STUDENT MANUAL

Adobe® Photoshop® 2020: Part 1

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Acknowledgements

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Adobe® Photoshop® 2020: Part 1

About This Course

Adobe® Photoshop® 2020: Part 1 focuses on some of the basic features of Photoshop so that the student can navigate the environment and use Photoshop tools to work with photographic images. In addition, the orientation to Adobe® Bridge and organization of files in Bridge is covered. Although Photoshop is used by a variety of professionals, from photographers to designers to videographers, Photoshop Part 1 will focus mainly on the photography component. The illustration and animation techniques are covered in subsequent levels of Photoshop.

This course is a great component of your preparation for the Adobe Certified Associate (ACA) Visual Design Using Adobe Photoshop CC 2019 exam.

Course Description

Target Student

Target students include professional or amateur photographers who want to use the robust features of Photoshop to enhance, modify, and organize their photographs, and anyone interested in working toward the Visual Design Using Adobe Photoshop CC 2019 certification.

Course Prerequisites

To ensure your success in this course, you should have a basic comfort level with digital photography. For example, you have used a digital camera and have downloaded images to your computer or other storage device.

Course Objectives

This course will prepare you to use the most common basic features of Adobe Photoshop. In this course, you will:

- Identify the components and capabilities of Photoshop.
- Create basic images.
- Manage selections and layers.
- Modify and repair images, and manage color.
- Refine images by adjusting layers, using camera raw, and applying advanced image refinement.
- Import, export, organize, and save files.

The CHOICE Home Screen

Logon and access information for your CHOICE environment will be provided with your class experience. The CHOICE platform is your entry point to the CHOICE learning experience, of which this course manual is only one part.

On the CHOICE Home screen, you can access the CHOICE Course screens for your specific courses. Visit the CHOICE Course screen both during and after class to make use of the world of support and instructional resources that make up the CHOICE experience.

Each CHOICE Course screen will give you access to the following resources:

- **Classroom**: A link to your training provider's classroom environment.
- **eBook**: An interactive electronic version of the printed book for your course.
- **Files**: Any course files available to download.
- **Checklists**: Step-by-step procedures and general guidelines you can use as a reference during and after class.
- **Spotlights**: Brief animated videos that enhance and extend the classroom learning experience.
- **Assessment**: A course assessment for your self-assessment of the course content.
- Social media resources that enable you to collaborate with others in the learning community using professional communications sites such as LinkedIn or microblogging tools such as Twitter.

Depending on the nature of your course and the components chosen by your learning provider, the CHOICE Course screen may also include access to elements such as:

- LogicalLABS, a virtual technical environment for your course.
- Various partner resources related to the courseware.
- Related certifications or credentials.
- A link to your training provider's website.
- Notices from the CHOICE administrator.
- Newsletters and other communications from your learning provider.
- Mentoring services.

Visit your CHOICE Home screen often to connect, communicate, and extend your learning experience!

How to Use This Book

As You Learn

This book is divided into lessons and topics, covering a subject or a set of related subjects. In most cases, lessons are arranged in order of increasing proficiency.

The results-oriented topics include relevant and supporting information you need to master the content. Each topic has various types of activities designed to enable you to solidify your understanding of the informational material presented in the course. Information is provided for reference and reflection to facilitate understanding and practice.

Data files for various activities as well as other supporting files for the course are available by download from the CHOICE Course screen. In addition to sample data for the course exercises, the course files may contain media components to enhance your learning and additional reference materials for use both during and after the course.

Checklists of procedures and guidelines can be used during class and as after-class references when you're back on the job and need to refresh your understanding.

At the back of the book, you will find a glossary of the definitions of the terms and concepts used throughout the course. You will also find an index to assist in locating information within the instructional components of the book. In many electronic versions of the book, you can click links on key words in the content to move to the associated glossary definition, and on page references in

the index to move to that term in the content. To return to the previous location in the document after clicking a link, use the appropriate functionality in your PDF viewing software.

As You Review

Any method of instruction is only as effective as the time and effort you, the student, are willing to invest in it. In addition, some of the information that you learn in class may not be important to you immediately, but it may become important later. For this reason, we encourage you to spend some time reviewing the content of the course after your time in the classroom.

As a Reference

The organization and layout of this book make it an easy-to-use resource for future reference. Taking advantage of the glossary, index, and table of contents, you can use this book as a first source of definitions, background information, and summaries.

Course Icons

Watch throughout the material for the following visual cues.

Icon	Description
	A **Note** provides additional information, guidance, or hints about a topic or task.
	A **Caution** note makes you aware of places where you need to be particularly careful with your actions, settings, or decisions so that you can be sure to get the desired results of an activity or task.
	Spotlight notes show you where an associated Spotlight is particularly relevant to the content. Access Spotlights from your CHOICE Course screen.
	Checklists provide job aids you can use after class as a reference to perform skills back on the job. Access checklists from your CHOICE Course screen.
	Social notes remind you to check your CHOICE Course screen for opportunities to interact with the CHOICE community using social media.

1 | Getting Started with Photoshop

Lesson Time: 1 hour

Introduction

Being able to take good photographs is no longer restricted to professionals thanks to automatic settings of digital cameras, which allow you to shoot hundreds of pictures with ease and speed. Of course, even with camera advancements, many photos need adjustment to become the picture you envisioned when you took it. That's where Adobe® Photoshop® 2020 tools can help you to make your photos more professional and appealing.

Before you begin working with your photographic images, you need to be familiar with the Photoshop workspace and recognize the value of Adobe® Bridge for managing your stock photos. You should also be able to modify Photoshop workspace preferences to suit your needs. Additionally, when you use or modify images, it's important to know the copyright laws that protect your images and those of others.

Lesson Objectives

In this lesson, you will:

- Describe the Adobe Bridge workspace.

- Identify and navigate the Photoshop workspace.

- Examine a customized workspace environment.

TOPIC A

Organize Photoshop Assets by Using Adobe Bridge

Photoshop 2020 is just one of the visual design applications in the Adobe Creative Cloud series. Unlike those applications that focus heavily on web creation and illustration, Photoshop has a versatility that meets the needs of amateur or professional photographers, as well as graphic illustrators and animators. In this topic, you'll familiarize yourself with Adobe Bridge and the Photoshop workspace.

Introduction to Adobe Photoshop

Photoshop forms the backbone of the workflow of a design team. Photoshop can be used to prepare an image for web or print and it can be used to create graphics from scratch, making it an invaluable tool for the designer at every stage of design and production. The workspace in Photoshop allows ease of design, with all of the tools, options, panels, and document windows at the user's fingertips.
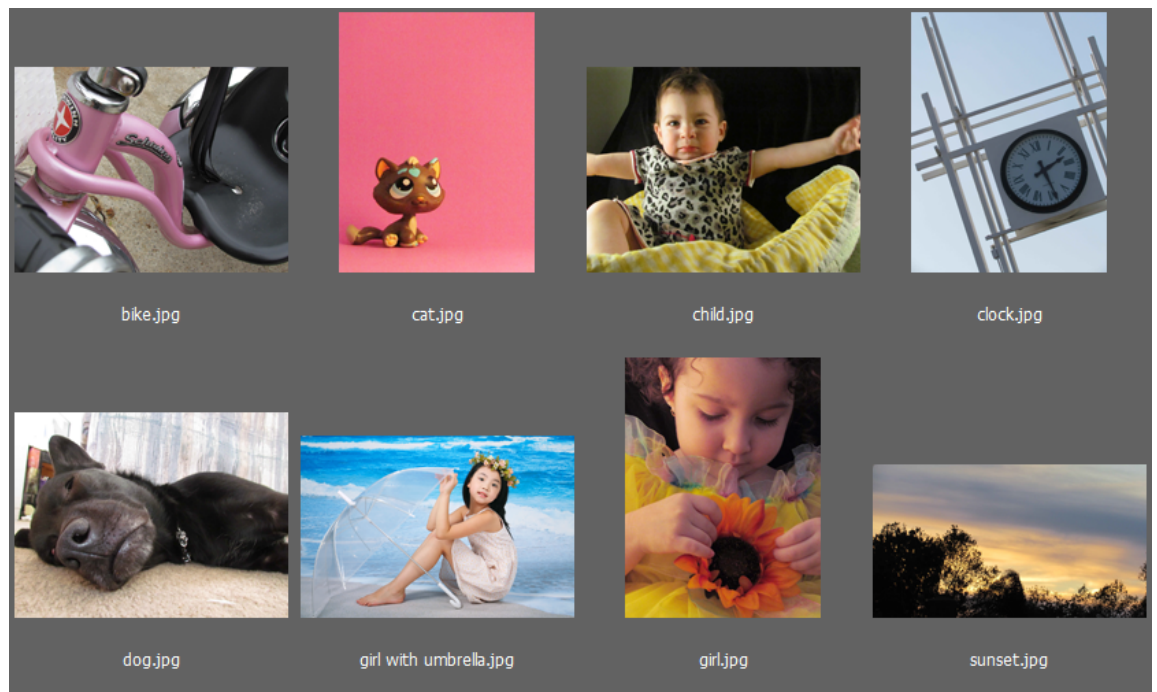

Figure 1–1: Photoshop images.

Adobe Bridge Workspace

Bridge has a number of workspace components you can use to view, search, group, and organize your files. You will explore this functionality in greater detail as you use Bridge throughout this course. One of the most convenient features of Bridge is the ability to create Favorites and quickly navigate to the file you want.
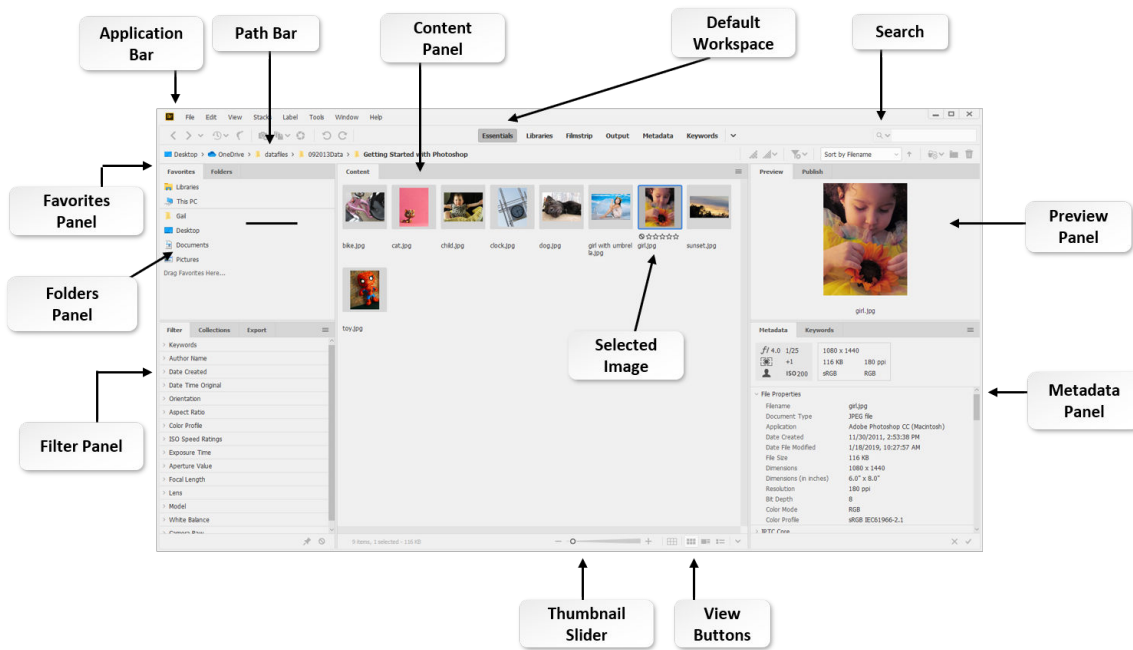
Figure 1–2: The Adobe Bridge workspace.

> **Note:** The default **Color Theme** is dark gray. It has been changed to white to make it easier to read in the course manual.

The following is a list of common Adobe Bridge components.

Workspace Component	Description
Content panel	Displays the contents (files and folders) from the currently selected and open folder.
Application bar	Displays buttons for tasks such as getting photos from the camera, returning to Photoshop, opening files in Camera Raw, and rotating images.
Path bar	Displays the full path of the folder hierarchy and can be used to navigate through the path directory.
Favorites panel	Provides easy access to frequently used folders.
Folders panel	Displays your computer's folder hierarchy and is used to navigate through folders and files.
Filter panel	Lists criteria, such as file type, rating, and creation date of the selected images.
Metadata panel	Displays the *metadata* assigned to a given file or files.
Preview panel	Displays an enlarged thumbnail of the currently selected image.
Search bar	Used to search for files and folders.
Thumbnail slider	Used to increase or decrease the thumbnail size of the images in the content area.
View buttons	View content as thumbnails, details, or as a list.

Workspace Component	Description
Libraries	Creative Cloud Libraries are available in the Libraries workspace which gives you access to the assets such as colors, text, brushes, and materials you use most often. Images can also be added to Libraries through the Bridge.

Metadata

Metadata is standardized information about a file. It includes things such as author, resolution, color space, *copyright*, and keywords. Other useful information specific to photography and video would include the image dimensions, file format, and the time the image or video was taken. Metadata can assist with your workflow and organization.

Collections

Collections are a way to group photos in one place for easy viewing. The photos can be located in different folders or on different hard drives. Smart collections are a type of collection generated from a saved search. The **Collections** panel allows you to create, locate, and open collections, as well as create and edit smart collections.

> **Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Use Adobe Bridge.**

ACTIVITY 1–1
Navigating Bridge

Data Files

C:\092013Data\Getting Started with Photoshop\toy.jpg

C:\092013Data\Getting Started with Photoshop\bike.jpg

C:\092013Data\Getting Started with Photoshop\child.jpg

Before You Begin

Adobe Photoshop (2020) and Adobe Bridge are installed.

Scenario

You are a photography student at one of the local universities that has partnered with the Chloe Community Gallery & Workshop (CCG&W) in an internship program. The CCG&W is a place where local and regional artisans display their works of art, design, photography, metals, and mixed-media.

CCG&W also offers a variety of workshops to local residents. You have been hired to assist in a workshop designed to guide participants in the use of Photoshop to enhance and add creativity to their photos. Because you are new to Photoshop, you need to get up to speed on the application. You start by browsing files in Adobe Bridge, where workshop images are stored. You also want to see how Bridge can be used and will navigate that feature as well.

> **Note:** Activities may vary slightly if the software vendor has issued digital updates. Your instructor will notify you of any changes.

1. Open Photoshop and Adobe Bridge.
   a) From the Windows 10 **Start** menu, find and open **Adobe Photoshop 2020**.
   b) From the Photoshop **Application** bar on top, select **File→Browse in Bridge**.

2. In Bridge, select the **Folders** panel, then navigate to the **C:\092013Data \Getting Started with Photoshop** folder. Observe that all the images in the folder are displayed.
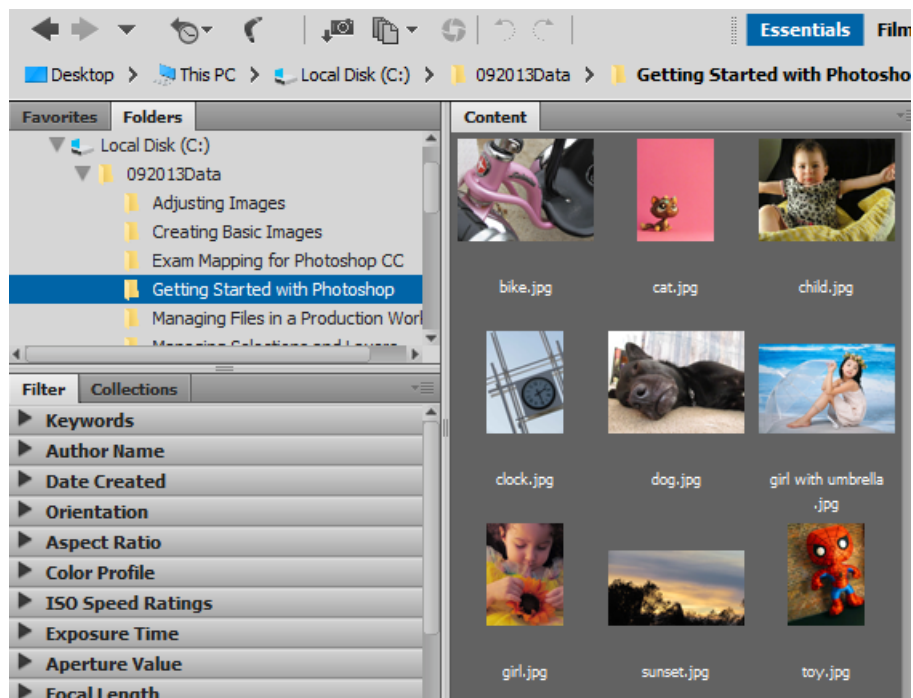
3. Open the **toy.jpg** file in Photoshop.

   a) In the **Content** panel, click once on the **toy.jpg** file to make it the active file. Note that the image appears in the **Preview** panel to the right of **Content**.

   If the **Publish** tab is selected, select the **Preview** tab to display the **Preview** panel.

   b) In the **Content** panel, double-click on the **toy.jpg** file to open the image in Photoshop.

   If you receive a warning about video RAM, select **OK** to continue.

   If the **Embedded Profile Mismatch** dialog box is displayed, select the **Use the embedded profile (instead of the working space)** radio button, then select **OK**.

   If the **Choose a topic to start learning** pop-up is displayed, close it.

4. Drag an image into an open Photoshop image.

   a) In the Bridge window, double-click the **bike.jpg** image to make it the active Photoshop image.

   b) Position the **Bridge** and **Photoshop** windows so you can see at least part of each window.

   c) Drag the **child.jpg** file from the Bridge directly onto the Photoshop image of the bike and release the mouse button. Note the guides and sizing handles on the image.

   d) Select the **Move** tool from the **Tools** panel.

e) Move the image toward the lower-right corner of the bike image, until you can see a fair amount of both images.

This is being done so that you can see, in the simplest way, how to combine two images into one. You may also use **Ctrl+** to zoom in on the images.

5. Close the **bike.jpg** image without saving the file. Keep the **toy.jpg** file open.

TOPIC B

Organize the Photoshop Workspace

If you have never seen or used Photoshop, you may initially be overwhelmed by the number of components that can occupy its workspace. Once you can identify the main sections and their purpose, you will become more comfortable with it when working on photos or illustrations.

Photoshop Workspace Overview

Photoshop forms the backbone of the workflow of a design team. Photoshop can be used to prepare an image for web or print and it can be used to create graphics from scratch, making it an invaluable tool for the designer at every stage of design and production.

The workspace in Photoshop allows ease of design, with all of the tools, options, panels, and document windows at the user's fingertips. The Photoshop workspaces can also be customized, making it easy for any designer to get the look and feel that allows the most efficient use of their design time.

Photoshop Workspace Components

When you open Photoshop, the workspace layout is displayed. Similar to many window-type applications, take note of the **Application** bar at the top. This is followed by the **Options** bar with components and features that change depending on the tool being applied to an image. This section also has the **Workspace Switcher**, a menu of preset workspace layouts.
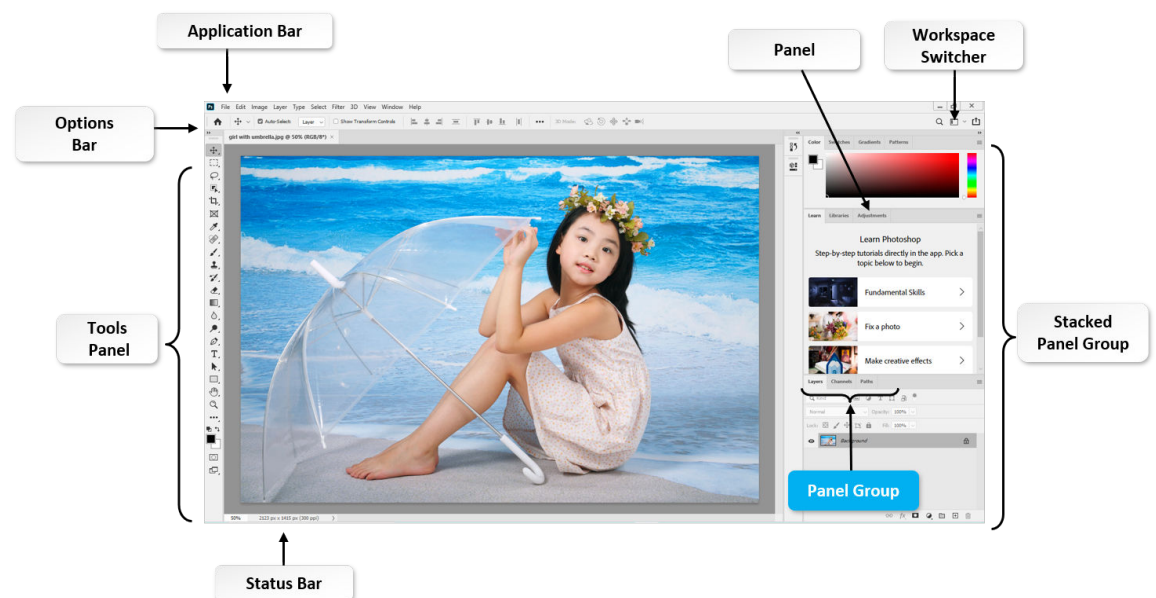
Figure 1–3: Photoshop workspace components.

Along the right side of the workspace are panels and panel groups, and along the left side is the **Tools** panel. When you select a tool, the control panel for that tool is displayed along the **Options** bar.

As you familiarize yourself with the location of the various tools, notice that tools on the **Tools** panel are organized into related groups. Right-click one of the tools to open a context menu of related tools. When you select one of the tools from the context menu, its icon shows on the main **Tools** panel, and you will no longer see the icon of the other related tool. So for example, you might

right-click the **Rectangular Marquee** tool and select the **Elliptical Marquee** tool from the context menu. You will then see the icon for the Elliptical tool, not the Rectangular one. The Rectangular tool is still there in the same position, but hidden.

Figure 1–4: Context menu tools.

At the bottom of the workspace is the **Status** bar, which displays data about your current document, such as image size and magnification.
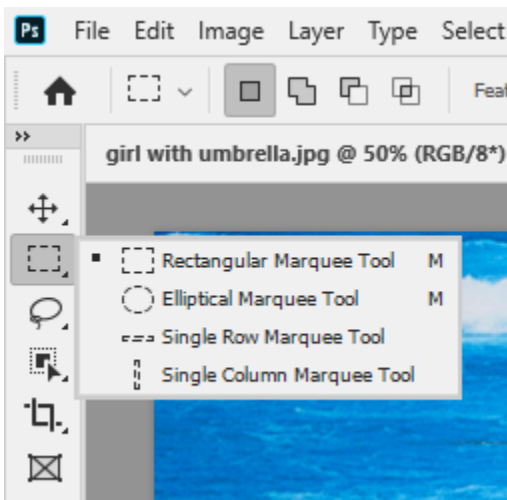
Workspace Component	Description
Application bar	Includes the **File, Edit, Image, Layer, Type, Select, Filter, 3D, View, Window,** and **Help** menus.
Options bar	Displays components and options that change based on the tool that is selected on the **Tools** panel.
Tools panel	Contains tools for selecting, drawing, and modifying objects. Some tool options also appear in a context-sensitive options bar.
Panels	Include controls and menus to perform various operations. Commonly used panels include the **Adjustments**, **Color**, and **Layers** panels. Two or more panels can be grouped together to form a panel group. Panel groups can further be organized into stacked panel groups.
	By default, panels are docked to the workspace, but they can be floated, hidden, rearranged, grouped, and ungrouped.
Document window	This is the Photoshop working area used for displaying, creating, and modifying images.
Status bar	Displays helpful information about the document image, such as magnification and file size.
Workspace Switcher	Allows user to switch between various workspaces. In this context, "workspaces" means a set and arrangement of panels.

Tools Panel

The tools that are visible on the **Tools** panel are only a portion of what Photoshop offers. If you take a closer look, you'll see some tools have a small triangle in their lower-right corner. This indicates that there is a menu of tools associated with that particular tool—a sort of tool "family."

When you position a pointing device over a tool, a "tool tip" appears below the pointer containing the name of the tool.
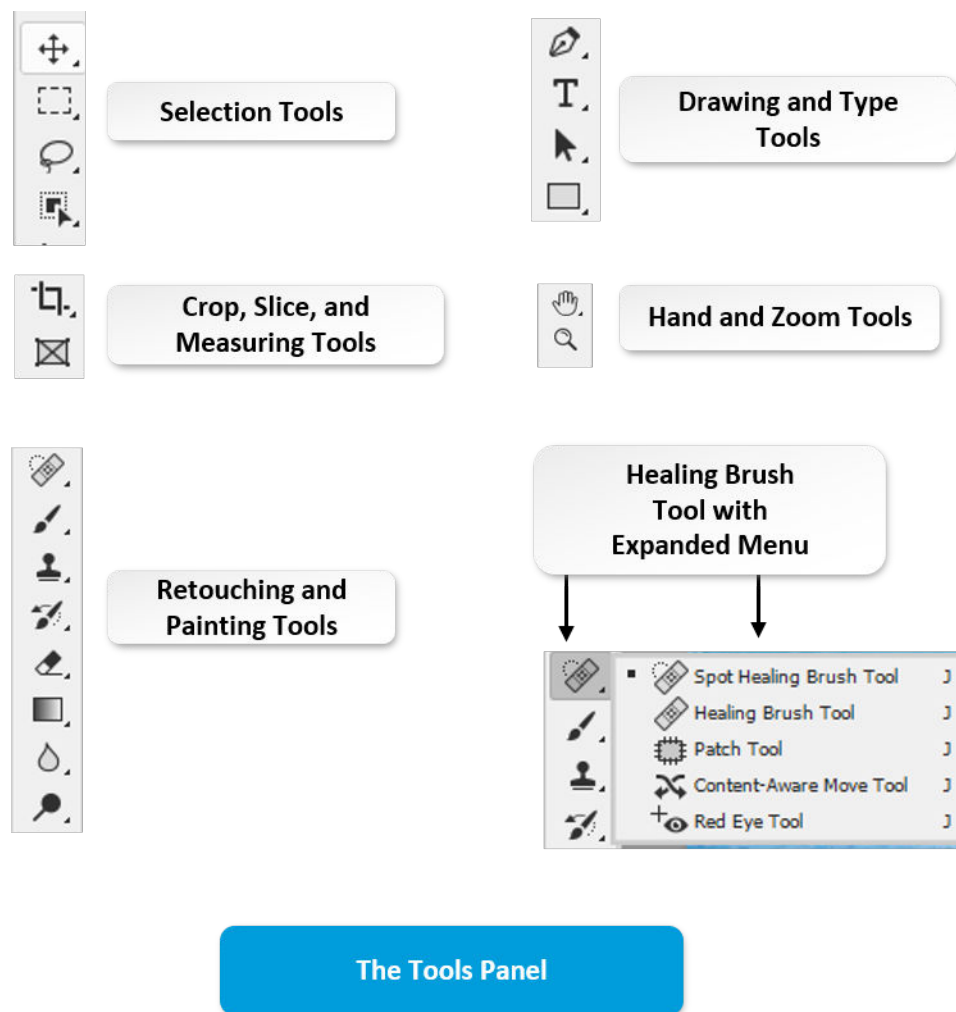
Figure 1-5: Sections of the Tools panel.

The Home Screen

When you first open Photoshop you are at the Photoshop Home screen. You can also return to the Home screen at any time using the **Home** icon in the **Options** bar.

Screen Modes

The main document area is where your images are displayed. From the **View** menu, you can choose one of three modes as your display.

Screen Mode	Description
Standard Screen Mode	The default Photoshop workspace mode. It displays the menu bar, toolbar, and visible panels.
Full Screen Mode with Menu Bar	This mode has a smaller document area than **Full Screen**, but larger than **Standard**, as it does include the menu bar.
Full Screen Mode	This mode has the largest document area of the three modes. However, in this mode the menu bar, toolbar, and panels are hidden.

Note: In addition to using the **View** menu, you can toggle through the three modes by pressing the **F** key on your keyboard.

Magnification Techniques

The **Zoom** tool, located on the **Tools** panel, controls how large or small you want to view an image or portion of an image. For example, to correct the eye color of a subject in a photograph, it's easiest to enlarge the image area around the eyes.

Use the **Zoom** tool to increase the magnification of your image. When the **Zoom** tool is selected, the mouse pointer appears as a plus (+) sign. Clicking anywhere on the image will increase magnification. To decrease magnification, press and hold the **Alt** key. (The mouse pointer will appear as a minus [–] sign).

Additional Zoom Options

Because everyone finds their own comfort level with repetitive tasks, here are some alternatives to using the **Zoom** tool.

Action	Step
Zoom in incrementally	**Ctrl+** (plus)
Zoom out incrementally	**Ctrl–** (minus)
Zoom in	**Ctrl+Spacebar**: select or drag
Zoom out	**Alt+Spacebar**: select or drag
Jump to 100 percent	Double-click **Zoom** tool
	Ctrl+Alt+0
Fit to Screen	**Ctrl+0**
Numeric value	On the **Status** bar, double-click the current magnification percent and enter your own numeric value.

Rearrange Multiple Open Documents

Chances are good that you will have multiple images open on the Photoshop workspace. Multiple images are displayed in a tabular format. To rearrange the placement of tabs, drag the desired tab and drop it into place.

You can also tile multiple image windows on the workspace. Depending on the number of images you have open, you can tile as few as two images, or as many as six images. You can zoom and move each image in its tiled state.

To reset the tiled windows, select the **Consolidate All to Tabs** option.

If you have multiple documents open and you want to close one or more of the documents, right-click a document tab to display the options. You can close the selected tab, close all tabs, or close all other tabs.

Keyboard Shortcuts and Alt Key Combinations

Keyboard shortcuts and **Alt** key combinations are keystrokes or keystroke combinations that will temporarily allow you to switch to another tool when you hold them down. Once the key or keys are released, Photoshop switches back to the original tool. To view a full list of default keyboard shortcuts and **Alt** key combinations, select **Help→Photoshop Help** and type ***keyboard shortcuts*** in the **Search** text box. Photoshop offers these keyboard shortcuts for selecting objects.

