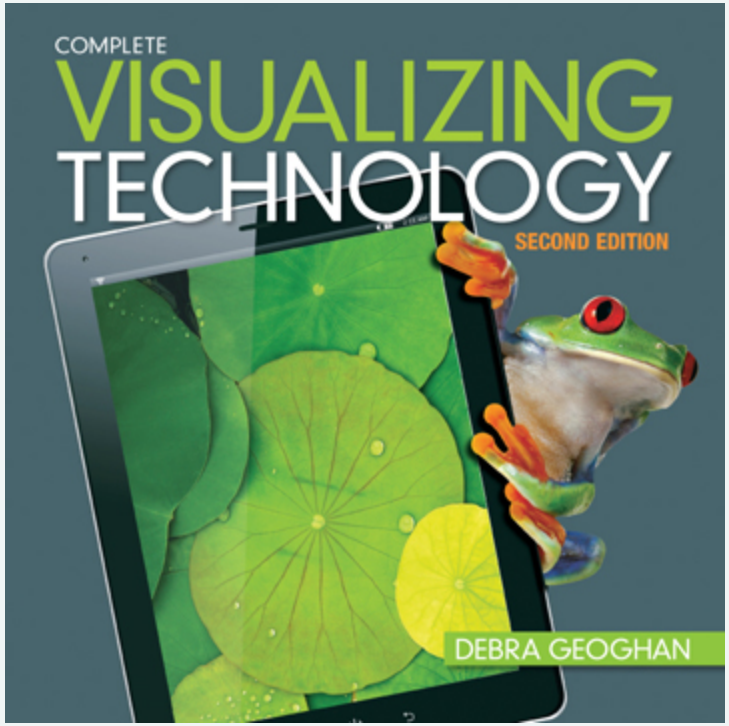
PowerPoint Presentation to Accompany



Chapter 6

Digital Devices & Multimedia

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1. Explain the features of various types of digital cameras.
2. Compare different methods of transferring images from a digital camera.
3. List several ways to edit and print photos.
4. Recognize different audio file types.
5. Describe several ways to create videos.
6. Compare portable media players, tablets, and smart phones.

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Objective 1: Overview

Digital Camera Basics

1. Examine the key features of digital cameras: resolution, storage, zoom, and lenses
2. Discuss digital camera options: point and shoot and digital single lens reflex (D-SLR)

Key Terms

- Compact system camera (CSC)
- Digital single-lens reflex camera (D-SLR)
- Point and shoot camera
- Resolution
- Shutter lag
- Zoom

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Digital Cameras
Resolution | Storage | Zoom | Lenses

- Resolution:
  - Quality of the image
  - Measured in pixels
  - Higher resolution means more detail

RESOLUTION	PHOTO QUALITY PRINT SIZE
1–2 megapixel	Up to 4 × 6
2–3 megapixel	Up to 5 × 7
4–5 megapixel	Up to 8 × 10
6–7 megapixel	Up to 11 × 14
8 megapixel	Up to 16 × 20
10 megapixel	Up to 20 × 30

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Digital Cameras
Resolution | Storage | Zoom | Lenses

- Store images:
  - Internally
  - Removable memory cards

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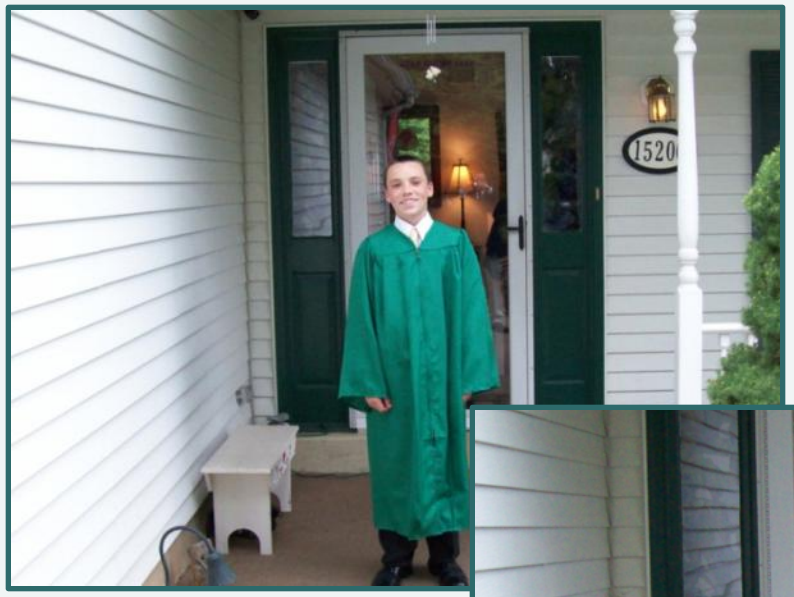
Digital Cameras
Resolution | Storage | Zoom | Lenses

