Microsoft

Microsoft® Digital Image 2006

Standard Edition

Easily organise, enhance, and share your memories

User's Manual

Microsoft®

Digital Image® Standard

User's Manual

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Contents at a Glance

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1 Installation

Starting Setup

To install Microsoft Digital Image 2006 Standard Edition, you must be running Windows 98, Windows Millennium Edition, Windows 2000, or Windows XP or later. On Windows 2000 and Windows XP systems, you must have administrative privileges. For information regarding privileges, please refer to the operating system Help.

On most computers, Microsoft Digital Image setup will begin automatically when you insert the Microsoft Digital Image CD into your disk drive.

To begin automatic set-up:

1. Turn off any antivirus software that you're using, and close any programs that are running.
2. Insert the Microsoft Digital Image 2006 Standard Edition CD into your disk drive. The Installation Wizard begins automatically.

If the above procedure does not start the setup process, you can start it manually.

To begin setup manually:

1. Turn off any antivirus software that you're using, and close any programs that are running.
2. Insert the Microsoft Digital Image CD into your disk drive.
3. Click **Start**, and then click **Run**.
4. If your CD-ROM drive is listed as letter D, type *d:\setup.exe*.
   If your CD-ROM drive has a letter other than D, replace D with the correct letter when you type the path.
5. Click **OK**.
   The Installation Wizard begins.

Completing the Installation Wizard

The Installation Wizard will show you a series of dialog boxes that provide setup status and some installation preference options. For most users, the default preferences will be appropriate. Information about the different setup options is provided below.

Installation Folder Dialog Box

The Installation Folder dialog box allows you to choose where the program will be installed on your computer. To install the program to a folder other than the folder in the Installation folder box, do one of the following:

- Type a different path in the **Installation Folder** box.
- Click **Change**, select a folder in the **Change Installation Folder** dialog box, and then click **OK**.

Note that some files will be installed to the Program Files drive even if you choose to install the program to a different drive.

Installation Options Dialog Box

The Installation Options dialog box allows you to choose between Typical installation and Full installation.

- **Typical installation** takes up less space on your hard drive, and is recommended for most users. With Typical installation, you will have to insert the Microsoft Digital Image CD in your CD-ROM drive to use some of the projects and clip art while you are using the program.
- **Full installation** copies all of the Microsoft Digital Image projects and clip art to your hard drive, so you will not have to reinsert a Microsoft Digital Image CD while you are using the program. Look under Description for the disk space required for this option.

Special Circumstances

Upgrading from a Different Microsoft Digital Image Product

If you already have a Microsoft Digital Image product installed on your machine, any one of several situations may occur when you try to install another Microsoft Digital Image product:

- **Previous versions** If you have a Microsoft Digital Image product previous to the 2006 edition already installed, installing a 2006 product will make both programs available on your computer.
- **Upgrade from another 2006 product** You can install a Microsoft Digital Image 2006 product that has more features than a 2006 product already installed. The version of Microsoft Digital Image with fewer features will be uninstalled automatically before the new installation begins. Your pictures and projects will not be deleted.
- **Blocked downgrade** If you have a Microsoft Digital Image 2006 product installed, you will not be able to automatically install a 2006 product with fewer features. To install the version with fewer features, you must first uninstall the version with more features.

Reinstalling or Removing Microsoft Digital Image

If you are having problems running Microsoft Digital Image, reinstalling the program may help it to run better on your computer.

You should not attempt to remove Microsoft Digital Image by deleting the program files from your hard disk. Instead, use the Microsoft Digital Image Installation Wizard to properly uninstall the program.

To remove or reinstall Microsoft Digital Image on Windows XP:

1. Log on to the computer as an administrator.
2. From the Windows **Start** menu, click **Control Panel**.
3. Click **Add or remove programs**.
4. From the list of installed programs, click the version of Microsoft Digital Image you want to remove or reinstall.
5. Click **Change/Remove**.
   The Installation Wizard opens.
6. Follow the instructions on the screen.

To remove or reinstall Microsoft Digital Image from Windows 98, Windows 2000, or Windows Millennium Edition:

1. From the Windows **Start** menu, point to **Settings**, and then click **Control Panel**.
2. Click **Add/Remove Programs**.
3. From the list of installed programs, click the version of Microsoft Digital Image you want to remove or reinstall.
4. Click **Add/Remove**.
   The Installation Wizard opens.
5. Follow the instructions on the screen.

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2 Welcome to Microsoft Digital Image Standard

Congratulations on your purchase of Microsoft Digital Image Standard. It is actually composed of two programs: Microsoft Digital Image Standard Editor and Microsoft Digital Image Standard Library.

Microsoft Digital Image Standard Editor provides editing features such as selection tools, red eye removal, and colour and contrast adjustments to help you get professional editing results quickly and easily. When you've finished editing your photos, it's a simple process to create prints or share your pictures through e-mail.

Microsoft Digital Image Standard Library is a powerful tool for organising, finding, and viewing your pictures. You can use the program to locate your pictures using folders or by browsing labels, flags, and ratings. You can view your pictures with the Library's full-screen slideshow viewer.

What You'll Find in This Book

The Microsoft Digital Image User's Manual introduces you to some important features in Microsoft Digital Image: how to get images into the program, edit images, add effects and borders, create projects, and print.

This book also provides an overview of some of the most important concepts of digital imaging.

The final section of this book offers a selection of articles on digital photography with plenty of sound advice from professional photographers.

Other Helpful Resources

This User's Manual is not an exhaustive resource for everything you can do in Microsoft Digital Image. For step-by-step instructions about all of the program's features and projects, check out the online Help system, available from the Start-up Window or the Help menu. Or, for a demonstration of some of Microsoft Digital Image's key features, watch one of the Demonstration Videos.

Digital photography is exciting and fun, and Microsoft Digital Image makes it easy to get professional results. We're confident that Microsoft Digital Image will be an enjoyable part of your digital-imaging experience.

3 Opening and Importing Pictures

Microsoft Digital Image makes it easy to import and open your pictures quickly. To import pictures from your camera or removable media to your computer, use the Import Pictures Wizard. This wizard is designed to streamline the file transfer process, allowing you to name the picture files and destination folder. To open pictures for editing, use the file browser. The file browser displays thumbnails of all your pictures, so you can quickly choose the ones you want.

Importing Pictures

The Import Pictures Wizard is a convenient way to transfer pictures and video clips from your digital camera, scanner, flash memory card, or some other storage location to your computer.

Launching the Import Pictures Wizard automatically

Windows Millennium Edition and Windows XP can automatically detect compatible cameras and other photo media such as photo CDs. This detection should occur when you:

- Connect a compatible camera to the computer and turn on the camera.
- Connect a compatible scanner to the computer and turn on the scanner.
- Connect a compatible card reader to the computer and insert media.
- Insert a photo CD, DVD, or other storage media into a drive on the computer.

This automatic detection feature is only available on computers running Windows Millennium Edition or Windows XP.

To set Windows to launch the Import Pictures Wizard automatically:

1. Connect your compatible camera, scanner, or other device to the computer, and then turn on the camera or device.
   - or -
   Insert the removable media into a drive or card slot on the computer.
2. When Windows detects the picture files, Windows will ask you what you want to do with the pictures.
3. Click **Import pictures to my computer using Microsoft Digital Image Import Wizard**.
4. Check **Always do the selected action**.
5. Click **OK**.
6. Click the device you want to use, and then click **OK**.

Starting the Import Pictures Wizard manually

If Windows does not automatically detect your device or other media, you can start the Import Pictures Wizard manually.

To start the Import Pictures Wizard manually:

1. Start Microsoft Digital Image.
2. On the **File** menu, click **Import Pictures**.
3. Click the device you want to use, and then click OK.

- or –

1. Start Microsoft Digital Image Library.
2. On the **File** menu, click **Import Pictures and Videos**.
3. Click the device you want to use, and then click OK.

