Standard 2.1.HS.F.4</b> Use units as a way to understand problems and to guide the solution of multistep problems. <b>Standard 2.1.HS.F.5</b> Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. <b>Standard 2.1.HS.F.6</b> Extend the knowledge of arithmetic operations and apply to complex numbers.</p>

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