- Zoom:
  - Optical
  - Digital
  - Or both
- Lenses
  - Zoom
  - Telephoto
  - Macro
  - Wide-angle



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Types of Cameras

- Basic point-and-shoot
- Advanced point-and-shoot
- Compact system cameras (CSC)
- Digital Single Lens Reflex (D-SLR)

Compact System Camera

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Use the Internet to research digital cameras. What is the highest resolution available today in point-and-shoot cameras? What about D-SLRs? Choose one point-and-shoot and one D-SLR with the same resolution. How do they compare in price, features, and reviews? What other factors affect the price?

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Objective 2: Overview

Bridging the Gap: Transferring Photos

1. Examine the options for transferring images from a digital camera
2. Discuss the Windows picture transfer process
3. Define tagging

Key Terms

- iOS device
- Tagging

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Transferring Images
Memory Cards | USB | FireWire | Wireless

- **Memory cards**
  - Store images
  - Can be inserted into computer or printer
- **USB or FireWire**
  - Connect the camera directly to a computer; Windows begins transfer process automatically
- **Wireless-enabled digital cameras**
  - Transfer photos using WiFi wireless technology

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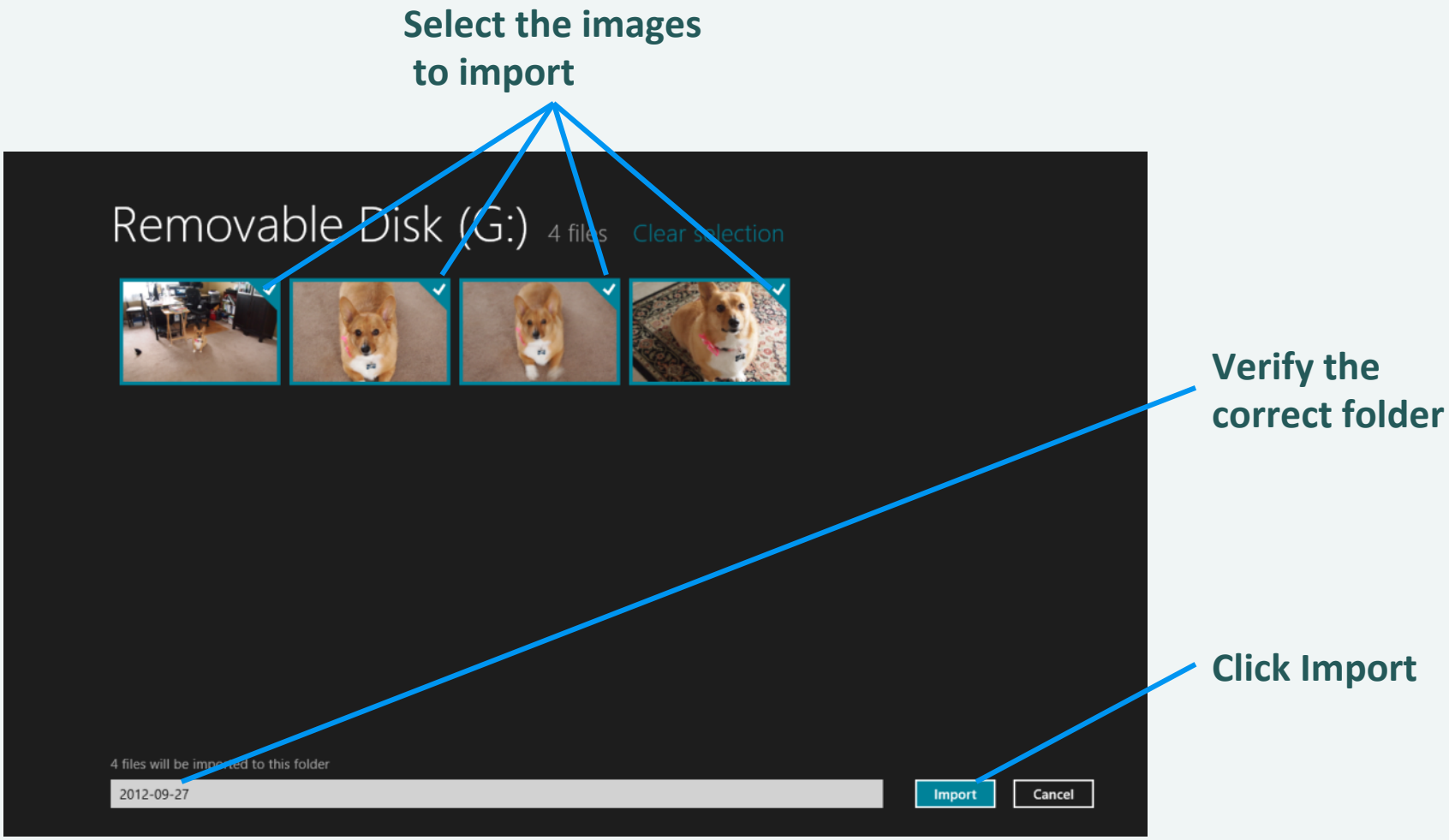
Windows Picture Transfer Process



