Glossary

5.1 surround sound Dolby Digital surround sound; the nomenclature 5.1 describes the speaker configuration, which has five speakers (left-front, center-front, right-front, left-rear, and right-rear) plus one subwoofer for low bass sounds.

8-bit graphics A computer graphics mode capable of displaying up to 256 different colors simultaneously; 256 is 2 to the eighth power (2^8).

16-bit graphics A computer graphics mode capable of displaying up to 65,536 different colors simultaneously; 65,536 is 2 to the sixteenth power (2^{16}).

24-bit graphics A computer graphics mode capable of displaying up to 16,777,216 different colors simultaneously; 16,777,216 is 2 to the twenty-fourth power (2^{24}).

A/D converter Analog-to-digital converter. A device that uses quantization and sampling to transform a continuous analog waveform into a digital bit stream.

algorithm A sequence of processing steps that perform a particular operation, such as compressing a digital video to store it efficiently and decompressing it upon playback.

AltaVista A full-text key word search engine for the World Wide Web invented by the Digital Equipment Corporation. AltaVista is on the Web at http://www.altavista.com.

ambient sound A multimedia technique in which a waveform audio file keeps repeating to create the aural illusion that the user is in the place or situation where the sound was recorded.

animation In multimedia, animation is the use of a computer to create movement on the screen.

anonymous FTP A method by which computers on the Internet allow public access to certain files. These files can then be examined and downloaded by anybody. See *FTP*.

applet A little application that gets downloaded to your computer along with a Web page.

aspect ratio The relative width-to-height dimensions of a computer display's picture elements (pixels). The typical 800×600 screen has an aspect ratio of 4:3.

avatar An agent representing the user in a virtual reality system.

bandwidth The capacity of a device to process or transmit information. The more information it can handle per second, the greater its bandwidth.

baud rate See *bps*.

bitmap The picture formed by assigning different colors to the pixels on a computer screen; or the computer file that specifies how to color the pixels to create such a picture.

BMP The three-character filename extension for Microsoft Windows bitmaps. See *bitmap*.

bookmark A place in a World Wide Web document that you can jump to by name.

bounce To mix two or more audio tracks into one.

bps Bits per second. A measurement of the speed at which data is transmitted over a communications medium. Also known as *baud rate*.

cable modem A computer network connection device for providing high-speed Internet access over TV cables.

camcorder A combination of *camera* and *recorder*. A portable device that records video and sound onto videotape.

CAV Constant angular velocity. A type of videodisc that can hold 54,000 still frames per side, or 30 minutes of motion video. See also *CLV*.

CD Audio The use of a compact disc (CD) to play back recorded music. Compact discs can hold up to 75 minutes of audio. Multimedia computers can access the audio in increments as small as $^1/75$ of a second.

CD Extra See *CD Plus*.

CD-I Compact disc–interactive. A multimedia delivery platform standard invented by Philips and Sony. The special players required for CD-I discs can also play CD Audio discs.

CD Plus A multisession CD-ROM format in which a regular CD Audio session has been augmented by multimedia materials in another session. You can play back a CD Plus on a regular CD Audio player if you just want to hear the music, or you can install it on a multimedia PC and navigate through hypertext, buttons, pictures, and videos recorded in subsequent sessions. Also known as *Enhanced CD* and *CD Extra.*

CD-ROM Compact disc—read-only memory. The use of a compact disc to store computer data. CD-ROMs can hold up to 680 MB.

CD-ROM XA CD-ROM extended architecture. Increases to as much as 19 hours the amount of audio that can be stored on a compact disc by providing lower-quality recording and playback rates.

chroma key Process whereby overlay cards display video on the screen and one of the colors becomes transparent. Any place the transparent color appears, you see the video input.

client A computer seeking information on your behalf from a server on a network.

CLV Constant linear velocity. A videodisc format that permits up to an hour of video to be recorded on each side of the disc. Most videodisc players cannot show still frames from CLV discs. See also *CAV.*

copyright A law that secures for limited times to authors and inventors the exclusive right to their respective writings and discoveries. See *Fair Use.*

custom toolbox An object-oriented set of multimedia development tools in the PODIUM multimedia application generator.

data rate The speed of data transfer, normally expressed in bits or bytes per second. For example, the data rate of a single-speed CD-ROM is 150,000 bytes per second, or 150 KB; double-speed CD-ROMs are twice as fast at 300 KB per second.

dB Decibel, a measurement of loudness. The higher the rating, the louder the sound. A whisper is 10dB; jet aircraft engines produce 130dB, which can permanently damage hearing.

DCT Discrete cosine transform. A video compression algorithm that eliminates redundant data in blocks of pixels on the screen. It is used in JPEG (stills), MPEG (motion), and CCITT (fax) compression standards.

DejaNews A search engine for Usenet newsgroups on the Internet. DejaNews is at http://www.deja.com/usenet.

digitizing The process of converting analog audio and video signals into a digital format that can be stored, manipulated, and displayed by a computer. Digitizing is accomplished by A/D converters on scanners and audio/video capture cards. See also *A/D converter.*

directory An index to the files and subdirectories that are stored on a computer storage device.

dissolve A transition effect between two sequential images on the screen. Dissolve patterns include splits, stripes, diagonals, and fades.

DLL Dynamic link library. The expandable software technology that enables vendors to add features easily to the Microsoft Windows environment.

domain name Allows numeric IP addresses (like *140.147.248.7*) to be expressed by names like *www.loc.gov.* See also *IP address.*

DSL Digital subscriber line, a type of digital telephone connection that can send data at speeds up to 2 million bits per second.

DSP Digital signal processor. A chip designed to process digitized sound and video quickly.

DVD Digital versatile disc, an optical storage medium that uses CD-size discs (120mm diameter) to store 4.7 GB (gigabytes) per layer, which is seven times more than a CD can hold. Dual-layer DVDs can hold 8.5 GB on a single side, with 17 GB on a double-sided, dual-layer disc.

Enhanced CD See *CD Plus.*

Ethernet A high-speed network topology that provides access at speeds up to 10 MB per second, depending on how many users are connected to the network. Multiple users on an Ethernet can cause data collisions, which require data to be resent, causing the network to slow down. See also *token ring.*

fade A gradual decrease in the brightness of an image or the loudness of a sound.

Fair Use A section of the U.S. copyright law that allows the use of copyrighted works in reporting news, conducting research, and teaching. See the *Fair Use of Educational Multimedia* guidelines in the Demonstrations/Textbook Examples section of the *Multilit* CD.

FAQ Frequently asked question. A list of frequently asked questions and their answers.

