Arkansas CTE

Computer Technology: Introduction: Grades 7, 8

Adopted 2007

Computing Fundamentals

1.1 Define terminology

1. Prepare a list of terms with definitions 1.1.1

1.2 Discuss types of computers, how they process information and how individual computers interact with other computer systems and devices

1. Compare categories of computers based on their size, power and purpose 1.2.1
2. Identify the role of the CPU including speed and how it is measured 1.2.2
3. Explain the difference between memory and storage including RAM, ROM and other storage devices 1.2.3
4. Illustrate the binary number system 1.2.4
5. Identify how computers share data, files, hardware and software (networking) 1.2.5

1.3 Describe the function of computer hardware components

1. Identify input, output and storage devices 1.3.1
2. Locate the motherboard with the CPU, memory, power supply, expansion clots, ports, and drives 1.3.2
3. Compare types of storage devices and their uses 1.3.3
4. Identify how hardware devices are installed on a computer system 1.3.4

1.4 Discuss the factors that go into an individual or organizational decision on how to purchase computer equipment

1. Describe and illustrate the decision-making process involved in purchasing a computer 1.4.1
2. Identify the criteria for selecting a personal computer 1.4.2
3. Identify factors that affect computer performance 1.4.3
4. Identify hardware and software considerations when purchasing a computer including warranties and support agreements 1.4.4

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Describe how to maintain computer equipment and solve common problems related to computer hardware

1. Identify how to protect computer hardware from theft or damage 1.5.1
2. Demonstrate routine maintenance along with troubleshooting techniques 1.5.2

1.6 Discuss how hardware and software work together to perform computing tasks and how software is developed and upgraded

1. Identify how hardware and software interact 1.6.1
2. Identify issues relating to software upgrades, such as pros and cons and methods to upgrade 1.6.2

1.7 Discuss different types of software, general concepts related to software categories, and the tasks to which each type of software is most suited or not suited

1. Identify fundamental concepts and common uses relating to word processing, spreadsheets, databases, graphics and multimedia, and presentation software 1.7.1
2. Identify the types and purposes of different utility programs 1.7.2
3. Identify other types of software 1.7.3
4. Identify how to select the appropriate application(s) for a particular purpose, and problems that can arise if the wrong software product is used for a particular purpose 1.7.4

1.8 Explain what an operating system is and how it works, and solve common problems related to operating systems

1. State the purpose of an operating system 1.8.1
2. Describe the difference between an operating system and application software 1.8.2
3. Cite examples of different operating systems including DOS, Windows, and Macintosh 1.8.3

1.9 Discuss the operating system desktop, files, and disks

1. Identify elements of the operating system desktop 1.9.1
2. Manipulate operating system such as minimizing the desktop window 1.9.2
3. Shut down, logoff and restart the computer 1.9.3
4. Use the operating system start menu and taskbar 1.9.4
5. Manipulate desktop folders and icons 1.9.5
6. Manage files using the operating systems file manager 1.9.6
7. Identify precautions one should take when manipulating files including using standardized naming conventions 1.9.7
8. Solve common problems associated with working with files 1.9.8

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1.10 Demonstrate how to change system settings, install and remove software

1. Display control panels 1.10.1

2. Identify different control panel settings 1.10.2
3. Change simple control panel settings such as date and time settings 1.10.3
4. Display and update a list of installed printers 1.10.4
5. Identify precautions regarding changing system settings 1.10.5
6. Install software including updates from online sources 1.10.6
7. Identify common problems associated with installing and running applications 1.10.7

Key Applications

2.1 Define terminology

1. Prepare a list of terms with definitions 2.1.1

2.2 Describe the state/exit procedures of an operating system application and the utilization of online help sources

1. Start and exit an operating system application 2.2.1
2. Use various forms of automated help 2.2.2

2.3 Discuss common on screen elements of operating system applications, changing application settings and managing files within an application

1. Identify on-screen elements common to operating system applications (e.g. menus, toolbars, and document windows) 2.3.1
2. Create and save a document 2.3.2

2.4 Identify common editing and formatting functions

1. Proofread and edit various documents (insert, cut, copy, move, undo, redo, repeat, Find/Replace, spell check, insert/modify pictures) 2.4.1