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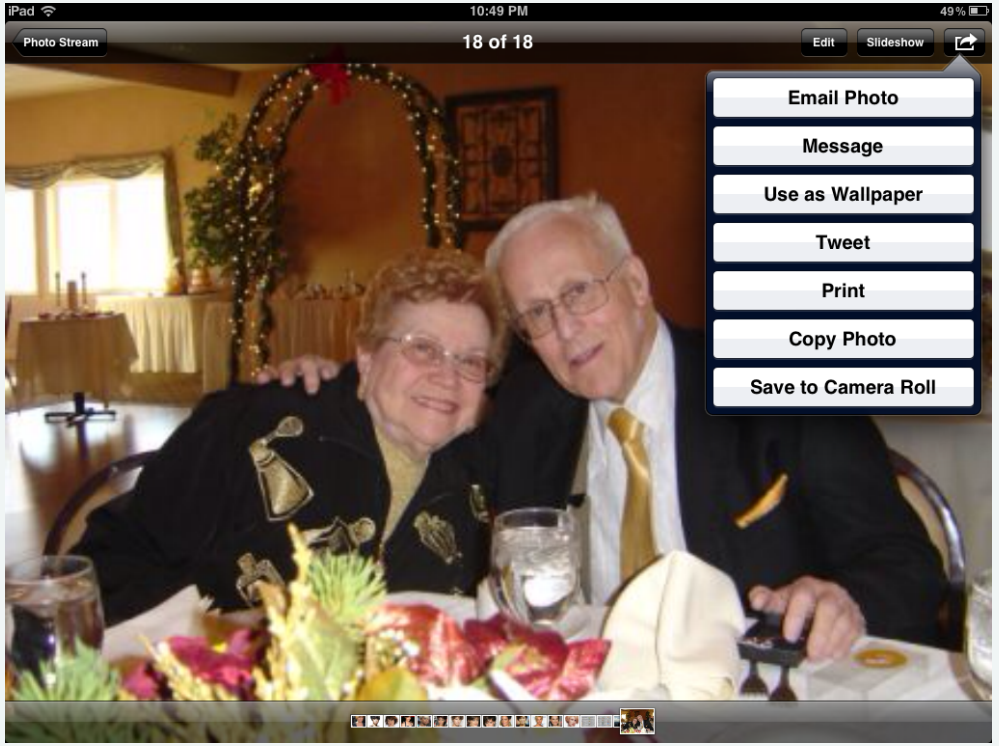
Transferring to the Cloud

