

Discovering Computers: Introducing a World of Technology ©2014

Chapter One: Digital Literacy

A Guide to this Instructor's Manual:

We have designed this Instructor's Manual to supplement and enhance your teaching experience through classroom activities and a cohesive chapter summary.

This document is organized chronologically, using the same heading in **red** that you see in the textbook. Under each heading you will find (in order): Lecture Notes that summarize the section, Figures and Boxes found in the section, if any, Teacher Tips, Classroom Activities, and Lab Activities. Pay special attention to teaching tips, and activities geared towards quizzing your students, enhancing their critical thinking skills, and encouraging experimentation within the software.

In addition to this Instructor's Manual, our Instructor's Resources also contain PowerPoint Presentations, Test Banks, and other supplements to aid in your teaching experience.

For your students:

Our latest online feature, CourseCasts, is a library of weekly podcasts designed to keep your students up to date with the latest in technology news. Direct your students to <http://coursecasts.course.com>, where they can download the most recent CourseCast onto their mp3 player. Ken Baldauf, host of CourseCasts, is a faculty member of the Florida State University Computer Science Department where he is responsible for teaching technology classes to thousands of FSU students each year. Ken is an expert in the latest technology and sorts through and aggregates the most pertinent news and information for CourseCasts so your students can spend their time enjoying technology, rather than trying to figure it out. Open or close your lecture with a discussion based on the latest CourseCast.

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Chapter Objectives

Students will have mastered the material in Chapter One when they can:

- Differentiate among laptops, tablets, desktops, and servers
- Describe the purpose and uses of smartphones, digital cameras, portable media players, e-book readers, and game devices
- Describe the relationship between data and information
- Briefly explain various input options (keyboards, pointing devices, voice and video input, and scanners), output options (printers, displays, and speakers), and storage devices (hard disks, solid-state drives, USB flash drives, memory cards, optical discs, and cloud storage)
- Differentiate the Internet from the web, and describe the relationship between the web, webpages, websites, and web servers
- Explain the purpose of a browser, a search engine, and an online social network
- Briefly describe digital security risks associated with viruses and other malware, privacy, your health, and the environment
- Differentiate between an operating system and applications
- Differentiate between wired and wireless network technologies, and identify reasons individuals and businesses use networks
- Discuss how society uses technology in education, retail, finance, entertainment, health care, travel, government, science, publishing, and manufacturing
- Identify technology used by home users, small office/home office users, mobile users, power users, and enterprise users

2: A World of Technology

LECTURE NOTES

- Discuss the role of computers in communication and in everyday life
- Use Figure 1-1 to define digital literacy

FIGURES and TABLES: Figure — 1-1

TEACHER TIP

As a way of explaining the term digital literacy or computer literacy, invoke this quotation from Dan Bricklin, creator of VisiCalc (the first successful spreadsheet program). He emphasizes that digital literacy implies a general knowledge of computers. “What does it mean to be computer literate? It does not mean knowing how to use a particular program, it means knowing how to use a computer. Car literate doesn’t mean knowing how to drive the particular car you learned on, it means being able to get into any car on any road and drive.”

CLASSROOM ACTIVITIES

1. Assign a Project: The place of computers in today’s schools can be an interesting discussion topic. Advocates argue that computers add interest, reinforce skills, and even improve behavior. Critics claim that computers promote superficial thinking, lead to shortened attention spans, and even damage vision and posture. Consider having students debate the merits of computer use in schools. Students can find many works, such as Lynne Schrum and Barbara Levin’s *Leading 21st-Century Schools: Harnessing Technology for Engagement and Achievement*, to support the inclusion of computers. Books such as Jane Healy’s *Failure to Connect: How Computers Affect Our Children’s Minds and What We Can Do About It* and Mark Bauerlein’s *The Dumbest Generation: How the Digital Age Stupefies Young Americans and Jeopardizes Our Future*, present a less optimistic view of computer use in schools.

2. Assign a Project: News about technology — both for good and for worse — is reported daily. Consider setting up a blog on which students could post technology-related articles for class discussion. Some popular technology magazines offer special rates for students and instructors. Technology can be a fascinating area of study. For example, biophysicists recently have experimented with using computer technology to treat visual impairments — implanting a computer chip in the eye or using a digital camera attached to a small computer that stimulates electrodes in the visual cortex. Have students do an extra-credit project on innovative uses of technology.