Opening Pictures for Editing

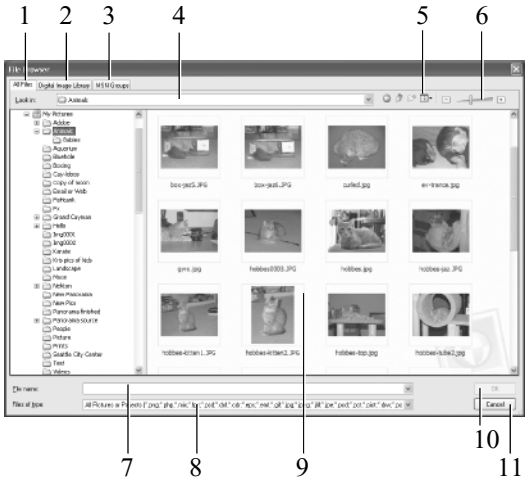
With Microsoft Digital Image, you can open pictures for editing from a variety of sources, including your computer, storage media, and most cameras and scanners.

Using the file browser

You can use the file browser to locate your pictures and open them for editing. The file browser can be used to open pictures from a large number of locations, including the following:

- The hard drive on a computer.
- An external hard drive.
- A digital camera that is a USB Mass Storage Class device. (A USB Mass Storage Class device works as a "virtual drive," letting you browse and open photos from the device as you would from a hard disk or floppy disk.) Although you can open pictures from a camera in this way, you will probably prefer to use the Import Pictures feature.
- A card reader.
- A USB drive.
- A photo CD or DVD.
- A floppy disk.
- A network location.

This picture identifies the main features of the file browser:



1. **All Files tab** Click the **All Files** tab to view the folder structure on your computer. Click a folder to display its contents and subfolders. The folder structure includes internal and external drives on your computer, including disk drives, card readers, and USB Mass Storage Class digital cameras.
2. **Microsoft Digital Image Library tab** Click the **Microsoft Digital Image Library tab** to find any picture you have catalogued in the Library. You can also use the Library's View By and Group By features to make it easier to find the pictures you want.
3. **MSN Groups tab** Click the **MSN Groups** tab to open pictures that you have stored on MSN Groups.
4. **Look in box** Displays the name of the current folder selected on the **All Files** tab.
5. **View menu** Use this menu to change the way the image files are displayed.
6. **Thumbnail size slider** Move the slider to change the size of the thumbnails.
7. **File name box** Displays the file name of a selected thumbnail.
8. **Files of type menu** Use this menu to change the types of image files to be displayed.
9. **Thumbnails** Small versions of your photos stored in the current folder.
10. **OK** Opens the selected thumbnails.
11. **Cancel** Closes the file browser without opening any photos.

File formats compatible with Microsoft Digital Image

Microsoft Digital Image can open photo files in any of the following formats:

- Adobe Photoshop (.psd)
- Enhanced Metafile (.emf)
- EPS (.eps)
- FlashPix (.fpx)
- GIF (.gif)
- Home Publishing (.php)
- JPEG (.jpg)
- Kodak Photo CD (.pcd)
- PC Paintbrush (.pcx)
- Picture It! (.png, .php, .mix, .fpx)
- PNG (.png)
- TIFF (.tif)
- Targa (.tga)
- Windows Bitmap (.bmp)
- Windows Metafile (.wmf)

To open pictures with the file browser:

1. If opening pictures from a USB Mass Storage Class camera, read your camera's documentation and make sure that you have installed the camera's software and drivers properly. Make sure your camera is turned on and connected to your computer.
2. On the **File** menu, click **Open**.
3. Click the **All Files** tab.
4. In the **Look in** list, click the drive, folder, or network location that contains the picture you want to open.
5. In the folder list, locate and open the folder or location that contains the pictures.
   Thumbnails of pictures in that folder appear in the right pane.
6. Select the picture you want to open. To select multiple pictures, press CTRL as you click the thumbnails.
7. Click **OK**.

Opening pictures from other cameras

If your camera does not show up as a drive in the file browser, it is probably designed to work using TWAIN or WIA support. For many cameras, Microsoft Digital Image works with TWAIN and WIA and your camera's software so that you can open photos directly into Microsoft Digital Image.

To open photos from a camera that uses WIA support:

1. Make sure that you have installed all the drivers that came with your camera.
2. Connect your digital camera to your computer, and then turn on the camera.
3. On the **File** menu, click **Import Pictures**.
4. If more than one device appears in the dialog box, click the one that represents your camera.
5. Click the pictures you want to import. If you want to import more than one picture, press CRTL as you click the pictures.
6. Click **Next**.
7. The pictures are copied to the My Pictures folder on your hard drive.

Using your camera's software

Some digital cameras—especially older models—may not function as a virtual drive or be TWAIN or WIA compliant. For these cameras, use the software provided by the camera to download the photos to a folder on your computer. Then open them with the file browser.

Troubleshooting tips for opening pictures from a camera

- Your camera must be connected and turned on before you start the digital camera task, or it will not appear in the list of cameras and drives.
- If you've connected your digital camera to your computer, but can't see your pictures, make sure the connections are secure, the camera is turned on, and the batteries are charged. The camera might not start downloading if its batteries are low on charge. Some cameras are equipped with an A/C adapter that you can use instead of batteries.
- If your camera does not appear in the list of cameras and drives, or if you receive an error message when you click **Download**, start your camera software from the operating system **Start** menu.
- For more information about downloading photos using the software included with your camera, consult your camera's manual.

Opening pictures from a scanner

Microsoft Digital Image supports two types of scanner formats: TWAIN and WIA. If your scanner doesn't use a TWAIN or WIA interface, you need to use the software designed specifically for the make and model of your scanner. Many scanner manufacturers provide free updates to their drivers on the Web.

To connect your scanner

1. Install the software that came with your scanner.
2. Turn off your scanner and computer.
3. Attach the connector cable from your scanner to your computer.
4. Turn on your scanner and computer.

Once the scanner is connected and recognised by your computer, you're ready to scan.

About TWAIN and WIA

TWAIN is interface software that allows communication between a camera and your computer. Many digital cameras come with a TWAIN driver.

WIA is a newer interface that works similarly to TWAIN, but often provides more control over the device. WIA is compatible with TWAIN, but is only available on some computer operating systems.

To scan a photo with a flatbed TWAIN or WIA scanner:

1. Connect your scanner to your computer, and then turn on the scanner.
2. Place your picture on the scanner.
3. On the **File** menu, click **Import Pictures**.
4. If more than one device appears in the dialog box, click the one that represents your scanner.
5. Depending upon the type of scanner you have, you will either see the **Scan Picture** pane or the **Import Pictures Wizard**.

If you see the **Scan Picture** pane:

1. Select your scanner from the list.
2. Choose the **Automatic Scan** option from **Click a scanning method**.
3. Click **Scan**.

If you see the Import Pictures Wizard:

1. If you want to immediately open the scanned picture for editing, click **Open the picture for editing**.
2. Click **Next**.
3. Select a place on your hard drive where the scanned picture will be stored and specify a file format. The default JPEG format is usually an excellent choice for scanned pictures.
4. Select a scanning method. Most of the time, you should choose **Automatic Scan** to get a high quality, colour picture.
5. Click **Next**.

Can this photo be printed?

To find out if a photo has enough resolution to print, see the "Selecting a Print Size" section of the "Saving and Printing Pictures" chapter.

Opening a Photo Sent Through E-mail

Many friends and family members enjoy sending photos through e-mail. When you receive photos through e-mail, you can save them to your computer and then work on them with Microsoft Digital Image.

Many photos sent through e-mail are low-resolution photos, which are not suitable for large prints. But low-resolution photos may be fine for online viewing or printing at small sizes.

To open a photo sent through e-mail:

Use your e-mail program to save the photo to a folder on your computer. Save the photo to a folder that will be easy for you to locate later, such as the My Pictures folder.

1. In Microsoft Digital Image, click **Open** on the **File** menu.
2. The **File Browser** dialog box opens.
3. Click the **All Files** tab.
4. On the **All Files** tab, browse to the folder containing the photo, and then click the folder.
5. Select the photo, and then click **Open**.

Opening a Picture from a Web Page

When you surf the Internet, you may come across pictures that you would like to use in your projects. Unless the Web site uses image protection, you can capture these images and use them for your own projects. Keep in mind, though, that even unprotected pictures may still have a copyright and you should have the permission of the Web site owner before saving and using pictures you find. Also, Web pictures are usually low resolution, so they may not be suitable for printing. But you could still use the images in a project to be viewed online.