- Mobile device cameras upload photos directly to the Internet or the cloud
- Android devices:
  - Photobucket
  - Facebook
  - Google Picasa
- iOS devices:
  - iCloud
- Multi-platform:
  - Dropbox
  - Instagram



iPad Photo App

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Do any of the cameras you researched in the previous section include wireless capabilities? If so, how fast? What are the limitations? If the camera didn't include wireless, look up the current Eye-Fi card. Is your camera compatible with the card? What is the cost of the Eye-Fi card? Find a similar model camera that includes wireless. How does the price compare with adding the Eye-Fi card instead?

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Objective 3: Overview

A Picture Is Worth a Thousand Words: Editing, Printing and Sharing Photos

1. Examine the options for printing and editing photos
2. List photo editing software programs available
3. List online photo editing services available
4. Discuss how PictBridge and kiosks work
5. Discuss online printing, and sharing sites and communities

Key Terms

- PictBridge

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Editing & Printing Photos

- **Editing software**
  - Picasa, Google: free
  - Photoshop, Adobe: $$$
- **Online editing**
  - Snapfish, Shutterfly, Flickr
  - Includes basic editing tools
  - Options to share and purchase

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Editing & Printing Photos

- **PictBridge:**
  - Industry standard
  - Allows camera to connect directly to printer via USB or a special dock
- **Kiosks:**
  - Retail stores
  - Built-in editing features
  - Connect your camera via USB or use a memory card

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Online Printing & Sharing

- **Personal sharing sites:**
  - Snapfish
  - Shutterfly
- **Photo-sharing community:**
  - Flickr
    - Owned by Yahoo!
    - Geo-tagging
    - Creative Commons

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Creative Commons

- Developed to increase sharing and collaboration
- Specifies how images and other material can be used
- Smithsonian Institution made hundreds of images available on Flickr under Creative Commons

Creativecommons.org

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Use the Internet to compare the cost and quality of photo prints from home photo printers, online services, and local retailers in your area. Create a chart comparing them. Include cost per print, sizes available, finish available, expected life span of prints, water resistance, and any other details you feel are important. When might you choose to use each of these methods for prints?

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Objective 4: Overview

Making Sense of Sound

1. List the different types of audio file types
2. Discuss the purpose of Digital Rights Management
3. List and discuss media software options
4. Discuss the advantages of speech recognition

Key Terms

- Advanced audio coding (AAC)
- Digital Rights Management (DRM)
- MP3
- Podcast
- Speech recognition

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Audio File Types

- **MP3:** Moving Picture Experts Group Layer-3 Audio,
  - Audio file type used for music files
- **AAC:** Advanced Audio Coding
  - Default file type used by Apple's iTunes software
- **WMA:** Windows Media Audio
  - Synthesized digital media files
- **DRM:** Digital rights management
  - Technology applied to digital media files
  - Poses restrictions on the use of these files
- **DMCA:** Digital Millennium Copyright Act

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Media Software

Apple iTunes	Windows Media Player	Winamp
Used to organize music and shop for new music, video, or other media files	Included with Windows Used to organize and play media files Ability to stream media files and burn CDs	Free media player, or purchase Pro version Will sync with iPods Enables media sharing with all your devices through Winamp Remote

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Music in the Cloud

- **Social media:**
  - Facebook
  - Twitter
- **Cloud:**
  - Pandora
  - Spotify
  - Grooveshark
  - Rhapsody
  - Slacker Personal Radio
  - Last.fm

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Speech Recognition

- Converts spoken words to text
- Interact with system using voice commands
- Allows disabled users to use a computer
- Windows 8 has built-in speech recognition software
- Often built into video games
- Train program to recognize speech patterns

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SIRI

- An intelligent personal assistant app
- Allows you to speak using natural language
  - Send messages
  - Make phone calls
  - Ask questions
- It works with built-in apps and some third-party apps like Facebook and Twitter
- SIRI learns your speech patterns

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Use Windows Help and Support to research speech recognition. What are the three ways you can use speech recognition on your computer? What are the advantages? Disadvantages? Think about your everyday interactions and give an example of speech recognition that you use.