Result	Key
Cycle through tools with the same shortcut key	**Shift+** shortcut key (if **Use Shift Key for Tool Switch** is selected in **Tools Preferences**)
Cycle through hidden tools	**Alt+** shortcut key (except add anchor point, delete anchor point, and convert point tools)
Move tool	**V**
Rectangular Marquee tool, **Elliptical Marquee** tool	**M**
Lasso tool, **Polygonal Lasso** tool, **Magnetic Lasso** tool	**L**
Magic Wand tool, **Quick Selection** tool	**W**
Crop tool, **Perspective Crop** tool, **Slice** tool, **Slice Select** tool	**C**
Eyedropper tool, **3D Material Eyedropper** tool, **Color Sampler** tool, **Ruler** tool, **Note** tool, **Count** tool	**I**
Spot Healing Brush tool, **Healing Brush** tool, **Patch** tool, **Content-Aware Move** tool, **Red Eye** tool	**J**
Brush tool, **Pencil** tool, **Color Replacement** tool, **Mixer Brush** tool	**B**
Clone Stamp tool, **Pattern Stamp** tool	**S**
History Brush tool, **Art History Brush** tool	**Y**
Eraser tool, **Background Eraser** tool, **Magic Eraser** tool	**E**
Gradient tool, **Paint Bucket** tool, **3D Material Drop** tool	**G**
Dodge tool, **Burn** tool, **Sponge** tool	**O**
Pen tool, **Freeform Pen** tool, **Curvature Pen** tool	**P**
Horizontal Type tool, **Vertical Type** tool, **Vertical Type** mask tool, **Horizontal Type** mask tool	**T**
Path Selection tool, **Direct Selection** tool	**A**
Rectangle tool, **Rounded Rectangle** tool, **Ellipse** tool, **Polygon** tool, **Line** tool, **Custom Shape** tool	**U**
3D Object Rotate tool, **3D Object Roll** tool, **3D Object Pan** tool, **3D Object Slide** tool, **3D Object Scale** tool	**K**
3D Camera Rotate tool, **3D Camera Roll** tool, **3D Camera Pan** tool, **3D Camera Walk** tool, **3D Camera Zoom** tool	**N**
Hand tool	**H**
Rotate View tool	**R**
Zoom tool	**Z**

Sliders and Options

Some dialog boxes, panels, and option bars have settings that use pop-up sliders. These are evident if there is a triangle next to the text field. You can activate the pop-up slider by selecting the triangle.

Position the mouse pointer over the triangle, hold down the mouse button, and drag the slider or angle radius to the desired value. To close the slider box, press **Enter** or just select anywhere outside of the slider box with the mouse pointer. If you want to cancel the changes and reset the values, press the **Esc** key.

Shift Modifiers

Holding down the **Shift** key while pressing the **Up Arrow** or **Down Arrow** keys will increase or decrease the value by 10-percent increments in the pop-up slider box.

Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Organize the Photoshop Workspace.

ACTIVITY 1–2
Organizing the Photoshop Workspace

Data File

C:\092013Data\Getting Started with Photoshop\girl with umbrella.jpg

Before You Begin

Ensure that Adobe Bridge is open to the **Getting Started with Photoshop** folder.

The toy.jpg file open in Photoshop.

Scenario

Now that you have browsed images in Adobe Bridge, it's time to become familiar with some of the basic elements of the Photoshop workspace.

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1. In Bridge, double-click **girl with umbrella.jpg** to open it in Photoshop.

2. Identify the tools available on the **Tools** panel.

    a) At the top of the **Tools** panel, select the double arrow ▶▶ to display tools in two columns.
    b) On the **Tools** panel, hover the mouse pointer over several tools to view their tool tips.
    c) Identify which tool is the **Rectangle** tool. Press and hold the **Rectangle** tool to display the menu of associated tools.
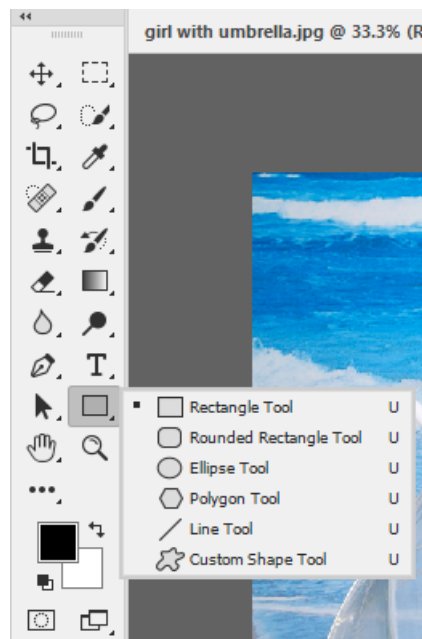
	Note: If you just see a descriptive box stating this is the Rectangle tool, click the tool a second time to display the sub-menu.

    d) Press **Esc** to close the menu.

3. Change the magnification level of the image.
   a) On the **Tools** panel, select the **Zoom** tool. Do not accidentally select the **Dodge** tool. Observe that the mouse pointer appears as a magnifying glass with a plus (+) sign.
   b) Select the image two or more times to increase the magnification to 100 percent. Magnification value is displayed on the document title tab, as well as on the left side of the **Status** bar.
   c) Press and hold the **Alt** key and note that the mouse pointer now appears as a magnifying glass with a minus sign (-). While pressing the **Alt** key, select the image once to reduce it.

4. Adjust the image so that both the girl and the umbrella can be seen in the current view.
   a) On the **Tools** panel, select the **Hand** tool and observe that the mouse pointer appears as a hand.
   b) Select and hold the image and move it appropriately so that the image appears centered and visible.

   > **Note:** The **Hand** tool will not move the image unless it is sufficiently zoomed and larger than the workspace.

5. View the image in full screen.
   a) On the **Application** bar, select **View→Screen Mode→Full Screen Mode**.
   b) Note the message, and then select **Full Screen**.
   c) Press **Esc** to exit and return to **Standard Screen Mode**.

6. Rearrange the images on the workspace.
   a) In the main window, drag the **girl with umbrella.jpg** document tab to the left until it slides in front of the **toy.jpg** tab.
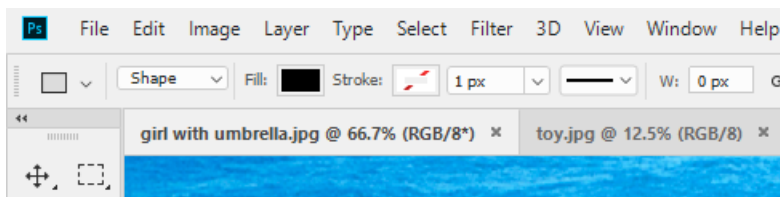
   Alternatively, drag the **toy.jpg** tab to the right to slide it after the **girl with umbrella.jpg** tab.
   b) Select **Window→Arrange→Tile All Vertically**.

   > **Note:** You can see both images.

   c) Select the **toy.jpg** image to make it the active image.
   d) Select **Window→Arrange→Float in Window**.

   > **Note:** Now the image is floating and you can move it around.

   e) Select **Window→Arrange→Float All in Windows**.

   > **Note:** Both images are floating.

   f) Drag on the tab of the active window to move the images to view them side by side.
   g) Select **Window→Arrange→Consolidate All to Tabs** to return to tabbed arrangement.

7. Close both files by selecting **File** and then selecting **Close All**. If prompted, select **No**.

TOPIC C

Customize the Photoshop Workspace

You've seen how to navigate the Photoshop Workspace. In addition, you've become familiar with screen modes, magnification, keyboard shortcuts, and managing multiple documents. Now you will customize the Photoshop Workspace to suit your own particular workflow.

The Preferences Dialog Box

There are several options you can set in the **Preferences** dialog box. These run the gamut from general and interface options to working with application plug-ins.

Preference Category	Enables You To
General	Specify **Color Picker** settings that can depend on your installed printer, or on the default Adobe colors. It also has general document and zoom settings, among others.
Interface	Specify screen, panels, and documents display. It also has options for enabling features such as floating window docking and displaying tool tips.
Workspace	Specify additional display options from Interface. It also has the **Restore Default Workspaces** button.
Tools	Specify various options such as tools, keys, scrolling, and zooming.
History Log	Specify export settings for an image's history log text to an external log file, or store the information in the metadata of edited files.
File Handling	Specify file saving options and **Camera Raw** preferences.
Export	Specify settings for the **Quick Export** function.
Performance	Specify settings for memory usage, history and cache, and graphic processing.
Scratch Disks	Specify primary internal drive to use for free memory (scratch disk) to continue to perform operations. It displays all available internal drives.
Cursors	Specify cursor appearance and brush tip settings.
Transparency & Gamut	Specify transparency grid settings and *color gamut* warning preferences.
Units & Rulers	Specify ruler measurement preferences (inches, picas, percent, and more), as well as column size settings, document resolution presets, and point/pica size.
Guides, Grid & Slices	Specify color and styles of guides, grids, and slices.
Plug-Ins	Specify settings for additional plug-ins and extension panels.
Type	Specify type and text engine options.
3D	Specify settings for 3D rendering, control, and display performance.

Preference Category	Enables You To
Technology Previews	Display the available previews in the current version.

Display the **Preferences** dialog box from the **Edit→Preferences** menu, then select one of the options from the preceding table.

Interface Preferences

In Photoshop you can select the color of the interface. Most noticeable is the dark gray color of the work area—the area behind an image. If you are content with this color shade, or the interface color doesn't matter for how you use Photoshop, then there's nothing else you need to do. If you want to modify the interface background, you can do so quickly by right-clicking on the background and selecting one of the options. You can also create a custom color of your choosing.
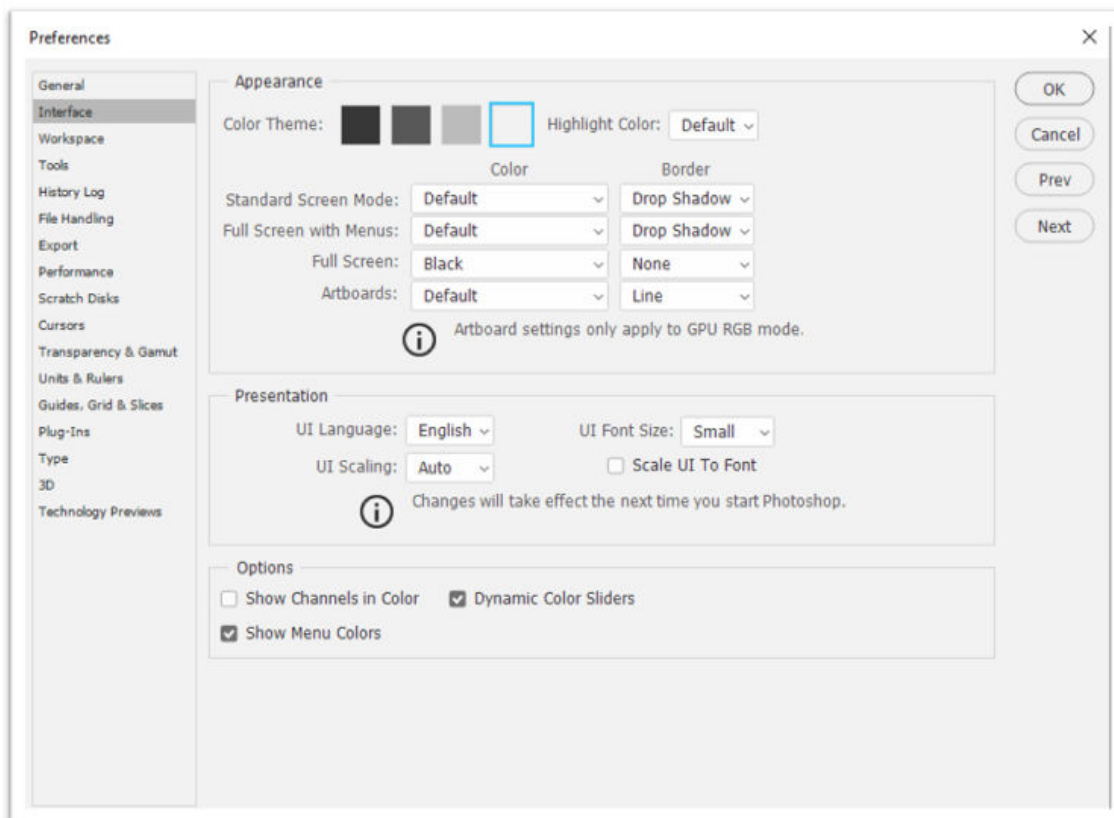

Figure 1–6: Interface preferences.

If you want to expand your preferences even further, you can do so in the **Edit→Preferences→Interface** dialog box. As with other customized preferences, you can always go back to the workspace default by selecting the **Restore Default Workspaces** button in the **Workspace** dialog box.

Predefined Workspaces

Predefined workspaces are job-focused workspace settings consisting of displayed toolsets and defined properties. Photoshop has several predefined workspaces designed to provide customized interface elements. For example, the **Painting** workspace displays the **Swatches** panel, **Brushes** panel, and **Layers** panel—all having tools and features specific to drawing and painting. The default workspace is called **Essentials**.

	Caution: Note that there are two stacked panel groups. You can collapse one or both to increase the Photoshop interface area.

On the **Options** bar, display the **Workspace Switcher** menu to select the desired workspace.

Predefined Workspace	Description
Essentials	Panels that are used for many general Photoshop tasks. This is the default workspace.
3D	Panels that are used to create 3D objects.
Graphic and Web	Panels that are used to create graphics for the web.
Motion	Panels specific to Photoshop animation tasks.
Painting	Panels used for working with drawing and painting tools.
Photography	Panels used for enhancing, modifying, and correcting photographs.

Custom Workspaces

Similar to predefined workspaces, custom workspaces are uniquely created workspace environments defined by the user. Custom workspaces can be similar to predefined workspaces or completely unique sets of displayed toolsets and environment properties.

|	**Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Customize the Photoshop Workspace.**

ACTIVITY 1–3
Customizing the Photoshop Workspace

Scenario

You need to know how to use Photoshop to enhance your images. It is best to set up the workspace ahead of time so that you won't be wasting time opening and closing windows.

1. Change the color of the interface.

   a) Go to **Edit→Preferences→Interface** to display the **Preferences** dialog box.

   You may have to scroll down a bit to see the **Preferences** option.

   b) In the **Preferences** dialog box, under **Appearance**, for both the **Standard Screen Mode** and **Full Screen with Menus** color lists, select **Light Gray** to change the background color, and then select **OK**.
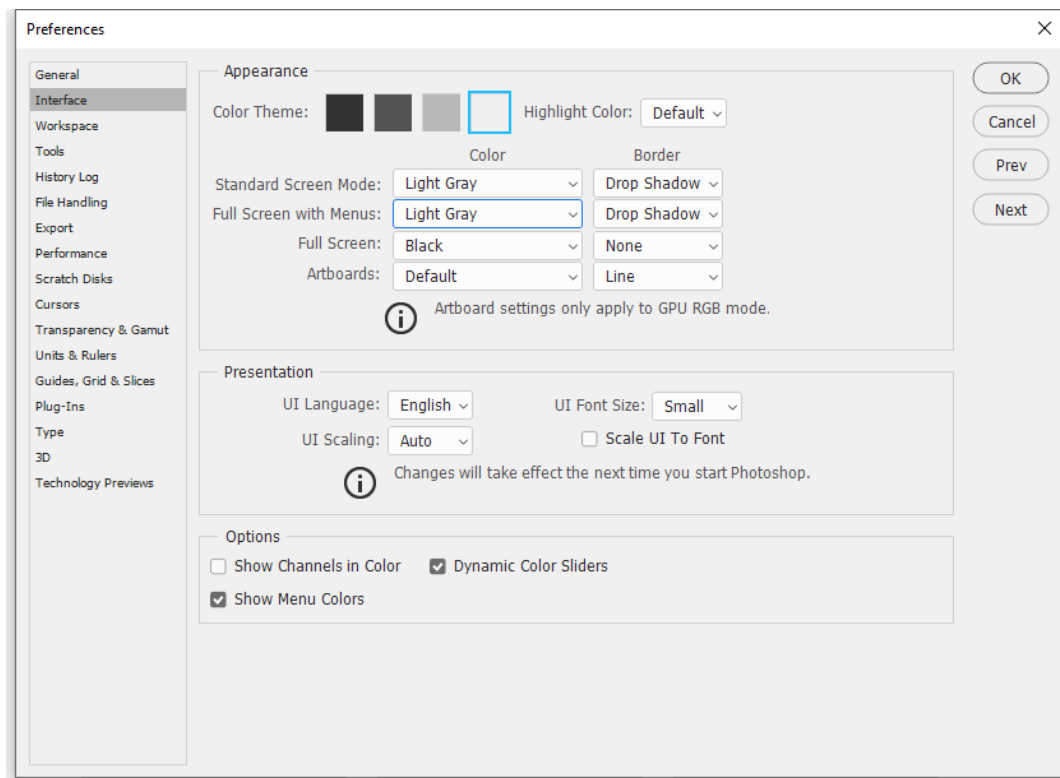

   c) Go back to **Bridge**, double-click the **girl with umbrella** image, and verify that the workspace background behind the image is **Light Gray**.

   d) Select **File→New** and, in the **New Document** dialog box, leave the default name and settings and select **Create**. You are creating a new image. Observe that even with a blank image, the interface background remains **Light Gray**.

   If necessary, in the **New Document** dialog box, select **Close**.

   e) Change the interface preference back to **Medium Gray**.

2. Display a new workspace preset.

a) On the far right of the **Options** bar, select the **Workspace Switcher** menu.
b) Select **Photography** and observe that the tools are now photograph-oriented.
c) Select the **Workspace Switcher** menu and select **Essentials** to return to that workspace. Observe that all the tools have changed back.

3. Rearrange, remove, and add panels from the **Essentials** workspace.
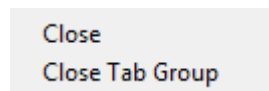
a) Observe that there are two stacked panel groups, on the right, under the **Workspace Switcher**. Ensure that the stacked panel group (with **Color**, **Swatches**, **Gradients**, and **Patterns**, and **Learn**, **Libraries** and **Adjustments**) on the far right is expanded, and the stacked panel group to its immediate left is collapsed.
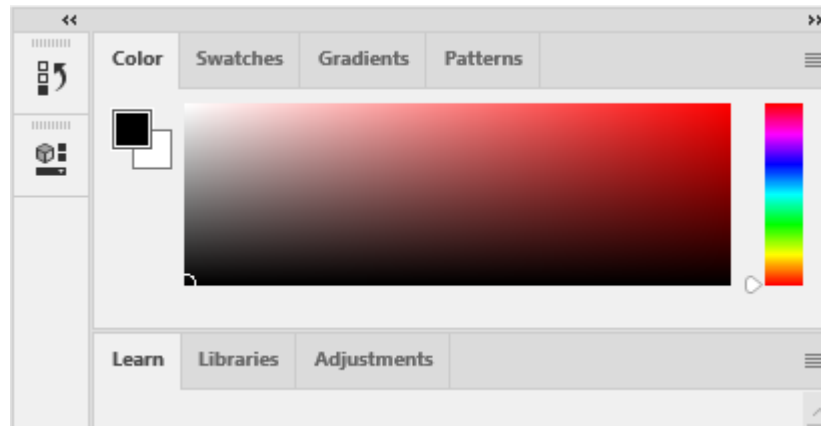

> **Note:** If the stacked panel group on the left (with the **History** panel) is not collapsed by default, select the **Collapse** icon to collapse it.

b) Above the collapsed panel, select the **Expand** icon to expand the stacked panel group. Observe that there are now two expanded stacked panel groups (**History/Properties** and **Color/Swatches/Gradients/Patterns and Learn/Libraries/Adjustments**) to the right of the main workspace window.
c) On the right-most stacked panel group, observe that there are a number of panel groups, such as **Colors/Swatches/Gradients/Patterns**, **Learn/Libraries/Adjustments**, and **Layers/Channels/Paths**.
d) Select **Window→Styles**.
e) Drag the **Styles** panel to the right of the **Adjustments** tab to add the **Styles** tab next to the **Adjustments** tab.
f) To the right of the **Color/Swatches/Gradients/Patterns** panel group, select the panel group menu icon and, from the list, select **Close Tab Group**. Observe that the **Color/Swatches/Gradients/Patterns** panel group has closed.


g) Repeat the previous step twice to close the other two tab groups on the right-most stacked panel group.
h) Select the **Workspace Switcher** panel drop-down menu again and then select **Reset Essentials**. Observe that the closed panel groups reappear and the stacked panel group with the **History** and **Properties** panels are collapsed.

i) Expand the collapsed stacked panel group, then drag the **History** panel group to the right and down to place it between the **Color/Swatches/Gradients/Patterns** panel group and the **Learn/Libraries/Adjustments** panel group. As you drag, when you see a blue horizontal line appear between the **Color/Swatches** panel group and the **Learn/Libraries/Adjustments** panel group, release the mouse button.
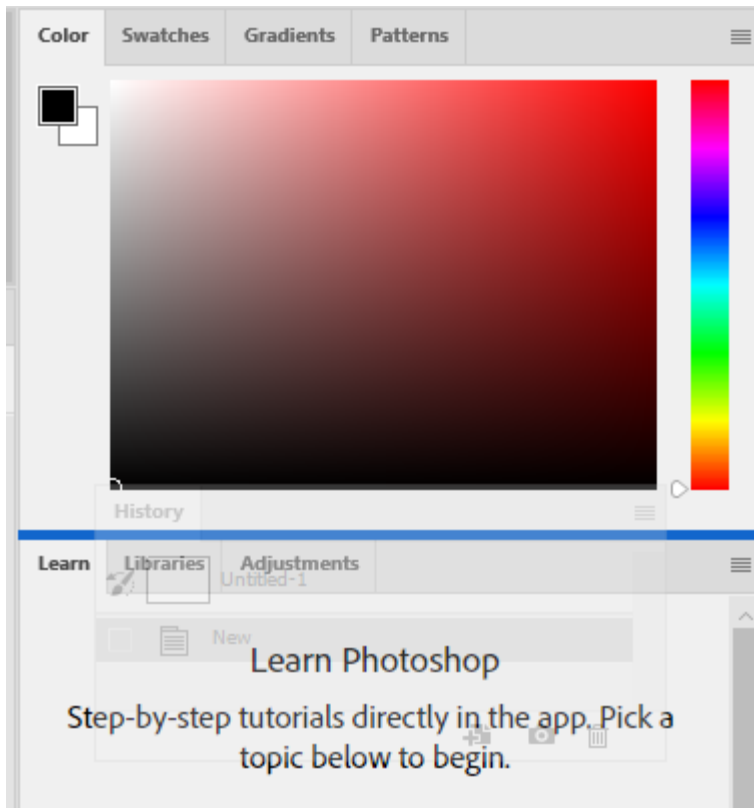

	Note: As you drag, observe that the panel you are dragging becomes really transparent. You may have to try this procedure a few times before you are successful.

j) From the Photoshop **Application** bar, select **Window→Navigator** to display the **Navigator** and **Histogram** panel group where the **History** panel group used to be.

k) On the panel group title bar, grab a blank part of the title bar to select the entire panel group.
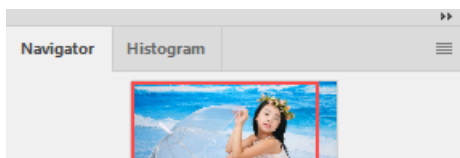
l) Drag the group to the right and place it above the **History** panel group. Make sure that both **Navigator** and **Histogram** have been moved as a group.

m) In the **Color/Swatches/Gradients/Patterns** panel group, verify that the **Swatches** panel is active. If it is not, select it. Select the panel menu icon to reveal the **Swatches** menu.

n) From the **Swatches** menu, select **Close**. Observe that this closes the **Swatches** panel but not the **Color**, **Gradients** or **Patterns** panels.

o) Drag the **Color** panel group down and place it over the **Learn/Libraries/Adjustments** panel group. When the **Learn/Libraries/Adjustments** panel group is outlined in blue, release the mouse button to place the **Color** panel group next to the **Learn/Libraries/Adjustments** panel group.
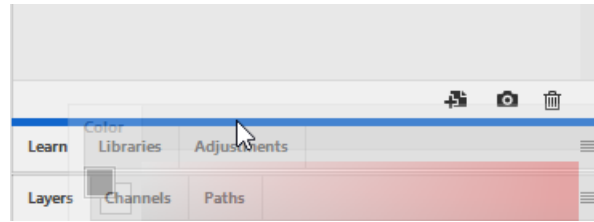
4. Create a new workspace.

   a) Select the **Workspace Switcher** drop-down menu and select **New Workspace**.

   b) In the **Name** text box, type *My Workspace* and select **Save**.

   c) Verify that the **Workspace Switcher** now has **My Workspace** as the current workspace.

5. Close all open files, but leave Photoshop open.

Summary

In this lesson, you identified Photoshop interface and workspace components, and created a customized preset workspace. You also were introduced to Adobe Bridge. Taking the time to acclimate yourself to these applications is the first step toward finding your optimal working style. Arranging your workspace to best suit your needs will increase your comfort level and efficiency when working in Photoshop.

What value can you foresee in using Adobe Bridge?

Now that you've seen a few of Photoshop's workspace components, are there any changes you might make to customize the working area to your working style?

Note: Check your CHOICE Course screen for opportunities to interact with your classmates, peers, and the larger CHOICE online community about the topics covered in this course or other topics you are interested in. From the Course screen you can also access available resources for a more continuous learning experience.

2 | Creating Basic Images

Lesson Time: 1 hour

Lesson Introduction

You have identified the main components of the Adobe® Photoshop® 2020 workspace and experienced some of its navigational techniques. You also partnered Adobe Bridge with Photoshop for viewing and opening files.

Before using additional tools and features to enhance photo images, it's important to understand image type, size, resolution, and color modes—and how Photoshop can help you optimize the quality and final output of your pictures.

Lesson Objectives

In this lesson, you will:

- Manage image elements and formats.

- Apply design principles, elements, and graphic composition.

- Identify digital device parameters.

TOPIC A

Manage Image Elements and Formats

Have you ever enlarged a photograph that became blurry or distorted, or worked with an image that looked good on screen but not on the web or in print? An important consideration when working with images is to recognize and understand the color mode of your image, the type of image, and its size and resolution. These factors determine the clarity, vibrancy, and file size of your printed or online image.

Pixels, Resolution, and Image Size

Pixels are tiny squares of color, or shades of gray, that together comprise an image. The number of pixels per unit that make up an image, usually measured in inches as *ppi*, determines the image *resolution*. An image with a high resolution has more pixels per inch (ppi) than the same image with a lower resolution. The greater the number of pixels there are, the sharper the image will be, but the larger the file size as well.

For print, a standard quality photograph will have 300 pixels per inch (300 ppi). The same picture intended for display on the web works well at 72 ppi.

> **Note:** Resolution clarity is specific to printed output and to viewing devices, such as computer monitors.

Figure 2–1: Magnified at 300 percent, the image with the higher resolution (300 ppi) has more clarity than the image with the smaller resolution (72 ppi). However, the file size of the 300 ppi image is larger.

Image Size Dialog Box

The **Image Size** dialog box has several options for modifying the size or resolution of an image.
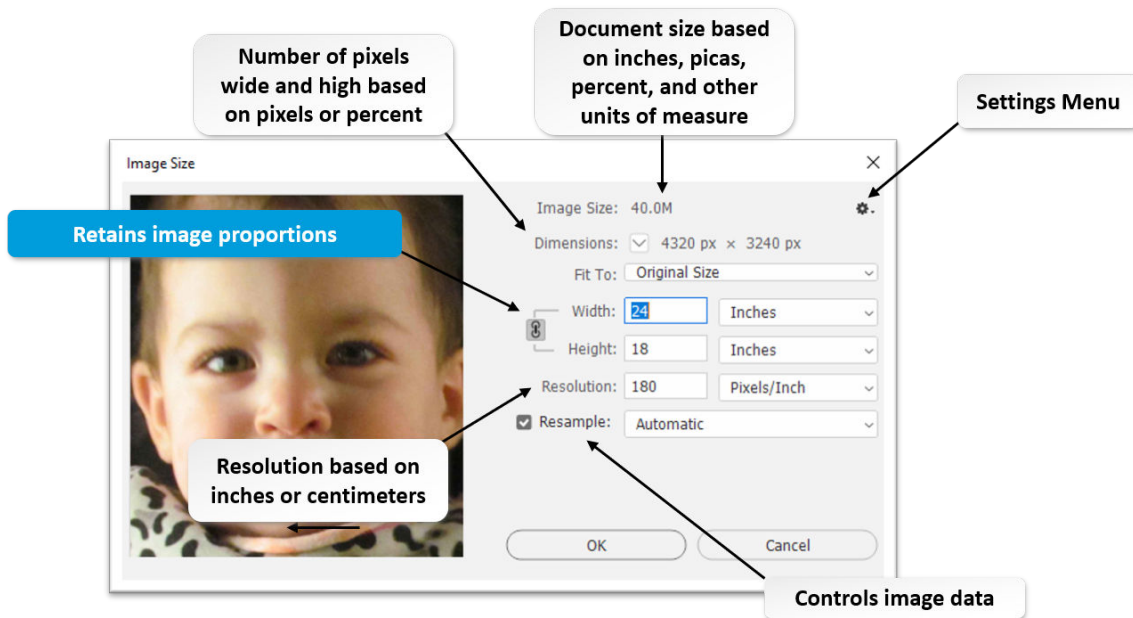
Figure 2-2: The Image Size dialog box.

Image Size vs. Canvas Size

In addition to changing the size of your image, Photoshop lets you change the size of the canvas. The canvas is the layer on which your image is placed. This can sometimes be confusing, but think of the canvas as the picture frame around a picture. You can change the width and the height of the canvas layer to either increase the editable area around the image or decrease to crop an area around the image.

Resampling

Resampling, also known as *interpolation*, controls the amount of image data when you increase or decrease the resolution or the pixel dimensions of an image. Beginning with the original image that has a given number and color of pixels, an image can be resampled up or downsampled.

Resampling Option	Description
Resample Up	Photoshop resamples the image and adds pixels. The added pixels are given color values based on the color values of original pixels.
	Disadvantage: Resampling up can reduce the sharpness and detail of an image. The increased pixel count also increases the size of the file.
Downsample	Photoshop resamples the image and deletes pixels. This has little effect on image detail and clarity; think of thumbnail images as an example. The reduction in pixels reduces the size of the file.