2.5 Identify common printing functions

1. Format a document for printing 2.5.1
2. Preview a file before printing 2.5.2
3. Print files, specifying common print options 2.5.3
4. Manage printing and print jobs 2.5.4
5. Identify and solve common problems associated with printing 2.5.5

2.6 Discuss formatting text and documents including the ability to use automatic formatting tools

1. Identify on-screen formatting information (select text, line/paragraph spacing, indent, create and modify, bulleted/numbered list, symbols, special characters, outline, including breaks, paragraph markers, date/time, document comments, ruler, tabs, page break, section break, page numbers, headers/footers, footnotes/endnotes, borders, shading, styles, format painter, track changes, document statistics) 2.6.1

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2. Format text and documents using the automatic formatting tools 2.6.2

2.7 Explain inserting, editing, and formatting tables in a document

1. Create a table 2.7.1
2. Insert, edit, and format tables in a document 2.7.2
3. Sort data in a table 2.7.3

2.8 Discuss modifying worksheet data and formatting data in a spreadsheet

1. Apply basic spreadsheet features and functions to produce a spreadsheet 2.8.1
2. Create and save a spreadsheet 2.8.2
3. Retrieve, edit, format, and print a spreadsheet 2.8.3
4. Create and modify arithmetic formulas 2.8.4
5. Use common function formulas (e.g. SUM, AUTOSUM, AVERAGE, and COUNT) 2.8.5
6. Identify common errors made when using formulas and functions 2.8.6
7. Create a chart from worksheet data 2.8.7
8. Apply table autoformat 2.8.8
9. Demonstrate an understanding between absolute and relative formulas 2.8.9

2.9 Illustrate creating and formatting simple presentations

1. Identify effective design principles for simple presentations 2.9.1
2. Create and format a simple presentation 2.9.2

2.10 Discuss managing slides, including: creating/inserting a new slide with a specified format; deleting a slide; and duplicating a slide

1. Insert and delete a slide 2.10.1
2. Change slide view 2.10.2
3. Change slide layout 2.10.3
4. Modify a slide background 2.10.4
5. Apply transitions to slides 2.10.5
6. Print presentation using various output elements (speaker's notes, handouts, etc.) 2.10.6
7. Present presentation to peers 2.10.7

2.11 Explain databases

1. Apply basic database features to produce a simple record 2.11.1
2. Create and save a database file 2.11.2

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Define terminology

1. Prepare a list of terms with definitions 3.1.1

3.2 Discuss network fundamentals and the benefits and risks of network computing

1. Describe a network 3.2.1
2. List and describe the types of networks 3.2.2
3. List the benefits and risks of network computing 3.2.3

3.3 Describe the relationship between computer networks, other computer networks (like the telephone network) and the Internet

1. List and describe communications media 3.3.1
2. List and describe network transmission hardware 3.3.2

3.4 Discuss how electronic mail works

1. Demonstrate how to send and receive an e-mail 3.4.1
2. Demonstrate how to manage e-mail (reply, forward, save, delete) 3.4.2
3. List the procedures for the secure use of electronic mail 3.4.3

3.5 Discuss the appropriate use of e-mail and e-mail netiquette

1. Create a professional and effective electronic communication 3.5.1

3.6 Discuss the different types of information sources on the Internet

1. List types of Internet resources 3.6.1
2. Evaluate Web sites 3.6.2

3.7 Explain how to search for information online

1. Demonstrate the use of a Web browsing application 3.7.1
2. Label the parts of the browser window 3.7.2
3. Use several search engines to find information 3.7.3
4. Search for information using various search techniques 3.7.4
5. Save, copy, and print text, Web pages, and images from the Internet 3.7.5

3.8 Discuss how computers are used in different areas of work, school, and home

1. List common uses of the Internet 3.8.1

3.9 Discuss the risks of using computer hardware and software online

1. Cite ways you can prevent data loss 3.9.1
2. Identify types of computer crimes 3.9.2
3. Identify computer viruses 3.9.3

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J Discuss how to use computers and the Internet safely, legally and responsibly

1. Describe ways to protect privacy and personal security online 3.10.1

2. Identify legal and ethical issues pertaining to the use of technology 3.10.2
3. Describe responsibilities of technology users 3.10.3