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Objective 5: Overview

You Ought to Be in Pictures

1. Discuss methods to create videos using screen capture, webcams, and digital cameras
2. Discuss video cameras and their similarities to digital cameras
3. Discuss options available for sharing video

Key Terms

- Screen capture
- Streaming
- Webcam
- Webcasting

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Videos

- Screen capture:
  - Jing
  - Screencast-O-Matic
- Webcasting:
  - Broadcasting on the Web
  - Live or prerecorded
  - Streaming
- Webcams/video conferencing:
  - Virtual meetings
  - Connect classrooms
  - Collaboration
  - Talk to family
  - Take videos

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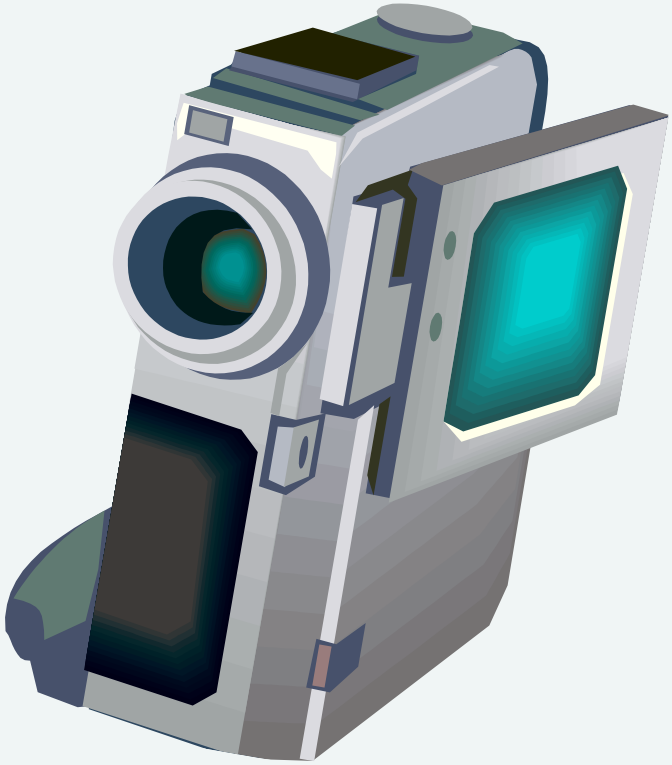
Video Cameras

- **Features:**
  - Megapixels
  - Storage
  - Zoom
- **Recording options:**
  - Built-in hard drives
  - Mini-DVDs
  - Memory cards



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Sharing Video

DVD Authoring

- Video editing software
  - Capture
  - Edit
  - Export video
- Features:
  - Fun transitions
  - Animations
  - Captions
  - Music, and more
- Burn to DVD or upload to Web

YouTube

- Most popular video sharing site on the Internet
- The quality of videos varies
- Share video with friends and family

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Webcasting

- Broadcasting on the Web
- Webcasting is not interactive—it's a one-way process

- **Streaming:**
  - Media begins to play immediately as it is being received
  - Does not require the whole file to be downloaded to your computer first

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Use the Internet to research D-SLR video cameras. Select a model in the same price range as the camera you researched earlier. Compare the video capabilities of the two cameras. What features does a dedicated video camera have that the other doesn't? Is the video camera capable of taking still images? How does the quality compare? Is it worth the money to purchase both types of cameras? Explain.

