

MULTIMEDIA APPLICATIONS I

Curriculum Content Frameworks

Please note: All assessment questions will be taken from the knowledge portion of these frameworks.

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Curriculum Content Frameworks

MULTIMEDIA APPLICATIONS I

Grade Levels: 11, 12
Course Code: 492360

Prerequisite: Keyboarding
Word Processing I & II
(or Computer Business Applications)
Desktop Publishing I (Suggested)

Course Description: Multimedia Applications I is a one-semester course giving students experience in using multimedia to merge text, graphics, video, and sound. Applied principles are used to analyze and organize information, set up a design structure and produce special visual expressions.

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Unit 1: Introduction to Multimedia

Hours: 5

Terminology: Animation, Copyright laws, Fair use, Graphics, Interactive, Multimedia, Multimedia careers, Public domain, Royalty-free, Shareware, Sound, Text, Trademark, Video

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do			ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description	
1.1 Define terminology	1.1.1 Manipulate vocabulary and concepts individually and in groups	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3] Applies/Understands technical words that pertain to multimedia [1.3.6]	
1.2 Describe the basic elements of multimedia	1.2.1 Identify the typical components of multimedia (text, graphics, sound, video, and animation)		Listening Reading	Comprehends ideas and concepts related to multimedia [1.2.1] Identifies relevant details, facts, and specifications [1.3.16]	
1.3 Identify current and emerging multimedia technologies and their effect on society	1.3.1 Study and compare different classifications of multimedia (education, business, entertainment, etc.)	Foundation	Listening Speaking	Comprehends ideas and concepts related to multimedia [1.2.1] Communicates a thought, idea, or fact in spoken form [1.5.5]	
1.4 Discuss career opportunities in multimedia	1.4.1 Research careers in multimedia	Personal Management	Career Awareness, Development, and Mobility	Develops skills to locate, evaluate, and interpret career information [3.1.3]	
1.5 Discuss the laws and guidelines that affect multimedia, i.e. copyright, trademark, etc.	1.5.1 Analyze and illustrate the basic concepts of the copyright law, fair use, public domain, shareware, trademark, and royalty free	Foundation	Listening	Comprehends ideas and concepts related to education and multimedia [1.2.1] Receives and interprets verbal messages [1.2.8]	

Unit 2: Hardware and Software

Hours: 5

Terminology: Animation software; Burner; Compact disk; Development system; Digital Video Disk (DVD); Drawing software; DVD authoring software; Firewire; Flash drive; Flash memory; Gigabyte (Gb); Image editing software; Kiosk; Magnetic storage; Media player; Megabyte (Mb); Memory card; Optical storage; Painting software; Playback system; Plug-in; Podcast; Podcasting software; Presentation software; Recording software; Red, Green, Blue (RGB); Resolution; Sound editing software; Terabyte (TB); Universal Serial Bus (USB); Video capture device; Video editing software; Web design software

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
2.1 Define terminology	2.1.1 Manipulate vocabulary and concepts individually and in groups	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3] Applies/Understands technical words that pertain to multimedia hardware and software [1.3.6]	
2.2 Discuss current and emerging methods to deliver multimedia and the equipment needed	2.2.1 Access three different multimedia sources (i.e. Internet, slide show, book on CD, etc.) and identify elements within each source	Foundation	Listening	Comprehends ideas and concepts related to hardware and software [1.2.1] Receives and interprets verbal messages [1.2.8]	
	2.2.2 Identify basic equipment needed for presentation (i.e. projectors, smartboards, Internet, kiosks, etc.)		Reading	Uses written resources to obtain factual information [1.3.23]	
			Speaking	Applies/Uses technical terms appropriate to audience [1.5.2]	
2.3 Discuss the hardware components for a multimedia playback system	2.3.1 Identify and label the hardware components of a playback system (processor, storage, speakers, etc.)	Foundation	Listening	Comprehends ideas and concepts related to hardware and software [1.2.1] Receives and interprets verbal messages [1.2.8]	
	2.3.2 Name the basic characteristics of color displays (i.e. RGB, resolution, etc.) and explain the function of each		Speaking	Communicates a thought, idea, or fact in spoken form [1.5.5]	
2.4 Describe the additional components needed for a multimedia development system	2.4.1 Identify the hardware components for a development system: digital camera, digital video camera, scanner, microphone, speakers, firewire, video capture device, USB	Foundation	Listening	Comprehends ideas and concepts related to hardware and software [1.2.1]	
			Speaking	Communicates a thought, idea, or fact in spoken form [1.5.5]	