To open a photo from a Web page:

1. Make sure that both Microsoft Digital Image and your Web browser are open and running on your computer.
   A button for each program appears in the taskbar at the edge of your screen.
2. On the taskbar, click the button for your Web browser program.
3. In your Web browser, locate the Web page that contains the picture you want.
4. Right-click the picture, and then click **Copy**.
5. On the taskbar, click the button for Microsoft Digital Image.
6. On the Microsoft Digital Image **File** menu, click **New**.
7. Select a canvas size, and then click **Done**.
   A blank canvas opens in the workspace.
8. On the Microsoft Digital Image **Edit** menu, click **Paste**.
   The new picture appears on the canvas.

Once the photo is opened in Microsoft Digital Image, you can edit it as you would any other photo and save it to your computer.

Watch for copyrights

Pictures you see on the Web may be copyrighted, so be sure to read the site's legal information or get permission from the site's owner before you use an image.

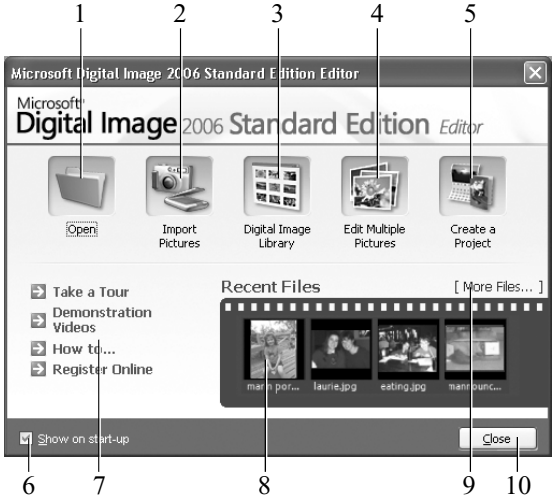
4 Microsoft Digital Image Basics

This chapter covers some of the fundamental aspects of Microsoft Digital Image that you'll need to get started. You'll find information on the Start-up Window, the work area, basic image manipulation, applying text, and Help resources.

Start-up Window

The Start-up Window is a quick launching point to your pictures, Mini Lab, projects, the Library, recently opened files, and Help.

By default, the Start-up Window opens every time you start Microsoft Digital Image. After closing the Start-up Window, you can open it at any time from the main work area by clicking the **Start-up Window** button in the Common Tasks list. This diagram points out the main features of the Start-up Window.

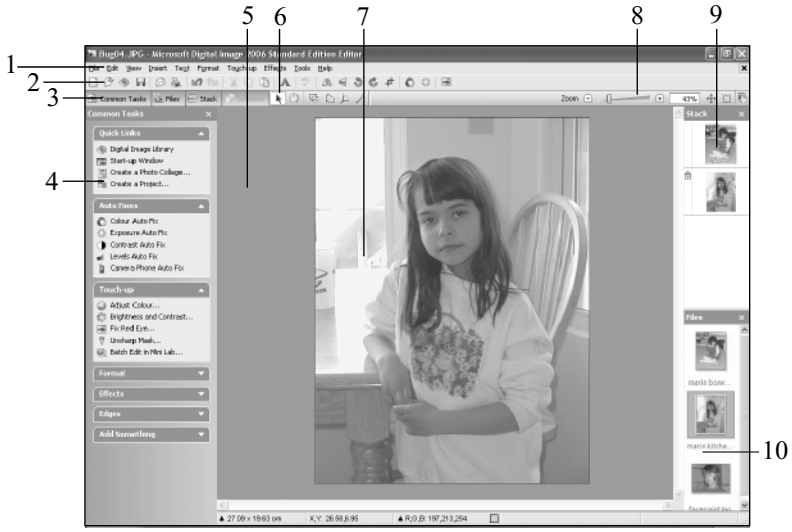


1. **Open** Click this button to open the file browser, where you can open photos from your hard drive, a network drive, a digital photo card reader, a CD or DVD, or a floppy disk.
2. **Import Pictures** Click this button to import one or more pictures from a digital camera, scanner, or other external storage device.
3. **Microsoft Digital Image Library** Click this button to open the Library, where you can find and organise your pictures.
4. **Edit Multiple Pictures** Click this button to open the Mini Lab. The Mini Lab helps you perform routine editing tasks—such as rotating, resizing, or adjusting colours—on multiple pictures at the same time.

5. **Create a Project** Click this button to pick a project design. You'll find a variety of projects—such as calendars, greeting cards, and album pages—designed to work with your photos. Projects are organised by type and by theme.
6. **Show on start-up checkbox** Select this check box to have the Start-up Window open every time you start Microsoft Digital Image.
7. **Help links** Click these links to go directly to resources that can help you get the most out of Microsoft Digital Image and digital imaging.
   - **Take a Tour** launches the product Tour.
   - **Demonstration Videos** displays links to the different videos available.
   - **How to…** displays a collection of image-editing lessons.
   - **Online Photo Tips** links you directly to the digital photography section of the MSN Photos Web site.
   - **Register Online** links you to the registration page of the Microsoft Web site.
8. **Recent Files** See thumbnails of the last four pictures that you have edited. Click on one of the thumbnails to open that file.
9. **More Files** Click this button to open the file browser, where you can open pictures from your hard drive, a network drive, a digital photo card reader, a CD or DVD, or a floppy disk.
10. **Close** Click this button to close the Start-up Window and go to the main work area.

Examining the Work Area

Most of the picture-editing tasks you perform in Microsoft Digital Image will be in the main work area. When you open Microsoft Digital Image and close the Start-up Window, you see the main work area. The picture below identifies the key elements of the Microsoft Digital Image work area.



1. **Menus**
   Menus provide access to all of the Microsoft Digital Image features. The Help menu gives you access to the Help window, the Demonstration Videos, and the Microsoft Digital Image Tour.
2. **Toolbar**
   The toolbar contains shortcut buttons for single-click access to some of the most common commands. To see the name of a toolbar button, hover the mouse pointer over the button.
3. **Workspace Toolbar**
   This toolbar contains buttons for the Common Tasks list, Stack, and Files palette. You can create more room in the workspace by hiding any of these tools.
4. **Common Tasks list**
   The Common Tasks list is an easy way to locate features. This list provides convenient access to some of the most common tasks, as well as single-click access to the Mini Lab, project selector, and the Start-up Window. All of the features found in the Common Tasks list—as well as additional features—are also available in the menus.

5. **Workspace**
   The grey area represents the workspace, the area that the canvas sits within. You can use the zoom controls to magnify or reduce the canvas so that it covers more or less of the workspace.
6. **Selection Tools**
   The selection tools allow you to isolate and work on a specific part of the picture.
7. **The canvas**
   The white area is called the canvas, and it represents the printable area of the page. When you open a picture, the canvas is often not visible since it is covered entirely by the picture. You can use the zoom controls to magnify or reduce the canvas so that it covers more or less of the workspace.
8. **Zoom controls**
   The zoom controls magnify or reduce your photo so that you can see it in more or less detail.
9. **Stack**
   The Stack displays a thumbnail of each object in your picture. You can rearrange the order of the objects by dragging thumbnails up or down within the Stack.
10. **Files palette**
    The Files palette displays a thumbnail of all of the currently open pictures. You can switch your active picture by clicking a thumbnail in the Files palette. You can also add a picture to the one you're working on by dragging the thumbnail from the Files palette to the canvas.

Image Formatting

When you have a picture open on the canvas, there are a number of ways to re-size or re-orient it.

Changing picture size

When you open an image onto the canvas, the on-screen representation of the image is automatically sized so that it fills the workspace. As a result, a high resolution image, such as 1600 x 1200 pixels, will appear onscreen just the same size as a low resolution image that's only 640 x 480 pixels. For this reason, viewing a picture on the canvas is not a reliable way of judging an image's actual resolution.

Whenever you resize an image, consider these three factors:

- *Image size*, which is the size of the printed image.
- *Pixel dimensions*, which is how many coloured dots (pixels) make up the picture.
- *Resolution*, which is the density of the pixels in the picture.