File Transfer Protocol See *FTP.*

FireWire High-speed serial technology for connecting peripherals to a computer; particularly popular on the Macintosh, where it is used to connect multimedia peripherals such as DV (digital video) camcorders and other high-speed devices like hard disk drives and printers.

flowchart A logic diagram that illustrates the steps involved in an interactive decision-making process.

fps Frames per second. A measure of the recording and playback rate of digital videos.

frame animation Makes objects move by displaying a series of predrawn pictures, called frames, in which the objects appear in different locations on the screen.

frame rate The speed at which frames are displayed on the monitor. Broadcast television in North America and Japan is displayed at 30 fps; in Europe it is displayed at 25 fps.

freenet An organization that provides free Internet access to people in a certain area, usually through public libraries.

front-end The creation or use of software to make it easy for people to perform computing tasks that would otherwise be too complicated or time-consuming for everyday use.

FTP File Transfer Protocol. Allows users to send a file from one computer to another over the Internet.

full motion Video played at the broadcast television frame rate. See also *frame rate.*

gateway A computer whose role on a network is to reformat data sent from one computer into a form it can forward to another.

GB See *gigabyte.*

GIF Graphics Interchange Format. Invented by CompuServe for use on computer networks, GIF is the prevalent graphics format for images on the World Wide Web.

gigabyte One billion bytes. A byte can hold a single character; a gigabyte can hold a billion characters. Abbreviated *GB.*

GigaPoP One of the regional network aggregation points in the high-speed version of the Internet known by the name Internet2.

Gopher A menu-based system for accessing Internet resources, including host computers, directories, and files.

Gopherspace The connection of all existing Gopher servers.

graphics accelerator A computer chip or circuit card that helps your PC process the specialized calculations required for 3-D imaging.

GUI Graphical user interface. Allows direct manipulation of on-screen objects and events using icons, menus, toolbars, and dialog controls. Macintosh, Windows, and OS/2 Presentation Manager are examples of GUIs.

hard drive A magnetic storage device on which computer programs and data are stored.

helper app An application that helps a World Wide Web browser handle a file that the browser cannot deal with on its own.

home page The Web page that serves as your main menu or home base on the Web. By linking things to your home page, you create a hierarchy that makes it easy to go to other Web pages and access resources on the Web. See *Web page.*

host The main computer to which a user is connected when accessing the Internet.

hot spots Places on the computer screen which, when selected, trigger the objects or events linked to them.

HTML Hypertext markup language. The coding specification for creating Web pages. An HTML file contains the text you see on a Web page, plus special codes called markup that determine how the text gets displayed and how the user interacts with the Web page.

hyper In multimedia, a prefix used to indicate that a link has given a new dimension to a word (hypertext), video (hypervideo), audio (hyperaudio), or part or all of a picture (hyperpicture).

IAB Internet Architecture Board. The governing body that makes decisions about Internet standards.

IETF Internet Engineering Task Force. A volunteer group that investigates and solves technical problems and makes recommendations to the Internet Architecture Board. See also *IAB.*

IMA Interactive Multimedia Association. The IMA encourages the setting of industrywide standards for multimedia hardware and software.

Information Superhighway A popular term coined by the White House to refer to the Internet with a metaphor the public could understand. See *Internet.*

input field A blank space on a computer screen into which the user can type information.

internaut A user who navigates the vast expanse of the Internet, much like an astronaut traverses outer space.

Internet The worldwide network of networks that are connected to each other via the Internet Protocol (IP).

Internet address Each computer on the Internet has a named address such as *www.loc.gov* (the Library of Congress Web site). See also *domain name.*

Interner Explorer See *Microsoft Internet Explorer.*

IP address A 32-bit numeric address of a computer on the Internet. An IP address consists of four numbers separated by periods. The numbers range from 0 to 255. The smallest address is 0.0.0.0 and the largest is 255.255.255.255. The number of IP addresses this scheme allows is 256^4, which is 4,294,967,296. See also *domain name.*

ISDN Integrated Services Digital Network. A high-bandwidth digital telecommunications network being installed gradually throughout the United States. This network handles voice, video, and data; it also supports videoconferencing.

ISO International Standards Organization.

IVD Interactive videodisc. A multimedia format in which a computer is connected to a videodisc player to provide interactive video capabilities.

Java An applet technology invented by Sun Microsystems. See *applet.*

JPEG Joint Photographic Experts Group. An ISO (International Standards Organization) body creating a new standard for digitizing still photographic images. The standard (which is also called JPEG) is cooperatively developed by more than 70 companies and institutions worldwide, including Sony, Philips, Matsushita, and Apple. The JPEG standard permits compression ratios ranging from 10:1 to 80:1—but the greater the compression, the lower the quality of the image.

K One thousand, a unit of computer measurement. For example, 150 K means 150,000. (Purists will tell you that the *K* used by computer scientists actually means slightly more than a thousand [1,024 to be precise], but for the measurements used in this book, a thousand is close enough and much easier to compute.)

KB See *kilobyte.*

kilobyte One thousand bytes. A byte can hold a single character; a kilobyte can hold a thousand characters. Abbreviated *KB.*

knowbot An information retrieval tool that you can train to go out on the Internet and find things for you.

layout The relationships among graphic design elements that appear on the screen, including text, pictures, icons, triggers, and buttons.

logic The use of conditional statements that act according to the values of variables. In multimedia, logic is used to make screens more sensitive to user needs and preferences. Logic is also used to increase the complexity, and hence the pizzazz, of multimedia special effects.

login To type your name and password to initiate a session with a host computer.

lossy Compression techniques in which decompressed images do not contain all the original information. JPEG and MPEG are lossy. The opposite is lossless compression. RLE (run-length encoding) is lossless but does not compress as much. See *RLE.*

markup Special codes inserted into a document, informing programs that read the document how to display or handle it. See *HTML.*

MB See *megabyte.*

meg See *megabyte.*

megabyte One million bytes. A byte can hold a single character; a megabyte can hold a million characters. Abbreviated *meg* or *MB.*

megahertz One million cycles per second. Processor speed is measured in megahertz. *Mega* means million, and *hertz* is one cycle per second. Abbreviated *MHz.*

megapixel One million pixels. See *pixel.*

metacognition Knowledge about your own thinking and learning.

metacognitive knowledge Knowledge about how tasks are performed and what makes some tasks more difficult than others.

MHz See *megahertz.*

Microsoft Internet Explorer Microsoft's World Wide Web browser.

MIDI Musical Instrument Digital Interface. The MIDI standard is a protocol by which electronic musical instruments communicate with computers and each other.

MIME Multipurpose Internet Mail Extensions. An Internet protocol that lets you attach a file to a mail message. When a user receives the message, the attached file gets decoded and stored on the user's PC.

modem A datacommunications device that connects a computer to a telephone line and lets the user transfer data at speeds ranging from 1,200 bits per second (bps) to 56 KB per second.

morph To transition one shape into another by displaying a series of frames that creates a smooth movement as the first shape transforms itself into the other shape.

Mosaic A World Wide Web browser created in 1993 by the University of Illinois supercomputer center. The graphical user interface in Mosaic made the Web very easy to use and led to the Web's becoming the most popular protocol on the Internet.