Photoshop offers different methods of interpolation in the **Image Size** dialog box.

Resampling Option	Description
Nearest Neighbor (hard edges) Interpolation	The simplest method, it increases the size of a pixel, and uses the color of the nearest pixel. The effect is similar to zooming in to enlarge and view a small area of an image (the eye, for example); the color remains true, even though the image itself is blurred.
	This method is not recommended for enlarging photographs because stretching the pixels produces jagged images.
Bilinear Interpolation	A method of determining the color value by averaging the color values of surrounding pixels. It produces fairly smooth edges for medium-quality results, but may not be suitable for photographic images.
Bicubic Interpolation (smooth gradients)	A method that employs a detailed examination of surrounding pixels and then creates new pixels based on the average value of what it finds.
	This method produces smoother edges and gradations than either of the other two methods. It is commonly used by image editing software and digital cameras for resampling images.
Bicubic Smoother (enlargement)	Both employ the bicubic method with more refined algorithmic calculations.
Bicubic Sharper (reduction)	**Bicubic Smoother** further smooths out the edges of an image. It is recommended for enlarging images.
	Bicubic Sharper employs sharper edges and is recommended for reducing image size.
Preserve Details	When the **Preserve Details** method is chosen, a **Reduce Noise** slider is displayed. Use the slider to smooth out noise as you upscale the image.

> **Note:** As with many tools and options, the resampling method you choose will often be based on what you determine to look best for any given image, and on the amount of experience you gain over time.

Raster Image

A *raster* image, also known as a *bitmap*, is made up of pixels, with each pixel occupying a specific location and having a specific color. The color and intensity of each pixel has variations that occur across a span of pixels; the eye sees this as the rendered image. Raster images are typically photographic images.

Scaling a raster image well beyond its original size causes the pixels to stretch, which can result in image distortion and a jagged appearance. This distortion is known as *pixelation*.
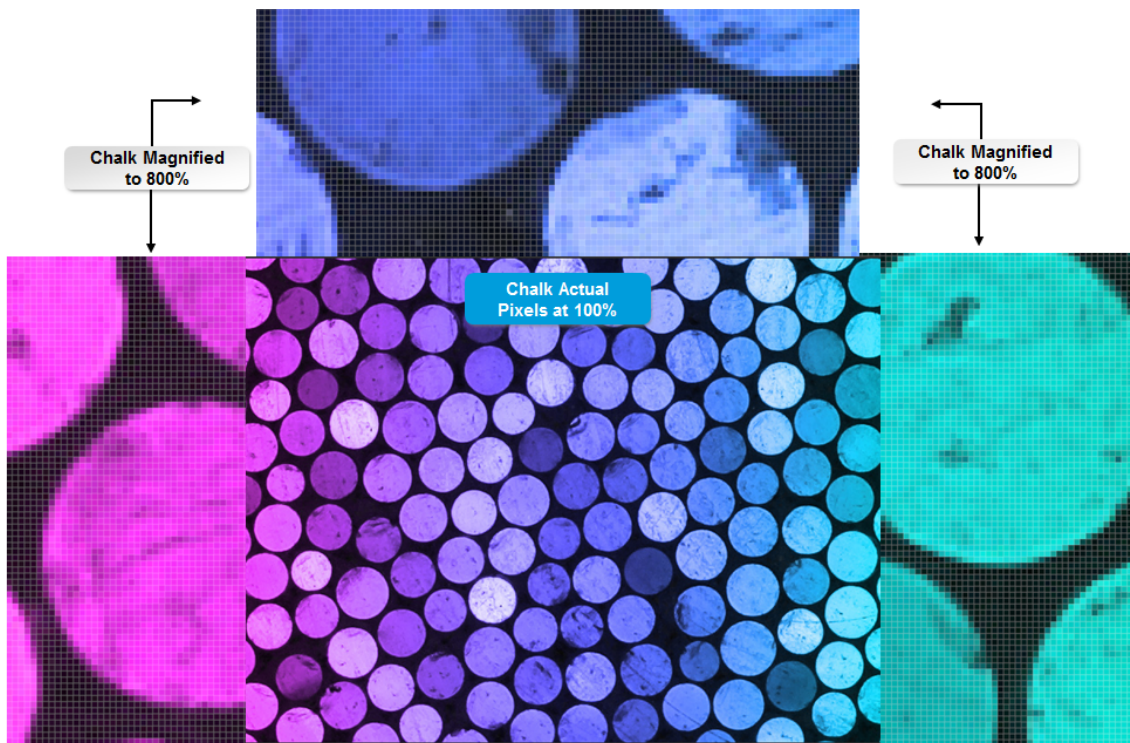
Figure 2–3: Raster image made of pixels, and pixel color variation.

Vector Image

A *vector* image is a graphic type based on a mathematical formula that defines points, called vectors, along a shape or path. Vector images are made up of lines, curves, colors, and position properties. Unlike the pixelation that can occur in raster images, vector images are scalable and resolution independent so they can be resized without corrupting image quality—and their file size remains the same.

Figure 2–4: A vector graphic has lines, curves, colors, and position properties.

Best Suited for the Web

Vector graphics are well suited for the web. They have a smaller file size than that of raster graphics, which saves download time. And they do not depend on monitor resolution, so clarity is not an issue.

Color Modes

Like most image editors, Photoshop is designed to work with raster files by using the **RGB Color** mode, but it also allows you to work with other color models, such as **CMYK**. Digital cameras produce images in the RGB color mode. Printers produce output in the CMYK color mode. To determine or select a color mode, select **Image→Mode** from the Menu bar.

Figure 2–5: Determining the color mode.

Color Mode	Description
RGB	*RGB* is a device-dependent color model that uses three colors, or channels, to reproduce colors on screen. Individual pixels are composed of a mixture of three colors: red, green, and blue. Each color has a value that ranges from 0 to 255. Zero represents black; 255 represents white. For example, a pixel with values of 0 for red, 0 for green, and 255 for blue, will appear as pure blue.
	Individual devices reproduce an RGB value differently, and can vary from manufacturer to manufacturer.
	The **RGB Color** mode in Photoshop varies according to the working space setting that you specify in the **Color Settings** dialog box. The default is standard **RGB (sRGB).**

Color Mode	Description
CMYK	*CMYK* has four channels to represent color: Cyan, Magenta, Yellow, and Black. The combination of CMYK colors can result in more than four billion available colors. Because it is a subtractive process, each additional color means more light is removed, or absorbed, to create colors. When you bring a CMYK image into Photoshop, keep in mind you are actually viewing it in RGB mode on your monitor, so the printed output may not look exactly like what you see on screen. CMYK is used by most printers and in the printing process.
Lab Color	The **Lab Color** mode defines colors mathematically and is based on how humans perceive color. The color components L, A, and B denote: • A luminance component ranging from black to white • A chromatic component ranging from green to red • A chromatic component ranging from blue to yellow **Lab** is device-independent.
Indexed Color	**Indexed Color** uses a single channel to represent color. A color table is used to determine the available colors.
Multichannel	**Multichannel** has 256 levels of gray in each channel. This mode supports many file formats and is used for specialized printing.
Bitmap	**Bitmap** is a single channel mode that results in two shades of brightness: black and white, and does not contain any intermediary gray level. Bitmap is used for line art and simple illustrations.
Grayscale	**Grayscale** has a single 8-bit channel that results in 256 brightness levels ranging from 0, for pure black, to 255, for pure white.
Duotone	**Duotone** is a single 8-bit channel mode that uses two, three, or four inks to print certain tones of the image in different colors. It is typically used to print tinted images and images with special ink requirements.

Color Settings

Color settings control the gamut of colors that Photoshop uses, displays, and prints. If you open an image in Photoshop with an embedded color profile that doesn't match the Photoshop color profile, Photoshop determines how to deal with it—often using the embedded information. However, new files that you create in Photoshop will adopt the color profile that you choose in the **Color Settings** dialog box, so it's important to know what is available and recommended.

Adobe Photoshop's default is *standard RGB (sRGB)*. Like RGB, sRGB uses three colors, or channels, to reproduce colors on screen—red, green, and blue. Although sRGB has a smaller gamut of colors than RGB, the difference is negligible, as the RGB gamut merely stretches colors. And because most electronic manufacturers rely on the sRGB model, it is the one that works best for digital and web images.

Save Options

When you save a document, you can save it to the Adobe cloud or to a drive on your computer. Saving the file to the cloud allows you to access it from any device where you have Photoshop installed. If you select to save the file to your computer, you can save it to an internal or external drive directly connected to the computer, or a remote drive on your network. If you save the file to the local computer, it won't be easily available on another computer unless you use a removable drive. If you later change your mind about where to save it, you can select the other option.

In the **Save As** dialog box, you can specify the file type, color options, and other features to save with the document. You can also select to save the file as a copy, thus preserving the original file. If you select the **As a Copy** option, the file name includes "copy" just before the file extension.

Cloud Documents

Files saved in Adobe's cloud space can be opened and edited in compatible Adobe apps. Cloud documents are considered cloud-native files. Benefits of saving files as cloud documents include the ability to access files from any device, including iPads. This means always having the most recent changes in the file no matter which device you access the file from, and the ability to work offline and then sync the file automatically the next time you are connected to the Internet.

File Formats

Graphic images tend to have a large file size, depending on the complexity of features that have been applied, and often require compression, especially for downloading to the web. File formats compress files differently. Photoshop's default file format is PSD. The most common graphic file formats are GIF, JPEG, and PNG.

File Format	Description
PSD	Default Photoshop file format. Supports all Photoshop features and is most compatible with other Creative Cloud programs.
GIF	Graphic Interchange Format, used for web and online services. It minimizes file size and electronic transfer time.
JPEG	The Joint Photographic Experts Group format, like GIF, is suitable for web display and online transfer. Because it retains millions of colors and shades, JPEG is a good choice for photographic images.
PNG	Portable Network Graphics format is similar to GIF, as it is effective for web and online display. PNG supports more color modes than GIF, as well as 24-bit images. It is not supported by some older web browsers.

Printed media requires a different quality of output than that of the web. It also has different preparation requirements for output to a commercial printer compared to output to a local printer. File formats designed for print include EPS and TIFF.

File Format	Description
EPS	The Encapsulated Postscript file format is compatible with the majority of layout programs, and can be used for both vector and raster graphics. However, it does not support layers. EPS files with vector graphics are rasterized by Photoshop to convert vectors to pixels.
TIFF	The Tagged-Image File Format supports only raster graphics, but it can be used on both the Windows and Mac platforms. A Photoshop file saved in TIFF format enables you to specify the type of compression, whether to preserve image resolution information and transparency or not.

Open With Photoshop

Depending on the applications and program defaults you have set on your computer, some files may automatically open in a different application. These may be files created in another Adobe application, such as Adobe® Illustrator® (.ai), as well as some Encapsulated Postscript (EPS) files. Consequently, you will have to direct your computer to open these file types in Photoshop by using

the **Open with** feature. To do this, select the file, right-click, and select **Open with→Adobe Photoshop 2020**.

Save As a Copy

When you save a file, you can opt to also save a copy by checking the **Save As a Copy** check box. Photoshop provides this option to keep any image layers intact because some file formats, such as EPS and TIFF, do not support layers.

> **Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Manage Image Formats.**

ACTIVITY 2–1
Working with Image Size

Data Files

C:\092013Data\Creating Basic Images\light.jpg

C:\092013Data\Creating Basic Images\light_copy.jpg
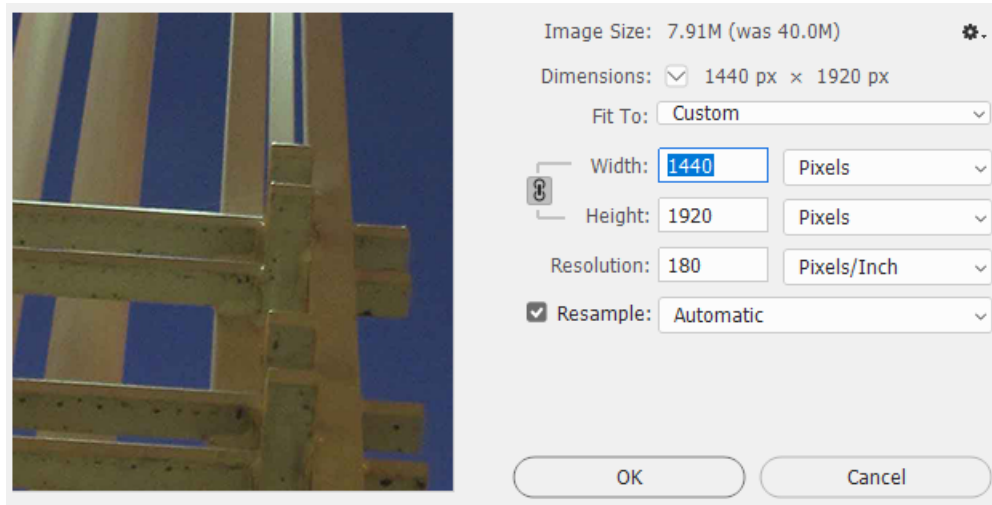
Scenario

As an intern for Chloe Community Gallery & Workshop (CCG&W), you are expected to assist the workshop leader by helping workshop participants meet each session's objectives. As many people have struggled with resizing their photos successfully, the objective for this week's session is focused on image size and resolution. Along with the stock photos to be used, participants have been encouraged to bring their own images to work with.

One workshop participant brought a photo that has very large dimensions and file storage size. He wants to be able to print it as an 8×10-inch photo. You have made a copy to demonstrate the value of resampling in this particular case and to keep his original file intact.
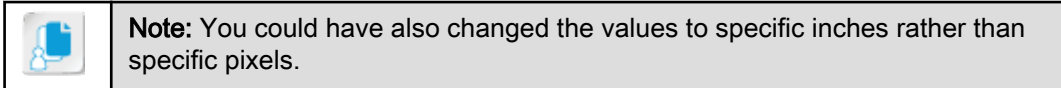
Another image is in EPS format and may not be set to automatically open in Photoshop. You want to demonstrate how to open this file and rasterize it in Photoshop.

1. Open the files **light.jpg** and **light_copy.jpg** in Photoshop.
   a) In Adobe Bridge, navigate to the **C:\092013Data\Creating Basic Images** folder.
   b) Select the **Creating Basic Images** folder to display its contents.
   c) Select **light.jpg**, press and hold the **Ctrl** key, and select **light_copy.jpg** to highlight both images, and double-click to open them in Photoshop.

2. Display the actual pixels and print size of the **light** image, and view its size and dimensions.
   a) If necessary, select the **Hand** tool to display view options.
   b) In the **light** image, on the **Options** bar, select **100%**. Observe that this displays the image in a 1:1 pixel relationship with the resolution of your monitor.
   c) On the **Options** bar, alternate among selecting **100%**, **Fit Screen**, and **Fill Screen**, and observe the effect on your view. If you have Navigator open on the right, then you can see the area that will be printed. It will have a red border around it.
   d) Select **View→Print Size** and note that, depending on your screen resolution, the print size may appear different from the workspace view. Observe that this is Photoshop's attempt to show you the size at which the image will print.
   e) Select **Image→Image Size**.
   f) Observe the file and document size and pixel dimension.
   g) Close the **Image Size** dialog box.

3. Scale down and resample the **light_copy** image.
   a) Select the **light_copy** image and select **View→Print Size** to view its print size.
   b) Select **Image→Image Size**.
   c) In the **Image Size** dialog box, verify that **Resample** is checked.
   d) In the **Width** box, select **Pixels** and change the value to **1440**. Note that the **Height** value has automatically scaled down as well.

e) Verify that the **Image Size** and **Dimensions** are considerably smaller.

Image Size: 7.91M (was 40.0M)

Dimensions: ☑ 1440 px × 1920 px

Fit To: Custom

Width: 1440   Pixels

Height: 1920   Pixels

Resolution: 180   Pixels/Inch

☑ Resample: Automatic

OK   Cancel

f) In the **Width** box, select **Inches**. Notice that the image went from 18 inches wide to only 8 inches wide now.

> **Note:** You could have also changed the values to specific inches rather than specific pixels.

g) Select **OK** to accept the new dimensions.

4. Save the **light_copy.jpg** file with a different name.

   a) From the **File** menu, select the **Save As** option.
   b) If the **Save on your computer or to cloud documents** window is displayed, check **Don't show again**, then select **Save on your computer**.
   c) In the **Save As** dialog box, in the **File name** text box, type *my_light*
   d) Verify that the **Format** is **JPEG (*.JPG; *.JPEG; *.JPE**) and select **Save**. If prompted about JPEG options, select **OK**.
   e) Select **Image→Mode**. If necessary, select **RGB Color**, and select **OK**. Verify that the **Image/Mode** value is **RGB**.

5. Resample the image up to twice its size, which does not only apply to height and width, but can also apply to percent.

   a) Select **Image→Image Size**.
   b) Record the pixel dimensions and resolution.

   _____

   c) In the **Width** drop-down box, select **Inches**. In the **Width** text box, type **15**. Verify that the height has scaled up proportionately and that **Resample** is checked and **Automatic** is chosen.
   d) Verify that the pixel dimensions have approximately doubled in size, and select **OK** to accept the new dimensions.
   e) If necessary, in the **Tools** panel, select the **Hand** tool and, on the **Options** bar, select **Fill Screen**.
   f) Note that even at twice the size, the vector image quality is still acceptable.

6. Save the document in Photoshop format.

   a) From the **File** menu, select **Save As**.
   b) In the **Save As** dialog box, in the **File name** text box, change the name to *my_new_light*
   c) Set the format to **Photoshop (*.PSD; *.PDD; *.PSDT**).

    d) Check **Save As a Copy** and select **Save**.

    e) If necessary, note the **Photoshop Format Options** warning and select **OK**.

7. Close all files without saving further and verify that **my_light.jpg** and **my_new_light.psd** are in Adobe Bridge.

TOPIC B

Apply Design Principles, Elements, and Graphic Composition

It is important when implementing your designs and layouts that you understand and use best practices in the application of design principles, elements, and graphic composition. This will provide a consistency and symmetry to your designs, resulting in the desired quality of your graphic output.

Graphic Design Elements and Principles

Graphic design is a purposeful, informational, and creative process. You can gain a better understanding of the basics of graphic design by studying the elements and principles that govern effective design and page layout.

The following chart describes design principles and their definitions.

Design Principle	Description
Emphasis	The part of the design that catches the viewer's attention. The artist will usually make one area stand out by contrasting it with other areas. The area will be different in size, color, texture, shape, etc.
Movement	The path the viewer's eye takes through the artwork, often to focal areas. Such movement can be directed along line edges, shape, and color within the artwork.
Balance	The equal distribution of visual weight in a design.
Unity	The feeling of harmony between all parts of the artwork creating a sense of completeness.
Color	Used to unify, separate, emphasize, and decorate. Color intensity, saturation, shade, and texture can be used to design a page effectively.
White Space	The area on a design that contains no content. When used appropriately, it helps to reduce clutter.
Alignment	Creates order and organization among elements.
Line	A mark with greater length than width. Lines can be horizontal, vertical, or diagonal; straight or curved; thick or thin.
Contrast	Emphasizes or highlights key elements within your design. The greatest contrast is achieved when two elements are total opposites.
Rule of thirds	Allows you to achieve a visually appealing balance by dividing your layout into three equal parts.
Proximity	By grouping similar elements together or in close proximity, you create a relationship between those elements.

Background Graphics

Background graphics are a very important part of the visual appeal of a design. The background generally sets the stage for the theme of the design. When it comes to the background, there is the

body background and the content background, which can be combined to form the three most commonly used background structures. There are also other background options.

Background Structure	Description
Content and Body Background Layered	The body background is at the bottom and the content background is layered on top of that.
Content Directly on Body Background	The content is laid directly on the body background, which is usually made up of images, textures, and illustrations.
Body and Content Backgrounds Combined as One	This is the most simple structure in which the content itself forms the background.
Header Backgrounds	A web page has a lot of leeway in terms of where the background design can be placed. Header and wrapper backgrounds offer a lot of flexibility. The header can flow seamlessly into the content or it can have a sharp boundary.
Wrapper Backgrounds	The wrapper can flow over from a standard layout, adding feeling and personality. Some graphics can be allowed to bleed into or extend through the content area.
Full-Body Backgrounds	Full-body backgrounds work well, provided they don't take away emphasis from the content, and highlights or bevels are used for color separation.

Figure 2-6: Background graphics.

Font Classification, Size, Type, and Color in Graphic Design

The typography used in graphic design has a significant effect on the final impact of that design with the viewer. No matter how incredible the images and layout of the design might be, a poor choice in typography can be ruinous. There are a number of aspects of typography to consider when choosing what works best in your design.

Typographical Element	Description
Connotations	It is important to ensure that the typeface matches the subject and the setting of the design; otherwise, the viewer could become confused and conflicted.
Utility	The typeface must be readable, and if there is any doubt at all about readability, then do not use the typeface. The rule of thumb is to choose a typeface that makes good use of space, balancing between positive and negative use of space.
Diversity	Variation in the typeface is a key way to differentiate between the importance of various parts of the text on a page. Using italics, bold, and bold italic in the right way can strengthen the message being conveyed.
Space	Give text space to breathe. Text should not be squashed together. Headlines need to have ample space before the body begins and there should be an appropriate amount of space between letters, words, lines, and paragraphs. Margin space between blocks of text is also important.
Color	While color and text might seem like separate things, they need to be considered together. The key here is to contrast the color and type of text with the color on which the text appears. Avoid putting light-colored text on a light-colored background and vice versa. Imagery behind text is also an important consideration.

Figure 2–7: Text and color.

Visual Hierarchy

Visual hierarchy is critical in design because it is the basis of communication between the designer and the target audience. Because people generally process things visually, they tend to see relationships between, and categorize, the things they see. For this reason, it is important for designers to arrange objects in such a way that they are visually appealing.

Visual Hierarchy Element	Description
Size	One of the most effective ways to create a visual hierarchy in design. Use size to convey importance, making more important design elements larger and less important design elements smaller.
Color	Color can be used in two ways: as an organizer tool and as a personality tool. Use of color in certain ways can demand attention, bring emotional appeal, affect brand, create symbolism, and classify information.
Contrast	Contrast is used to show the relative importance between different design elements. This can include intense changes between the size of the text or colors used.
Alignment	Use alignment to create order between the various elements on the page. Alignment can come in the form of separate columns or can be more complex, such as where information is positioned on a page to gain attention.
Repetition	Assign meaning to an element compared to other elements on a page by being repetitive in its appearance. This allows the viewer to pay particular attention to those elements that are not repetitious.
Proximity	This is a way to separate elements from each other. A designer can use proximity to create sub-hierarchies. This is the fastest way to associate content that is similar.
Density and Whitespace	Finding a balance between packing elements too densely and spacing them out too much is crucial. The key is to ensure the page is not too cluttered and the elements retain their relationship to one another.
Style and Texture	The use of style and texture on a page to create feeling, and via that feeling, create a hierarchy of the elements.

Guidelines for Applying Design Principles, Elements, and Graphic Composition

> **Note:** All of the Guidelines for this lesson are available as checklists from the **Checklist** tile on the CHOICE Course screen.

Apply Design Principles, Elements, and Graphic Composition

Here are some guidelines for applying design principles, elements, and graphic composition:

- Choose a font that can be used across all elements involved in the project.
- Use the same color scheme throughout the project.
- Create variety in the following ways:
  - Use two styles of the same typeface, such as condensed and bold.
  - Use different sizes or colors of the same graphic element.
- Use graphic elements, such as images and text, to guide the viewer's eye to specific details of the design, such as event information.
- Change characteristics of a specific graphic element in order to make it dominant.
- Manipulate the relationship of elements in your composition by changing their size in relation to one another, thus changing the balance.
- Change the proportion of design objects in order to create emphasis on the right graphic or text item.

- Lines can represent anything, from a leaf to a building.
- Lines can also be more literal, creating divisions and borders in your composition, adding to visual interest and creating a visual hierarchy.
- Utilize Photoshop brush tools to create lines from hard to soft, changing the feel of your design in simple yet effective ways.
- Text can also be used to create lines and be manipulated by changing the direction or placement.
- Shapes can be considered anything from a simple circle, to the silhouette of a person.
- Shapes can be used to mimic or remind your viewer of something specific, such as a circle being reminiscent of the sun, or an array of rectangles set up as a city skyline.
- Negative space can be a very useful element, creating a visually appealing balance and proportion.
- Text can also be manipulated to mimic specific shapes, or made to coexist with a shape to create visual interest.

ACTIVITY 2-2

Creating Visual Hierarchy by Using Design Elements

Data Files

C:\092013Data\Creating Basic Images\music.psd

C:\092013Data\Creating Basic Images\music_two.psd

C:\092013Data\Creating Basic Images\music_three.psd

Scenario

As a freelance designer, you have decided to do some work for nonprofit organizations to boost your experience and portfolio. A local preschool/daycare has asked you to create signs for the different workstations that are located inside the classroom. One of these is the music station.

They would like to include some simple elements in the poster that creates visual interest and is easily recognizable to children. They already have some images on hand that they would like you to incorporate into the design. You are required to add some type elements to the design and arrange the items so that they are visually pleasing as well as legible and effective.

1. Open the file **music.psd** in Photoshop.

    a) In Photoshop, select **File→Open**.
    b) Navigate to the **C:\092013Data\Creating Basic Images** folder.
    c) Select **music.psd** and then select **Open**. If a warning message about missing fonts appears, select **Next**. Select **Cancel**. To avoid seeing this message again, you can select the **Don't show on document open** check box.
    d) Examine the file. Notice how the elements of the design are placed haphazardly on the canvas with no real visual organization.

2. **What changes could you make to the composition to create more visual interest?**

3. Open the **music_two.psd** file in Photoshop. Examine the file for a moment and then answer the following questions.

    What element of design is used in the music notes, cassette tape, and CD that creates a more interesting design?

4. **Notice that the lines have been changed. What do you think was the idea behind their revised composition/arrangement?**

5. What has been done to the type to make it a more dominant element on the page? Are there any other changes that could create the same outcome?

6. What other changes have been made to the replicated objects? How does this affect visual hierarchy?

7. Open the **music_three.psd** file in Photoshop. Examine the file for a moment and then answer the following questions.

   What changes have been made to the background, and how does this affect the overall design?

8. How does the black background affect the word *MUSIC*? Do you think it stands out more or less? What would happen if the background was yellow?

9. Is there any "white space" in the design? Is there more or less than there was in the original design, and how does that affect it?

10. Close all files. Leave Photoshop open.

TOPIC C

Work with Digital Devices

You have become familiar with Photoshop, and the characteristics of the images you work on in it. Since Photoshop is most frequently used to edit photo images, it is now time for you to become familiar with the devices that Photoshop gets its images from. In this topic, you will work with digital devices.

Digital Image Fundamentals

Would it surprise you to learn that your digital camera doesn't shoot colors? That's because digital devices capture two values: 0 and 1, or black and white. All color is created by an output device such as a monitor or printer.

At its most basic level, a digital camera, using an image sensor called the **_charge coupling device_**, converts the analog light that comes into your camera into pixels, thereby recording an image as digital data. You'll recall that pixels are square units of grayscale information. In the digitizing process, the camera captures the grayscale data that combines to produce the color channels of red, green, and blue (RGB).

Figure 2–8: Output devices analyze grayscale data.

The exact grayscale value of any area of an image is displayed in the Photoshop **Info** panel.
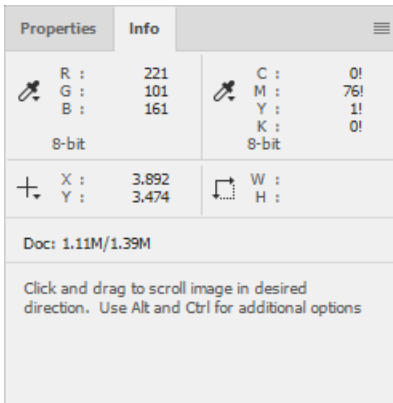
Figure 2–9: The Info panel displays the numerical breakdown of grayscale channels produced by digitizing the image.

Digital Photography Concepts

Its affordability and ease of use has made digital photography appealing and accessible to the most novice picture taker. You need to know very little about light exposure, shutter speed, and even focusing, as all of it is now automated. However, your investment in a digital camera can be enhanced by understanding some of the very basic terminology and concepts.

Terminology	Description
Aperture	An *aperture* is an iris-like opening inside the camera lens that can be adjusted larger and smaller. A larger aperture allows in more light.
	Aperture is based on ratios called F-stops. An F-stop of F16 is a much smaller aperture (opening) than that of F4.
Exposure	*Exposure* refers to the changes made to aperture and shutter speed to adjust for light.
Mode	The mode setting you select.
	Auto mode: The camera makes all decisions (shutter speed, aperture, light metering.)
	Program mode: The camera makes most decisions but you have some flexibility regarding shutter speed and aperture.
	Shutter priority: You select the shutter speed, and the camera adjusts to the corresponding aperture. Example: to blur or freeze a subject in motion.
	Aperture priority: You select the aperture (depth of field) and the camera adjusts to the corresponding shutter speed. Example: to focus on a particular depth of field and blur out areas outside that depth of field.
	Manual mode: You select all camera settings to determine exposure.
Megapixels	Equal to one million pixels, the number of megapixels contributes to image resolution and print size. Digital camera specs include the number of megapixels they are capable of producing. For example, to print a 4×6-inch image with high quality resolution, a camera would have to have at least 2 megapixels. A larger print, such as 16×20-inch, would require at least 8 megapixels. Most camera models today have a minimum of 10 megapixels.
Light meter	Measures the light in your scene to calculate a shutter speed and aperture.

Terminology	Description
Focus	Based on depth of field. A camera will normally take in more than one depth of field. Changing aperture and shutter speed determines the depth at which the camera uses a sharp focus, and where focus can be blurred.
Zoom	The focal length that brings images closer into view.
Flash	A burst of light used to compensate a dark or dim setting.
Shutter speed	The length of time light is allowed into a camera. Measured in seconds, or fractions of a second, shutter speed can be as slow as 1/15 of a second, or as fast as 1/16,000 of a second. The longer the shutter is open, the more light will get into the camera.

