

## Business and Finance Technology Education Frameworks Computer Information Systems

### Content Standard 1: Impact on Society

Develop a mastery of technology tools required to enhance academic, business and personal performance for success.

CT Computer Information Systems Frameworks Performance Standards 6-12	CT CCSS English Language Arts 6-12
<p><b>1.0 Access the impact of information technology in a global society.</b></p> <p><b>Beginning</b></p> <ul style="list-style-type: none"> <li>• Identify uses of information technology that meets human needs and affects quality of life in the home, school, and work.</li> <li>• Use information technology skills for lifelong learning.</li> </ul> <p><b>Intermediate</b></p> <ul style="list-style-type: none"> <li>• Describe the impact of technology on the knowledge and skills needed for success in the workplace.</li> <li>• Evaluate how information technology transforms business processes and relationships.</li> </ul> <p><b>Advanced</b></p> <ul style="list-style-type: none"> <li>• Analyze how developments in information technology affect the supply/demand characteristics of the global job market.</li> <li>• Illustrate how information technology changes organization structures.</li> </ul>	<p><b>11-12.RST.9.</b> Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p><b>9-10.WHST.6.</b> Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology's capacity to link to other information and to display information flexibly and dynamically.</p> <p><b>11-12-RST.6.</b> Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved.</p> <p><b>11-12.RH.7.</b> Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.</p>

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**Content Standard 1: Impact on Society**

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	<p><b>11-12.RST.5.</b> Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas.</p> <p><b>11-12.WHST.4</b> Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>

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### Content Standard 2: Hardware

Describe current and emerging hardware; configure, install and upgrade; diagnose and repair.

CT Computer Information Systems Frameworks Performance Standards 6-12	CT CCSS English Language Arts 6-12
<p><b>2.0 Identify hardware and emerging hardware components appropriate for specific tasks.</b></p> <p><b>Beginning</b></p> <ul style="list-style-type: none"> <li>• Identify the purpose and care of all types of computers and components.</li> <li>• Identify, connect, and explain the operation of peripheral devices.</li> </ul> <p><b>Intermediate</b></p> <ul style="list-style-type: none"> <li>• Explain and evaluate the purpose and care of computer components including capabilities for specific tasks.</li> <li>• Evaluate hardware device options including vendors and warranties to make sound consumer decisions.</li> <li>• Compare and contract various storage options (e.g., local, removable, remote).</li> <li>• Identify examples of emerging hardware technologies.</li> <li>• Obtain hardware certification(s) needed for a chosen career path.</li> </ul> <p><b>Advanced</b></p> <ul style="list-style-type: none"> <li>• Evaluate and recommend hardware to solve specific problems.</li> <li>• Analyze cost benefits and life cycle of hardware.</li> </ul>	<p><b>9-10.RST.4.</b> Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 9–10 texts and topics</i>.</p> <p><b>11-12.RST.4.</b> Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 11–12 texts and topics</i>.</p>

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### Content Standard 3: Operating Systems and Utilities Identify and evaluate various types of operating systems and utilities

CT Computer Systems Information Performance Standards 6-12	CT CCSS English Language Arts 6-12
<b>3.0 Describe various types of operating systems and utilities.</b>	
<b>Beginning</b>	<p><b>9-10.RST.4.</b> Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 9–10 texts and topics</i>.</p> <p><b>11-12.RST.4.</b> Use technology, including the Internet, to produce, publish and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically.</p> <p><b>9-10.RST.3.</b> Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.</p> <p><b>11-12.RST.3.</b> Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p>
<ul style="list-style-type: none"> <li>• Navigate operating systems.</li> <li>• Manage folders and files.</li> <li>• Identify and use appropriate help resources (e.g., help tasks, on-line help, manuals) to install, configure, upgrade, diagnose, and repair operating systems and utilities.</li> </ul>	
<b>Intermediate</b>	
<ul style="list-style-type: none"> <li>• Compare and contrast the functions, features, and limitations of different operating systems and utilities (e.g., open source, mobile, and proprietary operating systems).</li> <li>• Install and customize operating systems and utilities.</li> <li>• Obtain operating system certifications(s) needed for chosen career path.</li> </ul>	
<b>Advanced</b>	
<ul style="list-style-type: none"> <li>• Install and customize operating systems and utilities.</li> <li>• Diagnose and repair installation and operational problems of operating systems and utilities.</li> </ul>	

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**Content Standard 3: Operating Systems and Utilities**  
**Identify and evaluate various types of operating systems and utilities**

<b>CT Computer Systems Information Performance Standards 6-12</b>	<b>CT CCSS English Language Arts 6-12</b>
	<p><b>9-10.RH.9.</b> Compare and contrast treatments of the same topic in several primary and secondary sources.</p> <p><b>11-12.RH.9.</b> Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.</p> <p><b>9-10.RH.6.</b> Compare the point of view of two or more authors for how they treat the same or similar topics, including which details they include and emphasize in their respective accounts.</p>