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Objective 6: Overview

On the Move With Technology

1. Discuss and compare portable media players
2. List current smart phones and specialized devices

Key Terms

- e-reader
- e-waste
- Mobile application (mobile app)
- MP3 player
- Portable media player
- Smartphone
- Tablet

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Portable Media Players

- Handheld device
- Allows you to carry:
  - Thousands of songs
  - Podcasts
  - Photos
  - Videos
  - Games
- Devices:
  - iPod Shuffle
  - SanDisk Sansa Clip
  - Sony Walkman
  - iPad Touch
  - Coby

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Mobile Devices

- Smartphones
  - iPhone, Android
- Specialized devices:
  - Amazon Kindle
  - Barnes & Noble Nook
  - Apple iPad
  - Samsung Galaxy

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Tablets

- Operating systems:
  - iOS
  - Android OS
  - Windows OS
- Purchase apps:
  - Apple App Store
  - Google Play

Apple App Store

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E-Readers

- **Read:**
  - Books
  - Magazines
  - Other publications
- **Screen types:**
  - e-Ink
  - LCD
- **Popular devices:**
  - Barnes & Noble
    - Nook
  - Amazon Kindle
    - Fire

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Use the Internet to research the latest smart phones. Select two models you'd like to purchase. Create a table comparing the features of each. Include cost, carrier, contract length, camera type, media player, video, games, Internet, e-mail, and any other information you think is important. How do the devices compare?

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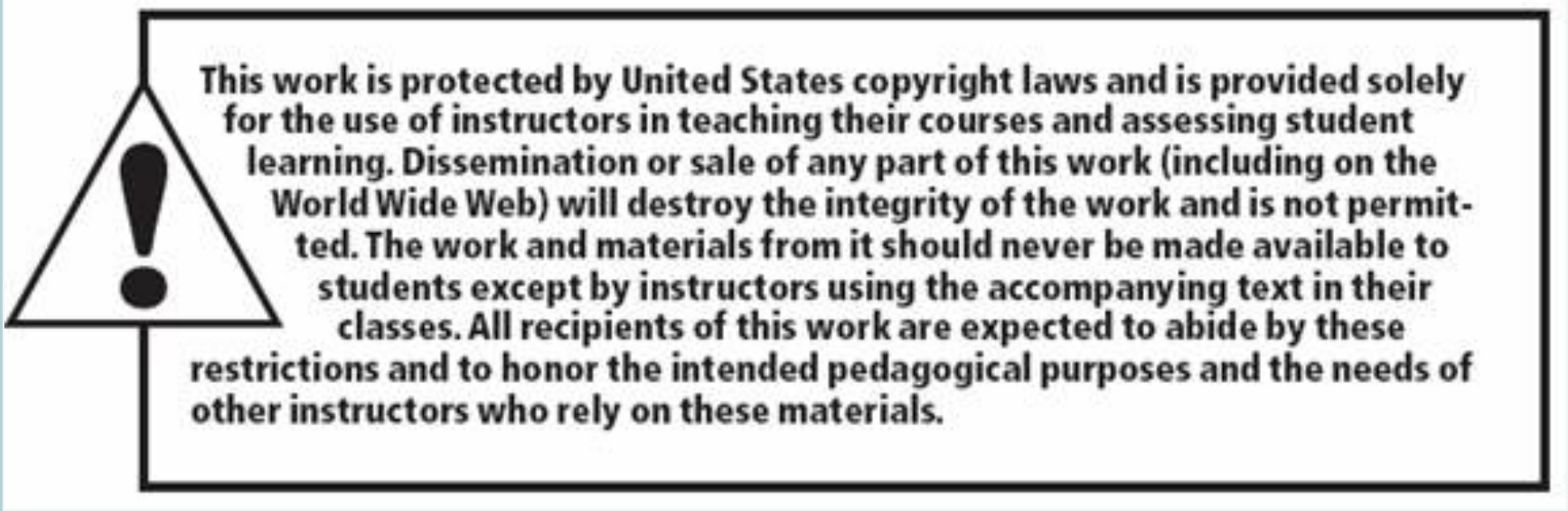

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