Note: For more information about transitioning to digital photography, see the article "Making the Transition from Film to Digital" at **http://www.adobe.com/digitalimag/pdfs/ phscs2ip_filmtodig.pdf**.

Scanning Basics

If you've ever seen or used a scanner, chances are it was of the flat-bed variety, in which you lift the cover and place a document on the glass plate. While you wouldn't think that a scanner has much in common with a digital camera, they both operate on the same principle that uses an image sensor, or charge coupling device, and analog light reflected on a static, flat image (a document or photo) that is converted into pixels, thereby reproducing a digital picture of the image.

When you place a document face down on the glass plate and close the cover, the Start mechanism uses mirrors and a light source (a lamp) that passes slowly under the glass plate to reflect the image onto a lens that gets filtered through the charge coupling device. The scanned image can then be viewed, stored, and printed by using a computer.

Along with the similarities a scanner and digital camera have, there are significant differences.

Scanner	Digital Camera
Captures 2D static displays.	Captures 2D and 3D, static and motion displays.
Has a built-in light source.	Depends on an external light source.
Has a static focal length.	Has adjustable focal lengths.
Has a set media speed.	Has adjustable media speeds.
Limited types available; the most common is a reflective flatbed type. There are also sheet-fed, hand-held, and drum scanners.	Available in a wide variety of types and models. Common types include single-lens reflex (SLR) with a fixed lens, and digital SLR with interchangeable lenses.
Images are stored in an external device, such as a computer.	Images can be stored in a camera and transferred to a computer or other output media.

Adobe Bridge Photo Downloader

Transferring photos from your camera is easily managed by using the Adobe Bridge Photo Downloader. Not only is it fast, but it also gives you the flexibility to rename files, organize them by date, save copies to a different location, delete photos from the camera (or memory card), and more.

To use the Adobe Bridge Photo Downloader, first connect your camera and your PC by using the cable provided with your camera. If your images are saved to a memory card, remove the card from the camera slot and insert it into the computer's SD slot.

From the Adobe Bridge **File** menu, select **Get Photos from Camera**. In the **Adobe Bridge - Photo Downloader** dialog box, select your preferences and then select **Get Media**. The transfer progress is displayed so you can see how much of the transfer is completed.

Once your files are copied or moved to Adobe Bridge, you can use Bridge tools to batch rename, rate, add metadata, and more.
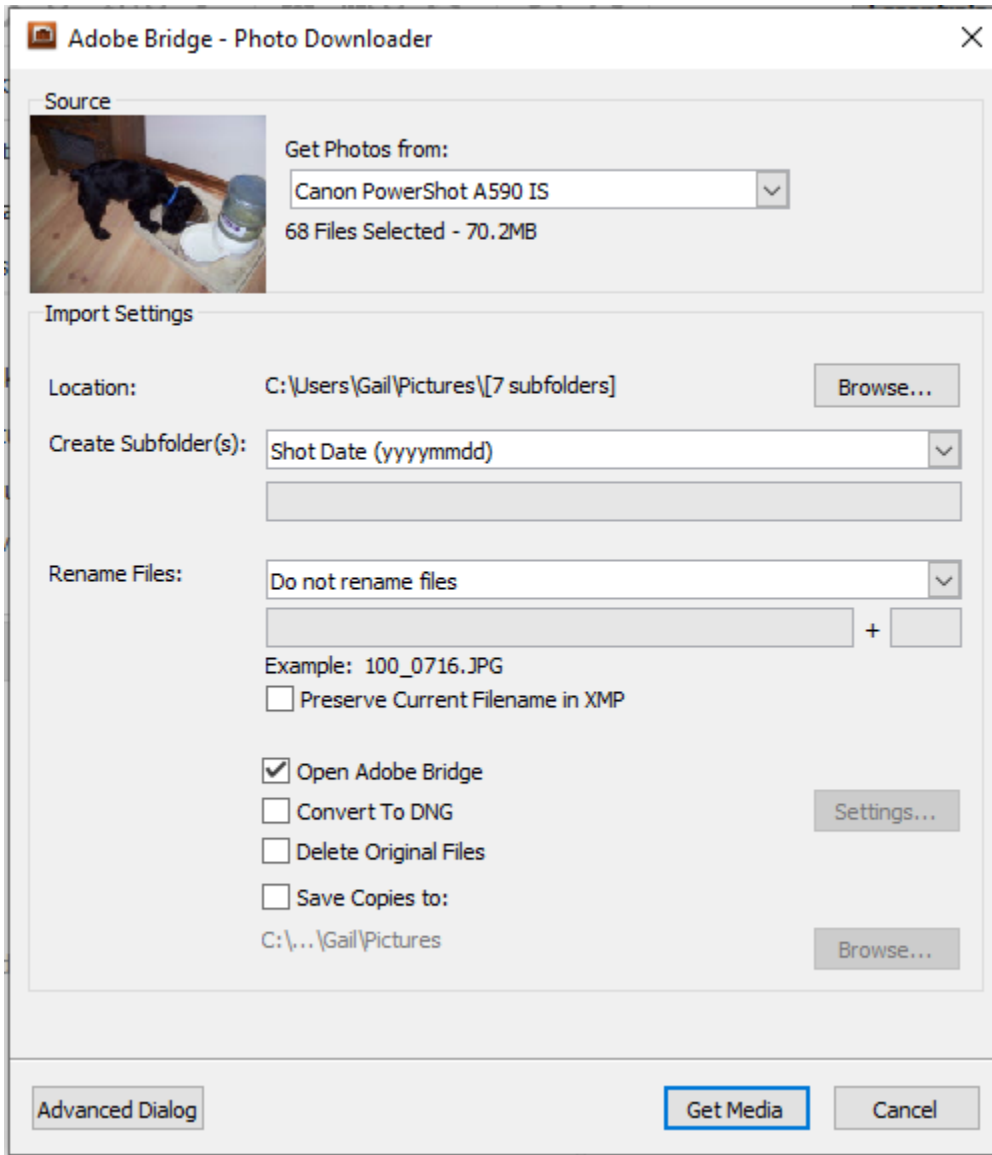
Figure 2–10: The Adobe Bridge – Photo Downloader dialog box.

> **Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Work with Digital Images.**

ACTIVITY 2-3
Working with Digital Devices

Scenario

In your facilitation role with workshop participants, you realize that many of them have limited knowledge of how digital devices work. In order to determine what areas people are the least savvy in, you develop an assessment for each participant to fill out. From those results, you will create a training session that will be used to help participants identify and work with digital devices.

1. In the digitizing process, what data does the camera capture that combines to produce the color channels of red, green, and blue?

2. What camera component captures analog light and converts it to pixels?

3. Which camera setting makes changes to aperture and shutter speed to adjust for light?
   - ○ Exposure
   - ○ Shutter speed
   - ○ Depth of Field
   - ○ Aperture

4. Which camera setting determines the length of time (in seconds) that light is allowed into the camera lens?
   - ○ Exposure
   - ○ Shutter speed
   - ○ Depth of field
   - ○ Aperture

5. Which camera setting is an adjustable opening in the shape of an iris?
   - ○ Exposure
   - ○ Shutter speed
   - ○ Depth of field
   - ○ Aperture

6. Which camera setting determines the camera's focus?
   - ○ Exposure
   - ○ Shutter speed
   - ○ Depth of field
   - ○ Aperture

7. What values are captured by a digital device?

   ○ 0 and 1

   ○ 0 and 256

   ○ Red, green, blue

   ○ RGB and CMYK

8. What features are common to both digital cameras and scanners? (Select two.)

   ☐ Both have a static light source.

   ☐ Both can capture 3D images.

   ☐ Both have an image sensor.

   ☐ Both produce digital images.

Summary

In this lesson, you worked with some image basics, such as size and resolution, and saw how modifying one can have an effect on the other. With this knowledge you will be able to work better with your images by determining what factors can enhance an image and what factors can degrade an image. You also had a brief introduction to how digital devices work. Although you may never want to use your camera in any mode other than automatic, you at least have set the groundwork for adjusting camera and image settings.

Now that you have been introduced to some of the basic elements and factors relating to digital images and devices, what information or Photoshop features did you find will be most valuable when working with images in the future?

Do you own or use a digital camera? What mode(s) are you most comfortable using?

> **Note:** Check your CHOICE Course screen for opportunities to interact with your classmates, peers, and the larger CHOICE online community about the topics covered in this course or other topics you are interested in. From the Course screen you can also access available resources for a more continuous learning experience.

3 | Managing Selections and Layers

Lesson Time: 1 hour

Lesson Introduction

Now that you have reviewed image basics, you are ready to begin using some of the tools that make Adobe® Photoshop® 2020 such a powerful image editor. This includes the variety of selection tools that each perform a unique function. In addition, you will be introduced to layers and why they are invaluable for working with graphic images.

Lesson Objectives

In this lesson, you will:

*   Use selection tools.

*   Manage layers.
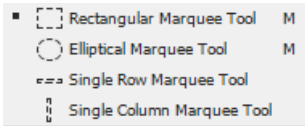
TOPIC A

Use Selection Tools

When you modify or enhance images, you may want to affect only a portion of the image. Photoshop has a set of selection tools with unique methods for working with image areas. What selection tool you use depends on the characteristics of the selection, whether you're selecting raster pixels or vector shapes, and more. Selections can be saved, moved, copied, cut, pasted, or stored in a channel.

Selection Tools

Selection tools are grouped by their use.

Tool Group	Used To	Example

Marquee Tools
 	
▪ ⬚ Rectangular Marquee Tool   M
  ◯ Elliptical Marquee Tool   M
  ⫶ Single Row Marquee Tool
  ⫶ Single Column Marquee Tool
 	
Shortcut key: **M**
Toggle through group: **Shift +M**
	Make rectangular, elliptical, single row, and single column selections.
	
	Selections can be moved, transformed, and modified.
		Rectangular Marquee:

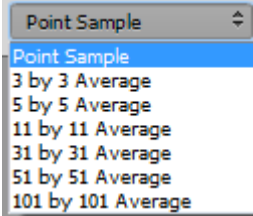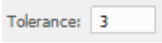| Tool Group	Used To	Example
Lasso Tools ○ Lasso Tool L ▷ Polygonal Lasso Tool L ▪ ◿ Magnetic Lasso Tool L Shortcut key: **L** Toggle through group: **Shift+L**	Make freehand, polygonal (straight-edged), and magnetic (snap-to) selections. Use the **Magnetic Lasso** tool to select areas of an image that have complex edges that are set against a high-contrast background, or that contain several colors.	**Lasso:** **Magnetic Lasso**:

Tool Group	Used To	Example
Quick Selection Tools □ 🔲 Object Selection Tool W ◌ Quick Selection Tool W 🖌 Magic Wand Tool W Shortcut key: **W** Toggle through group: **Shift +W**	The **Object Selection** tool allows you to select one or more objects, or parts of an object, by outlining a rectangular or lasso region around the object. The tool then automatically selects the object (or objects) within the region. This tool is also available from the **Select and Mask** workspace **Tools** panel. Make accurate selections of complex shapes by using an adjustable brush tip (**Quick Selection**). Select pixels of an image that are similar in color or brightness (**Magic Wand**). You can select contiguous or noncontiguous pixels by checking the **Contiguous** check box on the **Options** bar.	**Object Selection:** **Quick Selection:** **Magic Wand:**

Note: To deselect a selection, press **Ctrl+D**, or select **Select→Deselect** from the **Menu** bar.

Magic Wand Options

The **Magic Wand** tool allows you to select image pixels that are similar in color and brightness. When you select the **Magic Wand** tool, the **Options** bar displays settings that you can customize for the area and tolerance of your selections. You'll want to be aware of at least these three settings.

Option	Used To	Option Bar Display
Selection options	Select the action you want to perform: **New selection** **Add to selection** **Subtract from selection** **Intersect with selection**	
Point sample size	Set the number of pixels sampled by the tool: Point sample reads the exact value of the pixel selected. Point average reads the average value of the number of pixels selected.	Point Sample Point Sample 3 by 3 Average 5 by 5 Average 11 by 11 Average 31 by 31 Average 51 by 51 Average 101 by 101 Average
Tolerance	Set the color range of selected pixels. A low tolerance will select a smaller area of color. A high tolerance will allow for more color differences and will select a larger area of color.	Tolerance: 3

Quick Selection Brush Tip Options

The **Quick Selection** tool uses an adjustable brush tip to paint a selection. The size of the brush tip determines how wide the swatch grows as you drag across the selected area. Adjust the brush and brush action by setting tool options on the **Quick Selection Options** bar. As with the other selection tools, you can set a new selection, add to a selection, and subtract from a selection. You can also set the brush tip size and options.

Figure 3-1: The Quick Selection Options bar.

Selection Actions

Once you make a selection, you'll want to do something with it. Common actions you can take include move, copy, and delete.

Selection Action	How to Use
Add to selection	On the **Options** bar, select **Add to selection** and then drag outside the selected area to expand it, or to add another selection.
Subtract from selection	On the **Options** bar, select **Subtract from selection** and drag across the area from which you want to subtract.
Move a selection	To move a selection: Select the **Move** tool. Select inside the selection and drag the selection to a new location.
Copy a selection	To copy a selection, press **Ctrl+C** (or select **Edit→Copy**). To paste the copy, press **Ctrl+V** (or select **Edit→Paste**) and drag the copy to a new location.

Selection Action	How to Use
Delete a selection	To delete a selection, select **Edit→Clear**.
	To cut a selection to the clipboard, select **Edit→Cut**.

You can also save a selection by selecting **Select→Save Selection**, or load a selection by selecting **Select→Load Selection**.

Channels

Channels are grayscale images that store unique information about an image. In Photoshop, channels divide color images into their components, as in RGB images that are divided in red, green, and blue channels. Channels with color, such as grayscale, black, and white, use one channel, as there are no colors to divide.

The Alpha Channel

The *Alpha channel* stores the transparency information of an image without affecting its color channels. Alpha channels store image selections in grayscale mode. Alpha channels can be used to protect the selected area of an image, or to manipulate it.

Alpha channels are preserved only when an image is saved in the Photoshop, PDF, TIFF, PSB, or raw formats.

The Channels Panel

The **Channels** panel lists the channels in the current image. A thumbnail of the channel's contents appears to the left of the channel name. When you edit a channel, the thumbnail is updated automatically. You can duplicate, delete, split, or merge channels.

Figure 3–2: The Channels panel.

	Access the Checklist tile on your CHOICE Course screen for reference information and job aids on **How to Use Selection Tools**.

ACTIVITY 3–1
Using Selection Tools

Data Files

C:\092013Data\Managing Selections and Layers\face_and_flowers.jpg

Before You Begin

Adobe Bridge is open.

Scenario

In your facilitator role, you continue advancing your own Photoshop skills to become sufficiently competent in order to help workshop participants. You found that it takes a bit of experience to successfully use Photoshop selection tools. To guide workshop participants through their own trial and error in working with selection tools, you devised a practice exercise by using an illustration with various shapes and colors.

1. Open the **C:\092013Data\Managing Selections and Layers \face_and_flowers.jpg** file and set it to fill the screen.

    a) In Adobe Bridge, navigate to and display the contents of the **Managing Selections and Layers** folder.
    b) Double-click the **face_and_flowers.jpg** file to open it in Photoshop.
   c) Select the **Zoom** tool and, on the **Options** bar, select **Fill Screen**.

2. Draw a selection with the **Elliptical Marquee** tool.

    a) In the **Toolbar**, press and hold the **Rectangular Marquee** tool [image] and, from the flyout menu, select the **Elliptical Marquee** tool. [image]
    b) On the image, draw an elliptical shape around the eye on the right of the workspace.

    c) From the **Application** bar, select **Select→Deselect**.

3. Draw the same selection by using the **Lasso** tool.
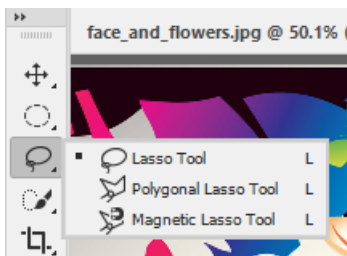
4. Press **Ctrl+D** to deselect the selection.

5. From the same tool group flyout menu, use the **Magnetic Lasso** tool to draw a more exacting selection around the eye.

   a) From the **Lasso** tool flyout menu, select the **Magnetic Lasso** tool.

   b) Starting at the inner corner of the eye, select to set the first anchor point; then drag along the upper shape of the eye. Observe that the **Magnetic Lasso** tool tracks the edge of the black color.

   c) Continue dragging along the lower shape of the eye, and when you meet the first anchor point, select to complete the selection.

   d) Press **Ctrl+D** to deselect the selection.

6. Make multiple selections with the **Quick Selection** tool.

   a) From the **Object Selection** tool flyout menu, select the **Quick Selection** tool.

   b) On the **Options** bar, select the **Brush picker** tool.

   c) In the drop-down menu, in the **Size** text box, if necessary, enter the number *5* and then select any area outside the drop-down menu to close it.

   d) On the three flowers above the eye in the image, select the edge of one flower and begin to slowly drag to extend until selection dots are displayed around the other flowers. If the selection exceeds part of the object, press **Ctrl+D** and try again.

   e) Press **Ctrl+D** to clear your selections.

   f) Select the blue butterfly.

   g) On the **Options** bar, verify that **Add to selection** is selected.

   h) Select the pink butterfly and observe that the blue butterfly remains selected.

   i) Toward the top-left of the image, select the green butterfly. The three butterflies are selected.

7. Copy and move the selections.

   a) From the **Edit** menu, select **Copy**.

   b) From the **Edit** menu, select **Paste**. The copied images are on top of the original ones.

   c) Select the **Move** tool.

   d) Select anywhere on the pink butterfly and drag to another area of the image to move the copied selections.

8. Save and close the file.

   a) Select **File→Save**.

   b) If prompted, select **Save on your computer**.

   c) In the **Save As** dialog box, change the file name to *my_face_and_flowers* in **PSD** format.

   d) Select **Save** and, in the **Photoshop Format Options** dialog box, select **OK**.

   e) Close the file.

9. Use the **Channels** panel.

a) Open any file.

b) On the right, select the tab next to **Layers** to access the **Channels** panel.

c) Select the **Eye** icon next to each channel to toggle visibility and notice the changes.

d) Shortcuts to each channel are listed next to the channel name.

e) Select the **Channels** drop-down menu. From the **Channels** menu, you can add a new channel, change channels, split and merge channels, close and delete channels, and so on. Select different options to see the different results.

f) If necessary, select anywhere outside the drop-down menu to cancel.

10. Close all files without saving changes.

TOPIC B

Manage Layers

Have you ever watched a child play with wooden blocks and just wanted to join in on the fun? A fascination with building things—whether it's a sand castle, a dream house, or the layers of a wedding cake—is common. No matter what material is used, you start with a base on which all the other materials and layers rely. This concept of building is what Photoshop layers allow you to do. By adding, deleting, and rearranging layers smartly, you can create a professionally designed composite of images, text, and color.

Layers

Layers are like separate sheets of transparencies, each with a unique design, that when overlapped create a composite picture. What you add and store in each layer can be individually manipulated without changing anything on another layer. This is especially useful when you don't want to alter the original image.

You can rename, duplicate, rearrange, group, merge, and delete layers. You can also hide them temporarily.
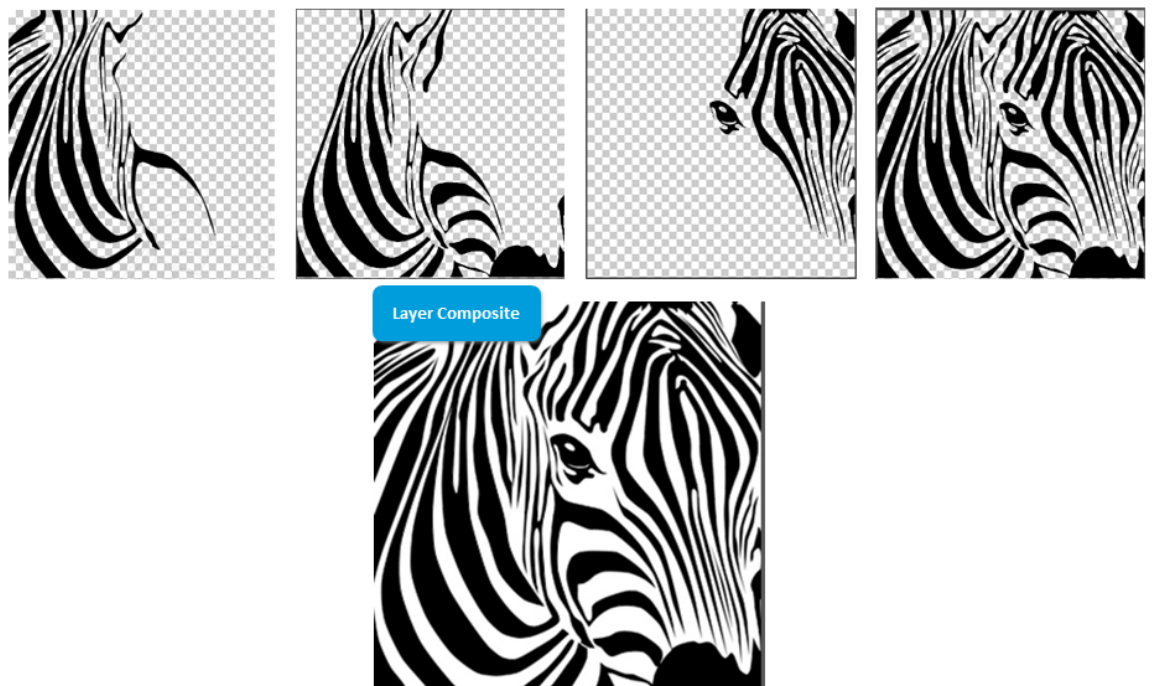

Figure 3–3: Separate layers combined to form the composite image.

> **Note:** To learn more about layers, check out the Spotlight on **Being Smart and Creative with Layers** presentation from the **Spotlight** tile on the CHOICE Course screen.

Layer Types

Photoshop has several types of layers.

| Layer Type	Description
Background	Automatically created whenever a document is created in Photoshop or saved as a Photoshop file.
	When you open a photographic image in Photoshop, its background layer is locked and needs to be unlocked in order to work with many of the adjustment tools.
	To unlock the background layer and convert the background to a new background layer, double-click the layer, rename the layer, set any layer options, and select **OK**.
Image	Contains image data.
Type	Automatically created when using the **Type** tool to add text to a document.
Fill	Has a solid color, gradient, or pattern fill.
Adjustment	Used to apply tonal or color changes to an image. Adjustments made to one layer are applied to all layers below it.
3D	Contains 3D objects.
Smart Objects	Retains the original information about an image independent of edits that are applied. For example, you can rotate an image in a smart object layer, and it doesn't affect the original image or image quality. This is referred to as non-destructive editing.
	After creating a Smart Object, if you need to, you can easily convert the object back to layers. The layers that made up the Smart Object will be included in a layer group.
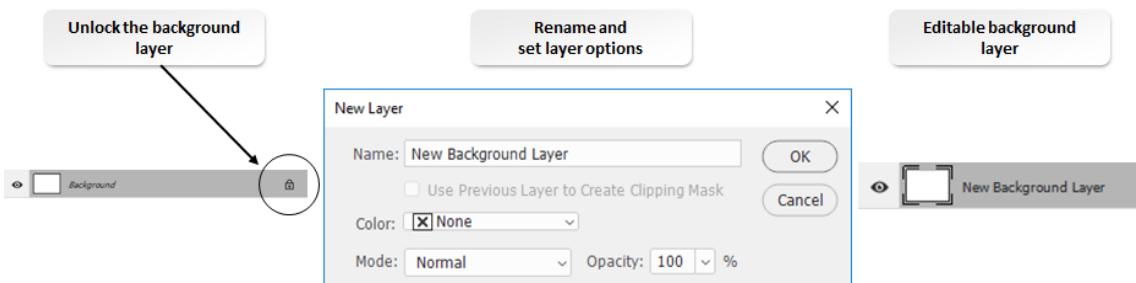
Figure 3–4: Locked background layer.

The Layers Panel

The **Layers** panel displays each layer as a thumbnail along with each layer's name. To the left of each thumbnail is an icon that looks like an eye, indicating layer visibility. It can be toggled on and off by clicking it.

At the top of the **Layers** panel is the **Filter Type** menu, which includes **Kind**, **Name**, **Effect**, **Mode**, **Attribute**, **Color**, **Smart Object**, **Selected**, and **Artboard** categories, each with options for modifying layer properties. Along the bottom of the panel are icons used to link layers, add a layer style or mask, create a new fill or adjustment layer, create a new layer, create a new group, and delete a layer.
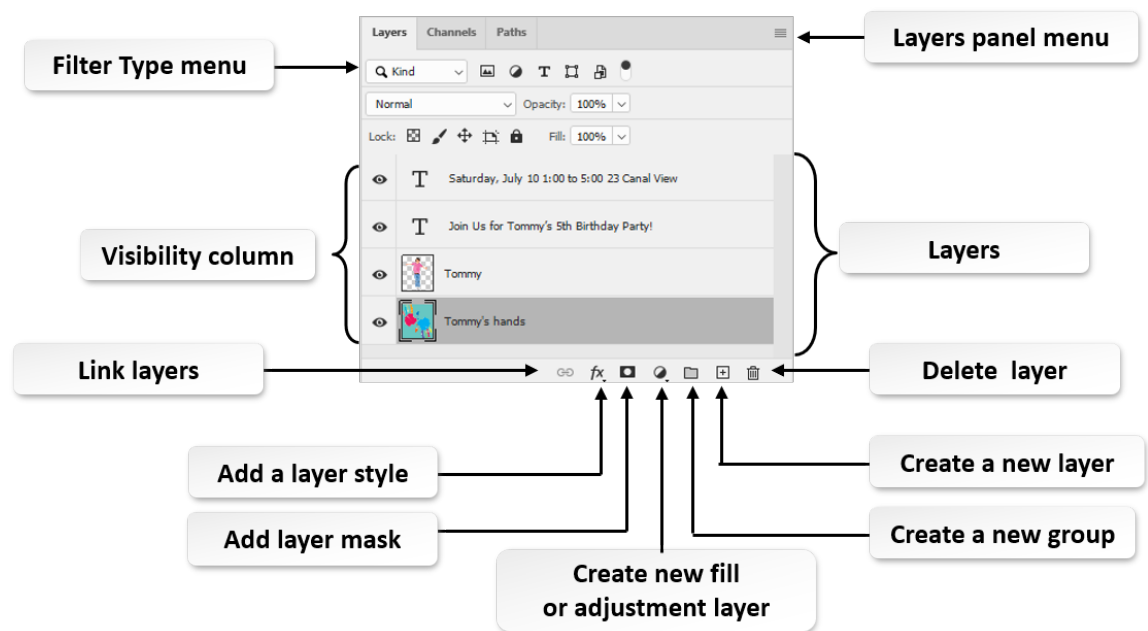
Figure 3-5: The Layers panel.

Layer Groups

A Photoshop file can contain multiple layers. Layer groups are a good way to organize those layers into a logical order and reduce clutter in the **Layers** panel. You can nest groups within other groups. It is also possible to apply blend modes and masks to multiple layers simultaneously. Layer groups are useful when you create multiple variations of a design composite and need to keep the related layers of each variation together.

Design Considerations When Using Layer Groups

When you use layer groups in your Photoshop file, it gives you flexibility in terms of how the layers will interact with each other, as well as how layer styles will be applied. For instance, a drop shadow layer style can be applied to one of the layers of the group, and then copied to each of the other layers. This would give an effect of overlapping elements casting shadows on the lower elements. However, if you were to apply the drop shadow layer style to the group as a whole, the layers would behave as if they had been merged and only cast one shadow. The layers are still separate but because the effect is applied to the group, they act as one layer.

Layer Opacity

The *opacity* of a layer is the degree of saturation versus transparency that it has. A layer with 100 percent opacity has no transparency, which means that a 100 percent opacity layer will hide all the components of any underlying layers. Conversely, a layer with 0 percent opacity is completely transparent, allowing the components of underlying layers to be visible.

Flatten Layers

Layers can add to the size of your file. One measure to take to reduce file size is to flatten an image that has layers. Flattening merges all layers into the background, discards hidden layers, and fills transparent areas with white.

> **Caution:** You cannot edit layers once they are flattened, so ensure that all modifications to layers are complete. Better yet, save a copy with its layers before flattening layers.

Keyboard Shortcuts for Working with Layers

Adobe Photoshop provides many helpful keyboard shortcuts that relate to the **Layers** panel. There are several keyboard shortcuts specifically for creating, moving, and grouping layers.

Result	Key Combination
Create new empty layer with dialog box	**Alt+New Layer** button
Create new layer below target layer	**Ctrl+New Layer** button
Move target layer down/up	**Ctrl+]** /**Ctrl+[**
Move layer to bottom or top	**Ctrl+Shift+]** or **Ctrl+Shift+[**
Group layers	**Ctrl+G**
Ungroup layers	**Ctrl+Shift+G**

Layer Nesting

Layer groups can be created to organize layers based on content and nesting layers improves the level of content-based organization. Once layer groups are formed, any layer group can be dragged and dropped into another layer group folder, organizing the information in a way that best suits the design process.

Blend Modes

The blend mode determines how the layer style of the active layer blends with the underlying layers, which may or may not include the active layer. For example, an inner shadow blends with the active layer because the effect is drawn on top of that layer, but a drop shadow blends only with the layers beneath the active layer. The blend modes are presets that offer a variety of special effects by determining how pixels blend with underlying pixels in the image. You can select a blend mode by choosing **Layer→Layer Style→Blending Options** and selecting a style from the **Blend Mode** pop-up menu.

Photoshop has a range of preset blend modes.

Blend Mode	Description
Darken	Looks at the color information in each channel and selects the base or blend color—whichever is darker—as the result color. Pixels lighter than the blend color are replaced, and pixels darker than the blend color don't change.
Multiply	Looks at the color information in each channel and multiplies the base color by the blend color. The result color is always a darker color. Multiplying any color with black produces black. Multiplying any color with white leaves the color unchanged. When you're painting with a color other than black or white, successive strokes with a painting tool produce progressively darker colors. The effect is similar to drawing on the image with multiple marking pens.
Color Burn	Looks at the color information in each channel and darkens the base color to reflect the blend color by increasing the contrast between the two. Blending with white produces no change.
Linear Burn	Looks at the color information in each channel and darkens the base color to reflect the blend color by decreasing the brightness. Blending with white produces no change.

