### PERSONAL AND ENVIRONMENTAL SAFETY.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>List common causes of accidents and injuries in a computer facility.</td>
</tr>
<tr>
<td>102</td>
<td>Wear personal protective equipment.</td>
</tr>
<tr>
<td>103</td>
<td>List and identify safety hazard symbols.</td>
</tr>
<tr>
<td>104</td>
<td>Review Safety Data Sheets (SDS) and explain their requirements in handling hazardous materials.</td>
</tr>
<tr>
<td>105</td>
<td>Describe types of fire extinguishers and explain which types to use for extinguishing various fires.</td>
</tr>
<tr>
<td>106</td>
<td>Use safe procedures to follow when lifting and carrying heavy objects.</td>
</tr>
<tr>
<td>107</td>
<td>Describe the importance of safety as it relates to environmental issues.</td>
</tr>
<tr>
<td>108</td>
<td>Identify potential hazards when working with power supplies.</td>
</tr>
<tr>
<td>109</td>
<td>Identify proper disposal procedures for batteries and display devices.</td>
</tr>
<tr>
<td>110</td>
<td>Identify proper disposal procedures for chemical solvents and pressurized cans.</td>
</tr>
<tr>
<td>111</td>
<td>Prevent Electro Static Discharge conditions.</td>
</tr>
<tr>
<td>112</td>
<td>Describe the meaning and importance of the Energy Star Rating System.</td>
</tr>
<tr>
<td>113</td>
<td>Configure a computer's power management settings to maximize energy efficiency.</td>
</tr>
</tbody>
</table>

**CAREER CLUSTER 1:** Arts, AV Technology and Communications Career Cluster  
(Choose Standards)  
1-2-3-4-5-6  
**PATHWAYS INCLUDE:**  
A. Telecommunications Career Pathway  
(Choose Standards)  
1-2-3-4-5-6

**CAREER CLUSTER 2:** Information Technology  
(Choose Standards)  
1-2-3-4-5-6-7-8-9-10  
**PATHWAYS INCLUDE:**  
Information Support and Services Career Pathway  
(Choose Standards)  
1-2-3-4-5-6-7-8-9-10  
Network Systems Career Pathway  
(Choose Standards)  
1-2-3-4-5

**KEY IDEAS/DETAILS**  
**GRADES 9-10-11-12**  
**Standard CC.3.5-9-10, A**  
**Standard CC.3.5-11-12 A**  
Cite specific textual evidence, etc.  
**Standard CC.3.5-9-10 B**  
**Standard CC.3.5-11-12, B**  
Determine the central ideas or conclusions of a text; etc.  
**Standard CC.3.5-9-10, C**  
**Standard CC.3.5-11-12, C**  
Follow precisely a complex multistep procedure, etc.

**CRAFT & STRUCTURE**  
**GRADES 9-10-11-12**  
**Standard CC.3.5-9-10, D**  
**Standard CC.3.5-11-12,D**  
Determine the meaning of symbols, key terms, and other domain specific words.  
**Standard CC.3.5-9-10, E**  
**Standard CC.3.5-11-12,E**  
Analyze the structure of the relationships among concepts in a text, etc.
Maintain safe work area to avoid common accidents and injuries.

**Programming and Software Development Career Pathway**
(Choose Standards)
1-2-3-4-5-6-7-8-9-10

**Standard CC.3.5.9-10.F**
**Standard CC.3.5.11-12.F**
Analyze the author’s purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a text.

**Web and Digital Communications Career Pathway**
(Choose Standards)
1-2-3-4-5-6-7-8-9-10

**NOTE:**
Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local area.

**INTEGRATE KNOWLEDGE & IDEAS**

**GRADES 9-10**

**Standard CC.3.5.9-10.G**
Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

**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.

**INTEGRATE KNOWLEDGE & IDEAS**

**GRADES 11-12**

**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 information from a range of sources into a coherent understanding.

**RANGE OF READING**

**GRADES 9-10-11-12**

**Standard CC.3.5.9-10. J**
### COMPUTER HARDWARE.

<table>
<thead>
<tr>
<th>Number</th>
<th>Task Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>201</td>
<td>Categorize storage devices and backup media.</td>
</tr>
<tr>
<td>202</td>
<td>Categorize the different types of computer cases.</td>
</tr>
<tr>
<td>203</td>
<td>Explain motherboard components, types and features.</td>
</tr>
<tr>
<td>204</td>
<td>Categorize power supplies types and characteristics.</td>
</tr>
<tr>
<td>205</td>
<td>Explain the purpose and characteristics of CPUs and their features.</td>
</tr>
<tr>
<td>206</td>
<td>Explain cooling methods and devices.</td>
</tr>
<tr>
<td>207</td>
<td>Compare and contrast memory types, characteristics, and their purpose.</td>
</tr>
<tr>
<td>208</td>
<td>Distinguish between the different display devices and their characteristics.</td>
</tr>
<tr>
<td>209</td>
<td>Summarize the function and types of adapter cards.</td>
</tr>
<tr>
<td>210</td>
<td>Configure and optimize portable devices such as: laptops, tablets, and smart devices.</td>
</tr>
<tr>
<td>211</td>
<td>Install and configure printers.</td>
</tr>
<tr>
<td>212</td>
<td>Install and configure personal computer components.</td>
</tr>
<tr>
<td>213</td>
<td>Install and configure and maintain personal computer components.</td>
</tr>
<tr>
<td>214</td>
<td>Detect problems, troubleshoot, and repair/replace desktop and laptop computer components.</td>
</tr>
<tr>
<td>215</td>
<td>Diagnose and repair common printer issues.</td>
</tr>
</tbody>
</table>

### CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster
- **Pathways Include:**
  - A. Telecommunications Career Pathway (Choose Standards): 1-2-3-4-5-6

### CAREER CLUSTER 2: Information Technology Career Cluster
- **Pathways Include:**
  - Information Support and Services Career Pathway (Choose Standards): 1-2-3-4-5-6-7-8-9-10
  - Network Systems Career Pathway (Choose Standards): 1-2-3-4-5-6-7-8-9-10
  - Programming and Software Development Career Pathway (Choose Standards): 1-2-3-4-5-6-7-8-9-10

### KEY IDEAS/DETAILS
- **GRADES 9-10-11-12**
- **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.

### NUMBERS AND OPERATIONS
- **Standard 2.1.HS.F.2**
  - Apply properties of rational and irrational numbers to solve real-world or mathematical problems.
- **Standard 2.1.HS.F.4**
  - Use units as a way to understand problems and to guide the solution of multistep problems.
- **Standard 2.1.HS.F.6**
  - Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
- **Standard 2.1.HS.F.8**
  - Extend the knowledge of arithmetic operations and apply to complex numbers.
### Standard CC.3.5.9-10.G
Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

### 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.

### INTEGRATE KNOWLEDGE & IDEAS

#### GRADES 11-12

- **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 information from a range of sources into a coherent understanding.

### RANGE OF READING

#### GRADES 9-10-11-12

- **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.

## CAREER CLUSTER 1:
Arts, AV Technology and Communications Career Cluster

- **CAREER CLUSTER 1:** Arts, AV Technology and Communications Career Cluster
- **KEY IDEAS/DETAILS**
  - **GRADES 9-10-11-12**
  - **Standard CC.3.5.9-10.A**
  - **Standard CC.3.5.11-12.A**
  - **CITE SPECIFIC TEXTUAL EVIDENCE, ETC.**

## NUMBERS AND OPERATIONS

- **Standard 2.1.HS.F.2**
Identify common laptop issues and determine the appropriate basic troubleshooting method.

Integrate common preventative maintenance techniques.

RESERVED

PATHWAYS INCLUDE:
A. Telecommunications Career Pathway
(Choose Standards)
1-2-3-4-5-6

CAREER CLUSTER 2: Information Technology
(Choose Standards)
1-2-3-4-5-6-7-8-9-10

PATHWAYS INCLUDE:
Information Support and Services Career Pathway
(Choose Standards)
1-2-3-4-5-6-7-8-9-10

Network Systems Career Pathway
(Choose Standards)
1-2-3-4-5

Programming and Software Development Career Pathway
(Choose Standards)
1-2-3-4-5-6-7-8-9-10

Web and Digital Communications Career Pathway
(Choose Standards)
1-2-3-4-5-6-7-8-9-10

NOTE:
Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local area.

Standard CC.3.5.10.B
Determine the central ideas or conclusions of a text, etc.

Standard CC.3.5.11.C
Follow precisely a complex multistep procedure, etc.

CRAFT & STRUCTURE
GRADES 9-10-11-12
Standard CC.3.5.9-10.D

Determine the meaning of symbols, key terms, and other domain specific words.
Standard CC.3.5.9-10.E
Analyze the structure of the relationships among concepts in a text, etc.

INTEGRATE KNOWLEDGE & IDEAS
GRADES 9-10
Standard CC.3.5.9-10.G
Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

Assess the reasoning in a text to support the author’s claim for solving a technical problem.
Standard CC.3.5.9-10.H

Apply properties of rational and irrational numbers to solve real world or mathematical problems.
Standard 2.1.HS.F.4
Use units as a way to understand problems and to guide the solution of multistep problems.
Standard 2.1.HS.F.5
Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
Standard 2.1.HS.F.6
Extend the knowledge of arithmetic operations and apply to complex numbers.
Compare and contrast findings presented in a text to those from other sources, etc.

INTEGRATE KNOWLEDGE & IDEAS
GRADES 11-12
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 information from a range of sources into a coherent understanding.

RANGE OF READING
GRADES 9-10-11-12
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.