The image size is the product of the pixel dimensions multiplied by the resolution. For example, if you have a picture made of 1200 x 1800 pixels and print it at a resolution of 300 pixels per inch, it will print at a size of 4" x 6". Given this relationship, if you change one of the three settings, one of the other settings will also have to change to keep the relationship equal. If you enlarged the picture in the previous example from 4" x 6" to 8" x 12"—and you kept the pixel dimensions the same—then the resolution would decrease from 300 pixels per inch to 150 pixels per inch.

When you resize a picture, it is generally not a good idea to try to increase or decrease the pixel dimensions since this reduces image quality. In most cases, it's not necessary to adjust the image size, since that can be handled automatically during printing. For high-quality prints, it's generally good to keep the picture's resolution at least 300 pixels per inch. But depending on you printer model and the image quality you desire, you may be satisfied with prints at only 150 pixels per inch. For Web use, 72 pixels per inch is usually considered sufficient.

To resize a picture:

1. On the **Format** menu, click **Resize Image**.
2. Click one of the following to lock the setting:
   - **Image size**
   - **Pixel dimensions**
   - **Resolution**
3. Enter amounts for the settings you want to change.
4. Click **Done**.

Applying Text

You can add text to any picture and easily change the text font, font colour, font size, alignment, and emphasis. You start by adding a text box, and then you edit the text in the box. A text box is its own layer on the Stack.

To add text:

1. On the **Text** menu, click **Insert Text**.
   A text box appears.
2. Type your text. As you add text, the text box will automatically expand vertically to fit all of your text.
3. To change the width of the text box, select the text box and drag one of the side resize handles.
4. To move the text box, select it, hover the mouse pointer over the edge of the text box until the move handle appears, and then drag the move handle.

Once you've added the text, you can select the text to edit it. You can also select the text and use the toolbar buttons to change formatting. When text is selected, the following tools are available on the toolbar for formatting:

- **The Font menu** 

lets you choose between 140 different fonts.
- **The Font Size menu** 

lets you choose font sizes from 8 to 620 points.
- **The Font Colour button**  lets you choose from a standard palette of colours or choose a custom colour.
- **The Bold button**  adds bold formatting to the text.
- **The Italic button**  adds italic formatting to the text.
- **The Underline button**  underlines the text.
- **The Alignment button**  has menu choices for Left, Right, Centre, and Justify.
- **The Bullets and Numbers button**  lets you apply or cancel formatting for bulleted or numbered lists.

Accessing Help from the keyboard

You can access the online Help system at any time by pressing F1 on the keyboard.

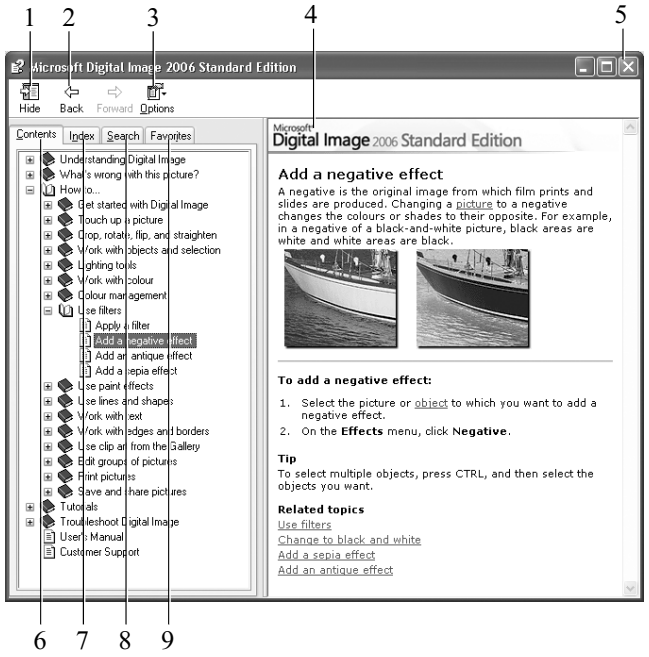
Help Resources

There are multiple ways that you can learn more about using Microsoft Digital Image. In addition to this User's Manual, there is the online Help system, the product Tour, and Demonstration Videos. The following sections describe the types of information available.

Online Help

Microsoft Digital Image online Help is the most comprehensive of the Help resources. It provides step-by-step instructions, overviews, troubleshooting topics, technical support, and the "What's wrong with this picture" diagnostic tool. Help includes several ways to find information, including a table of contents, a keyword index, and a full-text search of all Help topics.

This diagram identifies the main features of the Help window.



1. **The Show/Hide button** Click this button to expand or collapse the left pane of the Help window.
2. **The Back button** Click this button to go back to the last Help topic.

3. **The Options menu** This menu has options to print a topic or to set options such as **Internet Options**, where you can change the font size in the Help window.
4. **The Content Pane** Displays the current Help topic.
5. **The Close button** closes the Help window.
6. **The Contents tab** displays the Help table of contents.
7. **The Index tab** lets you find keywords in the index list.
8. **The Search tab** finds topics that contain words that you enter.
9. **The Favourites tab** lets you save topics for quick access later.

To access online Help:

1. On the **Help** menu, click **Microsoft Digital Image Help**.

Using the table of contents

You can use the table of contents to locate information by subject. The table of contents is a useful way to see all of the features available in each category of features.

To use the table of contents:

1. In the left pane of the Help window, click the **Contents** tab.
2. To expand a book in the contents, click the plus sign next to it.
3. To display a topic, in the contents list, click the topic title.

Using the index

You can use the index when you are looking for information about a specific term or keyword.

To use the index:

1. In the left pane of the Help window, click the **Index** tab.
2. In the **Type in the keyword** to find box, type the word you want to find.
3. In the results list, select the word you want to find, and then click **Display**.

Using the search

You can use the search function to find all the topics in Help that contain a word or combination of words.

To use the search:

1. In the left pane of the Help window, click the **Search** tab.
2. In the **Type in the keyword to find** box, type the word for which you want to search, and then click **List Topics**.
3. In the **Select topic to display** list, select the topic you want to view, and then click **Display**.

Product Tour

The Microsoft Digital Image Tour uses pictures, animations, and text to demonstrate the most popular and useful features of the program.

To take the product tour:

1. On the **Help** menu, click **Take a Tour**.
   The Tour opens, displaying icons to represent different categories of features.
2. Click an icon.
   A feature list appears on the left side of the window.
3. Click a feature.
   Graphics and text appear that explain the feature.
4. Repeat steps 2-4 to learn about more features.
5. To close the Tour, click **Close**.

Demonstration Videos

Demonstration Videos use animation and narration to show you how to use a variety of image-editing features on your photos.

To watch a Demonstration Video:

1. On the **Help** menu, click **Demonstration Videos**.
   The Help window opens to a topic about Demonstration Videos.
2. Click a video title link.
   The Video player opens and the Video begins.

The Demonstration Videos are accompanied by complete, online tutorials that let you walk through the tasks at your own pace. To open the online tutorial, click the **Written Tutorial** button on the Video player.

Technical Support

The type of Technical Support resources available vary based on where you live and how you obtained your Microsoft Digital Image product.

To view Technical Support information:

1. On the **Help** menu, click About Microsoft Digital Image 2006 Standard Edition.
2. Click **Tech Support**.

5 Basic Touch-up

Almost all pictures can be improved with basic touch-up tools. Microsoft Digital Image touch-up tools can be used to correct common problems such as red eye, crooked pictures, lighting problems, or similar distractions that can ruin a photo. In many cases, Microsoft Digital Image helps you eliminate basic problems with just a few clicks.

Adjusting Brightness and Contrast

When you take a photo with an automatic camera, the camera's automatic exposure feature measures the available light and determines how much light is required to take the photo. Sometimes, the exposure meter's measurement is slightly too low or too high, creating problems with brightness and contrast in the photo. Microsoft Digital Image provides tools to fix the levels of brightness and contrast.

To correct brightness and contrast:

1. On the **Touch-up** menu, click **Brightness and Contrast**.
2. Click **Exposure auto fix**.
3. If you are not satisfied with the results, fine-tune the settings with the **Brightness and Contrast** sliders.
4. Click **Done**.

The picture on the left is both too dark and too low contrast. The Exposure auto fix tool was applied to the version on the right, correcting both the brightness and contrast levels.