Blend Mode	Description
Lighten	Looks at the color information in each channel and selects the base or blend color—whichever is lighter—as the result color. Pixels darker than the blend color are replaced, and pixels lighter than the blend color do not change.
Screen	Looks at each channel's color information and multiplies the inverse of the blend and base colors. The result color is always a lighter color. Screening with black leaves the color unchanged. Screening with white produces white. The effect is similar to projecting multiple photographic slides on top of each other.
Color Dodge	Looks at the color information in each channel and brightens the base color to reflect the blend color by decreasing contrast between the two. Blending with black produces no change.
Linear Dodge (Add)	Looks at the color information in each channel and brightens the base color to reflect the blend color by increasing the brightness. Blending with black produces no change.
Overlay	Multiplies or screens the colors, depending on the base color. Patterns or colors overlay the existing pixels while preserving the highlights and shadows of the base color. The base color is not replaced, but mixed with the blend color to reflect the lightness or darkness of the original color.
Soft Light	Darkens or lightens the colors, depending on the blend color. The effect is similar to shining a diffused spotlight on the image. If the blend color (light source) is lighter than 50 percent gray, the image is lightened as if it were dodged. If the blend color is darker than 50 percent gray, the image is darkened as if it were burned in.
Hard Light	Multiplies or screens the colors, depending on the blend color. The effect is similar to shining a harsh spotlight on the image. If the blend color (light source) is lighter than 50 percent gray, the image is lightened, as if it were screened. This is useful for adding highlights to an image. If the blend color is darker than 50 percent gray, the image is darkened, as if it were multiplied. This is useful for adding shadows to an image. Painting with pure black or white results in pure black or white.
Vivid Light	Burns or dodges the colors by increasing or decreasing the contrast, depending on the blend color. If the blend color (light source) is lighter than 50 percent gray, the image is lightened by decreasing the contrast. If the blend color is darker than 50 percent gray, the image is darkened by increasing the contrast.
Linear Light	Burns or dodges the colors by decreasing or increasing the brightness, depending on the blend color. If the blend color (light source) is lighter than 50 percent gray, the image is lightened by increasing the brightness. If the blend color is darker than 50 percent gray, the image is darkened by decreasing the brightness.
Pin Light	Replaces the colors, depending on the blend color. If the blend color (light source) is lighter than 50 percent gray, pixels darker than the blend color are replaced, and pixels lighter than the blend color do not change. If the blend color is darker than 50 percent gray, pixels lighter than the blend color are replaced, and pixels darker than the blend color do not change. This is useful for adding special effects to an image.

Blend Mode	Description
Hard Mix	Adds the red, green, and blue channel values of the blend color to the RGB values of the base color. If the resulting sum for a channel is 255 or greater, it receives a value of 255; if it is less than 255, it receives a value of 0. Therefore, all blended pixels have red, green, and blue channel values of either 0 or 255. This changes all pixels to primary additive colors (red, green, or blue), white, or black.
Difference	Looks at the color information in each channel and subtracts either the blend color from the base color or the base color from the blend color, depending on which has the greater brightness value. Blending with white inverts the base color values; blending with black produces no change.
Exclusion	Creates an effect similar to but lower in contrast than the **Difference** mode. Blending with white inverts the base color values. Blending with black produces no change.
Subtract	Looks at the color information in each channel and subtracts the blend color from the base color. In 8- and 16-bit images, any resulting negative values are clipped to zero.
Divide	Looks at the color information in each channel and divides the blend color from the base color.
Hue	Creates a result color with the luminance and saturation of the base color and the hue of the blend color.
Saturation	Creates a result color with the luminance and hue of the base color and the saturation of the blend color. Painting with this mode in an area with no (0) saturation (gray) causes no change.
Color	Creates a result color with the luminance of the base color and the hue and saturation of the blend color. This preserves the gray levels in the image and is useful for coloring monochrome images and for tinting color images.
Luminosity	Creates a result color with the hue and saturation of the base color and the luminance of the blend color. This mode creates the inverse effect of **Color** mode.
Lighter Color	Compares the total of all channel values for the blend and base color and displays the higher value color. **Lighter Color** does not produce a third color, which can result from the Lighten blend, because it chooses the highest channel values from both the base and blend color to create the result color.
Darker Color	Compares the total of all channel values for the blend and base color and displays the lower value color. **Darker Color** does not produce a third color, which can result from the Darken blend, because it chooses the lowest channel values from both the base and the blend color to create the result color.
Normal	Edits or paints each pixel to make it the result color. This is the default mode. (**Normal** mode is called **Threshold** when you're working with a bitmapped or indexed-color image.)
Dissolve	Edits or paints each pixel to make it the result color. However, the result color is a random replacement of the pixels with the base color or the blend color, depending on the opacity at any pixel location.

Type Tool

When you select and use the **Type** tool, a new **Type** layer is added to the **Layers** panel. There is a **Horizontal Type** tool and a **Vertical Type** tool—the one you use depends on how you want to orient your text. Text selections in the **Options** panel include text orientation, text font family, font style, font size, text anti-alias, text color, alignment, and more.

Figure 3–6: The Type tool.

Rulers and Guides

When working with Photoshop images, rulers and guides can be used to align and place objects in a document. The horizontal ruler's zero point is aligned at the left edge of the **canvas** size (independent of image size), and the vertical ruler's zero point is aligned at the top-left edge. Guides can be dragged from both the horizontal and vertical rulers to the canvas. Rulers and guides are especially useful when objects need to be aligned precisely.

To display rulers, from the **View** menu, select **Rulers**.

Guide Properties

The Guides feature of Photoshop is used when adjusting images. The guides show up as lines that are cyan in color, one horizontal and one vertical, that are superimposed over the image. To create a guide, select **View→Rulers**. You will then see a set of rulers along the top and left side of your image. To create a guide, move the cursor over the ruler, left-click, and drag the cursor over the image. A guide will appear. You can do this as many times as necessary to ensure you have enough guides to adjust the image.

These guides have a number of properties with which you need to be familiar:

- Guides are temporary and can be moved around as needed.
- Guides are saved when the file is saved and will be visible each time the file is opened.
- Guides are visible only on the screen and will not show when the image is printed.
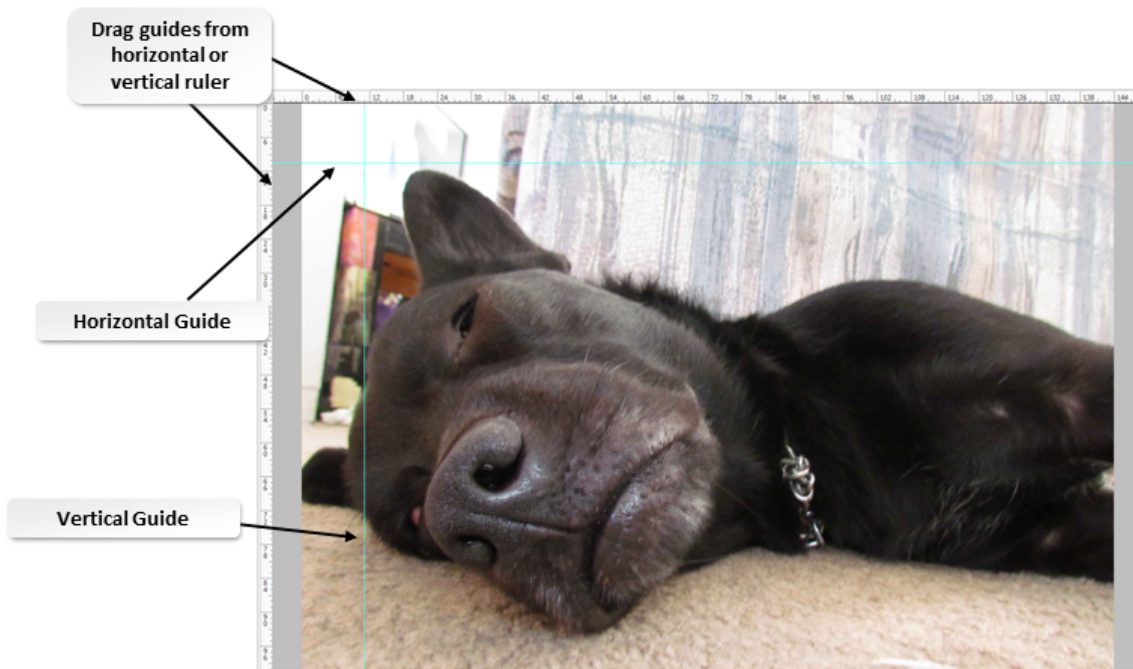- Guides can be hidden from view on the screen by deselecting **View→Extras**.

Figure 3-7: Guides.

The History Panel

It's inevitable when working with complex selections and multiple layers that the results do not always end up looking as intended. Rather than start from scratch, Photoshop provides the **History** panel that keeps a list of all the actions you take. Each action is treated as a separate state, with the last action performed listed at the bottom, and the earliest action taken listed at the top.

To restore your document to an earlier state, just select the previous state in the **History** panel.
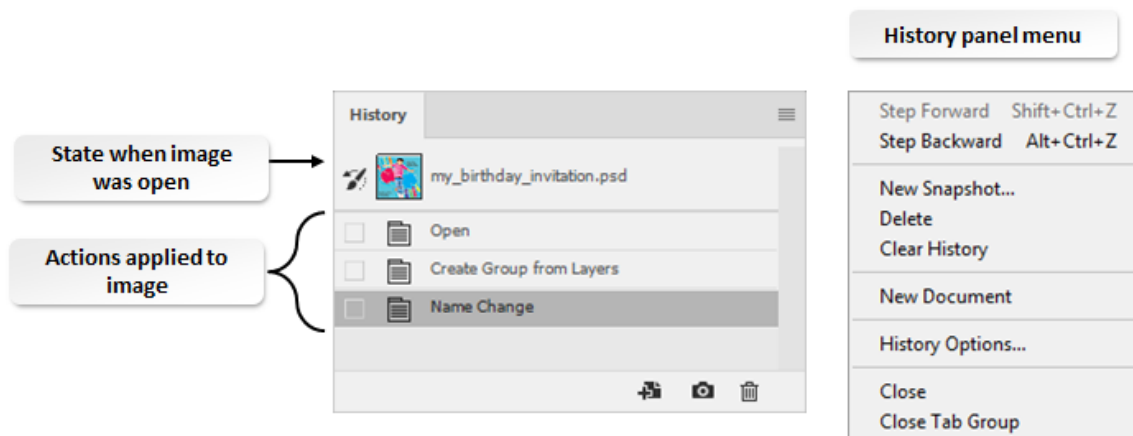
Figure 3-8: The History panel with several action states listed.

> Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Manage Layers.

ACTIVITY 3–2
Making a Layer Composite

Data Files

C:\092013Data\Managing Selections and Layers\boy_jumping.psd

C:\092013Data\Managing Selections and Layers\hands.psd

Scenario

One of your co-workers is throwing a birthday party for her son. She would like to create a special invitation to send to his friends, but isn't sure how to accomplish this. She has asked you to help her. Use the following reference image as a guide during this activity.

1. From the **C:\092013Data\Managing Selections and Layers** folder, open the files **boy_jumping.psd** and **hands.psd**.

2. Tile the two files vertically by selecting **Window→Arrange→2-up Vertical**.

3. Drag the image of the boy into the **hands.psd** file.
   a) If necessary, make **boy_jumping.psd** the active file.
   b) Select the **Move** tool and drag the image of the boy into the **hands.psd** file. Move the image as needed so that the full length of the boy is displayed vertically and is approximately centered between the painted hands.

      Initially, only the cursor will appear over the hands. The image of the boy will appear over the hands when you release the mouse button.

4. Select **Window→Arrange→Consolidate All to Tabs**. Make sure **hands.psd** is the active file.

5. Rename the layers and hide a layer.
   a) On the right, select the **Layers** panel.
   b) Double-click the text **boy_jumping**. Rename it to *Tommy*
   c) Rename the **Hands** layer to *Tommy's hands*
   d) Select the layer visibility button 👁 next to the **Tommy** layer to hide the layer. Observe that **Tommy's hands** is now the active layer.

6. Identify a font for later use.
   a) Make **boy_jumping.psd** the active tab.
   b) Select the **Horizontal Type** tool, then select anywhere in the background and type *Tommy*
   c) Select the **Rectangular Marquee** tool.
   d) Draw a rectangle around the word "Tommy."
   e) In the **Properties** panel, change the font size to **36 pt**.
   f) Select **Type→Match Font.**

      The **Match Font** dialog box appears.

Match Font   ✕

Results for similar fonts:

☆ Myriad Arabic Regular	*O*	Sample
☆ Myriad Pro Regular	*O*	Sample
☆ Myriad Hebrew Regular	*O*	Sample
☆ Kozuka Gothic Pr6N R	*O*	Sample
☆ Adobe Fan Heiti Std B	*O*	Sample
☆ Adobe Heiti Std R	*O*	Sample
☆ Yu Gothic UI Regular	T̄ᴛ	Sample
☆ Microsoft YaHei Regular	T̄ᴛ	Sample
☆ Microsoft YaHei UI Regular	T̄ᴛ	Sample
☆ Microsoft PhagsPa Regular	*O*	Sample

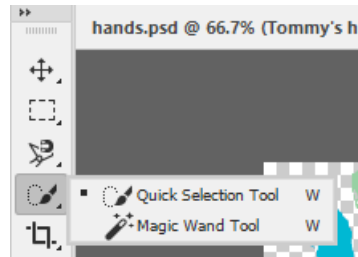☑ Show fonts available to sync from Typekit   (Cancel) (OK)

---

   g) Select the font you prefer.

h) Select **OK**.

i) In the **Layers** panel, with the **Tommy** text layer selected, select the **Delete** button 🗑 to delete the layer containing the word Tommy.

j) Select **Yes** to confirm.

7. Recolor the background.

a) Make **hands.psd** the active tab and **Tommy's hands** the active layer.

b) Select the **Magic Wand** tool.

c) On the **Options** bar, select the current **Tolerance** value and type *3* to set a tolerance of **3**.

d) Select the transparent background. Observe the dotted line around the hands to show they're selected.

e) On the **Tools** panel, select the **Gradient** tool, hold to display the flyout menu, and then select the **Paint Bucket** tool.
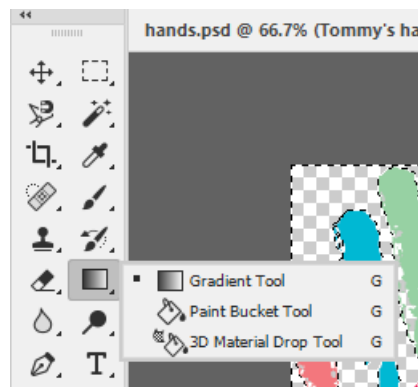
f) On the **Tools** panel, double-click the **Set foreground color** tool ▣ to display the **Color Picker**.

g) In the **Color Picker (Foreground Color)** dialog box, along the **Color Slider**, select the cyan blue area. In the **Color Field** box, select a light shade of cyan. You have to select in the big color square for the new color to show. Then select **OK**.
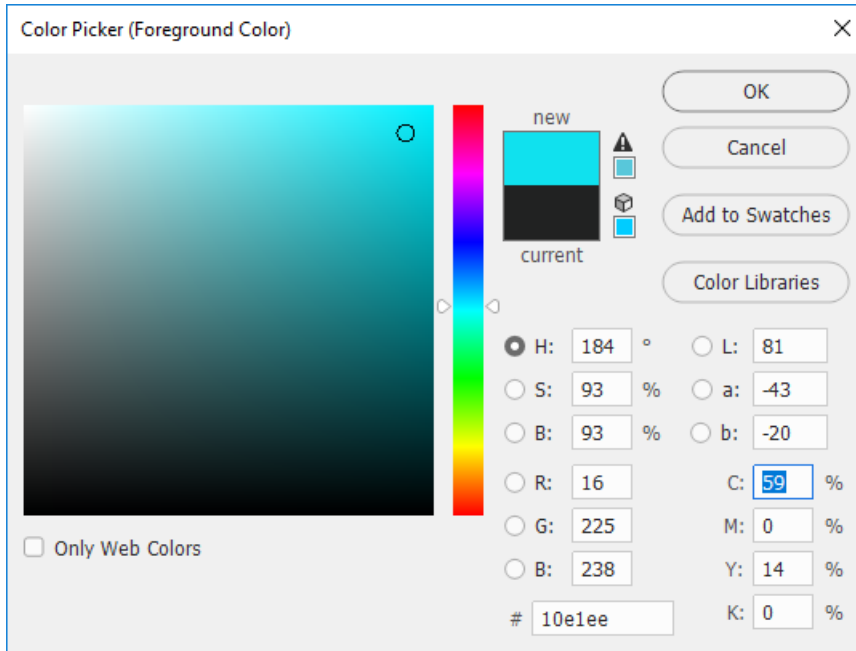

h) Place the paint bucket cursor anywhere within the background and click to paint the background.
i) Press **Ctrl+D** to deselect the selection.

8. Add text to the image.

a) Unhide the **Tommy** layer.
b) Select **View→Rulers** to display the rulers.
c) If the ruler is displayed in pixels, right-click the **Ruler** and select **Inches**.
d) Select **View→New Guide** and then select the **Horizontal** radio button. Select **OK**. The horizontal guide appears at the top of the image.
e) Select **View→New Guide** and then select the **Vertical** radio button. Select **OK**. The vertical guide appears at the left side of the image.
f) Select the **Move** tool. Using the image from the scenario at the beginning of this activity as a guide, position the guides to intersect in the upper-right area, slightly above Tommy's eyebrows and a little left of his left elbow.

g) Select the **Horizontal Type** tool and observe that the font family is the font you chose in the **Match Font** dialog box. Set the font size to **24**. If necessary, change the text color to black.


h) Just to the lower-right of the intersection of the guides, type *Join Us for* and press **Enter**, type *Tommy's 5th* and press **Enter**, and type *Birthday Party!*
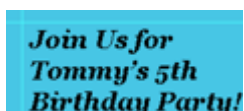
i) Select anywhere on the horizontal ruler and drag down to create a second horizontal guide. Drag it to the 8-inch mark on the vertical ruler.
j) Select the **Tommy's hands** layer to make it the active layer.

     k) Select the **Horizontal Type** tool and set the text pointer in the lower-left edge of the document just below the 8-inch guide. Type *Saturday, July 10* and press **Enter**, type *1:00 to 5:00* and press **Enter**, and type *23 Canal View*

> Saturday, July 10
> 1:00 to 5:00
> 23 Canal View
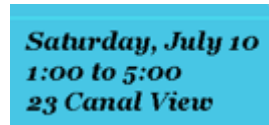
9. Select any other tool (such as the **Move** tool).

10. Select **View→Clear Guides** to hide the guides.

11. Save the file to your computer as *my_birthday_invitation.psd*

12. Close all files without saving further. Leave Photoshop open.

Summary

In this lesson, you worked with Photoshop selections and layers. To be creative with Photoshop, you will often use a combination of tools and techniques. With continued experience, you will become comfortable with what selection tools to use for a given task, and the more you work with layers, the more complex and creative your images will become. Layers and selections are features that make Photoshop a powerful and popular image editor.

Have you used selection tools in other programs? How did they compare to Photoshop's selection tools?

What benefits do you expect to gain by using Photoshop layers?

> **Note:** Check your CHOICE Course screen for opportunities to interact with your classmates, peers, and the larger CHOICE online community about the topics covered in this course or other topics you are interested in. From the Course screen you can also access available resources for a more continuous learning experience.

4 | Adjusting Images

Lesson Time: 1 hour

Lesson Introduction

Adobe® Photoshop® 2020 is a powerful program for a variety of creative solutions, one being the tools and features it offers for making adjustments to graphic images. Whether it's a simple resizing adjustment, or a major repair to restore an image, you'll find the methods and techniques for improving your images are well worth learning and using Photoshop.

Lesson Objectives

In this lesson, you will:

- Modify an image.

- Repair an image with the **Content-Aware Move** tool, the **Patch** tool, and the **Clone Stamp** tool.

- Implement a color management workflow.

TOPIC A

Modify Images

There are a wide variety of ways to modify, enhance, or correct an image. Cropping is one of the more obvious and common modifications, but sometimes just moving or straightening an image is all that is needed. Other image transforming options include scaling, rotating, and copying. With Photoshop 2020, Adobe has re-engineered these tools for ease of use and greater control.

The Crop Tool

When you select the **Crop** tool, your image is overlaid with a modifiable grid, and outlined with handles at the corners and sides that you can simply grab and drag. You can also rotate the image by dragging along the outside of the grid lines in a clockwise or counterclockwise direction.

Figure 4–1: The Crop tool.

Crop Options

On the **Crop Options** bar, there are several features you can employ to further customize the crop.

Crop Options Bar	Description
Ratio	You can crop by using unconstrained boundaries, preset dimensions, or your own size and resolution values that can be saved as a preset.
Rotate Orientation	You can toggle between portrait and landscape orientation.
Straighten	You can straighten an image by drawing a line along the horizontal or vertical axis.
Overlay Options	You can change the style of the overlay. The default is **Rule of Thirds**, which divides the image into both horizontal and vertical thirds. You can also choose to display or hide the overlay.
Additional Crop Options	You can display or not display the cropped region. You can automatically center the cropped region. You can overlay the cropped area with a tint.
Delete Cropped Pixels	You can either delete cropped pixels or keep them hidden for later use.
Content-Aware	When you straighten or rotate the image with **Content-Aware** enabled, Photoshop fills in the gaps based on image content.

Select one of the options to the right of the **Crop Options** bar to reset, cancel, or commit the current crop operation.

Healing Tools

Some of the healing tools you may find valuable when repairing images are the **Healing Brush**, **Spot Healing Brush, Clone Stamp**, **Patch**, and **Red Eye** tools.

Healing Tool	Description
Clone Stamp	The **Clone Stamp** tool duplicates an area of an image by painting over another area of the image. It is a useful tool for repairing defects. You can use any brush tip to "paint" with.
Healing Brush	The **Healing Brush** tool is used to retain the tone of an area by analyzing a sample of a retouched area and blending original shading, texture, and tone.
Spot Healing Brush	The **Spot Healing Brush** tool analyzes the neighboring areas of an image to identify the optimal pixels for healing the selected area. It is a good tool for removing blemishes or small imperfections.
Patch	The **Patch** tool is used to select and clone large areas by blending the texture, lighting, and shading of the sampled area to the source pixels. This tool works best for large defects that are in high contrast to the surrounding areas. This can be used in **Normal** mode or **Content-Aware** mode. The **Content-Aware** mode blends content by synthesizing content around the selected element to seamlessly blend it with the surrounding content.

Healing Tool	Description
Content-Aware Move	The **Content-Aware Move** tool is used to select and then move a portion of an image. The area left when the content is moved is filled in with elements from the picture around the area from where the selection was moved. On the **Options** bar, select the **Move** mode to place the selected object in a new location or the **Extend** mode to expand or contract the selected object.
Red Eye ⁺👁	The **Red Eye** tool is used to remove the appearance of red eyes that result from the flash or other illumination source on the eye's retina. It is more common in children, or when taking pictures in a darkened area. The best way to prevent red eye is to use the red eye setting on your digital camera, if available as an option.

The **Healing Brush** and **Patch** tool options include a **Diffusion** slider, which adjusts how the pasted area blends with its surroundings. If the image is grainy, set the **Diffusion** value to a low number. If the image is smooth, set the **Diffusion** value to a higher number.

Content-Aware Move Tool

The **Content-Aware Move** tool allows you to seamlessly move an object to another location on the image—and replaces the "hole" from where the object was moved with the background. The effect works best with a simple background such as snow, grass, sand, sky, or water. Select the **Content-Aware Move** tool from the **Spot Healing Brush** flyout menu, outline the object to be moved, and then drag it to a new location.

Transform Controls

Transforming refers to the scaling, rotating, skewing, stretching, and warping of an image. You can apply transformations to a selection, an entire layer, multiple layers, or a layer mask. To make a transformation, first select an item to transform and then choose a transformation command. To get to the transformation commands, select **Edit→Transform** and select from the available commands.

Command	Result
Scale	Enlarges or reduces an item relative to its reference point, the fixed point around which transformations are performed. You can scale horizontally, vertically, or both horizontally and vertically.
Rotate	Turns an item around a reference point. By default, this point is at the center of the object; however, you can move it to another location.
Skew	Slants an item vertically and horizontally.
Distort	Stretches an item in all directions.
Perspective	Applies one-point perspective to an item.
Warp	Manipulates the shape of an item.
Rotate 180, Rotate 90 CW, Rotate 90 CCW	Rotates the item by the specified number of degrees, either clockwise or counterclockwise.
Flip	Flips the item vertically or horizontally.

Keyboard Modifier Combinations

Photoshop has several keyboard modifier combinations that provide more effective usage of the transform controls.

Key	Result
Shift	When using **Scale**, pressing **Shift** while dragging a corner handle will scale the selection proportionately. When using **Rotate**, pressing **Shift** will constrain the rotation to 15-degree increments.
Alt	Pressing **Alt** creates a duplicate of the selection having the transformation applied to it. When using **Distort**, pressing **Alt** will cause distortion relative to the center point of the bounding border.

The Navigator Panel

The **Navigator** panel is a valuable feature that lets you quickly zoom in or out and navigate to select areas of the image. It has a View area that displays a miniature version of the current image. You can set navigation by using the **Zoom Slider** or by clicking either the **Zoom In** or **Zoom Out** buttons. As with all panels, the **Navigator** panel can be undocked and moved around the workspace.

Histogram

A *histogram* is a visual representation of values displayed in a graphical format. In Photoshop, and other image editing programs, the histogram plots the attributes of each pixel in an image and shows the overall tonal range of an image. Attributes can include brightness, exposure, color depth, tone, saturation, and more. In an RGB histogram, each color (red, green, blue) shows the distribution of shadows, midtones, and highlights on a range from 0 to 255.

An image with full tonal range has some pixels in all areas. However, there is no "ideal" histogram. In other words, every image has its own range, and a histogram that peaks in the middle and slopes identically on both sides is not necessarily suited to all images. An important function of a histogram is to show you where you need to apply image adjustments.

Select **Histogram** from the **Window** menu to display the **Histogram** panel.

Figure 4–2: The Histogram panel.

📋	Access the Checklist tile on your **CHOICE** Course screen for reference information and job aids on **How to Modify an Image.**

ACTIVITY 4-1
Using the Content-Aware Move Tool

Data File

C:\092013Data\Adjusting Images\woman_jumping.jpg

Scenario

A friend created an image of a woman jumping on a beach, but he's not satisfied with the placement of the woman in the image. He's not sure how to fix it, and has asked you to help him modify the image.

1. In the **Navigator** panel, open the **woman_jumping image.jpg** file.
   a) In Bridge, from the **Adjusting Images** folder, open **woman_jumping.jpg**.
   b) If necessary, open the **Navigator** panel by selecting **Window→Navigator**.
   c) At the bottom of the **Navigator** tab, to the right of the slider, select the **Zoom In** icon multiple times to enlarge the image to **66.6** percent.
   d) Place the cursor inside the (red) view area and drag it to the left so the image of the woman is within the outline.

2. Move the image of the woman to the right of the picture.

a) From the **Spot Healing Brush** tool flyout menu, select the **Content-Aware Move** tool.
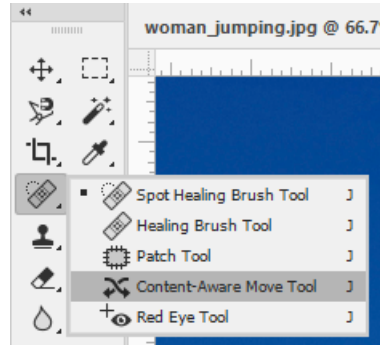
b) In the Photoshop workspace, beginning just above the head of the woman, drag a line around the woman to create a loose selection path around the image. If you are not satisfied with your first attempt, you can press **Ctrl+D** to retry.

c) In the **Navigator** panel, select the **Zoom Out** icon to reduce the image to **33.3** percent.

d) In the Photoshop workspace, select anywhere inside the selection, drag about two inches to the right, and release the mouse button. Press **Enter**. A progress box shows the transformation process.

e) Press **Ctrl+D** to deselect the image.

3. Move the shadow based on the new image position.

a) In the **Navigator** panel, increase the zoom to **66.6** percent and drag the view area around the shadow on the sand.

b) Draw a loose outline around the shadow on the sand.

c) Reduce the zoom to **33.3** percent, drag the shadow to the right, and release the mouse button. Press **Enter**. The shadow should be to the right, not directly under the woman, because of the angle of the sun.

d) Press **Ctrl+D** to deselect the image.

4. Save the file as **my_woman_jumping** in JPEG format and close the file.

a) Select **File→Save As** and save the image to your computer as *my_woman_jumping.jpg*

b) In the **JPEG Options** dialog box, accept the defaults and select **OK**.

c) Close the file.

TOPIC B

Repair Images

Repair may sound like an odd term to associate with graphic images and photographs, other than the restoration of old photos. But Photoshop has several tools that heal, patch, erase, clone, and so on. Once you know what tools are available, and what they can do, you'll have a better understanding of why and how images can be repaired.

Content–Aware Fill Tools

Earlier, you used the **Content-Aware Move** tool. Photoshop also has a **Content-Aware Fill** tool that removes a selection and fills it with the missing pixels. You can create a content-aware fill from the **Edit** menu, or when using some of the healing brush tools.

> **Note:** To learn more about photo correction, check out the Spotlight on **Making Photo Corrections** presentation from the **Spotlight** tile on the CHOICE Course screen.

Brush Settings Panel

The **Brush Settings** panel has an assortment of predefined brush tip shapes and sizes, and settings for use with various tools. You can access **Brush Settings** from the **Options** bar when using a brush tool, or an editing tool that uses brushes, such as the **Clone Stamp** tool. You can also display the panel by selecting it from the **Window** menu.

Content–Aware Fill Workspace

Photoshop includes an interactive editing workspace that allows you to choose which source pixels to use and how those pixels are used. You can choose to rotate, scale, and/or mirror the source pixels. This is done in a full-resolution preview panel that shows all of the changes you make as they are made. This content-aware fill workspace also allows you to save the results of the content-aware fill as a new layer in the image.