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
2.5 List storage media and hardware available for multimedia	2.5.1 Compare and contrast storage media available and the storage capacity of each	Foundation	Listening	Comprehends ideas and concepts related to storage media and hardware [1.2.1]	
	2.5.2 Compare and contrast the advantages and disadvantages of available storage media/hardware		Reading	Reads and follows instructions to operate technical equipment [1.3.19]	
	2.5.3 Access/Write using optical storage media (CD/DVD)		Science	Applies Knowledge to complete a practical task [1.4.3]	
	2.5.4 Access/Write using flash storage media		Speaking	Participates in conversation, discussion, and group presentations [1.5.8]	
2.6 Describe the types of software needed to develop and playback multimedia projects	2.6.1 Compare and contrast different types software used for developing multimedia projects	Foundation	Listening	Comprehends ideas and concepts related to multimedia software [1.2.1] Receives and interprets verbal messages [1.2.8]	
	2.6.2 Compare and contrast different software used for playback, i.e. media players		Reading	Applies technical words that pertain to multimedia software [1.3.6]	
			Speaking	Communicates a thought, idea, or fact in spoken form [1.5.5]	

Unit 3: Design Principles

Hours: 5

Terminology: 3-D, Alignment, Asymmetrical balance, Balance, Color, Consistency, Contour, Contrast, Dingbats, Display font, Flow, Focal point, Font, Point, Repetition, Reverse type, Sans serif, Serif, Shadow, Small cap, Symmetrical balance, Text wrap, Texture, Typeface, Typography, Unity

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
3.1 Define terminology	3.1.1 Manipulate vocabulary and concepts individually and in groups	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3] Applies/Understands technical words that pertain to design principles [1.3.6]	
3.2 Discuss basic design principles	3.2.1 Create examples of basic design principles; focal point, balance, flow, repetition, unity, contrast, color	Foundation	Reading	Applies/Understands technical words that pertain to design principles [1.3.6] Draws conclusions from what is read [1.3.12] Identifies relevant details, facts, and specifications [1.3.16]	
		Thinking	Reasoning	Comprehends ideas and concepts related to design principles [4.5.2]	
3.3 List the basic categories of typefaces and their characteristics	3.3.1 Design a document using fonts from the basic categories	Foundation	Reading	Applies/Understands technical words that pertain to typefaces [1.3.6] Draws conclusions from what is read [1.3.12] Identifies relevant details, facts, and specifications [1.3.16]	
		Thinking	Reasoning	Comprehends ideas and concepts related to typefaces [4.5.2]	

CAREER and TECHNICAL SKILLS What the Student Should be Able to Do		ACADEMIC and WORKPLACE SKILLS What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
3.4 Discuss the guidelines for selecting fonts	3.4.1 Critique examples of multimedia presentations for appropriate and inappropriate use of fonts	Foundation Thinking	Reading Reasoning	Applies/Understands technical words that pertain to fonts [1.3.6] Draws conclusions from what is read [1.3.12] Identifies relevant details, facts, and specifications [1.3.16] Comprehends ideas and concepts related to fonts [4.5.2]
3.5 Discuss basic styles and special formatting styles	3.5.1 Create a multimedia presentation applying styles to text: bold, italicize, underline, shadow, small cap, 3-D, contour, texture, color, reverse type, text wrap, etc.	Foundation Thinking	Reading Reasoning	Applies/Understands technical words that pertain to formatting styles [1.3.6] Draws conclusions from what is read [1.3.12] Identifies relevant details, facts, and specifications [1.3.16] Comprehends ideas and concepts related to formatting styles [4.5.2]
3.6 Discuss alignment options	3.6.1 Apply different alignment options to the text in a multimedia presentation	Foundation Thinking	Reading Reasoning	Applies/Understands technical words that pertain to alignment [1.3.6] Draws conclusions from what is read [1.3.12] Identifies relevant details, facts, and specifications [1.3.16] Comprehends ideas and concepts related to alignment [4.5.2]