### OPERATING SYSTEMS AND SOFTWARE

<table>
<thead>
<tr>
<th>Number</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>401</td>
<td>Identify different operating systems by their features.</td>
</tr>
<tr>
<td>402</td>
<td>Use various user interfaces.</td>
</tr>
<tr>
<td>403</td>
<td>Install and configure an operating system.</td>
</tr>
<tr>
<td>404</td>
<td>Explain boot sequences, methods, and startup utilities for various operating systems.</td>
</tr>
<tr>
<td>405</td>
<td>Select the appropriate commands and options to troubleshoot and resolve problems.</td>
</tr>
<tr>
<td>406</td>
<td>Differentiate between various operating system directory structures.</td>
</tr>
<tr>
<td>407</td>
<td>Use system utilities/tools and evaluate the results.</td>
</tr>
<tr>
<td>408</td>
<td>Troubleshoot common OS and software issues.</td>
</tr>
<tr>
<td>409</td>
<td>Manage local users, groups, and institute local security policies.</td>
</tr>
<tr>
<td>410</td>
<td>Install and configure a network and workstation operating system.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cluster 1: Arts, AV Technology and Communications Career Cluster</th>
<th>Cluster 2: Information Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose Standards 1-2-3-4-5-6</td>
<td>Choose Standards 1-2-3</td>
</tr>
</tbody>
</table>

### KEY IDEAS/DETAILS

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.HS.F.2</td>
<td>Apply properties of rational and irrational numbers to solve real world or mathematical problems.</td>
</tr>
<tr>
<td>2.1.HS.F.4</td>
<td>Use units as a way to understand problems and to guide the solution of multistep problems.</td>
</tr>
</tbody>
</table>

### TEXT TYPES AND PURPOSE

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.HS.F.2</td>
<td>Write arguments focused on discipline specific content.</td>
</tr>
<tr>
<td>2.1.HS.F.4</td>
<td>Write informative or explanatory texts, including the narration of technical processes, etc.</td>
</tr>
</tbody>
</table>

### NUMBERS AND OPERATIONS

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.HS.F.2</td>
<td>Apply properties of rational and irrational numbers to solve real world or mathematical problems.</td>
</tr>
<tr>
<td>2.1.HS.F.4</td>
<td>Use units as a way to understand problems and to guide the solution of multistep problems.</td>
</tr>
</tbody>
</table>

### CRAFT & STRUCTURE

<table>
<thead>
<tr>
<th>Cluster 1: Arts, AV Technology and Communications Career Cluster</th>
<th>Cluster 2: Information Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Determine the central ideas or conclusions of a text, etc.</td>
<td>Follow precisely a complex multistep procedure, etc.</td>
</tr>
</tbody>
</table>
PATHWAYS INCLUDE:
- Information Support and Services Career Pathway (Choose Standards)
- Network Systems Career Pathway (Choose Standards)
- Programming and Software Development Career Pathway (Choose Standards)
- Web and Digital Communications Career Pathway (Choose Standards)

NOTE:
Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local area.

GRADES 9-10-11-12
Standard CC.3.5.9-10, D
Standard CC.3.5.11-12.D
Determine the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E
Standard CC.3.5.11-12.E
Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F
Standard CC.3.5.11-12.F
Analyze the author’s purpose in providing an explanation, describing a procedure...and
Analyze the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS
GRADES 9-10
Standard CC.3.5.9-10.G
Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

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.

INTEGRATE KNOWLEDGE & IDEAS
GRADES 11-12
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

PRODUCTION & DISTRIBUTION OF WRITING
GRADES 9-10-11-12
Standard CC.3.6.9-10.C
Standard CC.3.6.11-12 C
Produce clear and coherent writing...appropriate to task, purpose, and audience.

Standard CC.3.6.9-10 D
Standard CC.3.6.11-12.D
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.

Standard CC.3.6.9-10.E
Standard CC.3.6.11-12.E
Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH
GRADES 9-10-11-12
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 measurement when reporting quantities.

Standard 2.1.HS.F.6
Extend the knowledge of arithmetic operations and apply to complex numbers.
<table>
<thead>
<tr>
<th>500 NETWORK TECHNOLOGIES.</th>
</tr>
</thead>
<tbody>
<tr>
<td>501 Explain the function of common networking protocols, such as FTP, TCP/IP suite, DHCP, DNS, etc.</td>
</tr>
<tr>
<td>502 Identify commonly used TCP and UDP default ports, including TCP ports: FTP – 20, 21, SSH – 22, TELNET – 23, HTTP – 80, etc.</td>
</tr>
<tr>
<td>503 Identify the following address formats, including IPv6, IPv4, MAC addressing.</td>
</tr>
<tr>
<td>504 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.</td>
</tr>
<tr>
<td>505 Identify common IPv4 and IPv6 routing protocols, including link state, distance vector, and hybrid protocols.</td>
</tr>
<tr>
<td>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).</td>
</tr>
<tr>
<td>507 Identify the characteristics of wireless communication standards, including 802.11 standards: speeds, distance, channels, frequency, authentication, and encryption.</td>
</tr>
<tr>
<td>508 Identify the basic elements of unified communication technology such as: VoIP, Video, Real Time Services, POS and UC devices</td>
</tr>
<tr>
<td>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards) 1-2-3-4-5-6 PATHWAYS INCLUDE: A. Telecommunications Career Pathway (Choose Standards) 1-2-3</td>
</tr>
<tr>
<td>CAREER CLUSTER 2: Information Technology (Choose Standards) 1-2-3-4-5-6-7-8-9-10 PATHWAYS INCLUDE: Information Support and Services Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10 Network Systems Career Pathway (Choose Standards) 1-2-3-4-5</td>
</tr>
<tr>
<td>KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Cite specific textual evidence, etc. Standard CC.3.5.9-10.B Standard CC.3.5.9-10.C Standard CC.3.5.11-12.A Follow precisely a complex multistep procedure, etc.</td>
</tr>
<tr>
<td>PRODUCTION &amp; DISTRIBUTION OF WRITING GRADES 9-10-11-12 Standard CC.3.6.9-10.C Standard CC.3.6.11-12.C Produce clear and coherent writing...appropriate to task, purpose, and audience. Standard CC.3.6.9-10.D Standard CC.3.6.11-12.D Develop and strengthen writing as needed by planning, revising, editing,</td>
</tr>
<tr>
<td>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</td>
</tr>
</tbody>
</table>

Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.