MPC Multimedia PC. An industrywide specification of the minimum hardware requirements needed for multimedia.

MPEG Motion Pictures Experts Group, an ISO (International Standards Organization) body creating a new standard for digital video. The standard (which is also called MPEG) was cooperatively developed by more than 70 companies and institutions worldwide, including Sony, Philips, Matsushita, and Apple. MPEG is emerging as the digital video standard for compact discs, cable TV, direct satellite broadcast, and high-definition television.

multiliterate Understanding the principles of multimedia, its impact on the world, and how to use it for attaining business, professional, educational, and personal objectives.

multimedia The use of a computer to combine and present text, graphics, audio, and video with links and tools that let the user navigate, interact, create, and communicate.

multisession A type of CD-ROM drive that can play back CDs that have been recorded on more than once.

Netscape Navigator One of the most popular World Wide Web browsers for the Internet.

NIC Network Information Center. Every network on the Internet should have an NIC and a network administrator. Each NIC looks after the needs of the users connected to its network.

NOC Network Operations Center. The organization responsible for the day-to-day operations of a network.

NTSC National Television Standards Committee. The North American TV standard is named after the committee that created it.

overlay To superimpose text and graphics on still or motion video images.

PAL The European television standard that displays 25 frames per second. Used in all European countries except France; see also *SECAM*.

palette A table of colors used to paint pixels on the screen.

PC Card A plug-in credit card–sized PCMCIA peripheral for personal computers. See *PCMCIA*.

PCMCIA Personal Computer Memory Card International Association. The name of a standards group that creates specifications for credit card–sized peripherals for personal computers. See *PC Card*.

Pentium A microprocessor chip manufactured by Intel and its licensees. See *processor*.

pixel Picture element—the tiny dots that make up the computer screen. Each pixel has a specific color and intensity level.

play list A sequence of CD Audio clips, or MIDI or waveform audio files, that play back one after another.

point-to-point protocol Establishes a TCP/IP connection to the Internet through a modem. Abbreviated *PPP*.

PPP See *point-to-point protocol*.

processor The brain in a computer where calculations and decisions get made.

protocol A definition of how computers communicate with each other.

RAM Random access memory. The main memory at the heart of a computer in which multimedia programs execute.

Red Book The CD Audio protocol for recording audio onto compact discs. The minute-second-frame CD Audio addresses defined in the Red Book specification are known as Red Book addresses.

resolution A measurement of the number of pixels on a display. The typical multimedia computer has a resolution of 800×600 pixels. See *pixel*.

RGB Red, green, and blue. Each pixel displayed on the screen consists of a certain amount of red, green, and blue. For example, a black pixel has no red, green, or blue, whereas a white pixel has the maximum amount of each.

RLE Run-length encoding. A lossless data compression technique that encodes the number of times a repeated data element recurs instead of recording each occurrence. For example, 12 red pixels in a row would be encoded as 12R instead of RRRRRRRRRRRR.

root directory The primary directory on a hard disk from which all other directories branch. See also *directory*.

sampling The process of measuring and recording the values of an analog signal at evenly spaced time intervals.

sampling rate The number of times an analog signal is sampled each second. For example, CD Audio is recorded at a rate of 44,100 samples per second.

SCSI Small Computer System Interface, a serial bus topology for daisychaining up to eight high-bandwidth devices, such as mass storage units, to a computer.

SECAM Sequential Couleur Avec Memoire. The French national standard for color TV that is also used in Russia and eastern Europe. It operates at 25 frames per second.

self-extracting archive A list of files that have been archived into a single executable file that decompresses itself automatically when the user runs the archive.

server A computer on the Internet that provides information on demand to client computers. See also *client*.

shareware Computer software distributed with no up-front cost. Users who try the software and wish to keep using it must pay a fee. Shareware is not free.

SMPTE Society of Motion Picture and Television Engineers. Pronounced "sempty," SMPTE refers to a time code expressed in hours, minutes, seconds, and frames. SMPTE time code is written in the form HH:MM:SS:FF.

socket A portal on the Internet through which an application sends and receives information.

storyboard A time-based outline or script for a video or multimedia production.

subdirectory A directory inside another directory.

surf To browse an electronic medium for information. "Channel surfing" means to flip through the channels on a television set, looking for something that interests you. "Surfing the Internet" means to browse through the interconnected menus of information servers like Gopher and the World Wide Web.

surround sound See *5.1 surround sound.*

SVGA Super VGA. A screen resolution standard created by the Video Electronics Standards Association (VESA) that delivers a screen resolution of up to 800 × 600 with 256-color graphics.

tag A markup element in an HTML document. Tags are surrounded by brackets, such as the <P> tag that begins a new paragraph. See *HTML* and *markup.*

task analysis The process of hierarchically outlining an application's content.

TCP/IP Transmission Control Protocol/Internet Protocol. Computers connect to the Internet via TCP/IP.

telnet A protocol that allows users to log on to remote host computers on the Internet.

terminal The computer that connects to a host. The terminal can be a personal computer.

timeout A situation in a multimedia program in which the user must respond before a predetermined time limit expires and a default action occurs.

token ring A network topology that passes data in tokens that travel the network in a ring. Token ring networks run at 4 MB or 16 MB per second and are less prone to slow down as the number of users increases. See also *Ethernet.*

unzip To expand a zipped file back to its original uncompressed state. See *zip.*

upload To send a file to your host or to a remote host on the Internet. See also *host.*

URL Uniform resource locator. The address of a resource on the World Wide Web.

USB Universal Serial Bus, a popular way of connecting to your computer peripherals such as digital cameras, scanners, printers, fax machines, zip drives, and optical mice.

vector animation A vector is a line that has a beginning, a direction, and a length. Vector animation makes objects move by varying these three parameters for the line segments that define the object.

videodisc An optical disc on which video signals are recorded. Usually 12 inches in diameter, videodiscs are used for entertainment and to provide video in multimedia training applications. Videodiscs come in two formats: CAV and CLV. See also *CAV* and *CLV.*

WAIS Wide-area information servers. An Internet utility that provides full-text search capability.

waveform audio A method of creating sound by digitizing an analog audio waveform and storing the digital samples on a disk in a WAV file, from which the recording can be played back on demand. *WAV* stands for waveform.

wavetable A list of numbers that describe the desired waveshape of a sound.

WebCam Popular term for a videoconferencing camera designed for use on the World Wide Web.

WebMaster The person in charge of creating and maintaining a World Wide Web site.

Web page An HTML hypertext document on the World Wide Web. See *HTML.*

Webzine A magazine that is published on the Web instead of being printed on paper.

winsock The name of the dynamic link library (DLL) that enables the Windows operating system to open sockets on the Internet.