Unit 4: Digital Imaging

Hours: 20

Terminology: Bitmap (BMP), Clip art, Compression, Cropping, Digital zoom, Feathering, File conversion, Filters, Graphics Interchange Format (GIF), Grayscale, Image size, Joint Photographer Experts Group (JPEG), Layering, Lossy compression, Lossless compression, Macro zoom, Masking, Opacity, Optical zoom, Pixel, Portable Network Graphics (PNG), Raster, Rasterize, Scaling, Stock photography, Tagged Image File (TIFF), Transparency, Uploading, Vector graphics, Windows Metafile (WMF)

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do		What the Instruction Should Reinforce		
Knowledge	Application	Skill Group	Skill	Description
4.1 Define terminology	4.1.1 Manipulate vocabulary and concepts individually and in groups	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3] Applies/Understands technical words that pertain to digital imaging [1.3.6]
4.2 Discuss the basic characteristics of the digital camera	4.2.1 Demonstrate an understanding of the basic characteristics of a digital camera: storage media, uploading, resolution, zoom	Foundation	Science	Applies knowledge to complete a practical task [1.4.3]
	4.2.2 Demonstrate basic maintenance and care of the digital camera		Speaking	Participates in conversation, discussion, and group presentations [1.5.8]
	4.2.3 Take pictures with the digital camera and upload to a computer			
4.3 Discuss digital image file formats and compression	4.3.1 Compare/Contrast the two categories of digital images: bitmap, vector	Foundation	Listening	Comprehends ideas and concepts related to graphic file formats [1.2.1]
	4.3.2 Identify digital file formats: bmp, gif, jpg, png, tif, wmf		Speaking	Applies/Understands technical terms as appropriate to audience [1.5.2]
	4.3.3 Compare the file sizes and qualities of digital images		Writing	Analyzes data, summarizes results, and makes conclusions [1.6.2]
	4.3.4 Convert an image to a different format			

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
4.4 Identify the software available for creating and editing digital images	4.4.1 Examine software for creating and editing bitmap (paint) and vector (draw) images	Thinking	Creative Thinking	Uses imagination to create something new [4.1.1]	
	4.4.2 Create bitmap images			Combines ideas or information in a new way [4.1.2]	
	4.4.3 Create vector images		Knowing How to Learn	Applies new knowledge and skills to digital images [4.3.1]	
	4.4.4 Edit images in some of the following ways: crop, scale, convert to grayscale, transparent overlay, masking, filters, feathering, combining images				
4.5 Identify sources and specific uses of digital images	4.5.1 Locate sources of royalty-free stock photography and other digital images	Thinking	Creative Thinking	Uses imagination to create something new [4.1.1]	
	4.5.2 Create a multimedia presentation incorporating digital images			Combines ideas or information in a new way [4.1.2]	
			Knowing How to Learn	Applies new knowledge and skills to digital images [4.3.1]	

Unit 5: Sound

Hours: 10

Terminology: .au, Audio Interchange File Format (AIF), Kilohertz (kHz), Microphone, Musical Instrument Digital Interface (MIDI), MP3, Real Audio (RA), Ripper, Sampling, Sampling rate, Sound card, Streaming audio, Volume, Wave (WAV), Windows Media Audio (WMA)