Standard CC.3.5.11-12. I Synthesize information from a range of sources into a coherent understanding.

RANGE OF READING GRADES 9-10-11-12 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.

analysis, reflection, and research.

RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.1 & Standard CC.3.5.11-12.1.

Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.
| 509 | Implement technologies that support cloud and virtualization such as: virtual hardware, SANs, IaaS, SaaS, and PaaS. |
| Programming and Software Development Career Pathway | Standard CC.3.5.11-12.F Analyze the author’s purpose in providing an explanation, describing a procedure...and Analyze the structure of the relationships among concepts in a text. |
| Web and Digital Communications Career Pathway | INTEGRATE KNOWLEDGE & IDEAS GRADES 9-10 Standard CC.3.5.9-10.G Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart). 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. |
| NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local area. | Standard CC.3.5.9-10.H 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 information from a range of sources into a coherent understanding. |
| | RANGE OF READING GRADES 9-10-11-12 Standard CC.3.5.9-10.J Standard CC.3.5.11-12.J rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. Standard CC.3.6.9-10.E Standard CC.3.6.11-12.E. Use technology, including the internet, to produce, publish, and update individual or shared writing products. |
| | RANGE OF WRITING GRADES 9-10-11-12 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. |
**600 NETWORK MEDIA AND TOPOLOGIES.**

| 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. |
| 602 | Identify common connector types, including UTP, STP, coaxial, and fiber. |
| 603 | Identify common physical network topologies. |
| 604 | Differentiate and fabricate cables according to TIA/EIA 568A and 568B standards, including patch, crossover, and rollover cables. |
| 605 | Categorize common WAN technology types and properties. |
| 606 | Categorize common LAN technology types and ethernet properties: CSMA/CD, broadcast, collision, bonding, speed, distance. |
| 607 | Explain common logical network topologies and their characteristics, including peer to peer and client/server. |
| 608 | Install components of wiring distribution, including vertical and horizontal cross connects, verify installation and termination. |

**CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster**

(Choose Standards)

1-2-3-4-5-6

**PATHWAYS INCLUDE:**

A. Telecommunications Career Pathway

(Choose Standards)

1-2-3

**CAREER CLUSTER 2: Information Technology Career Cluster**

(Choose Standards)

1-2-3-4-5-6-7-8-9-10

**PATHWAYS INCLUDE:**

Information Support and Services Career Pathway

(Choose Standards)

1-2-3-4-5-6-7-8-9-10

Network Systems Career Pathway

(Choose Standards)

1-2-3-4-5

Programming and Software Development Career Pathway

(Choose Standards)

1-2-3-4-5-6-7-8-9-10

Web and Digital Communications Career Pathway

(Choose Standards)

1-2-3-4-5-6-7-8-9-10

**NOTE:**

**KEY IDEAS/DETAILS**

**GRADES 9-10-11-12**

Standard CC.3.5.9-10. A

Cite specific textual evidence, etc.

Standard CC.3.5.9-10 B

Determine the central ideas or conclusions of a text; etc.

Standard CC.3.5.9-10.C

Follow precisely a complex multistep procedure, etc.

**CRAFT & STRUCTURE**

**GRADES 9-10-11-12**

Standard CC.3.5.9-10. D

Define the meaning of symbols, key terms, and other domain specific words.

Standard CC.3.5.9-10.E

Analyze the structure of the relationships among concepts in a text, etc.

Standard CC.3.5.9-10.F

Analyze the author’s purpose in providing an explanation, describing a procedure...and

Analyze the structure of the relationships among concepts in a text.

**INTEGRATE KNOWLEDGE & IDEAS**

**GRADES 9-10**

Standard CC.3.5.9-10.G

**TEXT TYPES AND PURPOSE**

**GRADES 9-10-11-12**

Standard CC.3.6.9-10.A

Write arguments focused on discipline specific content.

Standard CC.3.6.9-10.B

Write informative or explanatory texts, including the narration of technical processes, etc.

**PRODUCTION & DISTRIBUTION OF WRITING**

**GRADES 9-10-11-12**

Standard CC.3.6.9-10.C

Produce clear and coherent writing...appropriate to task, purpose, and audience.

Standard CC.3.6.9-10.D

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.

Standard CC.3.6.11-12.C

Use technology, including the internet, to produce, publish, and update individual or shared writing products.

**NUMBERS AND OPERATIONS**

**Standard 2.1.HS.F.2**

Apply properties of rational and irrational numbers to solve real world or mathematical problems.

**Standard 2.1.HS.F.4**

Use units as a way to understand problems and to guide the solution of multistep problems.

**Standard 2.1.HS.F.5**

Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

**Standard 2.1.HS.F.6**

Extend the knowledge of arithmetic operations and apply to complex numbers.
Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local area.

Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).