World Wide Web A networked hypertext system that allows documents to be shared over the Internet. Developed in Geneva at the European Particle Physics Center (CERN). Abbreviated *WWW.*

WWW See *World Wide Web.*

Yahoo A subject-oriented index of the World Wide Web. Located at http://www.yahoo.com.

zip To compress one or more computer files into a smaller file that contains the same information in a compressed format that occupies less space on a computer.

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Index

Action buttons, 227–228
  creating, 265–266, 272–273, 277–278, 282
  rehearsing, 265–266, 273, 278, 282

ActiveX, 105

Addresses
  case-sensitivity and, 379
  IP, 13–14

AECT (Association for Educational Communications and Technology), 166–167

Alignment
  of objects, in PowerPoint, 216
  of text, 193

Alliances, in multimedia, 6

AltaVista search engine, 307, 308

Ambient sound
  recording, 248
  for screens, 259, 260, 269, 275–276, 281

American Psychology Association (APA) bibliographic style, 313, 314–315

Anatomy resources, 85–86

Anchor, in PowerPoint, 218

Anchored instruction, 39

Animals, education about, 44, 45

Animated GIFs, 104, 240–241

Animation, 26–27
  of charts, 355–356
  cinema and, 69–71
  computational, 26
  frame, 26
  of graphs, 355–356
  morphing and, 26–27
  of OLE objects, 355–356
  of tables, 355–356
  vector, 26

Animation effects, 233–237
  custom, 234–236
  multiple, coordinating, 237
  preset, 233, 234

Animation packages, 99–101

APA (American Psychology Association) bibliographic style, 313, 314–315

Apple QuickTime, 110

Appliance-based computing, 139

Application development packages, 96–105
  animation and multimedia sequencing, 99–101
  authoring, 101–103
  hypermedia, 98–99
  Instructional Management Systems, 105
  presentation, 96–98
  Web page creation tools, 103–105

Applications. *See also* History of Flight application
  as objects, hyperlinks and, 228
  presenting. *See* Presenting multimedia applications
  visualizing structure of, 298–302

Area charts, 350

Arrows, drawing, 339–340

Art education, 42–43

Association for Educational Communications and Technology (ACET), 166–167

Audience handouts, 288–290

Audio. *See also* Sound; Waveform audio recording
  digital, 116–117
  downloading from Internet, 313

Audio CD, 23
  inserting in PowerPoint presentations, 241–242

Audio clips, 237–238

Audio mixers, 133

Audio recording. *See* Waveform audio recording

Audio speakers, 117

Authoring systems, 101–103

Authorware, 101–102

AutoContent Wizard, in PowerPoint, 182–185

AutoCorrect feature, 202

Automatic timings, 288

AutoShapes feature, 210

Back buttons, creating, 265, 266, 273, 278, 282

Background, fill colors and effects, 198–199

Background colors, 174
  changing, 196–197
  fill, 198–199

Backgrounds, photographic, 174

Bandwidth, 160
  for audio recordings, 253

Banking, online, 8

Bar charts, 350

Behavioral psychology, 40–41, 42

Bibliographic style for citing Internet resources, 313–317
  APA style, 313, 314–315
  CMS style, 313, 314, 316–317
  MLA style, 313, 314, 315–316

Biology education, 44–46

Biplane screen, for History of Flight application, 260–266

Bitmaps, 18

Bits, 12

Bits per sample, for audio recordings, 252

Blue Angels screen, for History of Flight application, 274–275

Bolding text, 193

Borders, in PowerPoint, 214, 215

Brightness, of graphics, in PowerPoint, 219

Broadcasting presentations, 381–390
  changing lobby pages or settings and, 389
  creating broadcast file folder and, 382–383
  deleting broadcasts and, 389
  replaying broadcasts and, 388
  scheduling broadcasts and, 383–384, 385, 389
  setting broadcast options and, 384–385, 389
  setting up broadcasts and, 383–384
  starting broadcast and, 386
  tips for, 389–390
  viewing broadcasts and, 387–388

Brokerage market, online, 8

Brownout, Internet, 160
Bubble charts, 350
Building text, 235, 236
Bulleted text, 199–200
Buttons
  action. *See* Action buttons
  linking screens to, 262–263, 270–271, 276–277, 281
  navigation, customizing, 285
  Redo and Undo, 199
Buying computers. *See* Computer buying

Cable modems, 122
Cameras
  digital, 123–124
  for videoconferencing, 124
Campaigning, virtual, 82
Capturing images, 322–323
Case-sensitive file servers, 379
Catalogs, 166
CD Plus (CD Extra; Enhanced CD), 23
CD-R drives, publishing applications on, 366–367
CD-ROM drives, 10, 12, 116
CD-ROMs (compact discs—read-only memory), 10
  distributing to end users, 367
  encyclopedias on, 90–93
  history textbooks on, 53–54
  Kennedy assassination on, 55, 56
  recordable, 120
  wars on, 54–55
CeBIT, 167
Cell biology, education about, 45–46
Censorship, 151–152
Centering text, 193
Central processors, 113
Charts
  animating, 355–356
  creating, 349
  importing data for, 351
  types of, 350
Chat window
  sending files to meeting participants using, 397
  sending messages using, 396
Chemistry education, 46–47
Chicago Manual of Style (CMS) bibliographic style, 313, 314, 316–317
Cinefex, 165–166
Cinema, 67–71. *See also* Movies
Citing Internet resources. *See* Bibliographic style for citing Internet resources
Civics education, 48
Clip art, 19–20
  finding online, 209
  inserting, 205–206
Clipboard, copying and pasting with, 200
Clip gallery, inserting sound from, 237–238
Clipper chip, 151
CMS (Chicago Manual of Style) bibliographic style, 313, 314, 316–317
CNET, 163
Cognitive psychology, 40–41, 42
Color display, 114
Coloring text, 195–196
Colors
  background, 174, 196–199
  depth of, reducing, 326
  foreground, 174
  transparent, in PowerPoint, 220–221
Column charts, 350
COMDEX, 167
Communication. *See* Telecommunication
Comparison shopping, 32–33
Compression, of video, 330, 331, 334–335
Compton's patent, 154–155
Computational animation, 26
Computer buying, 126–130
  best buys and, 129–130
  high-end system checklist for, 128–129
  low-budget system checklist for, 126–127
  midrange system checklist for, 127–128
Computer components, 113–125
  auxiliary input devices, 122–124
  communication, 120–122
  multimedia accessories, 116–119
  multimedia read/write storage, 119–120
  printers, 125
  projectors, 124
  system unit, 113–116
Computer configuration, 131–133
Computer projectors, 124
Computer Shopper, 166
Cone charts, 350
Conferences, 167–168
Configuring multimedia computers, 131–133
  audio mixer and, 133
  integrating multiple features and, 131–132
  switches for, 132–133
Constructivist movement, 41
Content definition, 296
Contrast, of graphics, in PowerPoint, 219
Copying and pasting, with Clipboard, 200
Copyright, 155–156
Corporate training, 35–36
Correcting mistakes, 201–202
Cropping graphics, in PowerPoint, 221
Curves
  drawing, 340
  reshaping, 341
Cylinder charts, 350