3. Quick Quiz:

1) What does digital literacy involve? (Answer: It involves having a current knowledge and understanding of computers, mobile devices, the Internet, and related technologies.)

4. Critical Thinking: “To err is human, but to really foul things up requires a computer.” This anonymous quote, from a 1982 BBC radio broadcast, reflects the way many people once felt about computers. In 1982, few people owned a personal computer, and only a few more had much confidence in them. Since that time, however, over a billion personal computers have been purchased. Today, the majority of Americans owns a computer or mobile device. Even people who do not own their own computers often can access them through work, schools, libraries, and community centers. Has the increasingly widespread availability and use of computers changed people’s feelings about them? If so, how? Are people today more optimistic about the impact of computers than people were a generation ago? Why?

4: Computers

LECTURE NOTES

- Define computer
- Distinguish between input and output
- Define hardware
- Define personal computer (PC)
- Define mobile computer
- Define user
- Use Figure 1-2 to define laptop or notebook computer
- Use Figure 1-3 to define tablet, including the slate style of tablet
- Use Figure 1-4a and 1-4b to define desktop, including tower-style desktops and all-in-one desktops
- Use Figure 1-5 to define server

FIGURES and TABLES: Figures — 1-2, 1-3, 1-4a, 1-4b, 1-5

BOXES

1. BTW: *Digital-Only Content*. Encourage students to explore additional, digital-only content related to the text.
2. BTW: *Desktop*. Offer an explanation of the term desktop on desktop computers, tablets, and laptops and remind students that additional information is available on this subject.

3. BTW: *Online*. Provide a definition of the word, online, and remind students that additional information is available on this subject.
4. Consider This: *If the slate tablet has no keyboard, how do you type on it?* Discuss the on-screen keyboard with students, along with the physical keyboard that attaches to or wirelessly communicates with the tablet.
5. Consider This: *Which type of computer — laptop, tablet, or desktop — is best?* Challenge students to consider the circumstances under which each of these types of computers would be well suited to that situation.
6. How To 1-1: *Interact with a Touch Screen*. Review the descriptions and common uses of each of the touch screen gestures in the table.

CLASSROOM ACTIVITIES

1. Assign a Project: Computers have a singularly ubiquitous (being or appearing everywhere at the same time) presence. Watching television, driving a car, using a credit card, and even ordering fast food, not to mention typing a term paper on a laptop, all involve computers. For one day, have students make a list of each computer they encounter (be careful not to limit themselves just to the computers they see). How is the computer used? Why? How was the same task that the computer performs done before computers?
2. Class Discussion: Have students describe personal computers with which they are familiar. How was the computer used? What factors influence the choice of a personal computer? In addition to such obvious considerations as processing speed and amount of memory, less apparent factors, such as available software or even the computer's "footprint" (the amount of space it occupies on the work surface) also might be important.
3. Quick Quiz:
 - 1) Which touch screen gesture allows you to move an object around the screen? (Answer: slide)
 - 2) A tower-style desktop uses the same case to house the screen and the processing circuitry for a desktop. True or false? (Answer: False)
 - 3) What is a server? (Answer: A computer dedicated to providing one or more services to other computers or devices on a network)
4. Critical Thinking: Because they are portable, laptops often are more convenient and can be used more often. Desktop computers, however, tend to be less expensive and more reliable—one industry analyst estimates that laptop users call for support 10 to 20 times more frequently than desktop computer users. In addition, if a desktop computer component, such as the keyboard, fails, it is simple to get a replacement. When a laptop component fails, the whole computer must be serviced. Laptop repairs typically are more expensive than desktop computer repairs. What are the merits of laptop versus desktop computers?
5. Critical Thinking: What makes personal computers "personal"?

7: Mobile and Game Devices

LECTURE NOTES

- Define mobile device
- Explain what is meant by the term Internet-capable
- Use Figure 1-6 to define smartphone and camera phone
- Review the three types of messages you can send with smartphones: text message, picture message, and video message
- Use Figure 1-7 to define digital camera
- Use Figure 1-8 to define portable media player (or personal media player)
- Define earbuds
- Use Figure 1-9 to define e-book reader (electronic book reader, or e-reader) and e-book
- Use Figure 1-10 to define game console and to distinguish between a game console and a handheld game device