**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.

**INTEGRATE KNOWLEDGE & IDEAS**
**GRADES 11-12**
- **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 information from a range of sources into a coherent understanding.

**RANGE OF READING**
**GRADES 9-10-11-12**
- **Standard CC.3.5.10-11-12** By the end of grades 9-10, AND 11-12, read and comprehend technical texts independently and proficiently.

**TEXT TYPES AND PURPOSE**
**GRADES 9-10-11-12**
- **Standard CC.3.5.11-12. A** Cite specific textual evidence, etc.
- **Standard CC.3.5.11-12. B** Write arguments focused on discipline specific content.

---

<table>
<thead>
<tr>
<th>NETWORK DEVICES.</th>
<th>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards)</th>
<th>KEY IDEAS/DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td>700 <strong>NETWORK DEVICES.</strong></td>
<td>1-2-3-4-5-6</td>
<td><strong>GRADES 9-10-11-12</strong></td>
</tr>
<tr>
<td>701</td>
<td>Install, configure and differentiate between common network connectivity devices.</td>
<td></td>
</tr>
<tr>
<td>702</td>
<td>Identify the functions of specialized network devices such as, multilayer switch, content switch, IDS/IPS,</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster</strong></td>
<td><strong>Cite specific textual evidence, etc.</strong></td>
</tr>
<tr>
<td></td>
<td>(Choose Standards)</td>
<td><strong>Standard CC.3.5.9-10 B</strong></td>
</tr>
<tr>
<td></td>
<td>1-2-3-4-5-6</td>
<td><strong>Standard CC.3.5.11-12. B</strong></td>
</tr>
</tbody>
</table>

**NUMBERS AND OPERATIONS**
- **Standard 2.1.HS.F.2**
  - Apply properties of rational and irrational numbers to...
| **load balancer, multifunction network devices, DNS server, bandwidth shaper, proxy server, CSU/DSU.** | **PATHWAYS**  
**INCLUDE:**  
A. Telecommunications Career Pathway  
(Choose Standards)  
1-2-3  
**CAREER CLUSTER 2:**  
Information Technology  
(Choose Standards)  
1-2-3-4-5-6-7-8-9-10  
**Network Systems Career Pathway**  
(Choose Standards)  
1-2-3-4-5  
**Programming and Software Development Career Pathway**  
(Choose Standards)  
1-2-3-4-5-6-7-8-9-10  
Web and Digital Communications Career Pathway  
(Choose Standards)  
1-2-3-4-5-6-7-8-9-10  
**NOTE:**  
Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local area. | **Determine the central ideas or conclusions of a text; etc.**  
Standard CC.3.5.9-10.C  
Standard CC.3.5.11-12.C  
Follow precisely a complex multistep procedure, etc.  
**CRAFT & STRUCTURE**  
**GRADES 9-10-11-12**  
Standard CC.3.5.9-10.D  
Standard CC.3.5.11-12.D  
Determine the meaning of symbols, key terms, and other domain specific words.  
**Standard CC.3.5.9-10.E**  
**Standard CC.3.5.11-12.E**  
Analyze the structure of the relationships among concepts in a text, etc.  
**Standard CC.3.5.9-10.F**  
**Standard CC.3.5.11-12.F**  
Analyze the author’s purpose in providing an explanation, describing a procedure...and  
Analyze the structure of the relationships among concepts in a text.  
**INTEGRATE KNOWLEDGE & IDEAS**  
**GRADES 9-10**  
Standard CC.3.5.9-10.G  
Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  
**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.  
**Standard CC.3.6.9-10.B**  
Standard CC.3.6.11-12.B  
Write informative or explanatory texts, including the narration of technical processes, etc.  
**PRODUCTION & DISTRIBUTION OF WRITING**  
**GRADES 9-10-11-12**  
Standard CC.3.6.9-10.C  
Standard CC.3.6.11-12.C  
Produce clear and coherent writing...appropriate to task, purpose, and audience.  
**Standard CC.3.6.9-10 D**  
**Standard CC.3.6.11-12.D**  
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.  
**Standard CC.3.6.9-10.E**  
**Standard CC.3.6.11-12.E.**  
Use technology, including the internet, to produce, publish, and update individual or shared writing products.  
**RESEARCH**  
**GRADES 9-10-11-12**  
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, solve real world or mathematical problems.  
**Standard 2.1.HS.F.4**  
Use units as a way to understand problems and to guide the solution of multistep problems.  
**Standard 2.1.HS.F.5**  
Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.  
**Standard 2.1.HS.F.6**  
Extend the knowledge of arithmetic operations and apply to complex numbers. |

| Explain the advanced features of a switch such as, PoE, spanning tree, VLAN, trunking, port mirroring, port authentication, etc. | Install a basic wireless network, including client configuration, access point placement and Installation. | Configure appropriate encryption, configure channels and frequencies, set ESSID and beacon, verify installation. |
INTEGRATE KNOWLEDGE & IDEAS
GRADES 11-12
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 information from a range of sources into a coherent understanding.

RANGE OF READING
GRADES 9-10-11-12
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.

TEXT TYPES AND PURPOSE
GRADES 9-10-11-12
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.

RANGE OF WRITING
GRADES 9-10-11-12
Standard CC.3.5.9-10.1 & 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.