The sampling area is shown as an overlay mask in the document window. Using the tools from the **Tools** panel, modify the sampled area and select the area to fill. The **Content-Aware Fill** panel includes options for sampling, fill settings, and output settings.

There are three options you can use to specify the sampling area from which Photoshop should locate source pixels to use for filling content. The **Auto** option bases the fill on content around the fill area. The **Rectangular** option uses a rectangular area around the fill area. The **Custom** option allows you to manually specify a sampling area where you can specify which pixels to use for the fill area.

> **Note:** In addition to being able to fill areas based on surrounding pixels, you can also use surrounding pixels to remove something from an image.

Manual Tonal Adjustments

Making tonal adjustments will alter the contrast of an image. To adjust the tonal range of an image, you will use a histogram. You can select **Window→Histogram** or select the **Histogram** panel tab. Once the histogram is open, select the **Expanded View** from the **Histogram** panel menu and then select **Image→Adjustments→Levels**. This will open the **Levels** dialog box. Check the **Preview** check box.

You will see a black triangle to the left, representing shadows; a gray triangle in the middle, representing midtones; and a white triangle to the right, representing highlights. The graph in the **Histogram** panel and the **Levels** dialog box are identical.

In the **Levels** dialog box, the black, gray, and white triangles can be dragged to alter the histogram and the image. This can be done until the image looks good and then the work can be saved.

Localized Color Correction

No matter how good the camera that took the photograph is, not every image is going to have the perfect color balance. Differences in color casts can happen due to mixed lighting or poor processing. Localized color correction should take place only after global color correction has been done. Selecting an entire object and adjusting its color is not ideal because parts of an object might need more adjustment than others.

Select the area needing adjustment by using the **Marquee** tool. You can use the **Curves Adjustment** option by selecting **Layer→New Adjustment Layer→Curves**. The unselected area of the image will be masked in black. Select the **Brush** tool to adjust the color of the section of the image that you wish to adjust. When the color is adjusted to the right level, accept the adjustment.

HDR Imaging

When the need to adjust a high-dynamic range (HDR) image arises, you may need to adjust for exposure, toning, or both. To adjust for HDR exposure, select the **Exposure** icon or select the **Exposure** preset in the **Adjustments** panel. Alternatively, you can select **Layer→New Adjustment Layer→Exposure**. In the **Properties** panel, you can set a number of options, including **Exposure**, **Offset**, and **Gamma**.

In order to apply the full range of HDR exposure and contrast to an image, you will need to adjust HDR toning. To do so, open an image in **Grayscale** color mode. This can be an 8-, 32-, or 64-bit image. Then, select **Image→Adjustments→HDR Toning**.

> Access the Checklist tile on your CHOICE Course screen for reference information and job aids on **How to Repair Images.**

ACTIVITY 4–2
Making Image Adjustments

Data File

C:\092013Data\Adjusting Images\toddler_with_hat.psd

Scenario

A client took a picture of her toddler, but was disappointed to see some tiny dots and a small scratch on the child's face in the picture. The image is otherwise perfect. She has asked you to help remove these imperfections from the image.


1. Open **C:\092013Data\Adjusting Images\toddler_with_hat.psd**.

2. In the **Navigator** panel, increase the zoom to 100 percent and align the viewing area as needed.

3. Select the **Spot Healing Brush** tool and tool options.

a) On the **Tools** panel, select the **Spot Healing Brush** tool.
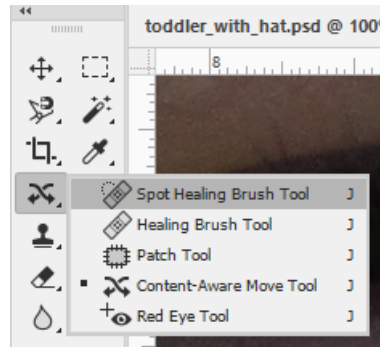
b) On the **Options** bar, set the pen pressure size to **25 px** and the mode to **Normal**, and select the **Proximity Match** button. **Sample All Layers** should be unchecked, as you are sampling the pixels only on the current layer.
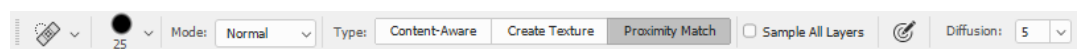
4. Replace dark pixels with surrounding pixel color.

a) Place the **Spot Healing Brush** pointer over the left cheek. If necessary, zoom in close enough to see the tiny black spots near the grains of sand.

b) Press and hold over the dark area and notice how the area inside the brush pointer turns black. Release the pressure to replace it with the surrounding pixel color (skin tone).

c) Continue to apply the brush as needed. There will be areas that will need additional work.

5. Use the **Healing Brush** tool to blend dark pixels with color.

a) On the **Tools** panel, from the **Spot Healing Brush** flyout menu, select the **Healing Brush**.

b) On the **Options** bar, if necessary, set the brush size to **19** and the mode to **Normal**, select **Sampled**, if necessary, uncheck **Aligned**, and select **Current Layer**.

c) Locate the area on the left of the girls' head where there is a small scratch.

d) Place the **Healing Brush** cursor over an area of clear skin.

e) Press **Alt** and select to "pick up" those light pixels to blend with darker areas.

f) Using short strokes, drag to "brush" over the imperfection to replace it with the clear skin. Continue to do this until the surrounding pixels blend.

g) To change pixel color, press **Alt-click** to apply new pixel color to the brush.

h) With short strokes, drag to apply the blend of colors.

6. Reduce the image to fit on screen to review your results.

7. Save the file as *my_toddler_with_hat.psd* in **C:\092013Data\Adjusting Images** and close the file.

TOPIC C

Implement Color Management

The importance of good color management cannot be overstated. Good color management and the proper color settings can bring life to an image and the opposite can kill it. Learning good color management skills and workflow are crucial to your Photoshop projects.

Color Management

Images can be captured on a number of different devices and the output can also be on any number of devices. Each of these devices portrays color differently, which can be challenging when an image must be produced for output on more than one device.

The color management system in Photoshop is made up of a color space that is independent of any device, International Color Consortium (ICC) profiles for each different device used, and a Color Matching Module (CMM) that will ensure the color characteristics of each device are treated properly.

The most important aspect of color management is to monitor calibration and characterization. To calibrate a monitor is to bring it to a standard state and to characterize a monitor is to determine how it will represent or reproduce color. An ICC profile will be created, which will describe the monitor's color handling characteristics.

Color Setting

Photoshop has default color settings that are not always ideal for your images. When you need to adjust the color settings, you can do this by selecting **Edit→Color Settings**.

The most common setting that needs to be changed in the **Color Settings** dialog box is the **RGB** setting in the **Working Spaces** section. The default is set as sRGB IEC61966-2.1, but the better and more common setting is Adobe RGB (1998). The other main choice is ProPhoto RGB. The other three default settings in **Working Spaces** are generally fine to work with.

In the **Color Management Policies** section of the dialog box, ensure that the RGB, CMYK, and Gray are all set to **Preserve Embedded Profiles**. The **Ask When Opening** and **Ask When Pasting** boxes can be unchecked.

The **Conversion Options** section comes next. In the **Intent** box, select **Relative Colorimetric**.

> Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Manage Colors.

ACTIVITY 4–3

Implementing Color Management

Scenario

While editing some images for a client, you noticed that the color was not coming out quite right. To give yourself an accurate color reference, you have decided to calibrate your monitor to provide a true image of what you're working on.

Make sure that your monitor is calibrated as per the manufacturer and operating systems specifications.

a) In Windows 10, select the **Start** button.

b) Type *Color Management*

c) From the results list, select **Color Management** to open the **Color Management** dialog box.

If prompted by **User Account Control**, select **Yes** and, if necessary, enter an administrator password.

d) In the **Color Management** dialog box, select the **Advanced** tab.

e) In the **Display Calibration** section, select the **Calibrate display** button. If prompted, select **Yes** to continue.

f) Select **Next**.

g) Step through the instructions.

h) Move the slider to get the circles to the correct gamma levels.

i) Find brightness and contrast controls on your monitor and follow the prompts.

j) Adjust the **RGB** sliders to remove any colored tints from the gray bars to return them to neutral.

k) Compare previous and current calibration to see the difference, if desired.

l) After comparing previous and current calibration, select **Next**. In the **ClearType Text Tuner** window, select **Cancel** to close the dialog box.

m) Close the **Color Management** dialog box.

Summary

In this lesson, you worked with several tools and techniques to improve and repair photographic images. As you continue to experiment with these techniques, you'll discover that some tools are most effective when used together to create the desired result. Sometimes cropping an image is all a picture needs to look better. But for those times when your photos just don't come out the way you thought they would, it's nice to know you can make improvements with Photoshop.

What tools and techniques did you find most enjoyable? What ones were most difficult?

How do you expect to use some of these tools for your own creative images?

> **Note:** Check your CHOICE Course screen for opportunities to interact with your classmates, peers, and the larger CHOICE online community about the topics covered in this course or other topics you are interested in. From the Course screen you can also access available resources for a more continuous learning experience.

5 | Refining Images

Lesson Time: 1 hour

Lesson Introduction

Adobe® Photoshop® 2020 is a powerful program for a variety of creative solutions. Its tools and features offer valuable options for editing and adjusting graphic images. Whether it's a simple resizing adjustment or a major repair to restore an image, you'll find the methods and techniques for improving your images are well worth learning and using Photoshop.

Lesson Objectives

In this lesson, you will:

- Make a layer adjustment in Photoshop.

- Refine the tone of an image in Camera Raw.

- Use advanced tools to refine images.

TOPIC A

Adjust Layers

Photoshop offers a variety of adjustment features designed to take images from acceptable to good to great! These are adjustments that can add very subtle improvements, very dramatic effects, and everything in between.

Layer Adjustment

When an image needs correcting, layer adjustment is used to apply corrections to all the layers that lie below the adjustment layer. These adjustments are primarily applied to color and tone.

Adjustment Types

Image adjustments can be made with layer adjustments, or directly on an existing layer.

Selected Adjustment Types	*Description*
Brightness/Contrast	**Brightness** increases or decreases the brightness or darkness of an image by moving right or left along the slider. A move to the right brightens *midtones* without brightening the shadows, whereas a move to the left darkens midtones.
	Contrast increases or decreases the contrast of an image. A move to the right increases midtones and image highlights. A move to the left decreases midtones and expands shadows.
	Contrast measures the *difference* in brightness between light and dark areas of an image.
Levels	**Levels** adjust the tonal range and color balance of an image by allowing you to control and fine-tune the level of midtones, shadows, and highlights.
	The **Levels** panel displays a histogram of the image that provides a visual of the levels of black, white, and midtones.
Curves	**Curves** let you make precise adjustments to points throughout the image. You can adjust the overall contrast and tonal range as well as adjust color.
	Points in the upper part of the curve adjust highlights. Points in the lower part of a curve adjust shadows. Points in the middle of the curve adjust midtones.
	Move the curve upward to lighten the image, and downward to darken the image.
Exposure	**Exposure** sets the overall image brightness. Moving the slider to the left darkens the image, whereas moving it to the right brightens the image.
Black & White	Convert a color image to black and white.
Vibrance	**Vibrance** adjusts the level of saturation of the less-saturated colors in an image. Increasing **Vibrance** makes less-saturated colors brighter and more colorful. Decreasing **Vibrance** fades the less-saturated colors and makes the more-saturated colors stand out.

Selected Adjustment Types	Description
Hue/Saturation	**Hue** refers to the specific tone of a color. For example, the various tones of the color blue that range anywhere from a cyan to a navy are each a hue.
	Saturation refers to the intensity of a color.
	By using the **Hue/Saturation** adjustment, you can adjust a specific range of colors or simultaneously adjust all the colors in an image.

Adjustment Layers

Instead of making adjustments directly on the original image, or background layer, you can make adjustments by using an adjustment layer. When you apply color and tonal adjustments to an adjustment layer, the changes are applied to all layers below it, without permanently affecting their pixel values. Each adjustment type has its own **Properties** panel where you will make the adjustment.

Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Adjust Layers.

ACTIVITY 5-1
Using Adjustment Layers

Data File

C:\092013Data\Refining Images\father_daughter.jpg

Scenario

Team members in your department have been using Photoshop for a little while now. They are starting to get comfortable with the idea of layers, and need to make adjustment to those layers. You will guide them in the use of adjustment layers. You want to stress that making an adjustment on a layer does not permanently change an image, as layers can be hidden and rearranged. Use the following reference image as you do the work.

1. Open the **C:\092013Data\Refining Images\father_daughter.jpg** file in **Fit on Screen** view.

2. Unlock the background layer and name it *Original Image*
   a) In the **Layers** panel, observe that the **Background** layer has a **lock** icon on it. Right-click the **Background** layer and select **Layer from Background**.
   b) In the **New Layer** dialog box, in the **Name** text box, type *Original Image*
   c) Select **OK**. Observe that the layer has been renamed and no longer has a lock.

3. Duplicate the background layer and rename it.
   a) Right-click the **Original Image** layer and select **Duplicate Layer**.
   b) In the **Duplicate Layer** dialog box, in the **Duplicate Original Image As** text box, name the layer *Original Image Working Copy* and select **OK**.

4. Create a levels adjustment in a new adjustment layer.
   a) In the panel, make sure **Original Image Working Copy** layer is selected.

b) At the bottom of the **Layers** panel, select the **Create new fill or adjustment layer** icon.

c) From the pop-up list, select **Levels**.

d) In the **Properties** panel, drag the left slider to a value of **25**. As you drag the slider, observe the changes to the image.
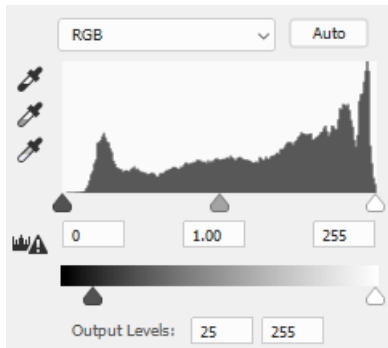
5. Create a curves adjustment in a new adjustment layer.

a) At the bottom of the **Layers** panel, select the **Create new fill or adjustment layer** icon.

b) From the pop-up list, select **Curves**.

c) In the **Properties** panel, select the top end of the curve and drag slightly downward to darken the image. As you drag the curve, observe the changes to the image.
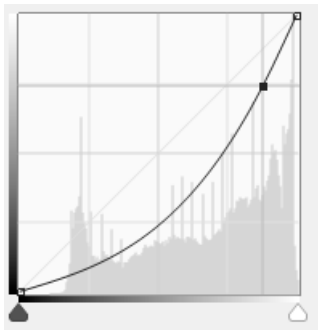
6. Merge the adjustment layers with the **Original Image Working Copy** layer.

a) In the **Layers** panel, press **Ctrl** and select the **Curves** layer, the **Levels** layer, and the **Original Image Working Copy** layer.

b) Right-click the layers and select **Merge Layers**. Observe that the layers have been replaced by a single merged layer.

c) Double-click the new merged layer and name it *Adjusted Image*

7. Compare the before and after images and save and close the file.

a) Toggle the visibility icon of the **Adjusted Image** layer several times to compare it to the original.

b) Save the file on your computer as *my_father_daughter.psd* and if you get a message to **Maximize Compatibility**, then select **OK**. Close the file.

TOPIC B

Apply Camera Raw

You may not have heard of Camera Raw and have questions about it. What is it? Why would I use it? How would I use it? Just as you had to orient yourself to the Photoshop and Adobe Bridge workspace environment, you'll do the same for Camera Raw, and become more familiar with the feature.

Camera Raw

Camera Raw is a software program plug-in that is included with Photoshop and Adobe Bridge. It is used on "raw" photographs—those that have unprocessed gray scale data, as well as metadata regarding the image capture settings. Most likely, your digital camera takes images processed by the camera's sensor, where image attributes and compression automatically take place. To shoot a "raw" image, you must set your camera to save files in raw format.

Camera Raw Files

If you are old enough to remember when cameras had film that produced negatives, you'll have some idea of a camera raw file. Basically, raw files hold the unprocessed image pixels. It is then up to you to make the adjustments: color saturation, tonal range, contrast, white and black balance, and so on.

Can Other Files Be Used in Camera Raw?

Yes they can, if they are in **TIFF** or **JPEG** format. The advantage to using Camera Raw is that it offers some editing features that Photoshop does not, such as split toning and lens corrections.

The Camera Raw Interface

When you open a file in Camera Raw, the interface is not displayed in full screen mode. You can toggle to full screen mode by pressing the **F** key or by selecting the toggle button in the upper-right corner of the window.

The first thing you may notice is that the interface is simpler than that of Photoshop. The menu across the top is the tools menu, which has some tools that are common to Photoshop, such as the **Zoom** and **Hand** tools.

Located in the top-right corner (above the **Basic** panel) is the **Camera Raw** histogram that shows the **RGB** channels of the selected image. As you make image adjustments, the histogram changes dynamically. Directly below the histogram are the image adjustment "tabs." The default image adjustment tab is called **Basic**. You can display any other tab menu by selecting its respective icon. Unlike Photoshop panels, the Camera Raw panels cannot be moved or floated.

	Note: To learn more about photo correction, check out the Spotlight on **Retouching Images with Camera Raw** presentation from the **Spotlight** tile on the CHOICE Course screen.

	Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Apply Camera Raw.

ACTIVITY 5-2
Using Camera Raw

Data File

C:\092013Data\Refining Images\woman_at_laptop.jpg

Scenario

The CCG&W regularly showcases the works of area photographers. Many of the photos displayed are shot as raw photographs. Even though most workshop participants have not seen or used Camera Raw, you provide a short overview.

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1. Open a file in Camera Raw and enlarge it.

   a) In Adobe Bridge, in the **Refining Images** folder, locate the **woman_at_laptop.jpg** image. Right-click and select **Open in Camera Raw**. DO NOT select **Open Image** at the bottom. Stay in Camera Raw.

   b) In the **Welcome to Camera Raw** window, select the **Get Started!** button.

   c) In the **Camera Raw** window, in the status bar, change the zoom level to **100%** to enlarge the image to 100 percent.

   d) From the **Tools** menu, select the **Hand** tool and adjust the image so that the woman's face is clearly visible.

2. Although the woman has nearly flawless skin, its tone is a bit light and not defined as well as it could be. Make a skin tone adjustment.

   a) Select the **Tone Curve** icon ⊞ to display the tone curve adjustments.

   b) There are two tabs, **Parametric** and **Point**. Select the **Point** tab and set the **Curve** to **Linear**.

   c) Grab the middle of the curve, and drag it slowly upward. Observe how the skin tone becomes washed out.

   Input: 112   Output: 147
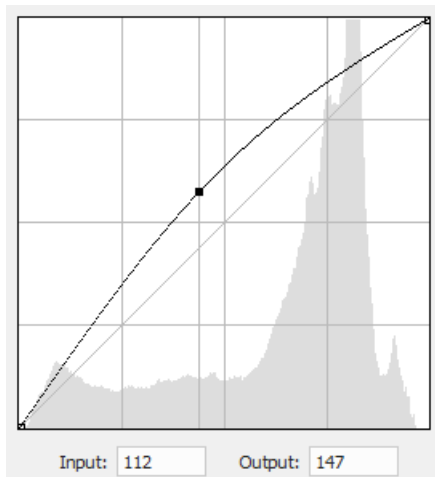
   d) Drag the curve slowly downward and observe how the skin tone darkens.

   You may have to experiment a bit to get the curve exactly as you want.

   e) Straighten the curve and then drag it straight down to approximately the middle of the second grid box from the bottom and second in from the left. Observe the change in skin tone as you do this.

    f) In the lower-right corner under the image, toggle the **Swap Before/After settings** button several times to compare the original with the adjusted image.

    g) If necessary, move the slider some more to adjust the skin tone to a desirable appearance.

3. Adjust the clarity around the woman's eyes and the highlights around her face.

    a) Select the **Basic** icon to open the **Basic** tab.

    b) You can show or blur the pores on her skin. Use the **Clarity** slider to make her pores more or less obvious.

    c) Under the image on the right, toggle the **Cycles between Before/After views** button and compare the eyelashes and area around the eye. The adjustment makes them slightly more defined.

    d) Move the **Exposure** slider to experiment with different values.

    e) Move the **Highlights** slider to experiment with different values.

    f) Use the **Cycle between Before/After views** button and compare.

    g) Depending on your results, adjust the values as you deem fit.

4. Save the file.

    a) In the bottom left of the interface, select **Save Image**.

    b) In the **Save Options** dialog box, verify that the **Destination** is **Save in Same Location**.

    c) In the **File Naming** section, in the text box to the right of **Document Name**, display the drop-down list and select **mmdd (date)** to add the current date to the file name.

    d) From the **File Extension** drop-down menu, select **.DNG** to save it in raw format. Verify that the file extension is .DNG.

    e) Select **Save**.

    f) Select **Done**.

5. Open the DNG file in Photoshop.

    a) In Adobe Bridge, from the **Refining Images** content, locate the **woman_at_laptop(ddmm).dng** file.

    b) Right-click and select the **Open With→Adobe Photoshop 2020 (default)** option. Note that it opens in Camera Raw.

    c) Select **Save Image** and, this time, save it in JPG format.

    d) Verify the quality setting is set to **High (8–9)** and select **Save**.

    e) Select **Done** to close Camera Raw.

    f) Open the JPG in Photoshop.

    g) Notice that it now has a background layer and can be enhanced further by using Photoshop adjustment features.

    h) Close the file.

TOPIC C

Refine Images by Using Advanced Tools

Your image is meant to carry a message to the viewer, but it cannot do that adequately if your image is left as it was taken. You have learned how to manage and adjust the colors of the image, but there is so much more to do to ensure the image conveys the proper message adequately.

Sharpen Images

Sharpening is the process of enhancing the definition of the edges in an image. Most images can benefit from being sharpened, although the amount of sharpening required will vary depending on the filter used.

Images can be sharpened by using the **Smart Sharpen** filter or the **Unsharp Mask** filter. The **Smart Sharpen** filter can be accessed by selecting **Filter→Sharpen→Smart Sharpen**. The controls must then be set.

Control	Allows the User To
Amount	Set the amount of sharpening. The higher the value, the greater the contrast between the pixels at the edge of the image.
Radius	Determine how many pixels at the edge of the image will be affected by the sharpening. The higher the value, the more obvious the sharpening effect.
Reduce Noise	Reduce the amount of unwanted noise, but maintains the integrity of the edges.
Remove	Set the sharpening algorithm that will be used to sharpen the image. Settings include **Gaussian Blur** (used with the **Unsharp Mask** filter), **Lens Blur**, and **Motion Blur**.
Angle	Set the direction of motion for **Motion Blur**, found in the **Remove** control.

When using the **Smart Sharpen** filter, you must also adjust the amount of sharpening of both the light and dark areas of the image. This is done by using the **Shadow** and **Highlight** sections. The controls can be adjusted for 8-bit and 16-bit images.

Control	Allows the User To
Fade Amount	Adjust the amount of sharpening applied to shadows and highlights.
Tonal Width	Control the range of tones in the shadows and highlights.
Radius	Control the size of the area surrounding each pixel that will be used to determine whether a pixel is in the shadows or highlights.

The **Unsharp Mask** can be accessed by selecting **Filter→Sharpen→Unsharp Mask**. The **Amount** and **Radius** controls will be present and can be changed as needed. There is also a **Threshold** control that will allow the user to determine the amount of difference required between the sharpened pixels and the surrounding area to ensure they are identified as edge pixels. The **Unsharp Mask** can be used to sharpen images selectively.

Blending Tools

Blending tools are found in the **Options** bar. They control how pixels in an image are affected by an editing or painting tool. When using the blending tools, you will be thinking in terms of base color, which is the original color; blend color, which is the color you are applying; and result color, which is the color that you end up with after you apply the blend. There are many blending tools from which to choose.

Blending Tool	Description
Normal	Paints/edits each individual pixel to end up with the result color. This is the default mode.
Dissolve	Create a result color using a random placement of pixels relative to the base or blend color. Dependent on the opacity at any pixel location.
Behind	Paint/edit only the transparent part of a layer. Must have **Lock Transparency** deselected.
Clear	Paint/edit each pixel to make them transparent. **Lock Transparency** must be deselected. Available for shape tools.
Darken	Examines the color information in each channel and chooses the darker of the base or blend color as the result color.
Multiply	Examines the color information in each channel and multiplies the base color by the blend color to produce the result color, which is always darker.
Color Burn	Examines the color information in each channel and increases the contrast between the base and blend colors to darken the blend color relative to the base color.
Linear Burn	Examines the color information in each channel and decreases the brightness to darken the base color relative to the blend color.
Lighten	Examines the color information in each channel and chooses the lighter of the base or blend color as the result color.
Screen	Examines the color information in each channel and multiplies the inverse of the base and blend colors. The result color is always lighter.
Color Dodge	Examines the color information in each channel and decreases the contrast between the base and blend colors to brighten the base color relative to the blend color.
Linear Dodge (Add)	Examines the color information in each channel and increases the brightness to brighten the base color relative to the blend color.
Overlay	Screens/multiplies the colors, based on the base color, by overlaying patterns or colors onto the existing pixels. Highlights/shadows of the base color are preserved.
Soft Light	Darkens/lightens the colors, based on the blend color.
Hard Light	Screens/multiplies the colors, based on the blend color, to add highlights to an image.
Vivid Light	Burns/dodges colors by either decreasing or increasing the contrast, based on the blend color.
Linear Light	Burns/dodges colors by either decreasing or increasing the brightness, based on the blend color.

Blending Tool	Description
Pin Light	Replaces colors, based on the blend color. Especially useful when adding special effects to an image.
Hard Mix	Adds the RGB values of the blend color to those of the base color, changing all pixel colors to red, green, blue, white, or black.
Difference	Examines the color information in each channel and subtracts the blend color from the base color or the base color from the blend color. This depends on which of the two has the greater brightness value.
Exclusion	Similar effect to applying the **Difference** tool.
Subtract	Examines the color information in each channel and subtracts the blend color from the base color. Negative values for 8- and 16-bit will be given a value of zero.
Divide	Examines the color information in each channel and divides the blend color by the base color.
Hue	The result color has the hue of the blend color and the luminance and saturation of the base color.
Saturation	The result color has the saturation of the blend color and the luminance and hue of the base color.
Color	The result color has the hue and saturation of the blend color and the luminance of the base color.
Luminosity	The result color has the luminance of the blend color and the hue and saturation of the base color.
Lighter Color	Makes a comparison of the total for all channel values for both blend and base colors and uses the higher value color.
Darker Color	Makes a comparison of the total for all channel values for both blend and base colors and uses the lower value color.

Opacity

As previously mentioned, **Opacity** is applied to the layers to make them either more or less transparent. To change the opacity of a layer, first select the layer to be changed. Next, in the **Layers** box, select **Opacity** and select the right-hand side of the numbers. This will display a sliding scale. Select the appropriate opacity level by dragging the arrow along the slider.

> **Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Refine Images by Using Advanced Tools.**

ACTIVITY 5-3
Sharpening, Blending, and Changing Image Opacity

Data Files

C:\092013Data\Refining Images\smiling_girl.jpg

C:\092013Data\Refining Images\cactus.jpg

C:\092013Data\Refining Images\orange_flowers.jpg

Scenario

You will guide workshop participants in how to refine images, helping them learn to sharpen, blend, and alter the opacity of an image.

1. Sharpen an image by using the **Smart Sharpen** filter.
   a) In Adobe Bridge, in the **Refining Images** folder, locate the **smiling_girl.jpg** image. Double-click to open in Photoshop.
   b) Select **Filter→Sharpen→Smart Sharpen**. The **Smart Sharpen** dialog box opens.
   c) Adjust zoom in the preview screen until the face fills the preview box.
   d) Make sure **Preview** is checked.
   e) Adjust settings to match the following:
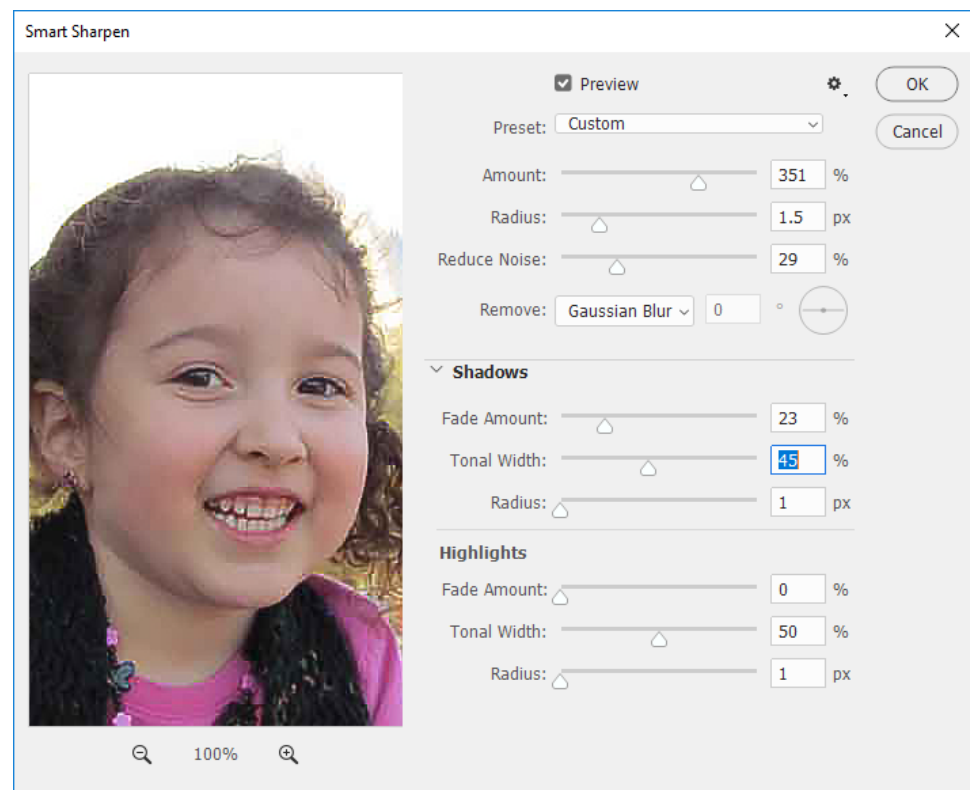
f) At the top, increase **Radius** to maximum, while decreasing **Reduce Noise** to minimum.
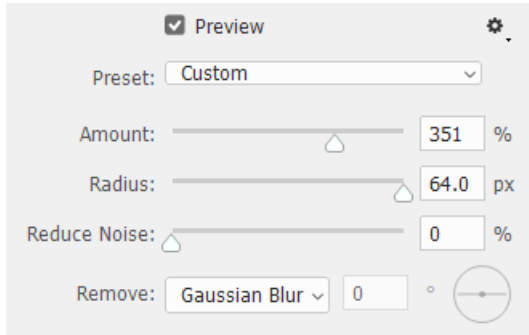
Observe the effect.

g) Increase **Reduce Noise** to maximum and observe the effect.
h) Increase the **Amount** to maximum and observe the effect.