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
5.1 Define terminology	5.1.1 Manipulate vocabulary and concepts individually and in groups	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3] Applies/Understands technical words that pertain to multimedia sound [1.3.6]	
5.2 Discuss how sound is used in multimedia	5.2.1 Access multimedia sources that have sound	Foundation	Listening	Comprehends ideas and concepts related to multimedia sound [1.2.1]	
	5.2.2 Analyze purpose of sound in multimedia	Thinking	Speaking	Communicates a thought, idea, or fact in spoken form [1.5.5]	
	5.2.3 Judge whether sound enhances or detracts from the application		Decision Making	Evaluates information/data to make the best decision [4.2.5]	
5.3 Discuss common sound file formats and compression	5.3.1 Compare quality size and platform compatibility of audio formats; AIF, AU, MIDI, MP3, WAV, WMA	Foundation	Listening	Comprehends ideas and concepts related to waveforms [1.2.1]	
5.4 Discuss the software/hardware and settings needed for sound playback, creation, and editing	5.4.1 Connect speakers, microphone, and headphones to the computer and adjust settings	Foundation	Reading	Reads and follows instructions to operate technical equipment [1.3.19]	
	5.4.2 Identify programs available for playback	Thinking	Science	Applies knowledge to complete a practical task [1.4.3]	
	5.4.3 Create a sound file using recording software		Uses equipment and techniques to record narration, edit sound files, and insert audio clips [1.4.23]		
	5.4.4 Edit a sound file using a sound editor program, i.e.: mix sound, insert sounds, cut sounds, rip sound files, convert sound formats		Knowing How to Learn	Uses available resources to acquire new skills or improve skills [4.3.4]	

CAREER and TECHNICAL SKILLS			ACADEMIC and WORKPLACE SKILLS		
What the Student Should be Able to Do			What the Instruction Should Reinforce		
Knowledge	Application		Skill Group	Skill	Description
5.5 Identify sources and specific uses of sound files	5.5.1	View web sites which provide royalty-free sound files	Thinking	Creative Thinking	Combines ideas or information in a new way [4.1.2]
	5.5.2	Record a narration for a multimedia project		Knowing How to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]
	5.5.3	Insert audio clips into a multimedia project			Uses available resources to acquire new skills or improve skills [4.3.6]

Unit 6: Introduction to Video

Hours: 10

Terminology: .mov, Analog, Audio Video Interleave (.avi), Digital, Motion Pictures Expert Group (.mpg) Real-time, Streaming media, Video, Video camera, Windows Media Video (.wmv)

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
6.1 Define terminology	6.1.1 Manipulate vocabulary and concepts individually and in groups	Foundation	Reading	Applies information and concepts derived from printed materials [1.3.3] Applies/Understands technical words that pertain to video in multimedia [1.3.6]	
6.2 Describe ways that video can enhance multimedia	6.2.1 View examples of video in multimedia presentations	Foundation	Listening	Comprehends ideas and concepts related to analog and digital video [1.2.1]	
	6.2.2 Compare/Contrast analog and digital video		Speaking	Applies/Uses technical terms appropriate to audience [1.5.2]	
6.3 Describe the most commonly used file formats for digital video	6.3.1 Compare/Contrast quality, size, and platform compatibility of video file formats: AVI, MPEG, WMV, MOV, etc.	Foundation	Listening	Comprehends ideas and concepts related to video file formats [1.2.1]	
			Reading	Applies/Understands technical words that pertain to video file formats [1.3.6]	
6.4 Describe sources for obtaining and viewing video	6.4.1 View and critique examples of video	Foundation	Listening	Comprehends ideas and concepts related to video [1.2.1]	
		Thinking	Knowing How to Learn	Locates appropriate learning resources to acquire or improve knowledge and skills [4.3.3]	
6.5 Identify the software available for creating videos	6.5.1 Create a video using images	Thinking	Creative Thinking	Uses imagination to create something new [4.1.1]	
			Seeing Things in the Mind's Eye	Visualizes a finished product [4.6.4]	

Unit 7: Integration

Hours: 5

Terminology: None

CAREER and TECHNICAL SKILLS		ACADEMIC and WORKPLACE SKILLS			
What the Student Should be Able to Do		What the Instruction Should Reinforce			
Knowledge	Application	Skill Group	Skill	Description	
7.1	Integrate the basic elements of multimedia into a project	7.1.1	Create a multimedia project with sound, digital images, and text	Thinking	Creative Thinking Uses imagination to create something new [4.1.1] Seeing Things in the Mind's Eye Visualizes a finished product [4.6.4]