NETWORK MANAGEMENT.

801 Explain, compare, and contrast the layers of the TCP/IP and OSI models.

802 Prepare physical and logical network diagrams, baselines, policies, procedures, and configurations and regulations.

803 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.

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.

805 Perform network optimization.

CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster
(Choose Standards)
1-2-3-4-5-6
PATHWAYS INCLUDE:
A. Telecommunications Career Pathway
(Choose Standards)
1-2-3

CAREER CLUSTER 2: Information Technology
(Choose Standards)
1-2-3-4-5-6-7-8-9-10
PATHWAYS INCLUDE:
Information Support and Services Career Pathway
(Choose Standards)

KEY IDEAS/DETAILS
GRADES 9-10-11-12
Standard CC.3.5.9-10. A
Standard CC.3.5.11-12 A
Cite specific textual evidence, etc.
Standard CC.3.5.9-10 B
Standard CC.3.5.11-12. B
Determine the central ideas or conclusions of a text; etc.
Standard CC.3.5.9-10.C
Standard CC.3.5.11-12.C
Follow precisely a complex multistep procedure, etc.

CRAFT & STRUCTURE
GRADES 9-10-11-12
Standard CC.3.5.9-10. D
Standard CC.3.5.11-12.D

TEXT TYPES AND PURPOSE
GRADES 9-10-11-12
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.

RANGE OF WRITING
GRADES 9-10-11-12
Standard CC.3.5.9-10.1 & 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.
<table>
<thead>
<tr>
<th>Network Systems Career Pathway (Choose Standards)</th>
<th>Programming and Software Development Career Pathway (Choose Standards)</th>
<th>Web and Digital Communications Career Pathway (Choose Standards)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2-3-4-5-6-7-8-9-10</td>
<td>1-2-3-4-5-6-7-8-9-10</td>
<td>1-2-3-4-5-6-7-8-9-10</td>
</tr>
</tbody>
</table>

**NOTE:**
Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local area.

| Determine the meaning of symbols, key terms, and other domain specific words.  
**Standard CC.3.5.9-10.E**  
**Standard CC.3.5.11-12.E**  
Analyze the structure of the relationships among concepts in a text, etc.  
**Standard CC.3.5.9-10.F**  
**Standard CC.3.5.11-12.F**  
Analyze the author’s purpose in providing an explanation, describing a procedure...and  
Analyze the structure of the relationships among concepts in a text. |
| Produce clear and coherent writing...appropriate to task, purpose, and audience.  
**Standard CC.3.6.9-10.D**  
**Standard CC.3.6.11-12.D**  
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.  
**Standard CC.3.6.9-10.E**  
**Standard CC.3.6.11-12.E**  
Use technology, including the internet, to produce, publish, and update individual or shared writing products. |
| Extend the knowledge of arithmetic operations and apply to complex numbers. |

**INTEGRATE KNOWLEDGE & IDEAS**

**GRADES 9-10**

| **Standard CC.3.5.9-10.G**  
Translate quantitative or technical information expressed in a text into visual form (e.g. a table or chart).  
**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. |

**INTEGRATE KNOWLEDGE & IDEAS**

**GRADES 11-12**

| **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. |

**INTEGRATE KNOWLEDGE & IDEAS**

**GRADES 11-12**

| **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. |

**RANGE OF WRITING**

| **GRADES 9-10-11-12**  
**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. |