2. Consider the sharpening effects you just saw and answer the following question.

Is there any value to setting the Smart Sharpen effect values too high or too low?

3. Select **Cancel**. Close the file, discarding any changes.

4. Change the opacity of images.

a) In the **Refining Images** folder of Adobe Bridge, locate the **cactus.jpg** file and double-click to open in Photoshop.
b) Select **File→Place Embedded**. Browse to **C:\092013Data\Refining Images** and select the **orange_flowers.jpg** file to place the photograph on a new layer. Select **Place**. Make sure the orange_flowers layer is on top. You will see two diagonal lines in the shape of an X representing the cactus image below it.
c) Select **Edit→Transform→Flip Horizontal** to get the flowers aligned to the right of the cactus.
d) Double-click the **orange_flowers** image. Observe that the lines disappear.
e) Select **Select→All**.
f) In the **Layers** panel, make sure the **orange_flowers** layer is selected. At the top right of the layer, select the **Opacity** drop-down box to reveal the **Opacity** slider. Adjust the slider to **62** percent. Observe that changes in opacity will change how the cactus interacts with the orange flowers, creating different degrees of visibility between the two.
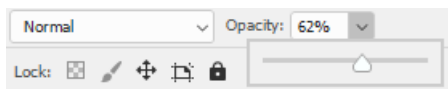
g) Adjust **Opacity** to different levels and observe changes to the overall image. You may have to let go of the slider to see the changes.

h) Close the file, discarding any changes.

Summary

In this lesson, you used layers to make image adjustments and got a brief introduction to Camera Raw. The more experience you gain in Photoshop, the more techniques you will discover for refining photographic images. You may even decide to set your digital camera to shoot in raw mode in order to have greater control over image properties.

What type of adjustments would you consider making with adjustment layers?

What benefits do you see for using Camera Raw?

> **Note:** Check your CHOICE Course screen for opportunities to interact with your classmates, peers, and the larger CHOICE online community about the topics covered in this course or other topics you are interested in. From the Course screen you can also access available resources for a more continuous learning experience.

6 | Managing Files in a Production Workflow

Lesson Time: 1 hour, 10 minutes

Lesson Introduction

Mobile devices and social media have made it so easy to send and view graphic images without ever having to print them. It's easy to share photos, but it's important to know how to prepare and save images intended for the web—and even more important when preparing images for print. You've put the effort into enhancing your images with Adobe® Photoshop® 2020, and now you need to know how to optimize them for web and print.

Lesson Objectives

In this lesson, you will:

- Import, export, and organize files.

- Save images for the web.

- Set print options.

- Save images for outside programs.

TOPIC A

Import, Export, and Organize Files

When working in Photoshop, you will sometimes need to use images from other programs. Regardless of your needs, you must be familiar with importing and exporting files in Photoshop and know how to manage your files to streamline your design workflow.

Importing Files

Importing a file into Photoshop is a straightforward process and there are a few options to accomplish this task. One is to simply select and drag the file into the Photoshop window. Alternatively, you can select **File→Open** and then choose the file you wish to open. If the file name you want is not shown, then select the option that allows you to see all files in the pop-up menu. Once you select your file, select **Open**.

There are times when instead of opening a file to work with in Photoshop, you want to import a file into a document in which you are already working. To do this, simply select **File→Place Embedded** or **File→Place Linked**. You can use the **Place Embedded** command to import an individual copy of the file. If you want to maintain a connection to the original file, then use the **Place Linked** command. Both **Place** commands allow you to import PDF, PDP, AI, or EPS files directly into a new layer in your document. If you are working with Bridge, then select **File→Place→In Photoshop**.
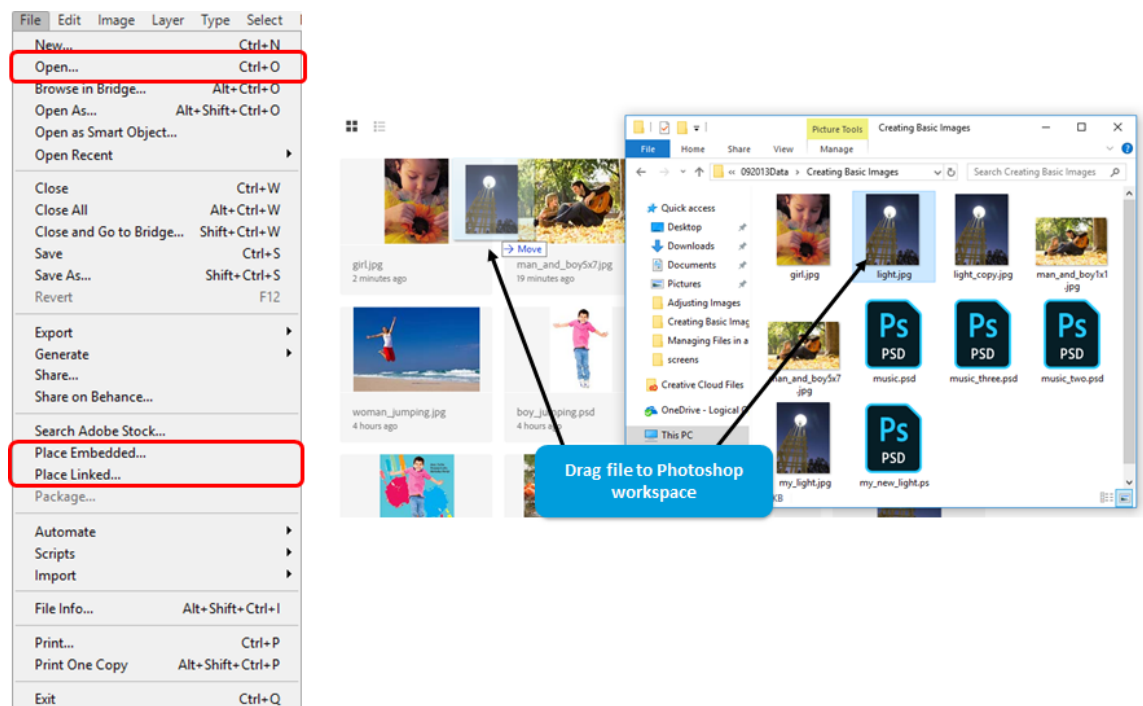

Figure 6–1: Place a file.

Exporting Files

Once you are finished enhancing your Photoshop image, you will want to save the file. This can be done simply by selecting **File→Save**, in which case the file retains its current format. Selecting **File→Save As** will allow you to choose another format in which to save the file. There are a number of file saving options.

File Saving Option	Description
As A Copy	Save a copy of the file and keep the file open at the same time.
Alpha Channels	Save alpha channel information along with the image.
Layers	Ensure all layers are preserved when the image is saved.
Notes	Save notes along with the image.
Spot Colors	Save spot channel information along with the image.
ICC Profile: sRGB IEC61966-2.1 (for Windows), Embed Color Profile (for Mac)	Create a document for color-management.
Thumbnail	This option is for Windows and saves thumbnail data.

There are times when you may want to save individual layers. To do so, select **File→Export→Layers to Files** and, in the **Export Layers To Files** dialog box, select the **Destination** to which you wish to export the file. Select the **Visible Layers Only** option to export only those layers that have visibility enabled. Name the file and choose the appropriate format. If necessary, check the **Include ICC Profile** option. Then select **Run**. You can export files to a number of formats, including PSD, JPEG, BMP, TIFF, Targa, and PDF.

Organizing Files

It is easy to allow creativity to get away from you when working in Photoshop, making it easy to forget the organization of files. However, when files are properly organized, there are a number of benefits, including:

• Streamlines workflow.
• Allows others to understand the design structure.
• Allows all designers working on the file to complete revisions easily and quickly.
• Minimizes the number of errors made during the production process.

The first step to becoming organized in Photoshop is to create all the pertinent folders before you begin. These could include a **Background** folder or a **Fonts** folder. Next, you should set up the document, particularly if you need to work with a document size that is different from the presets. You can do this when creating a new document. Select **File→New**. You will see a window pop up that will contain a number of options. It is here that you will set parameters such as resolution, background color, dimensions, and color mode. At this point, you will also set the prerequisites for **Print Design** and **Web Design**.

Now you need to name your layers. The ideal situation is to rename layers so they have names that are descriptive of the content. This will make it easier to find the layers when you want to edit them. However, be sure to keep those descriptive names short. Whenever possible, group layers that are all parts of the same object. You can also create sub-groupings. Name these groups and sub-groups appropriately, names such as Header, Content, and Sidebar. Make sure all layers and layer groups are arranged in an order that makes sense. The order can match the visual position of the layers on the screen. Any unused layers should be removed.
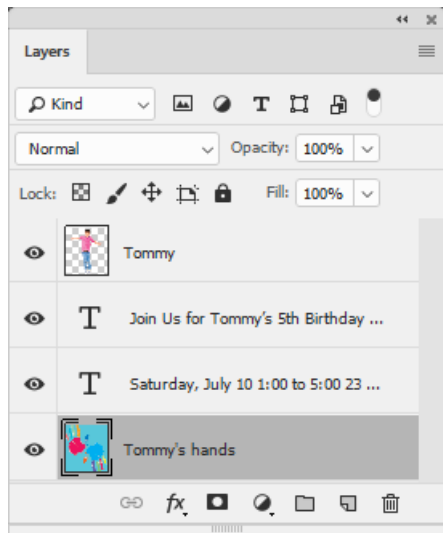
Figure 6–2: Name your layers.

	Access the Checklist tile on your **CHOICE** Course screen for reference information and job aids on How to Import, Export, and Organize Files.

ACTIVITY 6-1
Importing and Exporting Files

Data File

C:\092013Data\Managing Files in a Production Workflow\zebra.jpg

Scenario

The marketing department would like to use a particular image on both the company website and in a brochure. The production team is not really sure what file types are appropriate for the different scenarios. They have asked you to help them understand the various choices for exporting to different file types.

1. Review how saving an image in different formats presents various options.
   a) Display the **zebra.jpg** image in Photoshop.
   b) Select **File→Save As**.
   c) In the **Save As** dialog box, select the **Save as type** drop-down menu. Observe all the different file formats you can select.

2. Save the file in the **Multi-Picture Format (*.MPO)** format to review the options available.
   a) Select **Multi-Picture Format (*.MPO)** and select **Save**. Observe the additional settings that appear in the **JPEG Options** dialog box.
   b) Select **OK**.

3. Save the file in the **BMP (*.BMP;*.RLE;*DIB)** format to review the options available.
   a) Select **File→Save As**.
   b) This time, in the **Save As** dialog box, select the **Save as type** drop-down menu and select **BMP (*.BMP;*.RLE;*DIB)**. Select **Save**.
   c) Observe the BMP options that become available and select **OK**.

4. Close the file. Leave Photoshop open.

TOPIC B

Save Images for the Web

An image intended for the web needs to be saved in the appropriate format and optimized for size and clarity. Photographic images, especially, can have thousands, even hundreds of thousands, of pixels and the file size can be significant. When reducing such an image for the web you don't want to lose the quality and clarity or have it load so slowly that a browser could time out before it is fully loaded. Fortunately, there are methods to optimize images and prepare them for the web.

Image Optimization

Image optimization is a method of compressing the size of a raster image. However, some optimization techniques also remove detail and color data. These are referred to as *lossy* techniques, as compared to *lossless* techniques, in which the detail is retained.
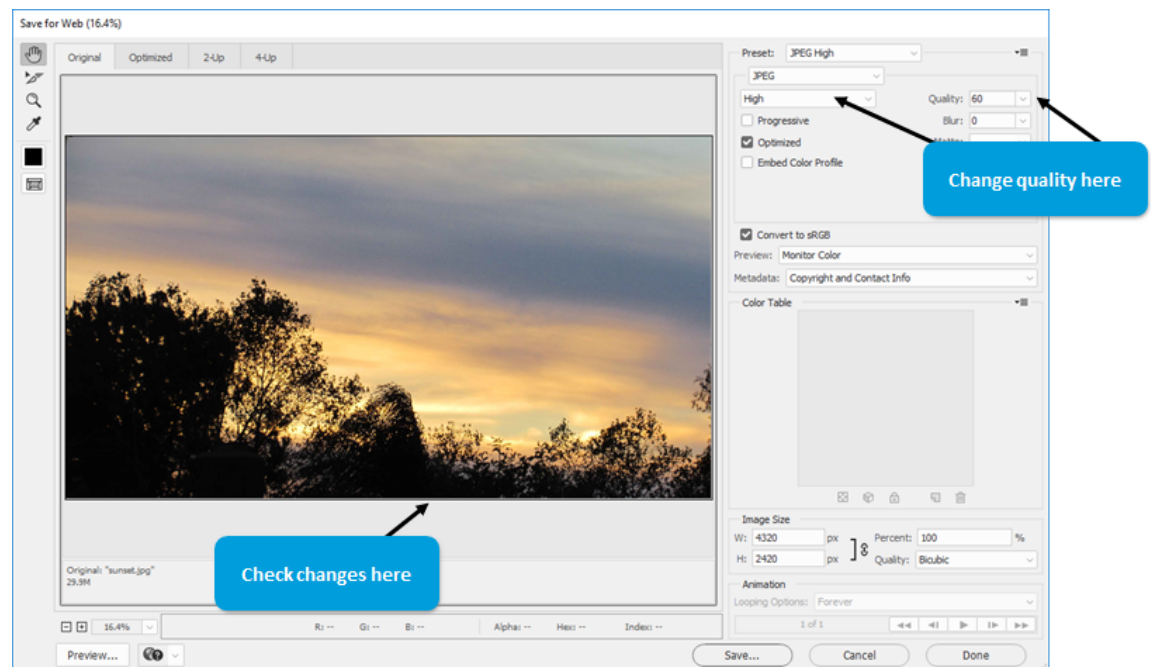
Figure 6–3: Image optimization.

File Formats for the Web

When saving Photoshop files for the web, you want to ensure that a suitable file format is used so that images won't lose their clarity and definition online. Web graphics can be saved in JPEG, PNG, and GIF formats. For photographs the preferred format is JPEG because it retains millions of colors and shades. The GIF format supports only 256 colors, making it less than ideal for photographic images. The PNG format is the most compatible with web browsers but, like GIF, is not as good a choice as JPEG for photos. For drawings and graphics with less than 256 colors, GIF and PNG formats result in a smaller file size than the JPEG format.

When saving a JPEG file for the web, specify the quality setting in the **Save for Web** dialog box. A high quality setting increases the file size but keeps the quality. A low quality setting creates a smaller file size, but a lower quality image.

Save for Web Option

Photoshop's **Save for Web** option allows you to preview one or multiple optimized versions of an image. You can also compare the optimized version with the original image. You can move images around by using the **Hand** tool. A move made to one image is replicated in all preview windows. You can preview **2-Up** or **4-Up**, as well as **Original** and **Optimized** views. The **Preset** menu displays the different options for optimizing an image (for example, JPEG High, PNG-24, and GIF 128 Dithered).
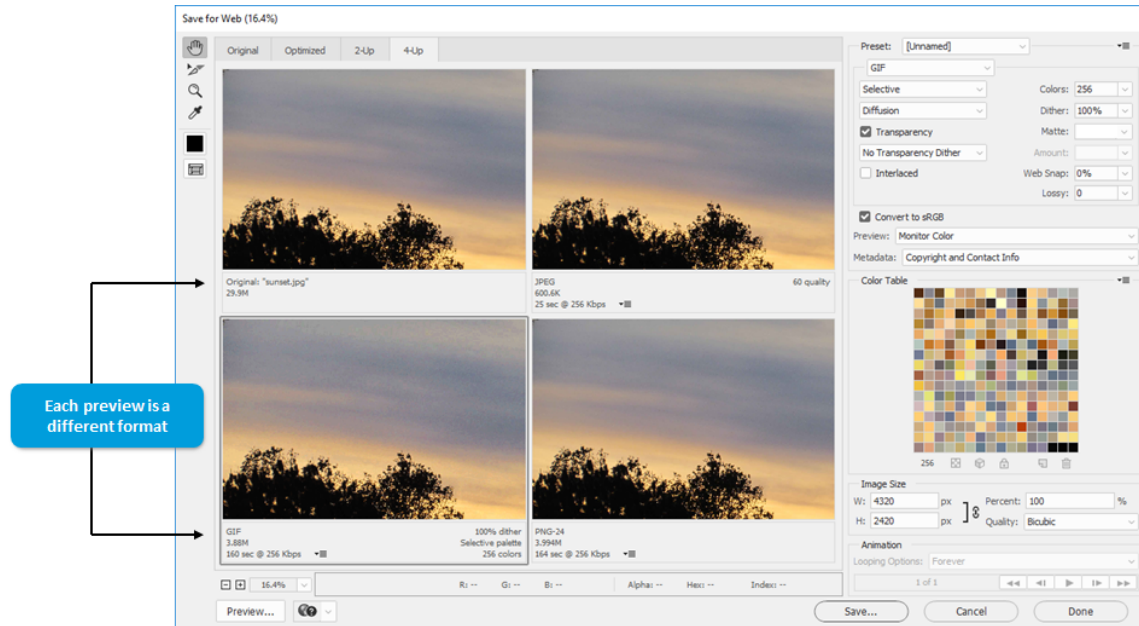
Figure 6–4: The Save for Web option.

📋	**Access the Checklist tile on your CHOICE Course screen for reference information and job aids on How to Save Images for the Web.**

ACTIVITY 6-2
Saving an Image for the Web

Data File

C:\092013Data\Managing Files in a Production Workflow\zebra.jpg

Scenario

As part of the final workshop, you will provide an overview on how to prepare photographic images for both web and print. You also have provided a JPEG file for participants to experiment with in the **Save for Web** dialog box.

---

1. Specify image settings for the web.

   a) Display the **zebra.jpg** image in Photoshop.

   b) Select **File→Export→Save for Web (Legacy)**.

   c) In the **Save for Web** dialog box, select the **2-Up** tab.

   d) From the **Tools** panel, select the **Hand** tool and drag one of the image sections so that the zebra's face is within the section boundaries.

   e) If necessary, click the top image pane to select it.

   f) In the upper-right area of the dialog box, display the **Preset** menu, select **JPEG High**, and note the size, quality, and download time at the bottom of the image pane.
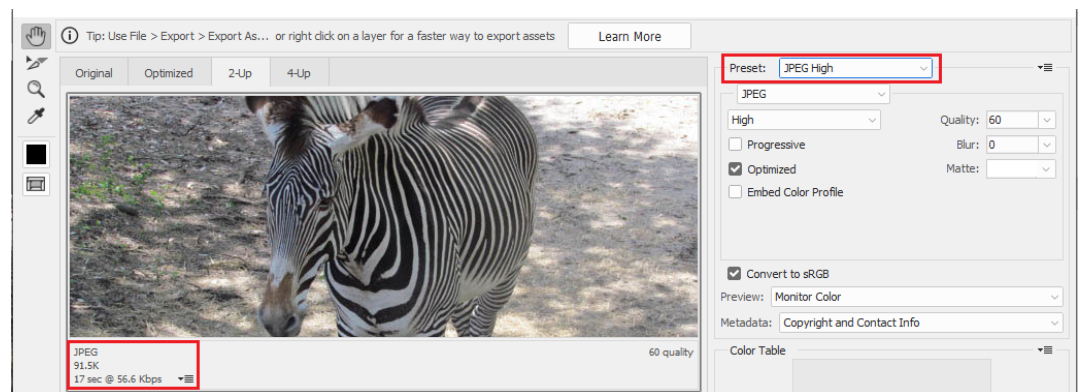
g) In the **Select download speed** drop-down list, select different download speeds and observe how the estimated download time changes.
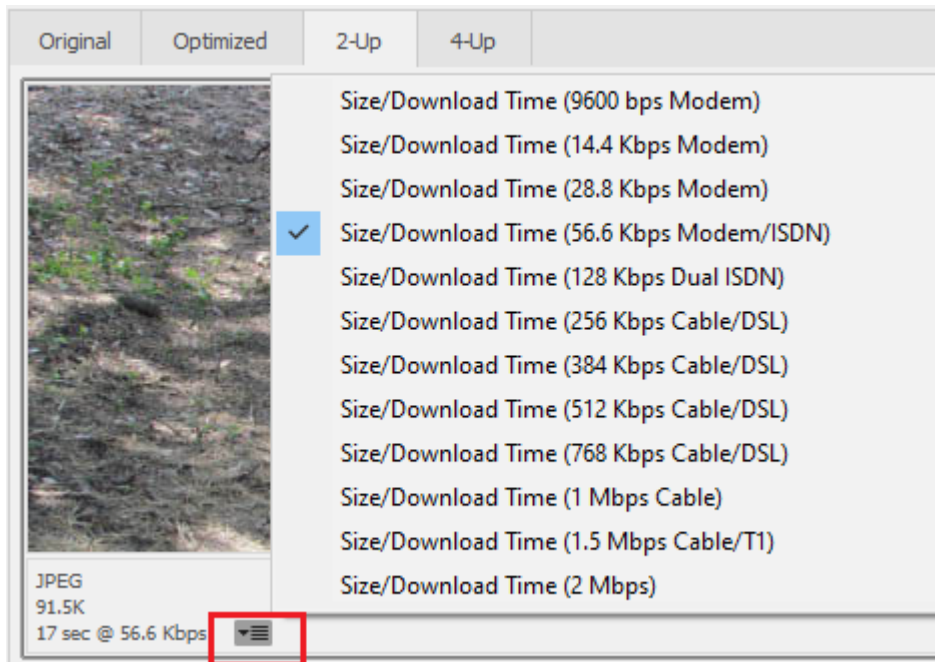
h) Change the download speed to **256 Kbps**. Observe that this doesn't change the file, but acts as a calculator for how long it will take to download the file on a specific connection speed.

2. Set the second image pane format to **GIF** and compare the images.

a) Click anywhere on the image pane on the bottom to select it.

b) Display the **Preset** menu, select **GIF 128 No Dither**, and note the size, quality, and download time at the bottom of the image pane.

c) In the bottom-left area of the dialog box, select the **Preview** button to preview the image in your web browser. If you get any prompts from your browser, select **OK**. Note the image data, HTML tags, and information.

If you have other browsers installed, you can select the drop-down to the right of the **Preview** button and select **Edit List** to choose your browser. You might need to select the **Find All** button to add browsers to the list.

d) Return to the **Save for Web** dialog box, select the image on the top, and select **Preview** to note its data and the quality of the image.

3. Display the **Save Optimized** dialog box and view the formats that the image can be saved in.

a) Select **Save** to save the image in the **JPEG High** format.

b) In the **Save Optimized As** dialog box, display the **Format** menu and note the choices for **HTML Only**, **Images Only**, or both **HTML and Images**.

c) Select **Cancel** to close the **Save Optimized As** dialog box, and select **Done** to close the **Save for Web** dialog box.

4. Close the web browser preview windows and save the Photoshop file as *my_zebra.jpg* accepting the JPEG defaults. Close the file.

TOPIC C

Save Images for Print

Preparing graphic images for print can require an entire course in itself, as there are so many factors that go into printing a vibrant, colorful, crisp, clear image. Commercial printing has additional requirements than printing to a local inkjet printer.

File Formats for Print

Photoshop files for the printer are typically saved in TIFF or EPS formats. TIFF supports only raster graphics, but EPS supports both raster and vector images. However, EPS does not support layers, and even though TIFF does support layers, it is recommended to save TIFF files without layers, as some applications cannot import layered files. It's best practice to save graphic images in multiple formats, retaining a copy of the source format, a PSD copy, and then a copy formatted for print.

TIFF Options

When saving a Photoshop file in TIFF format, you can optimize an image for print in the **TIFF Options** dialog box. You can compress an image, specify the arrangement of pixel data, specify Windows or Mac platform, preserve multi-resolution data (**Save Image Pyramid**), preserve transparency as an alpha channel, and compress the data in each layer. Compression options include:

*   **RLE: faster saves, bigger files**
*   **ZIP: slower saves, smaller files**
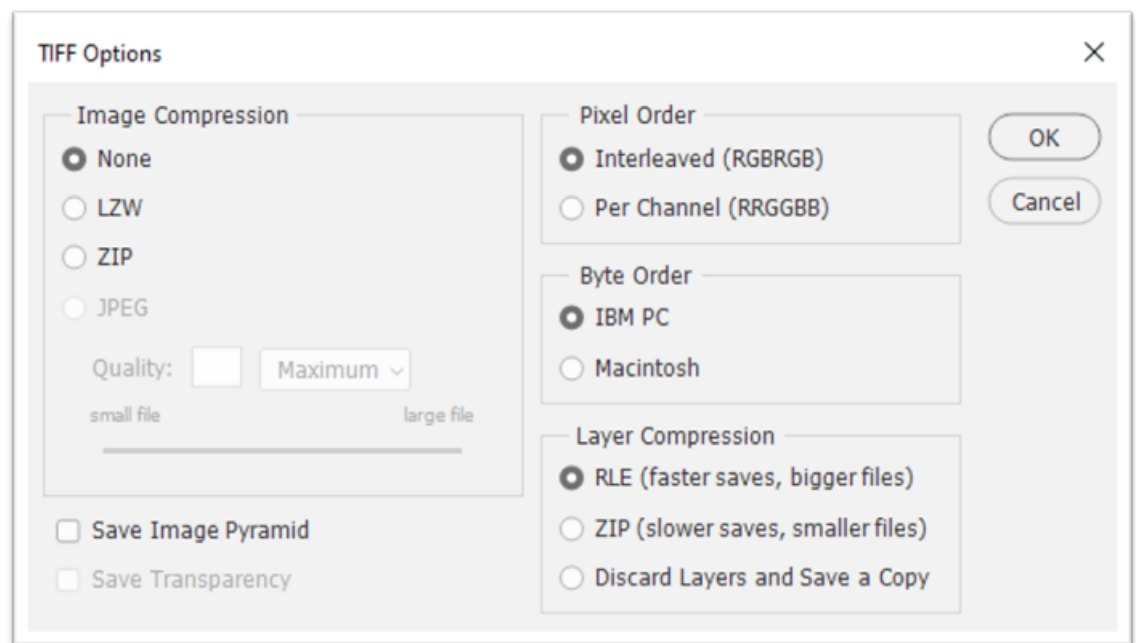*   **Discard Layers and Save a Copy**

Figure 6–5: The TIFF Options dialog box.

Print Settings

The **Photoshop Print Settings** dialog box has settings for print output and color management.

The following are the **Print Settings**:

- **Printer Setup**
- **Copies**
- **Layout** (portrait, landscape)
- **Color Management**
- **Position and Size**
- **Printing Marks**
- **Functions**
- **PostScript Options Disabled**

If you are not printing to a commercial printer or are unsure of color handling, it is recommended that you let the printer handle color management.

Printer Manages Colors

When you do not have a custom profile for the type of printer, ink, and paper you use, then it is best to allow the printer driver to manage the colors. To do this, select **File→Print** and then expand **Color Management** if it is not already expanded. In **Color Handling**, select **Printer Manages Colors**. You will be able to choose the appropriate color management settings in the **Photoshop Print Settings** dialog box. Then, select **Print**.
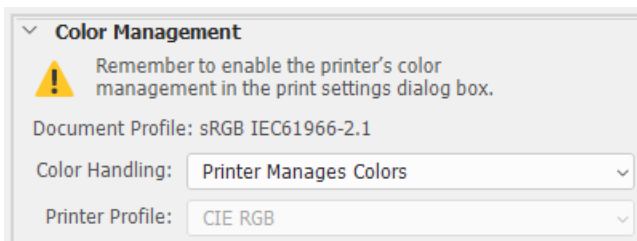
Figure 6–6: Printer manages color options.

Photoshop Manages Colors

Using **Photoshop Manages Colors** settings is perhaps the better method when it comes to color management for printing. This is particularly the case if you have created a custom profile for a certain combination of printer, ink, and paper. To allow Photoshop to manage the colors, select **File→Print**. In the pop-up menu, select **Color Management**. Next, select **Photoshop Manages Colors** in **Color Handling**. You can then set the **Printer Profile**, choosing the best match for your device. There are a number of other options you can set.
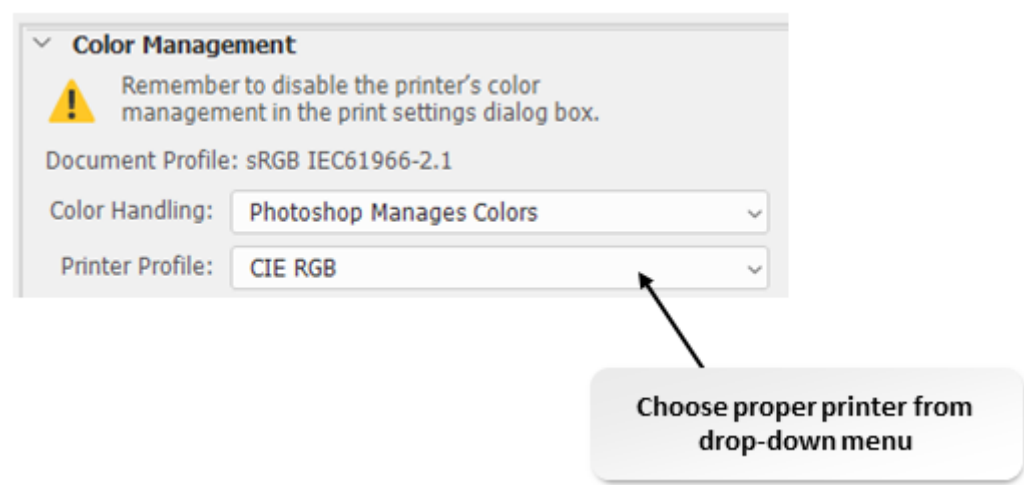
Figure 6–7: Photoshop manages color options.