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**Content Standard 4: Input Technologies  
Develop proper input techniques**

CT Computer Information Systems Frameworks Performance Standards 6-12	CT CCSS English Language Arts 6-12
<b>4.0 Use various input technologies to enter and manipulate information appropriately.</b>	<p><b>9-10.RST.3</b> Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.</p> <p><b>11-12.RST.3</b> Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p><b>9-10.WHST.2.a.</b> Introduce a topic and organize ideas, concepts, and information to make important connections and distinctions; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p> <p><b>11-12.WHST.2.a.</b> Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension.</p>
<b>Beginning</b>	
<ul style="list-style-type: none"> <li>Use input technology skills to enter and manipulate text and data.</li> </ul>	
<b>Intermediate</b>	
<ul style="list-style-type: none"> <li>Develop proper input techniques (e.g., 10-key touch pad, scanning, digital cameras, and recognition of developing technologies, the use of touch screen mouse or stylus, speech recognitions, student response systems, digital inking, and any new emerging technology).</li> </ul>	
<ul style="list-style-type: none"> <li>Use a variety of input technologies to maximize productivity.</li> </ul>	
<ul style="list-style-type: none"> <li>Compose and integrate documents using a variety of input techniques.</li> </ul>	
<b>Advanced</b>	
<b>Beginning</b>	
<ul style="list-style-type: none"> <li>Use input technology skills to enter and manipulate text and data.</li> </ul>	
<b>Intermediate</b>	
<ul style="list-style-type: none"> <li>Develop proper input techniques (e.g., 10-key touch pad, scanning, digital cameras, and recognition of developing technologies, the use of touch screen mouse or stylus, speech recognitions, student response systems, digital inking, and any new emerging technology).</li> </ul>	
<ul style="list-style-type: none"> <li>Use a variety of input technologies to maximize productivity.</li> </ul>	
<ul style="list-style-type: none"> <li>Compose and integrate documents using a variety of input techniques.</li> </ul>	
<b>Advanced</b>	
<ul style="list-style-type: none"> <li>Explore translation and digital language input tools and resources for effective global communication.</li> </ul>	

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**Content Standard 4: Input Technologies  
Develop proper input techniques**

<b>CT Computer Information Systems Frameworks Performance Standards 6-12</b>	<b>CT CCSS English Language Arts 6-12</b>
	<p><b>9-10.WHST.6.</b> Use technology, including the Internet, to produce, publish, and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically.</p> <p><b>11-12.WHST.6.</b> Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information.</p> <p><b>9-10.SL.6.</b> Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grades 9–10 Language standards 1 and 3 on pages 54 for specific expectations.)</p> <p><b>11-12.SL.6.</b> Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grades 11–12 Language standards 1 and 3 on pages 54 for specific expectations.)</p>

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### Content Standard 5: Productivity Software Use emerging application software appropriate for special tasks

CT Computer Information Systems Performance Standards 6-12	CT CCSS English Language Arts 6-12
<p><b>5.0 Identify, evaluate, select, install, use, upgrade and customize productivity software; diagnose and solve software problems.</b></p> <p><b>Beginning</b></p> <ul style="list-style-type: none"> <li>• Create and present multi-media using word processing and presentation software.</li> <li>• Create projects collaboratively.</li> </ul> <p><b>Intermediate</b></p> <ul style="list-style-type: none"> <li>• Use word processing, desktop publishing, database, spreadsheet, presentation and multi-media software to improve academic achievement across the curriculum.</li> <li>• Select and apply the appropriate productivity software to complete tasks.</li> <li>• Use help features and reference materials to learn software and solve problems.</li> <li>• Design, create and publish pages incorporating multi-media using various online template resources.</li> <li>• Identify terminology and structure for database development to sort and extract information.</li> <li>• Create and utilize multi-media delivery tools (e.g., blogs, podcasting, webcasting).</li> <li>• Obtain software industry certification(s) needed for a chosen career path.</li> <li>• Design, develop and deliver advance web content and applications using web design programs.</li> </ul>	<p><b>9-10.RST.4.</b> Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 9–10 texts and topics</i>.</p> <p><b>11-12.RST.4.</b> Use technology, including the Internet, to produce, publish and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically.</p> <p><b>9-10.RST.3.</b> Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.</p> <p><b>11-12.RST.3.</b> Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p><b>9-10.RH.4.</b> Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social studies.</p>

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**Content Standard 5: Productivity Software  
Use emerging application software appropriate for special tasks**