Glossary

Unit 1: Introduction to Multimedia

1. Animation – a simulation of movement or the perception of motion created by the rapid display of a series of still images
2. Copyright laws – laws designed to protect intellectual property rights
3. Fair use – a section of the US copyright law that allows the use of copyrighted works in reporting news, conducting research, and teaching
4. Graphics – multimedia elements such as a drawing, photo, or piece of clip art
5. Interactive – a feature of a multimedia project that allows the user to control some aspects of the presentation
6. Multimedia – a computer-based communication process that incorporates text, graphics, sound, animation, and video
7. Multimedia careers – careers that incorporate multiple elements of multimedia, such as game design, music and video production, animation, web design, etc
8. Public domain – property rights that belong to the community at large, are unprotected by copyright or patent, and are subject to use by anyone
9. Royalty free – prepared material that can be used, legally, without paying a fee to the artist, publishing company, etc.
10. Shareware – software distributed on the basis of an honor system
11. Sound – a multimedia element such as a narration, music, or other sound clip
12. Text – a multimedia element consisting of alphanumeric characters
13. Trademark – a name, symbol, or other device identifying a product; it is officially registered with the US government and its use is legally restricted to its owner
14. Video – a series of framed images put together, one after another, to simulate motion and interactivity

Unit 2: Hardware and Software

1. Animation software – software that takes independent pictures or frames and puts them together to form the illusion of continuous motion
2. Burner – a CD or DVD writer; can be internal or external
3. Compact disk – an optical storage medium made of molded polymer for electronically recording, storing, and playing back audio, video, text, and other information in digital form; also CD-ROM, CD-R, CD-RW
4. Development system – a high-end computer system used to create multimedia projects Includes additional components like video capture devices, microphones, scanners, etc
5. Digital Video Disk (DVD) – an optical disk with a capacity of 47 Gb or more that can hold a full-length commercial movie; also DVD-ROM, DVD±R, DVD±RW, Blu-ray
6. Drawing software – program used to create vector graphics; provides for freehand as well as geometric shapes
7. DVD authoring software – software that is aimed primarily at converting videos into movie DVDs, complete with titles and menus, that can be played on a DVD player
8. Firewire – high-speed serial technology for connecting peripherals to a computer; particularly popular for multimedia peripherals such as digital video camcorders and other high-speed devices like hard disk drives and printers
9. Flash drive – a plug-and-play portable storage device that uses flash memory and is lightweight enough to attach to a key chain; also known as a pen drive, keychain drive, thumb drive, jump drive
10. Flash memory – sometimes called “flash ram”; is solid-state memory that can be erased and reprogrammed; gets its name because the microchip is organized so that a section of memory cells are erased in a single action or “flash”
11. Gigabyte (Gb) – a unit of storage measuring roughly one billion bytes
12. Image editing software – software designed to edit, manipulate or modify digital photographs
13. Kiosk – a free-standing computer-based system that allows transactions, such as airline self-ticketing systems, or provides information, such as those systems found in shopping malls
14. Magnetic storage – storage device that encodes data as microscopic magnetized needles on the disk's surface
15. Media player – a program that allows you to play audio, video, and mixed-media files
16. Megabyte (Mb) – a unit of storage measuring roughly one million bytes
17. Memory card – a small removable storage medium used to store data in digital input devices such as cameras and audio recorders; some versions are called *memory sticks*

18. Optical storage – storage device that records data by burning microscopic holes in the surface of the disk with a laser
19. Painting software – programs used to create bitmap images; useful in creating original art because they provide the tools used by artists (such as brushes and pens)
20. Playback system – a computer that is configured to play multimedia projects, as contrasted with a development system used to create multimedia projects
21. Plug-in – a usually small piece of software that adds features to or enhances a larger piece of software
22. Podcast – an audio broadcast that has been converted to an MP3 file or other audio file format for playback in a digital music player or computer
23. Podcasting software – a collection of programs used to create, broadcast, and receive podcasts
24. Presentation software – programs used to create graphic presentations with visual aids, handouts, slides, etc; or for creating text with graphics, audio, and/or video
25. Recording software – programs designed to record audio files
26. Red, Green, Blue (RGB) – the color model used to display color on computer monitors, televisions, and similar devices
27. Resolution – the quality or sharpness of an image, usually measured in pixels per inch; the more pixels, the higher the resolution
28. Sound editing software – software used to edit and manipulate audio files
29. Terabyte (Tb) – a unit of storage measuring roughly one trillion bytes
30. Universal Serial Bus (USB) – an external serial bus standard that supports data transfer rates of 480 mbps (480 million bits per second); allows for standardized interface socket
31. Video capture device – an expansion device (internal or external) that digitizes full-motion video from a VCR, camera, or other video source
32. Video editing software – program used to capture, edit and manipulate video images, add effects, titles, music to create studio-quality video
33. Web design software – programs used to design and create single web pages or entire web sites