FIGURES and TABLES: Figures — 1-6, 1-7, 1-8, 1-9, 1-10

BOXES

1. Internet Research: *What is a digital SLR camera?* Encourage students to experiment with using the following search terms in their favorite search engine: digital slr camera introduction.
2. Internet Research: *What are popular portable media players?* Encourage students to experiment with using the following search terms in their favorite search engine: portable media players.
3. Internet Research: *What are the features of the top e-book readers?* Encourage students to experiment with using the following search terms in their favorite search engine: e-book reader comparison.
4. BTW: *Messaging Services*. Caution students about the cost implications of sending text, picture, and video messages via a smartphone, and remind students that additional information is available on this subject.
5. Consider This: *Are mobile devices computers?* Discuss the attributes of smartphones that make mobile devices be able to be considered computers.
6. Consider This: *Are digital cameras, portable media players, e-book readers, and handheld game devices becoming obsolete because more and more smartphones and tablets include their functionality?* Discuss the concept of convergence and survey students about the phenomenon described in the text.
7. Mini Feature 1-1: *Living Digitally – Gaming*. Review the wide variety of game accessories and input techniques — and the categories of games themselves — available today. Survey students about their experience with all of these options.
8. Ethics and Issues 1-1: *Do Text Messages Affect Writing Skills?* Encourage students to engage in this debate — and also to consider the impact of text messages on their own writing.

CLASSROOM ACTIVITIES

1. Class Discussion: Ask if students have ever used a mobile device in signing for a package or other delivery. What are other industries that have made good use of the handheld technology that mobile devices represent?
2. Assign a Project: Greenpeace issued a report examining the environmental friendliness of the three leading game consoles — and all of them tested positive for various hazardous chemicals. The analysis detected the use of hazardous chemicals and materials in Nintendo's Wii, Sony's PlayStation, and Microsoft's Xbox 360. With the game consoles market one of the fastest growing in consumer electronics — over 60 million game consoles have been sold, for example — this issue in the field of green computing is only going to become more significant. Have students research technology that manufacturers can use to design out harmful toxins and produce cleaner gaming systems.
3. Quick Quiz:
 - 1) Which of the following is NOT a popular type of message you can send with smartphones?
a) text message b) picture message c) video message d) media message (Answer: d)
 - 2) The trend of computers and devices with technologies that overlap is called digital integration. True or false? (Answer: False)

11: Data and Information

LECTURE NOTES

- Use Figure 1-11 to define data and information, contrasting the two concepts
- Explain what an input device is
- Use Figure 1-12 to review available kinds of keyboards
- Explain what a pointing device is and use Figure 1-13 to show a mouse and a touchpad
- Use Table 1-1 to review the descriptions and common uses of mouse operations
- Use Figure 1-14 to discuss the use of voice and video input
- Explain what a microphone, headset, and webcam are
- Use Figure 1-15 to define scanner
- Explain what an output device is
- Use Figure 1-16 to discuss the use of printers
- Define hard copy or printout
- Use Figure 1-17 to discuss the use of displays
- Use Figure 1-18 to discuss the use of earbuds, headphones, and speakers
- Explain the role of memory, storage media, and discuss what a storage device is
- Use Figures 1-19a and 1-19b to discuss hard disks (both fixed and external)
- Use Figures 1-20 through 1-22 to discuss the following storage devices: solid-state drives, USB flash drives, and memory cards
- Use Figure 1-23 to discuss the use of optical discs
- Use Figure 1-24 to discuss the use of cloud storage

FIGURES and TABLES: Figures — 1-11, 1-12, 1-13, 1-14, 1-15, 1-16, 1-17, 1-18, 1-19a, 1-19b, 1-20, 1-21, 1-22, 1-23, 1-24; Table — 1-1

BOXES

1. Internet Research: *What types of earbuds are available?* Encourage students to experiment with using the following search terms in their favorite search engine: earbud reviews.
2. BTW: *Links to Media*. Point out the icon that indicates the opportunity to view related interactive content.
3. BTW: *Mobile Computer Input*. Discuss the familiar input options that are available for laptop users (keyboards and mice), and remind students that additional information is available on this subject.
4. BTW: *Disk vs. Disc*. Review the significance (and applications) of the two different spellings of the word.
5. Consider This: *Can you give another example of data and its corresponding information?* Review the example in the text that offers a clear distinction between data and information in a context that is very familiar to students.
6. Consider This: *What can you do to ease eyestrain while using a computer or mobile device?* Discuss the practical tips provided in the text for optimal use of computers and mobile devices.
7. Consider This: *What is the general use for each type of storage media?* Define file, and then review the types of files for which each of the different types of storage media typically gets used.
8. Secure IT 1-1: *Backing Up Computers and Mobile Devices*. Discuss cloud storage solutions and review the components of a backup plan.