**CONTENT**

**GRADES 9-10**

| **Standard CC.3.5.9-10.I**  
Extend the knowledge of arithmetic operations and apply to complex numbers. |
<table>
<thead>
<tr>
<th>NETWORK TOOLS AND TROUBLESHOOTING.</th>
<th>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards) 1-2-3-4-5-6 PATHWAYS INCLUDE: A. Telecommunications Career Pathway (Choose Standards) 1-2-3</th>
<th>KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.11-12 A Synthesize information from a range of sources into a coherent understanding. RANGE OF READING GRADES 9-10-11-12 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.</th>
<th>TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10.A Standard CC.3.6.11-12.A Write arguments focused on discipline specific content. Standard CC.3.6.9-10.B Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc.</th>
<th>NUMBERS AND OPERATIONS Standard 2.1.HS.F.2 Apply properties of rational and irrational numbers to solve real world or mathematical problems. Standard 2.1.HS.F.4 Use units as a way to understand problems and to guide the solution of multistep problems. Standard 2.1.HS.F.5 Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. Standard 2.1.HS.F.6 Extend the knowledge of arithmetic operations and apply to complex numbers.</th>
</tr>
</thead>
<tbody>
<tr>
<td>900</td>
<td>901 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.</td>
<td>902 Use network scanners such as, packet sniffers, intrusion detection software, Intrusion prevention software, port scanners.</td>
<td>903 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.</td>
<td>904 Implement network troubleshooting methodologies, including Information gathering – identify symptoms and problems, Identify the affected areas of the network.</td>
</tr>
<tr>
<td>901</td>
<td>902</td>
<td>903</td>
<td>904</td>
<td>905 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.</td>
</tr>
<tr>
<td>Web and Digital Communications Career Pathway</td>
<td>Analyze the structure of the relationships among concepts in a text.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Choose Standards) 1-2-3-4-5-6-7-8-9-10</td>
<td><strong>INTEGRATE KNOWLEDGE &amp; IDEAS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GRADES 9-10</strong></td>
<td><strong>Standard CC.3.5.9-10.G</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Translate quantitative or technical information expressed in a text into visual form (e.g., a table or chart).</strong> Standard CC.3.5.9-10.H Assess the reasoning in a text to support the author’s claim for solving a technical problem. <strong>Standard CC.3.5.9-10.I</strong> Compare and contrast findings presented in a text to those from other sources, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>INTEGRATE KNOWLEDGE &amp; IDEAS</strong> <strong>GRADES 11-12</strong></td>
<td><strong>Standard CC.3.5.11-12.G</strong> Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem. <strong>Standard CC.3.5.11-12.H</strong> Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible. <strong>Standard CC.3.5.11-12.I</strong> Synthesize information from a range of sources into a coherent understanding.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>RANGE OF READING</strong> <strong>GRADES 9-10-11-12</strong></td>
<td><strong>Standard CC.3.5.9-10.J</strong> By the end of grades 9-10, AND 11-12, read and comprehend technical texts independently and proficiently.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Standard CC.3.5.11-12.J</strong> Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc. <strong>RANGE OF WRITING</strong> <strong>GRADES 9-10-11-12</strong></td>
<td><strong>Standard CC.3.5.9-10.K</strong> &amp; <strong>Standard CC.3.5.11-12.K</strong> Use technology, including the internet, to produce, publish, and update individual or shared writing products. <strong>RESEARCH</strong> <strong>GRADES 9-10-11-12</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Standard CC.3.6.9-10.E</strong> <strong>Standard CC.3.6.11-12.E</strong> Conduct short and more sustained research to answer a question or solve a problem. <strong>Standard CC.3.6.9-10.F</strong> <strong>Standard CC.3.6.11-12.F</strong> Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation. <strong>Standard CC.3.6.9-10.H</strong> <strong>Standard CC.3.6.11-12.H</strong> Draw evidence from informational texts to support analysis, reflection, and research. <strong>RANGE OF READING</strong> <strong>GRADES 9-10-11-12</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Standard CC.3.6.9-10.I</strong> &amp; <strong>Standard CC.3.6.11-12.I.</strong> Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.</td>
<td><strong>Standard CC.3.6.9-10.J</strong> &amp; <strong>Standard CC.3.6.11-12.J</strong> Significantly for a specific purpose and audience.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAREER CLUSTER 1: Arts, AV Technology and Communications Career Cluster (Choose Standards) 1-2-3-4-5-6 PATHWAYS INCLUDE: A. Telecommunications Career Pathway (Choose Standards) 1-2-3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAREER CLUSTER 2: Information Technology (Choose Standards) 1-2-3-4-5-6-7-8-9-10 PATHWAYS INCLUDE: Information Support and Services Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10 Network Systems Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10 Programming and Software Development Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10 Web and Digital Communications Career Pathway (Choose Standards) 1-2-3-4-5-6-7-8-9-10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KEY IDEAS/DETAILS GRADES 9-10-11-12 Standard CC.3.5.9-10. A Describe the basic forensic concepts such as: incident response, chain of custody, evidence preservation, and documentation. Standard CC.3.5.11-12 A Cite specific textual evidence, etc. Standard CC.3.5.9-10. B Differentiate the principals of user authentication such as, PKI, Kerberos, AAA: RADIUS, TACACS+, MAC filtering, IP filtering, tunneling and encryption. Standard CC.3.5.9-10. C Follow precisely a complex multistep procedure, etc. CRAFT &amp; STRUCTURE GRADES 9-10-11-12 Standard CC.3.5.9-10. D Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.11-12. D The different types of firewalls and the role of each in network access control: 802.1x, CHAP, MS, PKI, Kerberos, AAA: RADIUS, TACACS+. Standard CC.3.5.11-12. C Differentiate the principals of user authentication such as, PKI, Kerberos, AAA: RADIUS, TACACS+, MAC filtering, IP filtering, tunneling and encryption. Standard CC.3.5.11-12. B Determine the central ideas or conclusions of a text; etc. Standard CC.3.5.9-10. C Follow precisely a complex multistep procedure, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEXT TYPES AND PURPOSE GRADES 9-10-11-12 Standard CC.3.6.9-10. A Write informative or explanatory texts, including the narration of technical processes, etc. Standard CC.3.6.11-12. A Choose a level of accuracy appropriate to limitations on reporting quantities. Standard CC.3.6.11-12.B Write informative or explanatory texts, including the narration of technical processes, etc. Standard CC.3.6.9-10 D 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. Standard CC.3.6.9-10 C Produce clear and coherent writing appropriate to task, purpose, and audience. Standard CC.3.6.11-12 C Produce clear and coherent writing appropriate to task, purpose, and audience. Standard CC.3.6.9-10 B Use units as a way to understand problems and to guide the solution of multistep problems. Standard CC.3.6.11-12.B Use units as a way to understand problems and to guide the solution of multistep problems. Standard CC.3.6.9-10 A Write arguments focused on discipline specific content. Standard CC.3.6.11-12.A Write arguments focused on discipline specific content.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NOTE: Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local area.
### 1101 COMMUNICATION AND PROFESSIONALISM