Making a copy to touch up

Never edit your only copy of a picture. Always make a copy or choose **Save As** to save the edited file with a different name. If you aren't satisfied with the results, you can always start again from the original.

Setting the white balance on a digital camera

Many digital cameras allow you to set the white balance for specific types of light, such as sunlight, incandescent, and flash. Using this feature can help reduce tint problems in your pictures.

Zooming in to find white

If there are no significant areas of white in your photo, use the zoom controls to magnify the picture on the screen. When you zoom in, you might be able to use a very small area of white, such as the whites of a person's eyes.

Correcting a Colour Cast

When you take photographs, the source of the light can create a coloured cast in the photo. We tend to think of light being white, but nearly every light source has its own unique colour. For example, natural sunlight has a large component of blue in it, while incandescent (tungsten) lights—including most household light bulbs—give off a reddish or yellowish cast.

When taking a photo, you can compensate for these different colours of light by setting the white balance (with a digital camera), or by using special filters (on a film camera). But if you still end up with a cast in your photos, use the Adjust Colour tool to correct the balance of colours to make the lighting look more natural. Using this tool, you locate a point that should be white, and then Microsoft Digital Image balances all of the colours in the picture based on the white point you set.

If you have already used the Levels auto fix tool, the tint problems in the picture may already be corrected. Use the Adjust Colour tool to make additional adjustments to the tint.

To adjust colour:

1. On the **Touch-up** menu, click **Adjust Colour**.
   The mouse pointer becomes an eyedropper.
2. With the eyedropper, click an area in the picture that should be grey or neutral—in other words, not too colourful, too dark, or too light.
   Microsoft Digital Image automatically corrects the colours.
3. If you are not satisfied with the results, use the **Colour Balance** sliders for fine-tuning.
4. Click **Done**.

Fixing Red Eye

Using your flash in low-light situations can give your subjects red, unnatural-looking eyes. The Fix Red Eye tool darkens the red spots in the eyes to reduce or eliminate the redness.

To fix red eye:

1. On the **Touch-up** menu, click **Fix Red Eye**.
2. Use the pan and zoom controls to magnify your picture and focus on the red eyes in the photo.
3. Click the red part of the eyes. You can click up to two eyes at once.
4. Click **Fix selected red eyes**.
   The redness in the eyes is removed.
5. Repeat steps 3 and 4 until the red is eliminated.
6. Click **Done**.

Straightening a Picture

If you took a photograph while unintentionally holding the camera at an angle, the horizon or other straight lines will appear tilted. This tilt can be a distraction in the picture, but is easily fixed with the Straighten Picture tool.

The Straighten Picture tool rotates the picture to make the horizon level.

To make the horizon level, the Straighten Picture tool rotates the picture on the canvas. When rotated, part of the picture overlaps the edge of the canvas, and these areas would be removed during printing. The rotation also creates empty areas at the corners of the canvas. Fortunately, these problems are solved by the Auto Crop feature which is part of the Straighten Picture tool. After you straighten the picture, Auto Crop trims the edges of the picture so that it becomes aligned with the canvas.

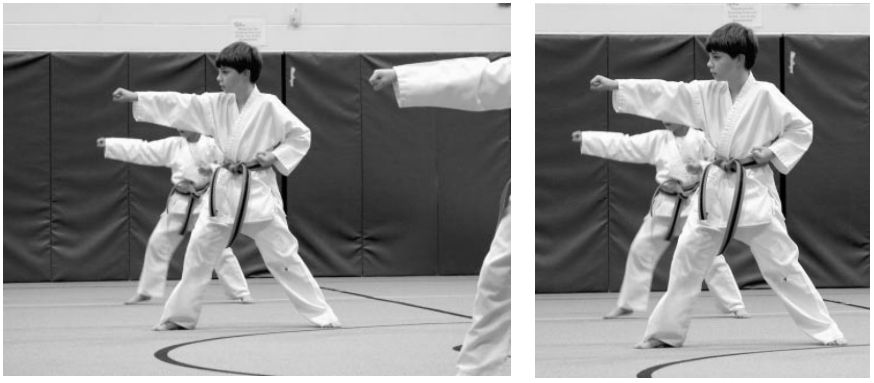
To straighten a picture with Auto Crop:

1. On the **Format** menu, point to **Straighten Picture**, and then click **Canvas**.
2. Identify a line in the picture that should be straight (such as the horizon), and then click one end of the line.
3. Click the other end of the line.
   The picture is automatically straightened.
4. Make sure the **Auto Crop** check box is selected.
   The area of the picture that will be cropped is shown in lightened colour around the edges.
5. Click **Done**.

Cropping

Cropping is an easy way to improve the composition of a photograph. For example, if your picture has distracting background elements along the top, bottom, or side, you can crop away these parts of the background to focus the attention on the subject.

When you crop a photo, you are removing pixels, and therefore lowering the effective resolution (although the dots per inch will stay the same). If you crop a significant portion of the original, you're limiting the extent to which you will be able to enlarge the picture for printing. This is why it's better to compose the picture as best you can when you take it, rather than relying on heavy cropping later.



Cropping a picture allows you to eliminate distractions and improve the composition.

Cropping your picture to a specific proportion lets you control exactly where the picture will be cut. Otherwise, if your picture is not the same proportion as the print size, some of the picture might be trimmed during printing to fit into the printable area of the page.

Using the rule of thirds

When composing a photograph, many beginning photographers consistently centre their subject directly in the middle of the frame. While this technique may be the easiest way to get the subject in focus with a point-and-shoot camera, it is not always the most interesting way to present the subject.

Most advanced photographers follow the *rule of thirds* when composing the space inside a picture frame. The rule of thirds is used throughout the graphic design world, because it helps to create balance between the subject and the background. When you compose a picture according to the rule of thirds, you mentally divide the frame into thirds both horizontally and vertically (imagine a noughts and crosses grid), and place the point of interest on one of the four spots where the lines intersect.

If the photo includes a person or animal, you can place the face on one of the four points, looking towards the centre of the scene. If the photo includes the horizon, it should run about one-third from the top or one-third from the bottom, depending on whether the terrain or the sky is the centre of focus.

The cropped picture is a more interesting composition because it follows the rule of thirds.

To crop a photo using the rule of thirds:

1. On the **Format** menu, point to **Crop**, and then click **Canvas**.
2. Under **Select a proportion**, click a proportion.
3. Select the **Show guidelines for the rule of thirds** check box.
4. Click a starting point on your photo, and then drag the outline to the opposite corner of the area to be cropped.
   The guidelines show the cropped area divided into thirds vertically and horizontally.
5. Move and resize the cropped area so a focal point in the picture is positioned at one of the intersections of the guidelines.
6. Click **Done**.

6 Advanced Photo Editing

After you have done general touch ups to your pictures, you may want to use advanced editing tools for more precise editing or to apply special effects. The selection tools and multiple-object composites give you the power to edit very specific areas of your pictures. You'll also be able to transform your pictures with filters, colour and edge effects, and specialised editing brushes.

Understanding Objects

For many advanced photo-editing tasks, you'll need to understand the concept of *objects*. An object is a part of a picture that can be edited individually. For example, when you add text to a picture, the text is a separate object from the background image. When you edit the text—say, making the font colour red—the background picture remains unchanged because it is a separate object.

Working with Composites

A picture that contains multiple objects is called a *composite*. The Stack helps you work with composites by displaying each object separately. Using the Stack, you can easily select any object. Make sure the Stack is showing in the workspace when you are working with composites.

To show the Stack:

1. On the **View** menu, click **Stack**.

On the Stack, you'll see a thumbnail representation of each object in the composite. The top thumbnail represents the object that is the top layer in the composite. The bottom thumbnail represents the background object in the composite. Thus, the object that is lowest in the Stack may be at least partially obscured in the composite by the objects on top of it.

You can change the order of the objects in the composite by dragging thumbnails up and down the Stack. For example, dragging an object's thumbnail from the lowest position on the Stack to the top position will bring it to the foreground of the composite.

Locked Objects

When you open any single-object picture, such as a picture you have taken with your digital camera, the picture will, by default, be *locked* to its position on the canvas. When an object is locked to the canvas, the Lock icon is shown next to that object's thumbnail on the Stack. This Lock icon indicates that you will not be able to drag the object around on the canvas.