Unit 3: Design Principles

1. 3-D – a special formatting style that creates the illusion of depth, height, and width
2. Alignment – the placement of text or graphics on a line (right, left, center, or justified)
3. Asymmetrical balance – the type of balance when both sides of the central axis are not identical, yet appear to have the same visual weight; a "felt" equilibrium or balance between the parts of a composition rather than actual equilibrium or balance
4. Balance – a feeling of equality of weight, attention, or attraction of the various elements within a production as a means of accomplishing unity
5. Color – the design principle that relates to color combinations, colored type, and the psychology of color
6. Consistency – maintaining the same layout and style throughout the presentation, i.e. fonts, colors, spacing, graphic elements, etc
7. Contour – a special formatting style that shapes or guides text around a shape, line, or other element
8. Contrast – the differences in values, colors, textures, shapes, and other elements within a presentation
9. Dingbats – typefaces that consist of graphic symbols or ornaments, rather than letters or numbers
10. Display font – fonts designed to attract attention
11. Flow – the visual path created by the arrangements of elements
12. Focal point – the visually dominant elements in a presentation; the center of interest
13. Font – a family of alphabetic characters, numbers, punctuation marks and other symbols that share a consistent design; often used synonymously with *typeface*
14. Point – a unit of measurement used to describe the size of text; one point = 1/72 of an inch
15. Repetition – the use of the same visual effect a number of times in the same project
16. Reverse type – special formatting style that uses light color text on a dark background
17. Sans serif – fonts that do not have tails or strokes at the end of the characters
18. Serif – fonts that have a tail or stroke at the end of some characters
19. Shadow – a formatting style that adds depth to text or other objects, making them appear more three-dimensional
20. Small cap – a formatting style that displays uppercase letters in a smaller size than the regular uppercase letters, typically the height of lowercase letters in that font

21. Symmetrical balance – type of balance that occurs when the weight of a composition is evenly distributed around a central vertical or horizontal axis
22. Text wrap – a special formatting style that allows text to flow around an image
23. Texture – a special formatting style that creates the illusion of actual textures such as wood, metal, objects in nature, etc.
24. Typeface – a family of alphabetic characters, numbers, punctuation marks and other symbols that share a consistent design; often used synonymously with *font*
25. Typography – the study of all elements of type as a means of visual communication; includes the shape, size, and spacing of characters
26. Unity – the combination of all elements working together to achieve a sense of harmony in your design; grouping related items close together

Unit 4: Digital Imaging

1. Bitmap – a category of graphics that represents the digital image as an array of dots called pixels
2. Bitmap (.bmp) – an uncompressed bitmap file format that is very large and is not appropriate for the web
3. Clip art – ready-to-use illustrations
4. Compression – encoding data to take up less storage space and less bandwidth for transmission
5. Cropping – eliminating unwanted areas of an image
6. Digital zoom – zoom takes a portion of the image and enlarges it electronically; the image quality is reduced since digital zoom enlarges the same set of pixels without adding detail
7. Feathering – special formatting style that blurs the edge of an image
8. File conversion – the process of saving a file in a different file format than its current format; i.e. changing .jpg to .tif
9. Filters – special effects available in graphics software that can be applied to images
10. Graphics Interchange Format (.gif) – compressed bitmap file format (lossless) that supports only 256 colors; supports transparency and animation; appropriate for the web
11. Grayscale – the use of many shades of gray to represent an image
12. Image size – the display size of an image represented in pixels, that is an image size of 640 x 480 would be 640 pixels wide and 480 pixels high
13. Joint Photographer Experts Group (.jpg) – a compressed bitmap file format (lossy) that is preferred for photographs; supports 16 million colors and is appropriate for the web; does not support transparency or animation
14. Layering – a feature that allows you to place one image on top of another and edit each independently
15. Lossy compression – a compression formula that reduces the file size by removing certain pixels
16. Lossless compression – a compression formula that reduces the file size without data loss
17. Macro zoom – zoom that allows you to take extreme close-ups
18. Masking – hiding part of a layer so that you can manipulate only the visible parts of the layer
19. Opacity – the percentage of transparency applied to an image
20. Optical zoom – zoom that physically increases the length of the lens, essentially creating a magnifying glass; produces a higher-quality image