Day trading, 38
Deletion
  of files at Web sites, 379
  of hyperlinks, 226
  of objects in PowerPoint, 223
  of presentation broadcasts, 389
Design paradigms, 291–294
  hierarchies, 293
  hybrid, 294, 295
  linear list, 292
  menus, 292
  networks, 294
Design templates, 345–347
  creating, 346–347
  predesigned, 345–346
Digital audio, 116–117
Digital cameras, 123–124
Digital Millennium Copyright Act (DMCA), 157–158
Digital recasting, 71
Digital subscriber line (DSL) modems, 121–122
Digital versatile discs. *See* DVDs (digital versatile discs)
Digital video, 25, 140–141, 330–337
  digitization process and, 330
  editing, 335–337
  playback process and, 330
  playing, 333–334
  preparing hard drive to record, 331
  recording, 331–333
  saving and compressing, 334–335
  video compression schemes for, 330, 331
Digitized pictures, 20–21
Dimming, of previously animated text, 236
Director, 100–101
Diskettes
  distributing to end users, 363–364
  packing applications onto, 361–363
Dissection, education about, 45
Distributing objects, in PowerPoint, 216
Distribution
  of CDs, 367

of diskettes, 363–364
of Zip disks, 365

DMCA (Digital Millennium Copyright Act), 157–158

Domain name system, 13–14

Doughnut charts, 350

Downloading from Internet, 312–313
bibliographic style for citing resources and, 313–317
Fair Use guidelines for, 317–318

Drawing, 338–342
of arrows, 339–340
of curves, 340
freehand, 341–342
of lines, 338–339
on-screen, during shows, 211–212
reshaping curves and, 341
of tables, 352–353

DSL (digital subscriber line) modems, 121–122

DVD drives, 116

DVDs (digital versatile discs), 12, 25
encyclopedias on, 90–93
recordable, 120

Dynamic HTML, 105

Economics education, 48

Editing
of equations, 354
of hyperlinks, 226
of text. *See* Text editing
of video, 335–337

Editing audio, 249–253
bandwidth and, 253
bits per sample and, 252
sampling rate and, 251

ED-MEDIA, 168

Education, 39–65
in art, 42–43
in biology, 44–46
in chemistry, 46–47
in civics, 48
cognitive versus behavioral psychology and, 40–41, 42
in economics, 48
elementary, 62–63
Fair Use interpretation for, 157
in foreign languages, 49–50
in geography, 51–53
in history, 53–56
Instructional Management Systems and, 105
in mathematics, 56–57
medical, 84–85
multimedia in, 9
in music, 57–59
in physics, 59–60
in reading and writing, 63–65
in science, 60–62

Electronic publishing, 8, 136–137

Electronic text, 18

Electronic town meetings, 78

Elementary education, 62–63

Embossing text, 195

Encryption, 151

Encyclopedias, 90–94
on CDs and DVDs, 90–93
on Internet, 93–94
online, 93

End Show command, linking Exit sign to, 284

Enhanced CD (CD Extra; CD Plus), 23

Entertainment, 67–75
cinema and, 67–71. *See also* Movies
interactive movies and, 72
video games and, 71
virtual reality and, 72–75

Equations, 354

Equity, 158–159

Errors, correcting, 201–202

Ethics, 158

Excite search engine, 308

Exhibits, 167–168

Exit sign, for History of Flight application, 283–285

Expansion ports and slots, 114–116

Fair Use, 156–158
guidelines for downloading from Internet and, 317–318

Fetch. *See* FTP software

File servers, case-sensitive, 379

Fill colors and effects, 198–199

FinanceNet, 82

Financial services, 34

Find and Replace option, 202

FireWire technology, 116

Flatbed scanners, 123

Flipping objects, in PowerPoint, 217

Flowcharting, 297, 298

Flying Fortress screen, for History of Flight application, 267–273

Folders, creating, 177–178
for broadcasting, 382–383
on Web, 380

Font selection, 172–173, 194–195

Foreground colors, 174

Foreign language education, 49–50

Format Painter, 202–203

Formatting toolbar, 191–192

Frame animation, 26, 99

Freehand drawing, 341–342

FrontPage and FrontPage Express, 103

FTP software
configuring connections, 374
creating new folders at Web sites using, 380
deleting and renaming files at Web sites using, 379
installing, 373
sending files using, 375–376

Full motion video capture, 118

Gateways, 150

Genetics, education about, 45

Geography education, 51–53

GIF images, animated, 104, 240–241

Gigabytes, 10

Government, 76–80
electronic town meetings and, 78
Internal Revenue Service Web site and, 83
national Information Superhighways and, 79
national security and, 79
patent searches and, 83
public service kiosks and, 77–78
small-business assistance from, 83
warfare and, 79–80

Graphic Converter. *See* Imaging software

Graphics, 18–21
animating, 237
arranging, 175
bitmapped, 18
clip art, 19–20
common formats, 18, 19
digitized, 20–21
downloading from Internet, 313
drawing. *See* Drawing
GIF, animated, 104, 240–241
hyperpictures, 21
imaging software and. *See* Imaging software
inserting, 207–209
linking to, 208–209
PowerPoint. *See* PowerPoint graphics
searching for, on Internet, 311–312
vector images, 19

Graphics accelerators, 117

Graphics objects, in PowerPoint, 219–221

Graphs
animating, 355–356
creating, 349

Grouping objects, in PowerPoint, 221–222

Handheld scanners, 122–123

Handles, 206

Hard drives, 10, 119
preparing for recording video, 331

Harvard Graphics, 98

HDTV (high-definition television), 141

Help system, in PowerPoint, 186–187
Heredity, education about, 45
Hierarchies, 293
High-definition television (HDTV), 141
History education, 53–56
History of Flight application, 256–290
  biplane and, 260–266
  Blue Angels and, 274–279
  completing and presenting, 283–290
  Flying Fortress and, 267–273
  home screen for, 256–259
  jumbo jets and, 280–282
Holography, 142
Home buttons, creating, 265, 272, 273, 278, 282
Home screen, for History of Flight application, 256–259
Home shopping, 7
Hybrid design paradigms, 294, 295
Hyperaudio, 24
HyperCard, 98
Hyperlinks, 224
  action buttons and, 227–228
  adding custom sound to, 248–249
  applications as objects and, 228
  editing and removing, 226
  hyperpictures and, 226
  hypertext and, 224–225
  of screens to buttons, 262–263, 270–271, 276–277, 281
  triggering, 264, 271, 277
Hypermedia programs, 98–99
Hyperpictures, 21, 226
HyperStudio, 99
Hypertext, 14, 18, 224–225
Hypervideo, 26