To lock or unlock an object:

1. Right-click the object's thumbnail on the **Stack**.
2. Click **Lock** or **Unlock**.

Selecting Objects with the Object Tool

The *Object tool* allows you to select one or more whole objects at a time. With the Object tool, you can move, resize, and rotate selected objects by dragging the object on the canvas or using the resize handles.

Each time you start Microsoft Digital Image, the Object tool will be selected by default. You will be able to accomplish many different editing tasks by using the Object tool as your only selection tool. Unlike the other selection tools, the Object tool does not have an options palette.

To select an object with the Object tool:

1. Make sure that the **Stack** appears in the workspace.
2. Click the **Object Tool** button on the toolbar.
3. On the **Stack**, click the object.

When an object is selected with the Object tool and not locked to the canvas, *object handles* are displayed around the perimeter of the selection. Object handles are yellow circles that you drag to resize and rotate the object.

To move, resize, or rotate an object with the Object tool:

1. Select the object with the Object tool as described above.
2. If the selected thumbnail has the Lock icon displayed, right-click the thumbnail, and then click **Unlock**.
3. To move the selection, hold the cursor over the object until the move handle appears, and then drag the object on the canvas.
4. To resize the object proportionally, hold the cursor over one of the corner object handles until the resize handle appears, and then drag the resize handle.
5. To stretch the object, hold the cursor over the top, bottom, or side object handles until the resize handle appears, and then drag the resize handle.
6. To rotate the object, drag the rotate handle that is attached to the top of the selection box.

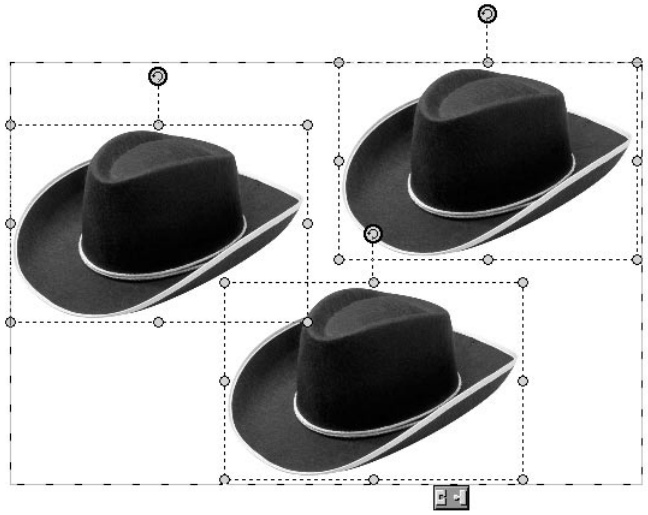
Selecting an object allows you to edit it without affecting other objects on the canvas. You can select an object by clicking it, either on the canvas or on the Stack. If you want to select a small object or one that is hidden behind other objects, it is often easiest to select it on the Stack.

Multiple Selection, Grouping, and Flattening Objects

Microsoft Digital Image allows you to create composites that contain many objects. While objects are separate, you can edit each one individually. However, sometimes you may want to edit two or more objects at the same time. There are three methods to join objects so that you can edit them together. From least permanent to most permanent, the three methods for combining objects are multiple selection, grouping, and flattening.

Multiple Selection

Multiple selection links objects temporarily. For example, if you wanted to move three objects the same amount to the left, you could select the objects, and then drag them together on the canvas. Then, as soon as you select a different object to work on, the multiple-selected objects are no longer connected.



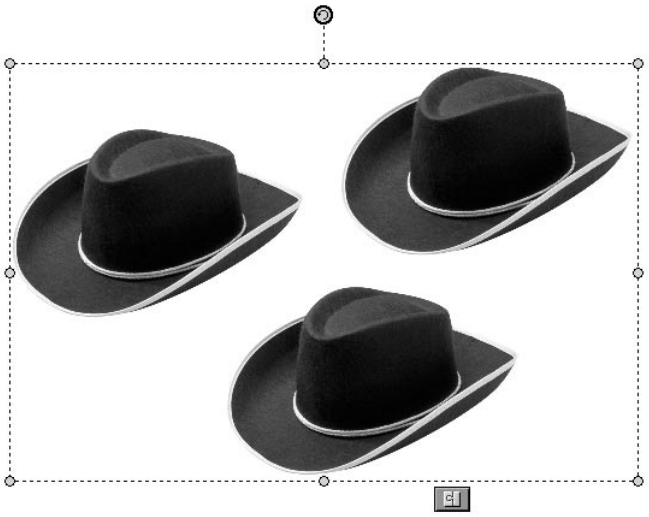
These three objects are a multiple selection, so they can be edited as a set and then separated later.

To select multiple objects:

1. Make sure that the **Stack** is showing.
2. Pressing CTRL, click each thumbnail on the **Stack** until all of the objects are selected.
3. To cancel the multiple selection, click any single object in the **Stack**.

Grouping Objects

Grouping objects allows you to edit multiple objects and then maintain the grouped relationship while you do other tasks. The grouping relationship is even preserved when you close a picture file saved in PNG Plus format. Grouped objects can later be ungrouped and edited individually.



These three objects have been grouped, as indicated by the Group icon at the bottom of the selection box.

To group objects:

1. Make sure that the **Stack** appears in the workspace.
2. Pressing CTRL, click each thumbnail on the **Stack** until all of the objects are selected.
3. On the **Edit** menu, click **Group**.
4. To cancel the group, click the group on the **Stack**, and then on the **Edit** menu, click **Ungroup**.

Flattening Objects

Flattening objects is a permanent action. If you will no longer need to edit objects individually, you can flatten objects into a single object. This allows you to work on the objects together and reduce the number of objects in your composite. Also, many editing tasks cannot be performed on a multiple selection. But if you flatten the objects together, they become a single object, so you will be able to edit them together.

To flatten multiple objects:

1. Make sure that the **Stack** appears in the workspace.
2. Pressing CTRL, click each thumbnail on the **Stack**.
3. On the **Edit** menu, click **Flatten Selected Objects**.

Automatic Flattening

When working with objects that are multiple-selected or grouped, some editing tasks—such as using advanced selection tools—will automatically flatten the selected objects into a single object. Microsoft Digital Image will give you a warning message whenever two or more objects will need to be flattened to perform an editing function. When you see a warning message about flattening, you can click **Cancel** to prevent the objects from being flattened.

Flattening Objects During Saving

When you save a composite picture in the PNG Plus file format, each object is preserved separately. When you open the file again, you can edit each individual object.

However, most file formats for images do not support multiple objects. So if you save a picture in the JPEG format, for example, all the objects will be flattened into a single object. Even if you open such a JPEG file in Microsoft Digital Image, you will not be able to edit objects individually.

Using Selection Tools

Selection tools give you more control and more options for editing images. They allow you to fix problems that exist in only part of the picture. You can also use selection tools to create new objects that can be duplicated or pasted onto other pictures.

Selection tools help you to isolate any part of a larger picture, which enables you to:

- Turn part of a picture into a separate object.
- Apply filters or other effects to a limited area of a picture.
- Duplicate part of an image within a picture.
- Combine parts from two or more pictures.

The selection tools are located on the toolbar next to the **Selection** options button. There are five selection tools available, and each one works well for a specific editing scenario. Select the method that best fits your picture and your intended use. In addition to the Object tool mentioned above, the other four selection tools are:

- Marquee tool
- Freehand tool
- Edge Finder
- Magic Wand

Anti-aliasing a selection

Anti-aliasing means that pixels on the edge of the selection can be partially selected. This technique helps to smooth the transition between the selection and the surrounding area. Anti-aliasing is useful when creating composites.

Feathering a selection

Like anti-aliasing, feathering a selection helps to smooth its edges. But where anti-aliasing only affects pixels directly on the selection border, you can feather a border of up to 250 pixels around the edge of the selected area.

The Marquee Tool

The Marquee tool helps you select part of an object in the shape of a rectangle, circle, or other shape. This tool is useful for cropping objects or pictures to a standard shape.

