Chapter 7 Digital Imaging, Scanning, and Photography

Chapter Objectives

Discuss the Chapter 7 objectives with students:
- Learn about imaging technologies.
- Learn to use and apply various digital image formats.
- Learn about file size and image resolution.
- Learn when to use low-resolution and high-resolution images.
- Learn to care for a scanner.
- Scan, crop, view, and save images.
- Take digital photographs and change quality and resolution settings.
- Save digital photos to a PC.

Web Resources

Review the activities for Chapter 7 that are found on the Web site. Decide whether you wish to have students complete the games and activities.

- Data Files
- Vocabulary Flash Cards
- Beat the Clock, Imaging
- Sort It Out, Passwords
- *PowerPoint* Reviews
- More Activities
    - Chapter 7 Supplemental Activity, Create Images for a Slide Show
    - Chapter 7 Supplemental Activity, Wrap Text Around Images

Slides

Preview the *PowerPoint* slides for Chapter 7 found on the IRCD. Decide which ones you will use for your presentations and demonstrations.

Assessment

Exam*View* test for Chapter 7

Lesson 59 Discovering Images

Lesson Objectives

Discuss the Lesson 59 objectives with students:
- Learn how dots of color can create elaborate computer images.
- Zoom in and out on an image.
- View and evaluate the resolution of an image with dots per inch or pixels per inch.
- Evaluate when to use a low- or high-resolution image.

- Learn about image file formats.
- Alter an image.

Data Files

- *DF 59 Reflection 1*
- *DF 59 Message*
- *DF 59 Reflection 2*
- *DF 59 Reflection 3*

Software Features

The following software features are introduced in Lesson 59:

- Open a file in *Paint*
- Maximize and minimize the *Paint* window
- Change the zoom in *Paint*
- Use the Pencil tool in *Paint* to alter images
- Save a file in *Paint*
- Use Print Screen to capture an image
- Paste an image from the clipboard into *Paint*
- View file details in a file list
- Insert a picture in a *Word* document

Document Formats

No document formats are taught in this lesson.

Vocabulary Terms

The vocabulary terms from Lesson 59 and their definitions are listed below. Explain the meaning of these words to students as you discuss the appropriate sections of the lesson.

pixel	Tiny dots of light or ink that make up images
resolution	Picture quality as measured in dots per inch or pixels per inch
pixels per inch (PPI)	A measurement of image resolution
dots per inch (DPI)	A measurement of image resolution

Teaching Strategies

Refer to the teaching notes in the *Century 21 Jr., Annotated Teacher's Edition* for each section and activity listed below.

1. Have students read Lesson 59.
2. Discuss the *Images, Mosaics, and Pixels* section with students. Have students complete activity *59A Learn: View the Mosaic-like Dots*. Make the data files needed for this activity available to students.

3. Discuss the *Controlling Dots of Color* section with students. Have students complete the activities in this order:

   59B Practice: Make a Mosaic on the Mask

   59C Apply: Create Mosaics with a Screen Capture

   Make the data files needed for activity 59B available to students.

4. Discuss the *Resolution and File Size* and *File Formats for Graphic Images* sections with students. Have students complete activity *59D Apply: Compare High-, Medium-, and Low-Resolution Images*. Then have them complete *59E Practice: Compare Screen and Print Resolutions*. Students are to work in a team for activity 59E. Assign or let students choose teammates. Make the data file needed for these activities available to students.

Lesson 60 Scanning Successfully

Lesson Objectives

Discuss the Lesson 60 objectives with students:
- Study various imaging devices.
- Learn to use and care for a scanner.
- Scan color, grayscale, and black-and-white images.
- Examine dots per inch and pixels per inch and their importance to imaging technologies.
- Tag images for convenient recovery.
- Adjust the brightness, contrast, hue, and saturation levels of an image.

Data Files

None

Software Features

The following software features are introduced in Lesson 60:

- Use the *Windows Photo Gallery* to preview, crop, scan, and save images
- Tag, organize, and adjust images with *Photo Gallery*
- View images as a slide show

Document Formats

No document formats are taught in this lesson.