21. Pixel – a single point in a graphic image on a digital display; the smallest unit a monitor can display
22. Portable Network Graphics (.png) – compressed bitmap file format (lossless) similar to the .gif format but is not limited to 256 colors; appropriate for the Web; supports transparency
23. Raster – another term for *bitmap*
24. Rasterize – converting vector objects in an image to raster (bitmap) content
25. Scaling – a change in the size of an image or element in both X-Y directions
26. Stock photography – ready-to-use photographs
27. Tagged Image File (.tif) – uncompressed bitmap file format; supports 16 million colors; file size is very large and is not appropriate for the web
28. Transparency – a visual quality in which a distant image or element can be seen through a nearer one
29. Uploading – transferring files or images to the computer from a storage source such as a media card or flash drive
30. Vector graphics – an image created by using a series of mathematically defined lines and curves rather than pixels, making the image easier to rescale; also called *draw*-type graphics; images do not lose quality when resized; can typically be edited
31. Windows Metafile (.wmf) – Microsoft’s vector file format; most Microsoft clip art are metafiles and can be edited

Unit 5: Sound

1. .au – sometimes referred to as audio/basic, this is one of the most common audio formats used on the Web
2. Audio Interchange File Format (.aif) – an audio format developed by Apple and used on Macs; PCs can also read the format; the format is similar to the wave file format and is not compressed
3. Kilohertz (kHz) – unit of measurement for sampling sound waves; literally, one thousand cycles per second; in the case of audio, one thousand samples per second
4. Microphone – an input device used to record music or voice files
5. Musical Instrument Digital Interface (MIDI) – pronounced *middy*; an audio file format for recording music from synthesizers and other electronic instruments
6. MP3 – a compressed audio file format that is the current standard for exchanging music files over the Internet; MP3 gets its name from MPEG, audio layer 3
7. Real Audio (.ra) – a file format developed by Real Networks specifically for streaming over the Internet; when sounds are saved in this format, they are automatically compressed to reduce the file size
8. Ripper – a software program that “grabs” digital audio from a compact disc and transfers it to a computer’s hard drive
9. Sampling – reproducing a sound by recording many fragments of the sound
10. Sampling rate – the number of times per second a recording device samples sound wave; the rate is measured in kilohertz
11. Sound card – an expansion board that enables a computer to manipulate and output sounds
12. Streaming audio – audio that is transmitted over the Internet and played in real time
13. Volume – the degree of sound intensity or audibility; loudness
14. Wave (.wav) – standard audio format for windows applications; file format is only slightly compressed
15. Windows Media Audio (.wma) – audio file format that can be played by Windows Media Player; files copied from a music CD to Windows Media Player will be converted to a .wma file format

Unit 6: Introduction to Video

1. .mov – file extension for a Quick Time movie
2. Analog – the representation of information in a continuous stream rather than as individual pieces of data (digital); i.e., television signals are typically analog; by contrast, computer signals are digital
3. Audio Video Interleave (.avi) – the three-character filename extension for Microsoft Windows standard video format; format is uncompressed
4. Digital – the representation of information as individual pieces of data using the numbers 1 and 0, rather than as a continuous stream (analog)
5. Motion Pictures Expert Group (.mpg) – a file format that provides frame to frame compression
6. Real-time – refers to data, such as video or sound, broadcast or transmitted without editing or delays
7. Streaming media – a technique that allows viewing or listening to media before it has completely loaded and without placing as many demands on computer resources
8. Video – a series of framed images put together, one after another, to simulate motion and interactivity
9. Video camera – a camera that takes continuous pictures and generates a signal for display or recording
10. Windows Media Video (.wmv) – video file format that can be viewed in Windows Media Player

Unit 7: Integration

No terminology for this unit.