To make a selection with the Marquee tool:

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object of which you want to make a partial selection.
3. On the toolbar, click the Marquee Tool button.
4. If the **Marquee Tool** options palette is not visible in the workspace, click the **Selection** button on the toolbar.
5. To keep the edges of the selection smooth, select the **Anti-aliased** check box on the **Marquee Tool** options palette.
6. On the **Marquee Tool** options palette, click a shape for the marquee selection.
7. To keep the marquee shape in a specific proportion, click **Shape proportions** on the **Marquee Tool** options palette, and then enter a height and width.
8. On the **Marquee Tool** options palette, choose whether you want to make a new selection, add to the current selection, or subtract from the current selection.
9. Drag the marquee pointer diagonally across the area you want to select.
10. To adjust the selection shape, click **Adjust marquee** on the **Marquee Tool** options palette, resize or rotate the marquee shape, and then click **Done**.
11. To feather the selection (to make it blend into the surrounding part of the picture), click **Feather** on the **Marquee Tool** options palette, enter the number of pixels that you want feathered around the edge, and then click **OK**.
12. To select the opposite area, click **Invert** on the **Marquee Tool** options palette.

The Freehand Tool

The **Freehand tool** helps you select part of an object by drawing an irregular shape.

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object of which you want to make a partial selection.
3. Click the Freehand Tool button on the toolbar.
4. If the **Freehand Tool** options palette is not showing, click the **Selection** button on the toolbar.
5. To keep the edges of the selection smooth, select the **Anti-aliased** check box on the **Freehand Tool** options palette.
6. On the **Freehand Tool** options palette, click whether you want to make a new selection, add to the current selection, or subtract from the current selection.
7. On the picture, drag the pointer, and then click the starting point to complete the selection.
8. To feather the selection (to make it blend into the surrounding part of the picture), click **Feather** on the **Freehand Tool** options palette, enter the number of pixels that you want feathered around the edge, and then click **OK**.
9. To select the opposite area, click **Invert** on the **Freehand Tool** options palette.

The Edge Finder

The **Edge Finder** helps you select part of an object by tracing along well-defined edges. This tool is useful for cutting out or copying people or detailed items in a picture.

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object of which you want to make a partial selection.
3. Click the **Edge Finder** button on the toolbar.
4. If the **Edge Finder** options palette is not showing, click the **Selection** button on the toolbar.
5. To keep the edges of the selection smooth, select the **Anti-aliased** check box on the **Edge Finder** options palette.
6. On the **Edge Finder** options palette, click whether you want to make a new selection, add to the current selection, or subtract from the current selection.
7. On the **Edge Finder** options palette, enter a value in the **Width** box. The Width is the number of pixels away from the pointer that the **Edge Finder** will try to detect an edge.
8. On the picture, click points along the edge of the item you want to select. As you trace, make sure that the edge stays within the zone of the Edge Finder.
9. To close the selection area, click the starting point.
10. To modify the selection, click **Adjust edges**, drag any point in the selection marked by a square, and then click **Done**.
11. To feather the selection (to make it blend into the surrounding part of the picture), click **Feather** on the **Edge Finder** options palette, enter the number of pixels that you want feathered around the edge, and then click **OK**.
12. To select the opposite area, click **Invert** on the **Edge Finder** options palette.

The Magic Wand

The **Magic Wand** lets you select parts of an object that are the same or similar colours. The Magic Wand is useful for selecting a consistently coloured area—a blue sky for example—without having to trace around it.

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object of which you want to make a partial selection.
3. Click the Magic Wand button on the toolbar.
4. If the **Magic Wand** options palette is not showing, click the **Selection** button on the toolbar.
5. To select only similarly coloured pixels that are connected to each other, select the **Contiguous** check box. Also, selecting the **Smooth Edges** check box reduces the jaggedness of your selection.
6. On the **Magic Wand** options palette, enter a value in the **Tolerance** box. The Tolerance is the range of colours that will be included in the selection.
7. On the **Magic Wand** options palette, click whether you want to make a new selection, add to the current selection, or subtract from the current selection.
8. On the picture, click the colour you want to select.
9. If the selection includes too much or too little of the area you want to select, enter a different value in the **Tolerance** box, and then make another selection.
10. To feather the selection (to make it blend into the surrounding part of the picture), click **Feather** on the **Magic Wand** options palette, enter the number of pixels that you want feathered around the edge, and then click **OK**.
11. To select the opposite area, click **Invert** on the **Magic Wand** options palette.

Editing and Copying Selected Areas

Using the advanced selection tools helps you to isolate a very specific area of a picture for editing or copying. For example, if a picture has generally good lighting levels, but a person's face in a picture is in dark shadows, you can make a selection of just the face, and then adjust the brightness and contrast only in the selected area. And with anti-aliasing and feathering the selection, your edits to the selected area can look natural since the edited area will blend smoothly with the surrounding pixels.

Copying, Cutting, and Pasting Selections

Advanced selection tools also allow you to cut out or copy part of an object to create a new object. These techniques allow you to trim a hole in a picture or create a new object that can be pasted in the same picture or in a different picture.

To cut a hole in an object:

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object you want to cut a hole in.
3. On the toolbar, click a selection tool, and then select part of the object.
4. On the **Edit** menu, click **Cut**.

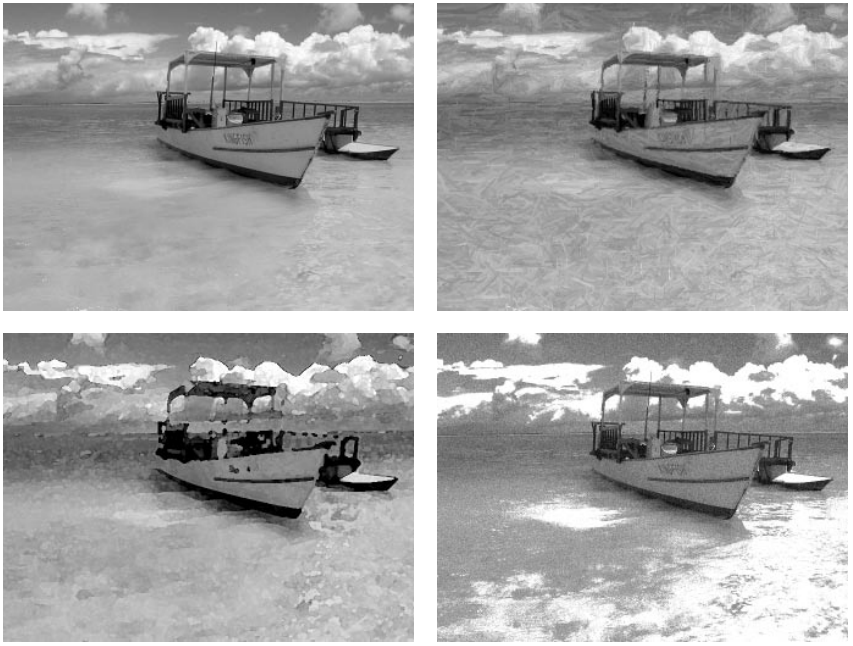
To copy and paste part of an object:

1. Make sure that the **Stack** appears in the workspace.
2. On the **Stack**, click the object you want to copy part of.
3. On the toolbar, click a selection tool, and then select part of the object.
4. On the **Edit** menu, click **Copy**.
   The selection is copied to the clipboard.
5. If you want to paste the selection onto a different picture, open that picture so that it is on the canvas.
6. On the **Edit** menu, click **Paste**.
   The selection becomes a new object on the **Stack**.

Note: If you paste the selection onto the same picture that you copied it from, the new object will be in the same position and may not look like a separate object. But the new object will be visible on the Stack, and you can use the object tool to move, resize, or rotate the new object.

Filters

The term *filter* originates from the coloured glass covers placed over a camera lens. The first filters in digital imaging sought to mimic the results of these physical camera filters, providing a slight shift in colour, or increasing the intensity of colours. But the filters in Microsoft Digital Image can create many other effects, from sharpening an image to making the picture look like a painting or a mosaic.



Three different filters were used on the original picture (upper left): The Coloured Pencil filter (upper right), the Watercolour filter (lower left), and the Film Grain filter (lower right).