IAD (Internet Addiction Disorder), 149
Icons, navigational, 298, 299
Image Control feature, in PowerPoint, 220
Image files. *See* Graphics
Imaging software, 320–328
  capturing images using, 322–323
  converting file formats using, 324
  installing, 320–322
  reducing color depth using, 326
  resizing images using, 325
  special effects with, 327–328
Importing data, for charts, 351
IMSs (Instructional Management Systems), 105
Industry Standard Architecture (ISA) slots, 116
INFOCOMM, 167
Information Superhighways, 3, 137–138
  national, 79
Instruction, anchored, 39
Instructional Management Systems (IMSs), 105
Integrated Services Digital Network (ISDN), 121
IntelliSense feature, in PowerPoint, 181
Interactive movies, 72
Interactive multimedia merchandising, 30–33
  comparison shopping and, 32–33
  kiosks for, 30–31
  video merchandising and, 31
  virtual shopping and, 31–32
Intercasting, in TV's vertical-blanking interval, 142
Internal Margin setting, in PowerPoint, 218
Internal Revenue Service (IRS) Web site, 83
Internet, 13–14
  downloading from, 312–313
  encyclopedic resources on, 93–94
  national Information Superhighways and, 79
  online meetings over. *See* Online meetings
  phone services and, 143
  pornography and obscenity on, 147–148
  resources for historians on, 56
  search engines and. *See* Search engines
  sex on, 147
  taxation on, 153
  universal access to, 158–159
Internet2, 160
Internet Addiction Disorder (IAD), 149
Internet brownout, 160
Internet Protocol (IP), 13
Internet resources, bibliographic style for citing, 313–317
Internet World, 164
Iomega Jaz disks, 120
Iomega Zip disks, 120
  distributing to end users, 365
  publishing applications on, 364–365
IP (Internet Protocol), 13
IP addresses, 13–14
IRS (Internal Revenue Service) Web site, 83
ISA (Industry Standard Architecture) slots, 116
ISDN (Integrated Services Digital Network), 121
Italicizing text, 193–194

Java, 110–111
JavaScript, 104
Jaz disks, 120
Jini, 110–111
Journals
  online, bibliographic style for citing articles in, 314–315, 316, 317
  printed, 164
Jumbo jets screen, for History of Flight application, 280–282

Kennedy assassination, on CD-ROM, 55, 56
Kiosks
  merchandising, 30–31
  public service, 77–78
Knowbots, 144

Layout, 170–171
  for speaker's notes and audience handouts, 289, 290
Learning. *See also* Education
  situated, 39
Legal issues, 153–158
  copyright, 155–156
  ethics and, 158
  fair use, 156–158
  patents, 153–155
Library of Congress Web site, 93
Linear lists, 292
Line charts, 350
Lines, drawing, 338–339
Linking, to image files, 208–209
Links. *See* Hyperlinks
Listservs, 162, 163
Live video feeds, 24
Lobby pages, changing, 389
Lycos search engine, 307, 308

Magazines, printed, 164, 165–166
Mass market applications, 36–37
Mass media, multimedia in, 9
Mathematics education, 56–57
MCI (Media Control Interface), 109
Media Control Interface (MCI), 109
Medicine, 84–89
  anatomy and physiology and, 85–86
  medical training and, 84–85
  online resources for, 88–89
  videoconferencing in, 87, 88
  virtual surgery and, 86–87

MEDLINE, 88

Meetings. *See* Online meetings

Megabytes (MBs; megs), 10

Megahertz (MHz), 10

Menus, 292
in PowerPoint, 181

Merchandising, multimedia. *See* Interactive multimedia merchandising

Mergers, in multimedia, 6

Metaphors
navigational, 298, 299
screen design and, 175–176

Microsoft FrontPage and FrontPage Express, 103

Microsoft MCI, 109

Microsoft PowerPoint. *See* PowerPoint

Microsoft Word, 103

MIDI (Musical Instrument Digital Interface), 12, 23, 119

Mistakes, correcting, 201–202

MLA (Modern Language Association) bibliographic style, 313, 314, 315–316

Modems
cable, 122
DSL, 121–122
telephone, 120–121

Modern Language Association (MLA) bibliographic style, 313, 314, 315–316

Morphing, 26–27
cinema and, 67–68, 69

Motion Picture Experts Group (MPEG), 12, 119

Movie clips, 239–240

Movie effects, 239–240

Movies
interactive, 72
searching for, on Internet, 311–312

Movie screens
creating, 264, 271–272, 277–278, 281
rehearsing, 265, 272, 278, 282

Moving
of graphics, 206–207
of text, 191

MP3 (MPEG Audio Layer 3), 23–24

MPEG (Motion Picture Experts Group), 12, 119

MUDs (multi-user domains), 148–149

Multimedia
business and advertising and, 8
definition of, 2, 3
education and, 9
electronic publishing and, 8
as emerging technology, 145
finding resources on World Wide Web, 27
home shopping and, 7
impact of, 6–9, 146–149
importance of, 3–4
integration of data, 27
mass media and, 9
mergers and alliances in, 6
rate of growth of, 4–6, 7, 11
reasons for understanding, 9
telecommuting and, 6–7
uses of term, 1

Multimedia careers, 159–160

Multimedia Compendium, 166

Multimedia merchandising. *See* Interactive multimedia merchandising

Multimedia PCs, 2. *See also* Computer *entries*
components of, 10, 12

Multimedia sequencers, 99–101

Multimedia standards, 108–112
Apple QuickTime, 110
coping with multiple standards and, 112
Microsoft MCI, 109
Sony PlayStation, 111
Sun Java and Jini, 110–111

Multimedia travel systems, 34

Multi-user domains (MUDs), 148–149

Musée de Louvre Web site, 94

Musical Instrument Digital Interface (MIDI), 12, 23, 119

Music education, 57–59

National Association of Broadcasters (NAB) annual conference, 168

National Education Computing Conference (NECC), 168

National Information Superhighways, 79

National security, 79

Navigation, metaphors and icons for, 298, 299

Navigation buttons, customizing, 285

NECC (National Education Computing Conference), 168

NetMeeting. *See* Online meetings

Netscape Composer, 103

Netscape Navigator, 378

Network cards, 122

Networks, as design paradigms, 294

NewMedia.com Web site, 163

Normal view, in PowerPoint, 179

Numbered text, 199–200

Nursing. *See* Medicine

Object linking and embedding (OLE), 354–356
animating OLE objects and, 355–356

Objects
applications as, hyperlinks and, 228
OLE, animating, 355–356
in PowerPoint. *See* PowerPoint

Obscenity, on Internet, 147–148

Office Assistant, 186

OLE (object linking and embedding), 354–356

OLE objects, animating, 355–356

Olympic bidding, 80–82

Online banking, 8

Online brokerage market, 8

Online encyclopedias, 93

Online meetings, 391–398
adding participants to meetings in progress and, 394
answering calls to join meetings and, 394
Chat window and, 396
ending, 395
leaving, 395
Online Meeting toolbar and, 393–394
removing participants from, 394–395
sending files and, 397
sending messages and, 396
troubleshooting, 397–398
whiteboard and, 396
yielding control to another participant in, 395–396