CLASSROOM ACTIVITIES

1. Class Discussion: Ask students what storage devices they have used and for what purpose (e.g., burning music on CDs, playing movies on DVD, or placing files on removable storage media, such as USB flash drives). Have students suggest other examples of storage devices (magnetic tape, PC Cards, and so on).
2. Critical Thinking: Challenge students to give examples of data and information. Encourage them to explain why they classified each example as they did. Clifford Stoll — lecturer, computer security expert, and author of *Silicon Snake Oil: Second Thoughts on the Information Superhighway* — notes a wide gap between data and information. Information, Stoll writes, has a pedigree, or lineage. Its source is known, whether it is by a respected professor or a seventh grader. “The Internet has great gobs of data,” Stoll maintains, “and little, little information.” Students familiar with the Internet might be interested in discussing Stoll’s observation. Is Stoll right?
3. Critical Thinking: On the subject of data and information, ask students to recall instances of a computer error with which they are personally familiar. How might human blunders have resulted in the “computer error”? Why are people apt to blame computers?
4. Class Discussion: Ask students to review the objective-based items in the Now You Know on page 18 to confirm their understanding of each point.

5. Quiz Yourself: Have students visit the Quiz Yourself resource for this book and chapter on Computer Concepts CourseMate, and then tap or click Objectives 1 – 4.

LAB ACTIVITIES

1. If possible, visit the school computer lab or use a computer set up in the classroom to familiarize students further with the kinds of storage media described in the text.

18: The Internet

LECTURE NOTES

- Use Figure 1-25 to discuss the Internet
- Explain that the World Wide Web (or web) is one of the most widely used services on the Internet
- Review some of the tasks that users perform on the Web
- Use Figure 1-26 to explain what the web and its webpages are, and to explain what a link (hyperlink) is
- Define downloading and surfing the web
- Define website and web server
- Explain what a browser is and refer students to How To 1-2 for instructions about the use of a browser
- Explain what a search engine is and refer students to How To 1-3 for instructions about the use of a search engine for performing a basic web search
- Use Figure 1-27 to discuss an online social network (social networking site)
- Review some of the other services available on the Internet — in addition to the web — like email, IM, VoIP, and FTP

FIGURES and TABLES: Figures — 1-25, 1-26, 1-27

BOXES

1. BTW: *Web vs. Internet*. Debunk what is perhaps one of the biggest misunderstandings in this subject area: the conflation of the concepts of the Internet and the Web and remind students that additional information is available on this subject.

2. BTW: *Downloading*. Define this term and remind students that additional information is available on this subject.

3. BTW: *Facebook and Twitter*. Discuss the significance of innovators like Mark Zuckerberg and of online social networks like Twitter and Facebook, and remind students that additional information is available on this subject

4. BTW: *Blogs*. Explain that posts on Twitter constitute a blog because of the nature of its journal format, and remind students that additional information is available on this subject.

5. Consider This: *How do Facebook, Twitter, and LinkedIn differ?* Review the three online social networks listed in the text and discuss the uses of each.

6. How To 1-2: *Use a Browser to Display a Webpage*. Review the steps to display a webpage on a computer or mobile device.

7. How To 1-3: *Perform a Basic Web Search*. Review the steps to conduct a search using search text in a search engine on a computer or mobile device.

8. Ethics and Issues 1-2: *Should Employees Be Held Accountable for Their Social Networking Posts?* Encourage students to engage in this debate — and also to search for their own names online as mentioned in the text and to take the steps necessary to protect their online reputation.

CLASSROOM ACTIVITIES

1. Class Discussion: Ask students to list other tasks that they perform on the web besides the ones listed in the text.

2. Class Discussion: Ask students if they have ever created a webpage or website. If so, what type of information did they provide on that page or site?