Vocabulary Terms

The vocabulary terms from Lesson 60 and their definitions are listed below. Explain the meaning of these words to students as you discuss the appropriate sections of the lesson.

imaging devices	Hardware tools that allow users to capture or create pictures
digitizing	The process used by a scanner to create an image

orientation	The way an image is positioned
landscape orientation	Placement of an image or document with the long side at the top
portrait orientation	Placement of an image or document with the short side at the top
skewed	Scanning an image at a slant
crop	To cut or trim
brightness	Determines how light or dark pixels are inside an image
contrast	The difference between the dark and light pixels in an image
hue	Refers to whether a color is red, green, blue, purple, and so on
saturation	Refers to the purity of a color or hue
tint	Software feature that changes the qualities of a hue so that it differs slightly from a primary color

Teaching Strategies

Refer to the teaching notes in the *Century 21 Jr., Annotated Teacher's Edition* for each section and activity listed below.

1. Have students read Lesson 60.
2. Discuss with students the sections *Imaging Devices; About Scanning; Position the Image; Preview, Adjust, and Scan the Image; Save the Image in a Web or Printed Format; Image Selection and Scanning with Your OS Software* . Have them complete activity *60A Learn: Windows OS Scanning Instructions*.
3. Discuss the *Using Windows Photo Gallery to Improve Images* section with students. Have them complete activity *60B Practice: Organize and Tag Images with Photo Gallery*.
4. Discuss the *Adjusting Images* section with students. Have them complete activity *60C Learn: Adjust Your Images*.

Lesson 61 Capturing Photos

Lesson Objectives

Discuss the Lesson 61 objectives with students:
- Learn about the powerful features of today's digital cameras.
- Experiment with the settings of a digital camera.
- Take pictures with a digital camera.
- Download digital images from a camera to a PC.
- Analyze picture file size and resolution.

Data Files

- *DF 61 Camera Log*

Software Features

The following software features are introduced in Lesson 61:

- Use the *Windows Photo Gallery* to select and copy images from a camera or memory card to a PC.
- Change the Windows Desktop background image.

Document Formats

No document formats are taught in this lesson.

Vocabulary Terms

The vocabulary terms from Lesson 61 and their definitions are listed below. Explain the meaning of these words to students as you discuss the appropriate sections of the lesson.

megapixels	Measurement used for resolution for digital cameras; millions of pixels
liquid crystal displays (LCDs)	Component of a digital camera that allow you see immediately the pictures you have taken
optical zoom	Physically adjusts the lenses and closes in on a subject without sacrificing quality
digital zoom	Zooms in on a subject, but image quality is sacrificed if the zoom is too "tight" or close

Teaching Strategies

Refer to the teaching notes in the *Century 21 Jr., Annotated Teacher's Edition* for each section and activity listed below.

1. Have students read Lesson 61.
2. Discuss the *Digital Photography*, *Capturing Digital Images,* and *Learn Your Camera's Settings* sections with students. Have students complete activity *61A Learn: Experiment with Your Camera*.
3. Discuss the *Downloading Images to Your PC* section with students. Have students complete the activities in this order:

   61B Learn: Import Your Images to a PC

   61C Apply: Use an Image as the Desktop Background

   61D Practice: Take Digital Photos

   61E Apply: Tell of Your Adventures

   61F Learn: Research Digital Photography Tips

   Students need access to the Internet to complete activity 61F.

Chapter Review

Data Files

- *DF C07 Colon*
- *DF C07 Reading*
- *DF C07 Business*

Vocabulary Terms

The vocabulary term from the *Applying What You Have Learned* activities and its definition is listed below. Explain the meaning of this word to students as you discuss the appropriate sections.

portfolio	A collection of samples of your best work

Teaching Strategies

Refer to the teaching notes in the *Century 21 Jr., Annotated Teacher's Edition* for each section and activity listed below.

1. Have students complete the *Reviewing What You Have Learned* questions.
2. Have students complete the activity *Prepare an Advertisement*.
3. Have students complete the activity *Scan or Take Photo for Portfolio*.
4. Have students complete the activity *Keyboarding Skillbuilding*.
5. Discuss the *Academic Connections, Communications: Colon and Semicolon* section with students. Have them follow the steps provided to complete the activities. Make the data files needed for this activity available to students.
6. Discuss the *Academic Connections, Reading: Read a Headline* section with students. Have them follow the steps provided to complete the activities. Make the data files needed for this activity available to students.
7. Discuss the *About Business, Advantages and Disadvantages of Being an Entrepreneur* section with students. Have them follow the steps provided to complete the activity. Make the data file needed for this activity available to students.
8. Discuss the *Career Exploration Portfolio* activity with students. Have students follow the steps provided to complete the activity. They will need Internet access for this activity. Students will work with a classmate to complete this activity.