Optical Data Corporation patent, 154

Outlines, creating presentations from, 184–185

Outline view, in PowerPoint, 179, 180

Outline window, editing text in, 201

Pack and Go Wizard, 360–368
distribution to end users and, 363–364, 365, 367
packing applications onto disks using, 361–363
PowerPoint Viewer and, 368
publishing on CD-R drives using, 366–367
publishing on high-capacity read/write disks using, 364–365
setting presentation options and, 367–368

Page-fed scanners, 123

Paint Shop Pro. *See* Imaging software

Patents, 153–155
searches for, 83

PCI (Peripheral Component Interconnect) slots, 116

Pen computing, 142

Peripheral Component Interconnect (PCI) slots, 116

PGP (Pretty Good Privacy), 151

Photographic backgrounds, 174

Physics education, 59–60

Physiology resources, 85–86

Pictures. *See* Graphics

Pie charts, 350

Playback, of video, 330, 333–334

PlayStation, 111

Pointing devices, 114, 115

Points, 173

Politics, 82

Pornography, on Internet, 147–148

Positioning
- of graphics, 206–207
- of text, 191

PowerPoint, 97, 104, 179–187, 213–223
- aligning objects in, 216
- animated GIF images in, 240–241
- animation effects in. *See* Animation effects
- audio CDs and, 241–242
- audio clips in, 237–238
- borders and, 214, 215
- charts and. *See* Charts
- creating presentations using, 182–185, 188–189
- deleting objects in, 223
- design templates and, 345–347
- distributing objects in, 216
- drawing with. *See* Drawing
- flipping objects in, 217
- graphics and. *See* PowerPoint graphics
- graphs and. *See* Graphs
- grouping and ungrouping objects in, 221–222
- Help system for, 186–187
- IntelliSense feature of, 181
- movie clips in, 239–240
- NetMeeting support and. *See* Online meetings
- presenting applications using. *See* Presenting multimedia applications
- publishing presentations using. *See* Broadcasting presentations; Pack and Go Wizard; Web page publishing
- rotating objects in, 217
- saving presentations using, 185, 190
- scaling objects in, 217–218
- sizing objects in, 217–218
- slide masters and, 344–345
- stacking order and, 222–223
- starting up, 179–181
- stopping, 185
- tables and. *See* Tables
- text editing with. *See* Text editing
- text objects in, 218–219
- 3-D effects using, 215–216
- toolbars and menus of, 181
- transition effects in, 232–233
- window of, 179–180

PowerPoint graphics, 204–212
- AutoShapes feature and, 210
- creating new screens and, 204–205
- cropping, 221
- drawing on-screen during shows and, 211–212
- finding clip art online and, 209
- graphics objects and, 219–221
- inserting clip art, 205–206
- inserting image files and, 207–209
- sizing and positioning, 206–207
- WordArt feature and, 211

PowerPoint Viewer, 368

Premiere, 99

Presentation packages, 96–98. *See also* PowerPoint

Presenting Communications, 165

Presenting multimedia applications, 285–288
- automatic timings for, 288
- going to specific slides, 286
- Rehearsal toolbar and, 285–286, 287
- rehearsing and, 290
- saving presentations as shows, 285
- self-running applications and, 287
- Slide Navigator for, 286
- speaker's notes and audience handouts for, 288–290
- starting applications from desktop, 286

Pretty Good Privacy (PGP), 151

Printed text, 16

Printers, 125

Printing, of speaker's notes and audience handouts, 288, 289

Privacy, regulation of, 150

Processors, 10

Professional associations, 166–167

Projectors, computer, 124

Proportional spacing, 172

Protectionism, regulation for, 152–153

Psychology, cognitive versus behavioral, 40–41, 42

Public service kiosks, 77–78

Publishing presentations. *See* Broadcasting presentations; Pack and Go Wizard; Web page publishing

Purchasing computers. *See* Computer buying

Pyramid charts, 350

QuickTime (Apple), 110

Radar charts, 350

RAM (random access memory), 10, 114

Reading education, 63–65

Read/write storage, multimedia, 119–120

Real estate services, 35

Recordable CD-ROMs, 120

Recordable DVDs, 120

Recording video, 331–333

Redo button, 199

Regulation, 149–153
- censorship and, 151–152
- encryption and, 151
- privacy and, 150
- protectionism and, 152–153
- taxation and, 153
- violence and, 152

Rehearsal toolbar, 285–286, 287

Rehearsing
- of action buttons, 265–266, 273, 282
- of movie screens, 265, 272, 278, 282
- of presentations, 290
- of Web pages, 376–377

Removing. *See* Deletion

Renaming, of files at Web sites, 379

Rippers, 24

Rotating objects, in PowerPoint, 217

Rural datafication, 138

SALT (Society for Applied Learning Technology), 167

Sampling rate, for audio recordings, 251

Sans serif fonts, 172, 173

Saving
- of applications, 185
- of video, 334–335

Saving presentations, 190
- as shows, 285
- as Web pages, 369–372

Scaffolding, 41

Scaling objects, in PowerPoint, 217–218

Scanned text, 16–18

Scanners, 122–123

Scatter charts, 350

Scheduling broadcasts, 383–384, 385, 389

Schemata, 41

Science education, 60–62

Screen design, 170–176
- arranging text and pictures for, 175
- common look and feel and, 176
- font selection for, 172–173

foreground versus background colors for, 174
layout for, 170–171
metaphors and, 175–176
photographic backgrounds for, 174
text sizing for, 173
user friendliness and, 175

Screens, 256–259
adding text, 268
adding text to, 258, 260, 275, 280
ambient sound for, 259, 260, 269, 275–276, 281
arranging text on, 258–259, 260, 268, 269, 275, 276, 281
creating, 257, 260, 267–268, 274–275, 280
linking to buttons, 262–263, 270, 271, 276–277, 281
movie, creating, 264, 271–272, 277–278, 281
titling, 257–258, 260, 268, 275, 280

Scribbling, 341–342

Scripting, 297

SCSI (small computer system interface) connectors, 115

Search engines, 307–312
AltaVista, 307, 308, 310–311
Excite, 308
Lycos, 307, 308
searching for pictures, sounds, and movies using, 311–312
searching for text using, 307–311
WebCrawler, 307, 308
Yahoo, 307, 308–310