3. Quick Quiz:

- 1) What can a webpage contain? (Answer: Text, graphics, audio, and video)
- 2) The web is a worldwide collection of computer networks that connects millions of businesses, government agencies, educational institutions, and individuals. True or false? (Answer: False)

23: Digital Security and Safety

LECTURE NOTES

- Review the protection that users must afford to their computers and mobile devices, as well as the health risks and environmental issues associated with the use of these devices
- Define malware and refer students to Secure IT 1-2 for guidelines for the protection of their computer and mobile device
- Discuss the role of privacy in the digital era, in terms of the information that is available about individuals online and the need to secure your own information through the judicious use of email, online social networks, and passwords
- Review some of the health concerns associated with prolonged or improper computer use
- Define e-waste and green computing, and discuss some of the environmental issues that have arisen with the advent of computing technology

TEACHER TIP

It is impossible to overstate the importance of protecting your computer and mobile device from viruses and other malware. As a possible activity, encourage students to research the latest products available for protection from malicious software, as a way to encourage them to make sure that they have coverage for their own devices.

BOXES

1. Internet Research: *What are other techniques that deter identity theft?* Encourage students to experiment with using the following search terms in their favorite search engine: prevent identity theft.

2. BTW: *Malware*. Discuss the onslaught of malware that users face in the contemporary computing environment, and remind students that additional information is available on this subject.
3. Consider This: *How can you contribute to green computing?* Review the examples in the text of some habits you can change to reduce the environmental impact of computing.
4. Secure IT 1-2: *Protection from Viruses and Other Malware*. Explain what an antivirus program is and review the precautions that must be taken to prevent the infection of a computer by computer viruses and other malware.
5. Secure IT 1-3: *Creating Strong Passwords*. Review the guidelines for creating strong passwords.

CLASSROOM ACTIVITIES

1. Class Discussion: Present students with a series of passwords that you have created and ask them to gauge, using the guidelines in the text, which are strong and which are weak passwords.
2. Quick Quiz:
 - 1) What is the term for software that acts without a user's knowledge and deliberately alters the computer's operations and mobile device's operations? (Answer: malware, or malicious software)
 - 2) What does green computing involve? (Answer: reducing the electricity consumed and environmental waste generated when using a computer)

25: Programs and Apps

LECTURE NOTES

- Define software, or program
- Review the two categories of software: system software and application software
- Use Figure 1-28 to discuss operating systems
- Explain what an application (or app) is and use Table 1-2 to review categories of applications
- Differentiate among a desktop app, a web app, and a mobile app
- Refer students to How To 1-4 for the steps to install, run, and exit an app, and to How To 1-5 for the steps to locate, install, and run a mobile app
- Discuss the process of installing software and explain it means to load software
- Explain what a user interface is
- Define software developer using Figures 1-29a and 1-29b
- Discuss the role of the software developer in creating programs and apps
- Review the popular programming languages mentioned in the text

FIGURES and TABLES: Figures — 1-28, 1-29a, 1-29b; Table — 1-2

TEACHER TIP

Help students to understand the difference between computer hardware and computer software. A CD or DVD is hardware; however, the programs stored on it are software. Mention different types of software instructions. If possible, show an example of a software package. Explain the purpose of an interface.

BOXES

1. BTW: *Bill Gates and Steve Jobs*. Discuss these familiar names, and remind students that additional information is available on these subjects.
2. Consider This: *How do you know if a program will run on your computer?* Review the significance of specifications for a program in order to determine that it is one that you can use on your computer or device.
3. How To 1-4: *Install, Run, and Exit an Application*. Review the steps for installing, running, and exiting an application.
4. How To 1-5: *Locate, Install, and Run a Mobile App*. Review the steps for installing, running, and exiting a mobile app.

CLASSROOM ACTIVITIES

1. Class Discussion: Ask how many students have purchased software packages or mobile apps. What type of application did they buy? In the case of desktop apps, did they purchase it in a physical store or via a download from the web? What information was on the software package (or on the webpage for the download)? Software packages and websites for downloading usually stipulate hardware requirements, such as processor speed and memory capacity.
2. Class Discussion: Ask students to describe the experience of working with a user interface that they remember being difficult to use. Why was it difficult to use?
3. Class Discussion: Ask students to guess the cost of various applications. Write student estimates on the board and compare them to the prices shown in current advertisements.
4. Assign a Project: Developing icons for a graphical user interface is not an easy task. Although a good icon need not be a work of art, it must be a memorable symbol of the task it represents. According to Susan Kare, creator of the icons used with many popular GUIs, "The best icons are more like traffic signs than graphic illustrations." Have students choose three commonplace activities and, using three sheets of graph paper, create an icon to represent each. Color the appropriate squares on the graph paper to create the image for each icon. On the back of the graph paper, have students explain why the icon is suitable for the activity chosen.
5. Class Discussion: Ask students to review the objective-based items in the Now You Know on page 28 to confirm their understanding of each point.
6. Quiz Yourself: Have students visit the Quiz Yourself resource for this book and chapter on Computer Concepts CourseMate, and then tap or click Objectives 5 – 8.