<table>
<thead>
<tr>
<th>Standard</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC.3.5.9-10.1</td>
<td>Assess the reasoning in a text to support the author’s claim for solving a technical problem.</td>
</tr>
<tr>
<td>CC.3.5.11-12.H</td>
<td>Compare and contrast findings presented in a text to those from other sources, etc.</td>
</tr>
<tr>
<td>CC.3.5.11-12.I</td>
<td>Integrate and evaluate multiple sources of information presented in diverse formats...to solve a problem.</td>
</tr>
<tr>
<td>CC.3.5.11-12.J</td>
<td>Evaluate the hypotheses, data, analysis, and conclusions in a technical text, verifying the data when possible.</td>
</tr>
<tr>
<td>CC.3.5.11-12.K</td>
<td>Synthesize information from a range of sources into a coherent understanding.</td>
</tr>
</tbody>
</table>

### Conduct short and more sustained research to answer a question or solve a problem.

- CC.3.6.9-10.G
- CC.3.6.11-12.G

Gather relevant information from multiple authoritative print and digital sources, following a standard format for citation.

- CC.3.6.9-10.H
- CC.3.6.11-12.H

Draw evidence from informational texts to support analysis, reflection, and research.

### RANGE OF WRITING

- CC.3.5.9-10.1
- CC.3.5.11-12.1

Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc.

### KEY IDEAS/DETAILS

**GRADES 9-10-11-12**

- CC.3.5.9-10.1
- CC.3.5.11-12.1

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

### CAREER CLUSTER 1:

**Arts, AV Technology and Communications Career Cluster**

1. Demonstrate the use of effective communication with customers such as: proper etiquette, active listening, cultural sensitivity.
2. Demonstrate techniques to solve customer problems.
3. Implement and adhere to acceptable use policies.
4. Demonstrate how to maintain customer confidentiality.

### PATHWAYS

- **A. Telecommunications Career Pathway**
  - Choose Standards 1-2-3-4-5-6

### TEXT TYPES AND PURPOSE

**GRADES 9-10-11-12**

- CC.3.5.9-10.1
- CC.3.5.11-12.1

Write argumentative texts focused on discipline specific content.

- CC.3.5.9-10.2
- CC.3.5.11-12.B

Write informative or explanatory texts, including the narrative of technical processes, etc.

### NUMBERS AND OPERATIONS

- **Standard 2.1.HS.F.2**

Apply properties of rational and irrational numbers to solve real world or mathematical problems.

- **Standard 2.1.HS.F.4**

Use units as a way to understand problems and to guide the solution of multistep problems.
CAREER CLUSTER 2: Information Technology
(Choose Standards) 1-2-3-4-5-6-7-8-9-10
PATHWAYS INCLUDE:
Information Support and Services Career Pathway
(Choose Standards) 1-2-3-4-5-6-7-8-9-10
Network Systems Career Pathway
(Choose Standards) 1-2-3-4-5
Programming and Software Development Career Pathway
(Choose Standards) 1-2-3-4-5-6-7-8-9-10
Web and Digital Communications Career Pathway
(Choose Standards) 1-2-3-4-5-6-7-8-9-10
NOTE:
Refer to the Common Career Technical Core Standards Booklet if you wish to add more Pathways, for your local area.

CRAFT & STRUCTURE
GRADES 9-10-11-12
Standard CC.3.5.9-10. D
Standard CC.3.5.11-12.D
Determine the meaning of symbols, key terms, and other domain specific words.
Standard CC.3.5.9-10.E
Standard CC.3.5.11-12.E
Analyze the structure of the relationships among concepts in a text, etc.
Standard CC.3.5.9-10.F
Standard CC.3.5.11-12.F
Analyze the author’s purpose in providing an explanation, describing a procedure, and analyzing the structure of the relationships among concepts in a text.

INTEGRATE KNOWLEDGE & IDEAS
GRADES 9-10
Standard CC.3.5.9-10.G
Translate quantitative or technical information expressed in a text into a visual form (e.g. a table or chart).
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.

INTEGRATE KNOWLEDGE & IDEAS
GRADES 11-12
Standard CC.3.5.11-12. G

PRODUCTION & DISTRIBUTION OF WRITING
GRADES 9-10-11-12
Standard CC.3.6.9-10.C
Standard CC.3.6.11-12.C
Produce clear and coherent writing appropriate to task, purpose, and audience.
Standard CC.3.6.9-10.D
Standard CC.3.6.11-12.D
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.
Standard CC.3.6.9-10.E
Standard CC.3.6.11-12.E
Use technology, including the internet, to produce, publish, and update individual or shared writing products.

RESEARCH
GRADES 9-10-11-12
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.

Standard 2.1.HS.F.5
Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.
Standard 2.1.HS.F.6
Extend the knowledge of arithmetic operations and apply to complex numbers.
| 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 information from a range of sources into a coherent understanding. |
| Draw evidence from informational texts to support analysis, reflection, and research. **RANGE OF WRITING** **GRADES 9-10-11-12** **Standard CC.3.5.9-10.J & Standard CC.3.5.11-12.J** Write routinely over extended time frames and shorter time frames for a range of tasks, purposes and audiences...etc. |

---

RANGE OF READING GRADES 9-10-11-12

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.