Self-running applications, 287

Serifs, 172, 173

Sex, online, 147

Shadowing text, 195

Shapes, AutoShapes feature and, 210

Shareware, 320

Shopping
comparison, 32–33
virtual, 31–32

Situated learning, 39

Sizing
of graphics, 206–207, 325
of objects in PowerPoint, 217–218
of text, 192

Slide masters, 344–345

Slide navigator, 286

Slide scanners, 123

Slide Show view, in PowerPoint, 179, 180

Slide Sorter view, in PowerPoint, 179, 180

Slide transitions, 232

Small-business assistance, 83

Small computer system interface (SCSI) connectors, 115

Smithsonian Institution Web site, 94

Snappy Video Snapshot, 124

Society for Applied Learning Technology (SALT), 167

Sony PlayStation, 111

Sound, 22–24. *See also* Audio
ambient, 248, 259, 260, 269, 275–276, 281
audio CD, 23
CD Plus, 23
custom, adding to hyperlinks, 230
default, adding to hyperlinks, 229–230
8-bit, 12
hyperaudio, 24
inserting, 237–238
MIDI, 23
MP3, 23–24
recording. *See* Waveform audio recording
searching for, on Internet, 311–312
16-bit, 12
waveform audio, 22–23

Sound effects, transitional, 233

Spacing, proportional, 172

Speakers, 117

Speaker's notes, 288–290

Special effects, with images, 327–328

Special symbols, inserting, 200–201

Speech recognition, 143

Spell checking, 202

Stacking order, in PowerPoint, 222–223

Starting
of broadcasting presentations, 386
of multimedia presentations from desktop, 286
of PowerPoint, 179–181

Stock charts, 350

Storyboarding, 296–297

Subscripts, 195

Sun Java and Jini, 110–111

Superimposition, 69

Superscripts, 195

Surface charts, 350

Surgery, virtual, 86–87

Switches, 132–133

Syllabus, 165

Symbols, inserting, 200–201

Synthesizers, 12

Systems approach, 302

System unit, 113–116
central processor and, 113
color display and, 114
expansion ports and slots and, 114–116
pointing device and, 114, 115
RAM and, 114

Tables
animating, 355–356
creating, 352
drawing, 352–353

Tables and Borders toolbar, 352–353

Task analysis, 296

Taxation, on Internet, 153

TCP/IP (Transmission Control Protocol/Internet Protocol), 120

Technology & Learning, 165

Telecommunication, 120–122
cable modems and, 122
DSL modems and, 121–122
ISDN and, 121
network cards and, 122
telephone modems and, 120–121

Telecommuting, 6–7

Telephone, Internet phone services and, 143

Telephone modems, 120–121

Television, intercasting and, 142

Templates, creating presentations from, 183–184

TERC, 163–164

Text, 16–18. *See also* Hypertext
animating, 234–235
arranging, 175, 258–259, 260, 268, 269, 275, 276, 281
building, 235, 236
downloading from Internet, 312–313
electronic, 18
entering in screens, 258, 260, 268, 275, 281
hypertext, 14, 18, 224–225
previously animated, dimming, 236
printed, 16
scanned, 16–18
searching for, on Internet, 307–311
size of, 173

Text boxes, inserting, 197, 198

Text editing, 191–203
aligning and centering text and, 193
background fill colors and effects and, 198–199
bolding text and, 193
bulleted and numbered text and, 199–200
changing background color and, 196–197
coloring text and, 195–196
copying and pasting with Clipboard and, 200
correcting mistakes and, 201–202
embossing and shadowing and, 195

Text editing *(continued)*
font selection and, 194–195
Format Painter and, 202–203
Formatting toolbar for, 191–192
inserting special symbols and, 200–201
inserting text boxes and, 197, 198
italicizing text and, 193–194
moving text and, 191
in Outline window, 201
sizing text and, 192
superscripts and subscripts and, 195
underlining text and, 194
Undo and Redo buttons and, 199
Text objects, in PowerPoint, 218–219
T.H.E. Journal, 164
3-D effects, in PowerPoint, 215–216
3D Studio, 100
Timings, automatic, 288
Titles, for screens, 257–258, 260, 268, 275
Toolbars, in PowerPoint, 181
ToolBook, 102–103
Town meetings, electronic, 78
Training, corporate, 35–36
Transitional sound effects, 233
Transition effects, 232–233
Transmission Control Protocol/Internet Protocol (TCP/IP), 120
Transparent colors, in PowerPoint, 220–221
Travel systems, multimedia, 34
Triggering hyperlinks, 264, 271, 277
Troubleshooting
of online meetings, 397–398
of Web pages, 376–377
TV tuners, 118, 119

Underlining text, 194
Undo button, 199
Ungrouping objects, in PowerPoint, 221–222
Unisys GIF patent, 155
Universal access, 158–159
USB (Universal Serial Bus) ports, 115
User friendliness, screen design and, 175

V-chip, 152
Vector animation, 26
Vector images, 19
Video, 24–26
digital. *See* Digital video
downloading from Internet, 313
DVDs and, 25
hypervideo, 26
live feed, 24
videodiscs, 25
videotape, 24–25
Videoconferencing, 33–34
cameras for, 124
in medicine, 87, 88
Videodiscs, 25
Video games, 71
violence in, 146–147
Video merchandising, 31
Video overlay, 118
Videotape, 24–25
Viewing presentation broadcasts, 387–388
Violence
regulation of, 152
in video games, 146–147
Virtual campaigning, 82
Virtual reality (VR), 138
for entertainment, 72–75
Virtual shopping, 31–32
Virtual surgery, 86–87
Voice recordings, 246–247
VR (virtual reality), 138
for entertainment, 72–75

Warfare, 79–80
Wars, on CD-ROM, 54–55
Waveform audio, 22–23
Waveform audio recording, 243–253
adding custom sound to hyperlinks and, 248–249
adjusting quality of, 251–252
of ambient sound, 248
bandwidth and, 253
checking record levels and, 246
editing and, 249–253
first, making, 245–246
of narrations, 246–247
preparing to make, 243, 244
Wavetables, 12
WebCams, 124
WebCrawler search engine, 307, 308
Web page creation tools, 103–105
Web page publishing, 369–380
configuring FTP connections and, 374
creating new folders and, 380
deleting and renaming files at Web sites and, 379
FTPing files and, 375–376
installing FTP software for, 373
mounting published files on Web and, 373–378
Netscape Navigator and, 378
rehearsing and troubleshooting and, 376–377
saving presentations as Web pages and, 369–372
unsupported features and, 377
Web pages, bringing to life, 104–105
Web sites, 163–164
Whiteboard, in online meetings, 396
Wired, 165
Wireless communications, 143–144
Word, 103
WordArt feature, 211
Word Wrap setting, in PowerPoint, 219
World Wide Web (WWW), 14
finding multimedia resources on, 27
music resources on, 59
Writing education, 63–65
WS_FTP. *See* FTP software
Wyatt, Keith, 58
WYSIWYG text entry, 189

X,Y charts, 350

Yahoo search engine, 307, 308–309

Zip disks, 120
distributing to end users, 365
publishing applications on, 364–365
Zone of proximal development, 41