LAB ACTIVITIES

1. If possible, ask students to go into the computer lab and see examples of different kinds of operating system software and application software.

29: Communications and Networks

LECTURE NOTES

- Use Table 1-3 to review uses of communications technologies
- Use Figure 1-30 to define communications device and discuss the differences in the technologies shown at work in this figure
- Review the wireless communications technologies listed in the text: Wi-Fi, Bluetooth, and cellular radio
- Define hot spot and refer students to Secure IT 1-4 for the guidelines for a safe experience using Wi-Fi hot spots
- Use Figure 1-31 to define network and resources
- Discuss the capabilities available to users of home networks and business networks

FIGURES and TABLES: Figures — 1-30, 1-31; Table — 1-3

BOXES

1. BTW: *Wireless Communications*. Encourage students to be familiar with innovative uses of wireless communications, some of which are likely to be available to them from their day-to-day experience, and remind students that additional information is available on this subject.
2. BTW: *The Internet*. Discuss the significance of the Internet, and remind students that additional information is available on this subject.
3. Secure IT 1-4: *Using Public Wi-Fi Hot Spots Safely*. Review the guidelines for safer browsing experiences at public Wi-Fi spots like those available at a coffee shop or the airport.
4. Mini-Feature 1-2: *Living Digitally: Staying in Sync*. Define key terms within the Mini-Feature, including synchronize (or sync), target, source, wired setup, wireless syncing, and cloud storage providers. Survey students about their experience using synchronization to keep multiple computers and mobile devices working in harmony.

CLASSROOM ACTIVITIES

1. Class Discussion: After surveying students about their familiarity with the communications technologies listed in the text, ask them to identify circumstances in which some or all of the available technologies could be particularly useful.
2. Quick Quiz:
 - 1) What is a network? (Answer: a collection of computers and devices connected together, often wirelessly, via communications devices and transmission media)
 - 2) What is a communications device? (Answer: hardware capable of transferring items from computers and devices to transmission media and vice versa)

33: Uses of Technology in Society

LECTURE NOTES

- Discuss how society has benefited from computers
- Use Figure 1-32 to discuss how computers are being used in schools

- Use Figure 1-33 to note the many areas of government and discuss how government offices use websites to provide services
- Review how people use computers to manage their finances, and define online investing
- Use Figure 1-34 to discuss the impact of technology on retail, in terms of the steps involved in a purchase made from an online retailer
- Define streaming and review the role of computers and mobile devices in the entertainment industry
- Use Figure 1-35 to point out the widespread use of computers in the health care industry
- Use Figure 1-36 to discuss how computers are used in the travel industry
- Define neural network and discuss the use of computers in all branches of science
- Use Figure 1-37 to discuss the use of computers and associated equipment by publishers
- Define blog, podcast, and wiki
- Use Figure 1-38 to define computer-aided manufacturing (CAM) and discuss the use of computers in manufacturing

FIGURES and TABLES: Figures — 1-32, 1-33, 1-34, 1-35, 1-36, 1-37, 1-38

TEACHER TIP

Computers have touched fields that some might consider surprising. When the Denver Broncos football team won its first Super Bowl, one of the recipients of a championship ring was not a player or coach, but the head of the team's information systems department that used computers to make player selections and develop game plans. Throughout this section, encourage students to suggest ways in which they have seen computers used.

BOXES

1. Internet Research: *How do educators use iTunes U?* Encourage students to experiment with using the following search terms in their favorite search engine: itunes u.
2. Internet Research: *How can you create a blog?* Encourage students to experiment with using the following search terms in their favorite search engine: create a blog.
3. BTW: *Technology @ Work*. Refer students to the Technology @ Work feature for more information about how technology is used in a variety of fields.
4. BTW: *Mobile Payments*. Encourage students to be familiar with innovative uses of mobile payment technology and remind students that additional information is available on this subject.
5. BTW: *Managing Health Conditions*. Encourage students to be familiar with innovative uses of technology related to managing medical conditions and remind students that additional information is available on this subject.
6. BTW: *Determining a Location*. Discuss the significance of the concept of triangulation, and remind students that additional information is available on this subject.
7. Consider This: *Can I make copies of songs or other media that I have purchased and downloaded from a legitimate website, such as iTunes?* Review the prohibitions on (and permitted circumstances of)

copying songs and other media.