CT Computer Information Systems Performance Standards 6-12	CT CCSS English Language Arts 6-12
<p><b>Advanced</b></p> <ul style="list-style-type: none"> <li>• Use advance word processing, desktop publishing, database, spreadsheet, presentation, and multi-media software features for professional applications.</li> <li>• Obtain software industry certification(s) needed for a chosen career path.</li> <li>• Analyze cost benefit and life cycle of software</li> <li>• Design, develop and deliver advance web content and applications using web design programs.</li> <li>• Plan and develop a database schema that explores industry standards for cross-platform interface development.</li> </ul>	<p><b>11-12.RH.9.</b> Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.</p>

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**Content Standard 6: Programming and Application Development  
Design, Develop, Test and Implement Programs**

CT Computer Information Systems Performance Standards 6-12	CT CCSS English Language Arts 6-12
<b>6.0 Demonstrate the ability to code.</b>	<p><b>9-10.RST.3</b> Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.</p> <p><b>11-12.RST.3</b> Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.</p> <p><b>11-12.RST.7.</b> Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem.</p> <p><b>9-10.WHST.4.</b> Produce clear and coherent writing in which the development, organization and style are appropriate to task, purpose, and audience.</p> <p><b>11-12.WHST.4</b> Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.</p>
<b>Beginning</b>	
<ul style="list-style-type: none"> <li>Identify and explain programming structures.</li> </ul>	
<b>Intermediate</b>	
<ul style="list-style-type: none"> <li>Choose the appropriate language or application development tool for specific tasks.</li> </ul>	
<ul style="list-style-type: none"> <li>Apply design principles to programming tasks.</li> </ul>	
<ul style="list-style-type: none"> <li>Test, debug, and document code.</li> </ul>	
<b>Advanced</b>	
<ul style="list-style-type: none"> <li>Maintain and reengineer existing code.</li> </ul>	
<ul style="list-style-type: none"> <li>Create a project to solve a business problem integrating mobile platforms.</li> </ul>	
<ul style="list-style-type: none"> <li>Obtain programming industry certification(s) needed for a chosen career path.</li> </ul>	

## Business and Finance Technology Education Frameworks Computer Information Systems

### Content Standard 7: Networking Infrastructure and Security Develop Skills for Networking and Implement Programs

CT Computer Information Systems Performance Standards 6-12	CT CCSS English Language Arts 6-12
<p><b>7.0 Develop skills to design, deploy and administer networking and security procedures for Information Technology.</b></p> <p><b>Beginning - Strand 1</b></p> <ul style="list-style-type: none"> <li>Identify and use basic networking resources.</li> </ul> <p><b>Intermediate – Strand 1</b></p> <ul style="list-style-type: none"> <li>Identify network devices, including connectivity hardware, and describe their functions.</li> <li>Distinguish among network environments (e.g., peer-to-peer, client server, thin client, n-tier, INTERNETWORKS, intranets, extranets).</li> <li>Compare and contrast the OSI model with protocols (e.g., TCP/IP, IPX/SPX). Apply path determination, routing, and addressing schemes to administer networks.</li> <li>Install and configure routers to simulate LAN/WAN environment.</li> </ul> <p><b>Advanced – Strand 1</b></p> <ul style="list-style-type: none"> <li>Design hardware and software network security solutions (e.g., VPN, SSL and Firewall).</li> <li>Obtain the networking industry certification needed in a chosen career path.</li> </ul> <p><b>Beginning - Strand 2</b></p> <ul style="list-style-type: none"> <li>Adhere to privacy, safety and security policies and legislation.</li> <li>Identify and discuss privacy issues within an organization.</li> </ul> <p><b>Intermediate – Strand 2</b></p> <ul style="list-style-type: none"> <li>Implement the procedures used to recover information from failures and security breaches.</li> <li>Implement controls to prevent loss of integrity of data and other information resources.</li> </ul>	<p><b>9-10.RST.4.</b> Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to <i>grades 9–10 texts and topics</i>.</p> <p><b>11-12.RST.4.</b> Use technology, including the Internet, to produce, publish and update individual or shared writing products, taking advantage of technology’s capacity to link to other information and to display information flexibly and dynamically.</p> <p><b>11-12.RST.9.</b> Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible.</p> <p><b>9-10.RST.9.</b> Compare and contrast findings presented in a text to those from other sources (including their own experiments), noting when the findings support or contradict previous explanations or accounts.</p> <p><b>11-12.RH.8.</b> Evaluate an author’s premises, claims, and evidence by corroborating or challenging them with other information.</p>

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**Content Standard 7: Networking Infrastructure and Security  
Develop Skills for Networking and Security**

CT Computer Information Systems Performance Standards 6-12	CT CCSS English Language Arts 6-12
<b>Advanced – Strand 2</b>	<b>9-10.RH.6.</b>
<ul style="list-style-type: none"> <li>• Design and implement a security plan for an information system.</li> </ul>	Compare the point of view of two or more authors for how they treat the same or similar topics, including which details they include and emphasize in their respective accounts.
<ul style="list-style-type: none"> <li>• Develop and implement disaster prevention and recovery policies and procedures.</li> </ul>	