Option	Description
Rendering Intent	Choose how Photoshop will convert colors to the color space at the destination.
Black Point Compensation	Maintains the detail of shadows in the image by making use of the full dynamic color range of the output device.
Match Print Colors	View colors in the image as they will appear when printed.
Gamut Warning	When **Match Print Colors** is selected, select **Gamut Warning** to highlight colors in the image that are outside of the gamut, which is the range of colors the device is capable of producing.
Show Paper White	Matches the white color in the preview to the white color of the paper on which the image will be printed, giving a more accurate print preview.

Once you have selected your options, you can select color management options for the printer driver. Finally, select **Print**.

	Access the Checklist tile on your **CHOICE** Course screen for reference information and job aids on **How to Save Images for Print**.

ACTIVITY 6–3
Using Printer and Photoshop Color Management

Data File

C:\092013Data\Managing Files in a Production Workflow\flamingos.psd

Scenario

Your co-workers need to print some images they have been working on in Photoshop. They are trying to decide if it would be better to have the printer or Photoshop manage the colors. They have asked you to demonstrate the difference. During your discussion, if desired, you may perform quick research on the Internet for more information.

1. Let Photoshop manage colors.
   a) Open **C:\092013Data\Managing Files in a Production Workflow\flamingos.psd**.
   b) From the **File** menu, select **Print**.
   c) In the **Photoshop Print Settings** dialog box, if the **Color Management** section is not expanded, then open it.
   d) Under **Color Handling**, select **Photoshop Manages Colors**.
   e) Select the **Printer Profile** drop-down box. Observe the different printer profiles available.
   f) Press **Esc** to close the list of printer profiles.
   g) Select **Cancel** to close the Photoshop **Print Settings**.

2. Consider the different printer profiles available and answer the following. If necessary, perform a quick search for *Photoshop printer color management* on the Internet for more information.

   When might it be useful to choose SMPTE-C, PAL/SECAM or SDTV NTSC?

3. Let your printer manage colors.
   a) Ensure that **flamingos.psd** is open.
   b) If necessary, from the **File** menu, select **Print**.
   c) In the **Printer Setup** section, in the **Printer** drop-down box, select any available choice, including **Fax** or **Microsoft XPS Document Writer**.
   d) If necessary, in the **Photoshop Print Settings** dialog box, open the **Color Management** section.
   e) In the **Color Handling** drop-down box, select **Printer Manages Colors**.
   f) Change the **Normal Printing** selection to **Hard Proofing**.
   g) In the **Proof Setup** drop-down box, select **Custom Setup**.
   h) In the **Proof Conditions** section, select the **Device to Simulate** drop-down box. Observe the many choices available. Press **Esc**.

4. Examine the various settings available in the **Customize Proof Condition** dialog box and answer the following question.

   What is the purpose of the Hard Proofing setting?

5. Select **Cancel** twice and close the **flamingos.psd** file without saving.

TOPIC D

Format Images for Other Programs

Designers often work with programs outside of Photoshop or they are creating images for others who are working in other programs. For this reason, you must understand how to save images for use in other programs.

Other Image Formats

There are many different file formats in Photoshop and it is important to be familiar with them.

File Format	Description
Photoshop (PSD)	The default file format for Photoshop.
Large Document Format (PSB)	PSB is used as the default in Photoshop to support documents that are up to 300,000 pixels in any dimension.
BMP	A standard Windows format that can be used on computers that support DOS and Windows.
Dicom	Digital Management and Communications in Medicine (Dicom) is used specifically for the storage and transfer of medical images.
Photoshop EPS	Encapsulated PostScript language is a format that contains both bitmap and vector graphics. This format is supported by all illustration, graphics, and page-layout programs.
Photoshop DCS 1.0 and 2.0	Desktop Color Separation is the standard EPS format that allows the color separations of CMYK images to be saved.
GIF	Graphics Interchange Format (GIF) is used to display indexed-color images and graphics in HTML documents.
IFF	Interchange File Format (IFF) is used for the general purpose of associating and storing multiple types of data.
JPEG, JPEG 2000, and JPEG Stereo	Joint Photographic Experts Group (JPEG) is used to display continuous-tone images, such as photographs, in HTML.
Multi-Picture Format (MPO)	A file format created by The Camera & Imaging Products Association (CIPA) that uses two JPEG files which are combined to create a 3D (three-dimensional) image.
PCX	PCX is used on IBM-compatible computers and supports Grayscale, Bitmaps, RGB, and Indexed Color modes.
Photoshop PDF	Portable Document Format (PDF) is compatible across platforms and applications. Photoshop supports both standard PDF files and Photoshop PDF files.
Photoshop Raw	A format that allows images to be easily transferred between applications and computer platforms.
Pixar	This is a format that supports high-end graphics applications. Ideal for 3D images and animation.
PNG	Portable Network Graphic (PNG) is an alternative to GIF. Used to display images on the Internet and to compress lossless images.

File Format	Description
Portable Bit Map	Portable Bit Map (PBM) supports monochrome bitmaps and is used for the lossless transfer of data.
Scitex CT	Scitex Continuous Tone (CT) is used for the processing of high-end images on Scitex computers.
Targa	Used on systems that use the Truevision video board. Supported by DOS color applications.
TIFF	Tagged-Image File Format (TIFF) is used as a method of passing images between computer applications and platforms.

Microsoft Word

Sometimes you create images in Photoshop that you want to use in a Microsoft® Word document. In order to do this, you will need to save the image in a format that is compatible with Word. To do so, select **File→Save As**. Next, select the arrow next to the **Save as type** box and select the GIF, JPEG, PNG, or PCX format because these import easily into Word. EPS and TIF also work well, but these formats create larger files. Once you have selected the appropriate file format, select **OK**.

Microsoft PowerPoint

When creating images for Microsoft® PowerPoint®, you will need to save the image in the proper format, one that won't take very long to load. In order to save images for use in PowerPoint, consider optimizing the image so it loads quickly. You can resize by selecting **Image→Image Size** from the **Photoshop** menu bar. The **Constrain aspect ratio** option should be activated. Once the new image size is entered, select **OK**.

You may also want to crop the image. Select the **Crop** tool from the upper-left side of the **Photoshop** toolbar. Then click and drag the cursor to select the area you want to keep. Press **Enter**.

Next, select **File→Save As**. The file formats that work best with PowerPoint are—GIF, PNG, and JPEG. If the image is black and white, or if the number of colors is 256 or fewer, select **GIF**. The **GIF Save Options** dialog box opens. The default settings are fine, unless your image is black and white. If the image is black and white, then select the **Forced** drop-down menu and select **Black and White**.
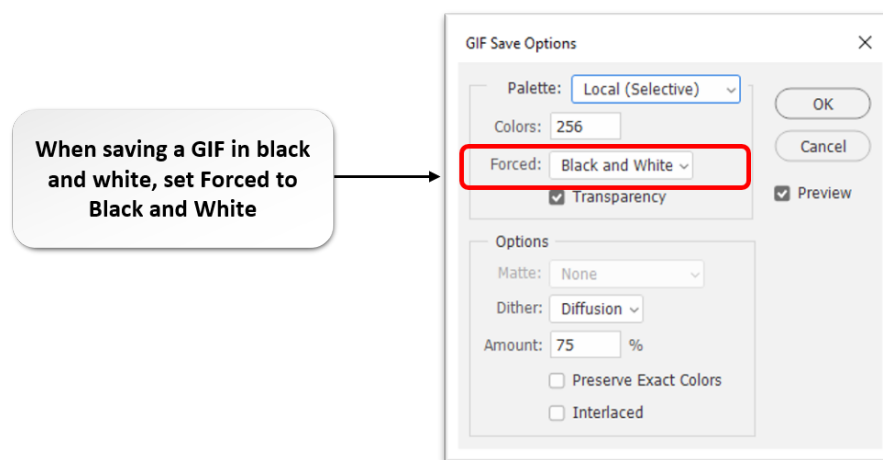

Figure 6–8: GIF Save Options.

A popular alternative is the Portable Network Graphics, or PNG, file format. This file format is often used for screen shots and is used by many image creation apps. One reason people like to use

PNG files is that you can save the file with a transparent background which is useful when combining the PNG image with other content. When saving the file in the PNG format, the **PNG Format Options** dialog box is displayed where you can select the file size. The **Interlacing** option increases the file size, but allows the download time to appear shorter when the image is loaded into a browser. If saved without interlacing, the image is displayed in the browser after the download has finished. Compression is used to create the smallest file size, and that can be very useful if the image will be displayed from the Internet through a web browser.
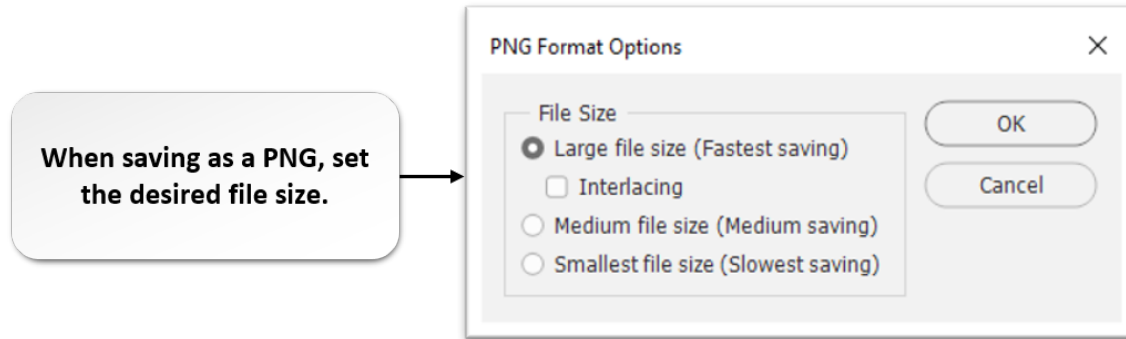
Figure 6–9: PNG Format Options.

If the image is a photograph or other complex color image, then select **JPEG**. To choose the right file type, select the down arrow next to the **Save as type** box and select the appropriate file type. Then select **Save**. The **JPEG Options** dialog box opens. Under **Format Options**, select **Progressive**. The **Scans** box should be left at a value of **3**. You can also adjust the **Image Quality**, but remember you will trade image sharpness for load time.
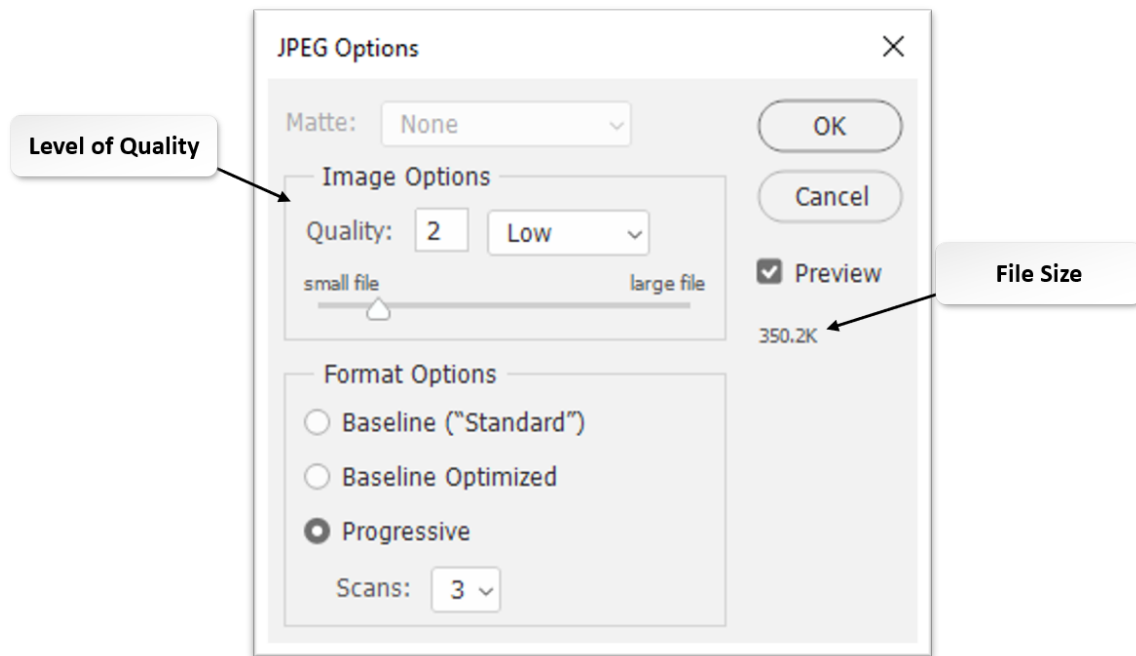
Figure 6–10: JPEG Options.

Access the Checklist tile on your **CHOICE** Course screen for reference information and job aids on How to Save Images for Other Programs.

ACTIVITY 6–4
Preparing Images for PowerPoint

Data File

C:\092013Data\Managing Files in a Production Workflow\flamingos.psd

Scenario

You need to determine the best way to manage colors for a project—with Photoshop or your printer.

1. Prepare the image for PowerPoint - **GIF**.
    a) Open **C:\092013Data\Managing Files in a Production Workflow\flamingos.psd**.
    b) From the **File** menu, select **Save As**.
    c) From the **Save as type** drop-down menu, select **GIF (*.GIF)** and select **Save**.
    d) In the **GIF Save Options** dialog box, in the **Forced** text box, select **None** and select **OK**.
    e) In the **GIF Options** dialog box, verify that **Normal** is selected and select **OK**.

2. Prepare the image for PowerPoint - **.JPEG**.
    a) From the **File** menu, select **Save As**.
    b) In the **Save as type** dialog box, choose **JPEG (*.JPG; *.JPEG; *.JPE)** and select **Save**.
    c) In the **JPEG Options** dialog box, move the slider to select different levels of quality, then select the desired level of quality. Keep in mind that the higher the quality, the larger the file size.
       You can see the file size under **Preview** on the right side of the dialog box.
    d) Under **Format Options**, select **Progressive**.
    e) Keep the number of **Scans** at **3**.
    f) Select **OK**.

3. Close all files and close Photoshop, and Bridge, if necessary.

Summary

In this lesson, you touched on the very basics of saving images for web and print. The important take-away is to be aware of what file format to use for your intended output and how to deal with issues of color and compression.

Have you printed photos in the past? Did you use a local printer, a kiosk printer, a commercial printer, or other source?

What web or print feature do you expect to take advantage of when outputting your images?

> **Note:** Check your CHOICE Course screen for opportunities to interact with your classmates, peers, and the larger CHOICE online community about the topics covered in this course or other topics you are interested in. From the Course screen you can also access available resources for a more continuous learning experience.

Course Follow-Up

In this course, you were introduced to the Photoshop environment and many of the features that make it a powerful image editor. With a focus on enhancing photographic images, this course gave you the knowledge and experience to use Photoshop tools to adjust, refine, and be creative with your own graphic images.

What's Next?

To build upon your skills and work with additional Photoshop tools, the next course in the series is *Adobe® Photoshop® 2020: Part 2*. In this course, you will work with Photoshop's advanced drawing and painting tools. In addition, you will learn the basics for automating tasks and creating a video in Photoshop.

You are encouraged to explore Photoshop further by actively participating in any of the social media forums set up by your instructor or training administrator through the **Social Media** tile on the CHOICE Course screen.

A | Mapping Course Content to Visual Design Using Adobe Photoshop CC 2019 Exam

Adobe is revising Creative Cloud certifications and plans to release updated exams in the first half of 2020.

Currently, through **Certiport.com**, Adobe offers the Adobe Certified Associate (ACA) certification program. Candidates who wish to obtain Adobe Certified Associate (ACA) - Photoshop certification must pass the associated exam.

To assist you in your preparation for the exam, Logical Operations has provided a reference document that indicates where the current exam objectives are covered in the Logical Operations *Adobe® Photoshop® 2020* courseware.

The exam-mapping document is available from the **Course** page on CHOICE. Log on to your CHOICE account, select the tile for this course, select the **Files** tile, and download and unzip the course files. The mapping reference will be in a subfolder named **Mappings**.

Best of luck in your exam preparation!

Mastery Builders

Mastery Builders are provided for certain lessons as additional learning resources for this course. Mastery Builders are developed for selected lessons within a course in cases when they seem most instructionally useful as well as technically feasible. In general, Mastery Builders are supplemental, optional unguided practice and may or may not be performed as part of the classroom activities. Your instructor will consider setup requirements, classroom timing, and instructional needs to determine which Mastery Builders are appropriate for you to perform, and at what point during the class. If you do not perform the Mastery Builders in class, your instructor can tell you if you can perform them independently as self-study, and if there are any special setup requirements.

Mastery Builder 1–1
Arranging Multiple Documents

Activity Time: 30 minutes

Data Files

C:\092013Data\Getting Started with Photoshop\toy.jpg

C:\092013Data\Getting Started with Photoshop\dog.jpg

C:\092013Data\Getting Started with Photoshop\girl.jpg

C:\092013Data\Getting Started with Photoshop\cat.psd

Scenario

You want to look at a few of your images to determine if any of them would make an interesting composite if combined. By arranging them on the Photoshop workspace, you hope to get a sense of which, if any, have a similar feel or theme.

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1. From the **C:\092013Data\Getting Started with Photoshop** folder, open the following files in Photoshop: **toy.jpg, dog.jpg, girl.jpg,** and **cat.jpg**.

2. Set the screen mode to **Full Screen Mode with Menu Bar**.

3. Float all the images and drag to rearrange them so that a portion of each one is visible.

4. Tile all the images vertically.

5. Tile **4-Up**.

6. Close the **toy.jpg** file.

7. Change the arrangement of the three remaining images by dragging and placing them on the workspace as desired.

8. Consolidate all back to tabs and then close the **girl.jpg** file.

9. View the remaining two images side by side to determine whether or not they would provide an interesting composite if combined.

10. Close all files.

Mastery Builder 2-1
Sampling Up Images

Activity Time: 30 minutes

Data Files

C:\092013Data\Creating Basic Images\man_and_boy1x1.jpg

C:\092013Data\Creating Basic Images\man_and_boy5x7.jpg

Scenario

To gain more experience modifying image size and resolution, you will experiment with a few images.

1. From the **C:\092013Data\Creating Basic Images** folder, open the files **man_and_boy1x1.jpg** and **man_and_boy5x7.jpg** in Photoshop and zoom to around 600% to see the actual pixels.

2. Display the **Image Size** dialog box for each file separately and record the pixel dimensions, document width and height, and resolution. Note that both files have a resolution of 300, but their document width and height differ.

3. In the **man_and_boy1x1.jpg** file, with **Resample** checked, change the document width to **7** inches. The height will automatically change to just less than 5 inches.

4. Record the pixel dimensions and resolution.

5. Display the resized file in actual pixels.

6. Arrange both files vertically to compare them for pixel quality and clarity. Although both images are relatively the same size and resolution, the image that was resized has lost pixel clarity because the same number of original pixels had to stretch to accommodate the larger document dimensions.

7. Close both files without saving changes.

Mastery Builder 3-1
Using Layers

Activity Time: 30 minutes

Data File

C:\092013Data\Managing Selections and Layers\ballerina.psd

Scenario

A friend has asked you to add text and color to a picture of her daughter from a recent ballet recital. She wants to frame it for her daughter's room.

1. Open **C:\092013Data\Managing Selections and Layers \ballerina.psd**.

2. Rename the layer *Jenny*.

3. Select the **Paint Bucket** tool and on the **Options** bar, set the **Tolerance** to *10*.

4. Select a vibrant color in the **Color Picker**.

5. Paint the background of the image. If the entire background does not get covered, use the **Paint Bucket** tool to add color to remaining background pixels.

6. Set a vertical guide to the 3-inch mark and a horizontal guide at the 1/2-inch mark.

7. Select the **Horizontal Type** tool. Set the font family to **Lucida Console**, the font size to **14 pt**, and the font color to **Black**.

8. Just below the intersection of the guides, type *Jenny's Recital*. If necessary, use the **Move** tool to move the text so that it all shows in the image.

9. On the next line, type *A Celebration*.

10. Save the file as **my_ballerina.psd** and close the file.

Mastery Builder 4–1
Cropping and Cloning

Activity Time: 30 minutes

Data File

C:\092013Data\Adjusting Images\house_on_lake.jpg

Scenario

You've taken a picture of the house you just bought and you notice that there are three different color walking paths: white, red brick, and gray asphalt. You want to see how the red brick would look replacing the gray asphalt, so you open it in Photoshop to try out the effect.

1. Open **C:\092013Data\Adjusting Images\house_on_lake.jpg**.

2. Make a duplicate layer, give it a name of your choice, and ensure it is the selected layer to work with.

> **Note:** Right-click the layer and select **Duplicate Layer**, then select **OK**.

3. Add a vertical guide at the 12 1/4-inch mark and a horizontal guide at the 5 1/2-inch mark.

4. Select the **Crop** tool and set crop options to **Clear aspect ratio values** and **Delete Cropped Pixels**.

5. Drag from the bottom up to the 5 1/2-inch guide, and then drag from the right to the 12 1/4-inch guide.

6. Commit the crop.

7. With the crop tool still selected, straighten the image and commit the crop.

8. Clear the guides.

9. Select the **Clone Stamp** tool and clone the dark gray path by using the pixels from the red brick path to replace the gray path with red brick.

10. Save the file as *my_house_on_lake.jpg* and close the file.

Mastery Builder 5–1
Refining an Image

Activity Time: 15 minutes

Data File

C:\092013Data\Refining Images\woman_smiling.jpg

Scenario

You took a picture of your sister for her modeling portfolio, but you are not satisfied with it. You want to make some refinements to make it look less washed out and more defined before showing it to her.

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1. Open **C:\092013Data\Refining Images\woman_smiling.jpg** in Camera Raw.

2. Experiment with the basic exposure, highlight, and shadow settings to see if you can improve upon them. Preview the before and after versions to see which looks best to you.

3. Experiment with the points curve and make any adjustments. Preview the before and after versions to see which looks best to you.

4. Continue to adjust settings until you are satisfied with the results.

5. Save it as *my_woman_smiling* and close Camera Raw.

Mastery Builder 6-1
Preparing Images for Different Formats

Activity Time: 30 minutes

Data File

C:\092013Data\Managing Files in a Production Workflow\girl_with_sunglasses.jpg

Scenario

You have decided to create a presentation of your photography work using Microsoft PowerPoint. In order to do so, you need to ensure that your photographs are saved in the right format.

1. Specify image settings for the web.
   a) Display the **girl_with_sunglasses.jpg** image in Photoshop.
   b) Select **File→Export→Save for Web (Legacy)**.
   c) In the **Save for Web** dialog box, select the **2-Up** tab.
   d) From the **Tools** panel, select the **Hand** tool and drag one of the image sections so that the girl's face is within the section boundaries.
   e) If necessary, click the left image pane to select it.
   f) In the upper right of the dialog box, display the **Preset** menu, select **JPEG High**, and note the size, quality, and download time at the bottom of the image pane.
   g) At the bottom of the left image pane, select the **Select download speed** icon ▾≡ to display its menu and review the download time options.
   h) Click the icon again to close the menu.
   i) Close the **Save for Web** dialog box.

2. Save for print.
   a) From the Photoshop **File** menu, select **Print**.
   b) In the **Photoshop Print Settings** dialog box, in the **Printer Setup** section, from the **Printer** drop-down list, select your printer.
   c) In the **Copies** text box, enter the number of copies.
   d) Select the desired layout.
   e) From the **Color Handling** drop-down list, select either **Printer Manages Colors** or **Photoshop Manages Colors**.
   f) If necessary, select a printer profile.
   g) From the **Rendering Intent** drop-down list, select your rendering option.
   h) If desired, enter a description in the **Description** text box.
   i) If desired, in the **Position and Size** section, check the **Center** position check box. Enter values for scale percent, height, and width.
   j) Select **Print**.

Solutions

ACTIVITY 2-2: Creating Visual Hierarchy by Using Design Elements

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2. **What changes could you make to the composition to create more visual interest?**

   A: Answers will vary, but can include changes such as rearranging images and elements, and changing fonts and colors.

3. **What element of design is used in the music notes, cassette tape, and CD that creates a more interesting design?**

   A: Answers may vary, but the consensus should be repetition.

4. **Notice that the lines have been changed. What do you think was the idea behind their revised composition/arrangement?**

   A: Answers will vary. The lines have been designed to give the impression of those seen on a sheet of music.

5. **What has been done to the type to make it a more dominant element on the page? Are there any other changes that could create the same outcome?**

   A: Answers will vary. The dominant element has been made larger. Other changes can include font style, adding effects, font color, and more.

6. **What other changes have been made to the replicated objects? How does this affect visual hierarchy?**

   A: Answers will vary. The replicated objects have been scaled to different sizes, creating a visual hierarchy across the bottom of the page.

7. **What changes have been made to the background, and how does this affect the overall design?**

   A: Answers will vary, but the general consensus should be that a gradient has been added to the background, creating a more appealing overall design as well as creating contrast and visual hierarchy.

8. How does the black background affect the word *MUSIC*? Do you think it stands out more or less? What would happen if the background was yellow?

   A: Answers will vary. The black background creates a contrast between it and the type, allowing it to stand out more. If the background was yellow, the type would be lost in the design.

9. Is there any "white space" in the design? Is there more or less than there was in the original design, and how does that affect it?

   A: Answers will vary. Although the gradient is an element, it does create white space, which becomes more apparent by the type being scaled down. The additional white space allows a simpler, less busy design that is easier for the viewer to read and therefore more effective.

ACTIVITY 2–3: Working with Digital Devices

1. In the digitizing process, what data does the camera capture that combines to produce the color channels of red, green, and blue?

   A: Grayscale data.

2. What camera component captures analog light and converts it to pixels?

   A: Charge coupling device, or image sensor.

3. Which camera setting makes changes to aperture and shutter speed to adjust for light?
   - ⦿ Exposure
   - ○ Shutter speed
   - ○ Depth of Field
   - ○ Aperture

4. Which camera setting determines the length of time (in seconds) that light is allowed into the camera lens?
   - ○ Exposure
   - ⦿ Shutter speed
   - ○ Depth of field
   - ○ Aperture

5. Which camera setting is an adjustable opening in the shape of an iris?
   - ○ Exposure
   - ○ Shutter speed
   - ○ Depth of field
   - ⦿ Aperture

6. Which camera setting determines the camera's focus?

- ○ Exposure
- ○ Shutter speed
- ◉ Depth of field
- ○ Aperture

7. What values are captured by a digital device?

- ◉ 0 and 1
- ○ 0 and 256
- ○ Red, green, blue
- ○ RGB and CMYK

8. What features are common to both digital cameras and scanners? (Select two.)

- ☐ Both have a static light source.
- ☐ Both can capture 3D images.
- ☑ Both have an image sensor.
- ☑ Both produce digital images.

ACTIVITY 5-3: Sharpening, Blending, and Changing Image Opacity

2. Is there any value to setting the Smart Sharpen effect values too high or too low?

A: Answers will vary. You can create special effects by exaggerating the settings.

ACTIVITY 6-3: Using Printer and Photoshop Color Management

2. When might it be useful to choose SMPTE-C, PAL/SECAM or SDTV NTSC?

A: Answers will vary, but the general consensus should be that because these are video formats, these choices are good for images that will be transferred to video. SMTE-C and SDTV NTSC are USA standards, and PAL/SECAM are European standards.

4. What is the purpose of the Hard Proofing setting?

A: Answers will vary. It is used to simulate what your final output will look like when printed on a printing press.

Glossary

Alpha channel
A channel in Photoshop that stores the transparency information of an image in grayscale mode and that can be used to protect an area of an image.

aperture
In a camera, a variable opening the shape of an iris inside a camera lens to allow light in.

bitmap
A graphical image made up of pixels. Raster images are bitmapped.

Camera Raw
The software program plug-in that is used to work with "raw" photographs—those that have unprocessed grayscale data.

channels
Grayscale images that store unique image information. In Photoshop, channels divide color images into components.

charge coupling device
An image sensor used in digital devices, such as cameras and scanners. It converts analog light into pixels.

CMYK
A color model that has four channels to represent color: cyan, magenta, yellow, and black.

color gamut
A specific spectrum of colors beyond those visible to the human eye. A color gamut is used to reconcile the range of colors that can be used in digital devices such as cameras, monitors, and televisions.

copyright
A legal statute that provides exclusive rights of ownership to distribute, reproduce, or license work.

exposure
In image editing, exposure is the overall brightness of an image.

histogram
A visual representation of values displayed in a graphical format. In Photoshop, a histogram plots the attributes of each pixel in an image.

interpolation
The resampling method that controls the amount of image data when there is an increase or decrease in pixel dimension.

layers
In Photoshop, layers act like sheets of transparencies, each with a unique design, that when overlapped create a composite image.

lossless
A file compression technique that does not reduce image detail or color information.

lossy
A file compression technique that reduces image detail and color information.

metadata
In graphic images, metadata is information about the image, such as file name, author, image size, image dimensions, date created, date modified, resolution, color mode, and more.

midtones
The middle tones between the black and white tones of an image.

opacity
The degree of saturation versus transparency. A 0 percent opacity is completely transparent; a 100 percent opacity is completely saturated.

pixelation
Image distortion that results from pixels being stretched as the result of a raster image being enlarged beyond its viewable size.

pixels
Tiny squares of color, or shades of gray, that together comprise an image.

ppi
(pixels per unit) The number of pixels that make up an image and determine image resolution.

predefined workspace
In Photoshop, job-focused workspace settings consisting of displayed toolsets and defined properties.

raster
A graphic image, also known as bitmap, that is made up of pixels occupying locations on a grid and having specific colors.

resampling
Controls the amount of image data when there is an increase or decrease in pixel dimension. Also known as interpolation.

resolution
The visual result of the amount of detail in an image, such as ppi for a graphic display, or dpi for printed material.

RGB
A device-dependent color model that uses three colors, or channels, to reproduce colors on screen.

sRGB
(standard RBG) The default color mode in Photoshop.

vector
A graphic type based on a mathematical formula that defines points, called vectors, along a shape or path.

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