8. Ethics and Issues 1-3: *Does Technology Create a Divide between the More and Less Fortunate?*

Explain the concept of the digital divide and encourage students to engage in this debate, perhaps in conjunction with outside reading on the impact of mobile devices in closing the digital divide, particularly in the developing world.

9. Ethics and Issues 1-4: *Should Wikis Be Allowed as Valid Sources for Academic Research?* Explain the reluctance of educators and librarians to consider wikis for academic research and encourage students to engage in this debate, perhaps citing their own experience with wikis, either as a participant or in the course of their academic research.

CLASSROOM ACTIVITIES

1. Group Activity: Divide the students into teams and ask them to debate the merit of computers in schools.

2. Class Discussion: Ask students who have participated in online banking or online stock trading to describe their experiences.

3. Assign a Project: A number of important people in the computer industry, including such figures as Gordon Moore, co-founder of Intel, and Steve Wozniak, co-founder of Apple, have expressed concern about who is using computers. They fear that, for cultural, financial, or societal reasons, certain groups of people are more likely to use computers than others. As computers play an increasingly important role in the race for success, this gives some people a head start, while others might be beginning with a handicap. Are computers purchased by individuals from a broad spectrum, or is there a certain type that represents most computer buyers? Have students visit a computer vendor and interview the manager or a salesperson about the demographics of computer buyers at that store. What gender are most buyers? In what age range do they fall? What seems to be the typical educational level? What is the approximate average income of a typical buyer? Do buyers tend to share any other characteristics? If their interviews show any trends, what reasons might be behind the results?

4. Assign a Project: Challenge students to a contest in which they imagine the most valuable new use of computer technology and present their concepts to the class. When each student has presented his or her idea, the class can vote on a winner. This topic gets the students to ponder what the world might be like for their children. This project will be enjoyed by science fiction lovers.

5. Quick Quiz:

- 1) Which of the following refers to an informal website consisting of time-stamped articles in a diary or journal format, usually listed in reverse chronological order?
a) wiki b) b-cast c) podcast d) blog (Answer: d)
- 2) Some websites support streaming, where you access media content while it downloads. True or false? (Answer: True)

6. Critical Thinking: The industrial revolution changed society similar to what ways in which computers have changed society? What are the differences?

7. Critical Thinking: Many areas develop a vocabulary unique to their discipline, and computer science is no exception. *Wired* magazine's book, *Jargon Watch*, is a dictionary of patter used by computer-philies. The book defines such terms as alpha geek (the most technologically advanced person in an office), meatspace (the real, as opposed to the virtual, world), and scud memo (a memo that does more harm to the writer's standing than to the intended target). Have students visit a local office, or the school's computer lab, and compile their own list of computer-related jargon. Include both the terms and their meanings. What terms are most universally understood? What terms rarely are heard? Will any terms be accepted as status quo in the future? Why or why not?

38: Technology Users

LECTURE NOTES

- List the five categories of computer users: home user, small office/home officer user, mobile user, power user, and enterprise user
- Use Table 1-4 to discuss the hardware and software requirements for the different categories of users

FIGURES and TABLES: Table — 1-4

BOXES

1. Mini-Feature 1-3: *Living Digitally: Digital Home*. Define key terms within the Mini-Feature, including programmable thermostats, smart appliances, security systems, vacuum systems, universal remotes, and player to be the controller. Survey students about their experience using any of these technologies.

CLASSROOM ACTIVITIES

1. Class Discussion: Ask if any students have had corporate computer experience. If so, have them share their experiences with the class, explaining how computers were used in the department where they worked and in any other department with which they were familiar.
2. Class Discussion: Ask students what kind of personal computer would be most suitable for different types of mobile users.
3. Assign a Project: Poll students with computers about the types of applications they use — word processing, personal finance, reference, entertainment, educational, communications, browser, and so on. Then ask students to graph the results, perhaps with a spreadsheet program such as Microsoft Office Excel.
4. Critical Thinking: What impact have computers had on the “interpersonal” side of business (i.e., employee and customer relationships)? How have computers changed people's jobs? Have computers cost any people their jobs? Has any job loss been balanced by the introduction of new, computer-related positions?
5. Class Discussion: Ask students to review the objective-based items in the Now You Know on page 41 to confirm their understanding of each point.

6. Quiz Yourself: Have students visit the Quiz Yourself resource for this book and chapter on Computer Concepts CourseMate, and then tap or click Objectives 9 – 11.

LAB ACTIVITIES

1. If the school has a CAD department, arrange for a guided tour.

End of Chapter Material

- **Study Guide** provides a general survey of the material in the chapter. Students can use these pages to reinforce their achievement of the chapter objectives.
- **Key Terms** allows students to use these terms from the text to prepare for tests and quizzes. Students should know each Primary Term (shown in bold-black characters in the chapter) and be familiar with each Secondary Term (shown in italic characters in the chapter). Primary Terms include terms commonly used in the computer industry and in advertisements, or terms that identify a major category. Secondary Terms include terms primarily used by IT professionals and other technical people, terms that identify subcategories, or terms that are discussed in more depth in a later chapter.
- **Checkpoint** exercises review key terms and concepts presented in the chapter. Have students complete the True/False, Multiple Choice, Matching, Short Answer, and Consider This exercises.
- **How To: Your Turn** exercises offer students additional information, resources, and activities related to the topics presented in the chapter.
- In the **Internet Research** exercises, students use various web resources to find out more features related to this chapter. Encourage students to use their browsers and the link in each exercise or a search engine to complete selected exercises.
- **Problem Solving** and **Collaboration** exercises allow students (both singly and in groups) to expand their knowledge by solving practical computer problems, using outside resources including but not limited to the web, blogs, podcasts, videos, magazines, newspapers, television, user guides, other individuals, electronics stores, and computer stores.
- Thought-provoking **Critical Thinking** exercises in each chapter exercise students' minds and challenge them to construct creative solutions. These exercises are constructed to allow students to work independently and collaboratively.
- The **Beyond the Book** exercises extend students' understanding of what they have learned in each chapter by requiring research.

Glossary of Primary Terms

- app (26)
- application (26)
- browser (20)
- communications device (29)
- computer (4)
- desktop (6)
- digital camera (8)
- digital literacy (2)
- e-book reader (9)
- game console (9)
- green computing (25)
- input device (12)
- Internet (18)
- laptop (4)
- mobile device (7)
- network (30)
- online social network (21)
- output device (14)
- personal computer (4)
- portable media player (8)
- printer (14)
- program (25)
- search engine (21)
- server (6)
- smartphone (7)
- social networking site (21)
- software (25)
- storage device (15)
- storage media (15)
- sync (32)
- synchronize (32)
- tablet (4)
- user (4)
- web (19)
- web server (20)
- webpage (19)
- website (20)

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Glossary of Secondary Terms

- backup (17)
- blog (37)
- Bluetooth (30)
- camera phone (7)
- click (13)
- cloud storage (17)
- computer-aided manufacturing (38)
- convergence (10)
- data (11)
- desktop app (26)
- digital divide (34)
- double-click (13)
- double-tap (5)
- downloading (19)
- drag (5, 13)
- earbuds (9)
- e-book (9)
- enterprise user (39)
- e-reader (9)
- e-waste (24)
- file (17)
- gesture (5)
- hard copy (14)
- hard disk (15)

- hardware (4)
- headset (13)
- home user (38)
- hot spot (30)
- hyperlink (20)
- information (11)
- input (4)
- keyboard (12)
- link (20)
- loads (27)
- malware (23)
- memory (15)
- memory card (16)
- microphone (13)
- mobile app (26)
- mobile computer (4)
- mobile user (38)
- mouse (12)
- neural network (37)
- notebook computer (4)
- online (6)
- on-screen keyboard (5)
- operating system (25)
- output (4)
- passphrase (24)
- personal media player (8)
- picture message (7)
- pinch (5)
- podcast (37)
- point (13)
- power user (39)
- press and hold (5)
- printout (14)
- resources (30)
- right-click (13)
- scanner (13)
- slide (5)
- small/home office user (38)
- software developer (28)
- solid-state drive (16)
- source (32)
- streaming (35)
- stretch (5)
- surfing the web (20)
- swipe (5)
- tap (5)
- target (32)
- text message (7)
- touchpad (12)
- USB flash drive (16)
- user interface (27)
- video message (7)
- web app (26)
- webcam (13)
- Wi-Fi (30)
- wiki (38)

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