To apply a filter:

1. On the **Effects** menu, point to **Filters**, and then click a filter.

Filters create a whole new look for your pictures. Many filters make the image look less like a photograph and more like a drawing, painting, mosaic, or other hand-created artwork. Filter-enhanced pictures can become an attractive focal point of projects such as greeting cards and calendars.

Waiting for filters to be applied

Some filters require your computer to make many calculations, so on a slower computer they may take a few minutes to be applied.

Colour Effects

You can give a picture a new look by applying a colour effect. Turn a favourite colour picture into an instant classic by changing it to black and white. Or, apply the antique effect, which "ages" your picture by giving it an old newspaper look. You can even turn it into a photographic negative.

To turn a colour picture to black and white, antique, or negative:

1. On the **Effects** menu, click one of the following:
   - **Antique**
   - **Black and White**
   - **Negative**

Paint Effects

With the Freehand Paint Brush, you can choose from several painting tools:

- Paint brush
- Airbrush
- Pencil
- Eraser
- Highlighter
- Chalk

Use these tools to add new colours to a picture.

To use the Freehand Paint Brush:

1. On the **Effects** menu, point to **Paint Brush**, and then click **Freehand**.
2. Click a painting tool, and then click a colour.
3. Click a brush size, and then paint by dragging on the picture.
4. Click **Done**.

You can paint with stamps to enliven your pictures with a rubber stamp effect. Choose from a variety of stamp designs or make your own. Paint with a single stamp design, or use multiple stamps on the same picture.

You can choose from a wide variety of stamps to customise any picture.

To paint with stamps:

1. On the **Effects** menu, point to **Paint Brush**, and then click **Stamps**.
2. Click a stamping style, and then click a stamp.
3. Click a stamp size, and then apply the stamp by clicking on the picture.
4. Click **Done**.

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7 Batch Editing in Mini Lab

If you take pictures regularly, it can become time consuming to perform basic editing to all of your pictures after you download them from your camera. Mini Lab contains tools that can help you save time with routine editing that needs to be done to many or all of the photos in a batch.

If you have a high-capacity storage medium in your camera, you might have dozens, or even hundreds, of photos to download at once to your hard disk. Some of these pictures may be excellent "keepers" that you will want to spend some time editing carefully later on. But many of the photos only need a few quick edits: changes such as rotation and resizing.

Opening each photo individually, performing basic edits, and then saving each one could take a lot of time. Mini Lab lets you perform these routine editing tasks to many photos at once. Mini Lab lets you select multiple photos to perform numerous tasks, including:

- Colour auto fix
- Exposure auto fix
- Camera phone auto fix
- Rotate
- Resize
- Print
- Save as (to save copies of the originals, change file format, and rename files)

Mini Lab displays all of your open photos, and includes a list of editing options that you can perform on multiple pictures. This diagram identifies the main features of Mini Lab.

1. The **Open more files** button opens the file browser to let you find more pictures to edit.
2. The editing options list shows all of the tasks available for batch editing.
3. File options let you save or print multiple photos.
4. The **Workspace** in Mini Lab contains thumbnails of all of your opened pictures.
5. The **Done** button closes Mini Lab, keeping the photos open and maintaining the changes you have made.
6. The **Cancel** button closes Mini Lab, undoing any unsaved changes.

To open Mini Lab from Microsoft Digital Image:

1. On the **Touch-up** menu, click **Batch Edit in Mini Lab**.

To open Mini Lab from the Library:

1. In the Thumbnail pane, select the pictures you want to edit.
2. On the **Tasks** menu, click **Batch Edit**.

When the Mini Lab starts, it automatically displays all pictures that were open in the program. Select the pictures you want to edit, and then click one or more editing tasks. The changes are applied automatically, but they are not saved unless you choose Save As in the Mini Lab or save your pictures in Microsoft Digital Image after exiting the Mini Lab.

When you've finished editing a photo, you can add polishing touches by surrounding it with an edge, a border, a mat, or a frame.

Edge Effects

Edge effects alter the outside edge of a photo. For portrait photos, try the soft edge effect. To draw attention to photos that you post on a Web site, try applying one of the highlighted edges.

The photo on the left has highlighted edges applied, which work great for photos on the Web and in e-mail. The photo on the right has been enhanced with soft edges.

To add an edge effect:

1. On the **Stack**, click the layer to which you want to add the edge effect.
2. On the **Effects** menu, point to **Edges**, and then click an edge effect or border.
3. If available, click a specific edge or border.
4. Follow the instructions on the screen to customise the size or colour of the edge or border.
5. Click **Done**.

Shrinking a picture to show the edge effect

Some edge effects appear only behind and outside the picture. So if your picture reaches the edge of the canvas, you might not be able to see the edge effect when you print it or save it to the Web.

To make sure you can see an edge you've added, make sure the object is not locked to the canvas, and then the press the CTRL key while you drag in one of the photo's corner resize handles. This will shrink the photo proportionally on the canvas, so that the border lies within the printable area.

Choosing the right mat

When choosing a mat, consider the colours in your photo and the colours of your frame. A mat should not overpower the subject of the photo. Try selecting a soft-coloured mat that matches one of the photo's secondary colours.

Mats and Frames

If you plan to put a photo in a traditional photo frame, you can add a Microsoft Digital Image mat to your photo before you print it. Mats create an elegant effect, and can also help to fit an oddly-proportioned print to a standard-size frame.

If you don't plan to mount a photo in a traditional frame, but would like to print and display it, use a Microsoft Digital Image frame instead. You can choose from a variety of frame themes to complement the subject of your photo. You can even add both a mat and a frame to the same photo.

Microsoft Digital Image has a wide variety of mats and frames to finish your favourite photos.

To add a mat or a frame:

1. Select the picture or object to which you want to add a mat or frame.
2. On the **Effects** menu, point to **Edges**, and then click **Frames and Mats**.
3. Click a theme, click a design, and then click **Open**.
4. Drag your photo from the **Files** palette into the frame or mat, and then click **Next**.
5. Move or resize the photo so that it fits within the frame, and then click **Done**.

9 Creating Projects

A great way to present your pictures and share them with friends and family is to create photo projects. Microsoft Digital Image offers a range of designs that you can use to showcase your pictures. Choose from greeting cards, calendars, business cards, and more.

Creating Photo Cards

Use your own photo to personalise a greeting card for a holiday, a party invitation, or any other occasion.

To open a photo card design:

1. Open a photo and check to see that it appears on the **Files** palette.
2. On the **File** menu, click **Create a Project**.
3. On the **All Types of Designs** page, click **Cards**.
4. Click **Photo Frame Cards**.
5. Click a theme, click a design, and then click **Open**.
6. Follow the instructions on the screen.
7. To edit the inside pages, on the **View** menu, click **Front of Card**, **Inside of Card**, or **Back of Card**.

Once your card project is open, you can add your own text, photos, and clip art. Since most printers cannot print to the edge of the page, the purple margins on the edges of a card project represent the unprintable areas of the card.

Photo cards are either half-fold cards, which are larger cards printed on both sides of the paper, or quarter-fold cards, which are smaller cards printed on only one side of the paper.

Working with a multi-page project

When working with a project that has more than one page (such as a greeting card), the multi-page palette appears on the bottom of the screen. This palette lets you switch between pages in the project.

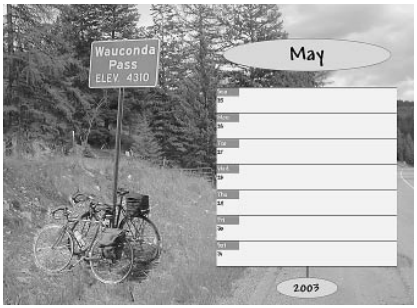
A favourite golfing photo was used to create this half-fold card.

To change the fold style of a card:

1. On the **Format** menu, click **Change Card Fold**.

Creating Calendars

Calendars are a great way to showcase your favourite photos. Calendar projects are available in the following formats:



A one-week calendar

A one-year calendar

A one-year calendar

These are the first three months of a 12-month calendar

To create a calendar project:

1. On the **File** menu, click **Create a Project**.
2. Click **Calendars**.
3. Click a calendar type.
4. Click a theme, click a design, and then click **Open**.
5. Set the start date for the calendar, and then click **Next**.
6. Follow the instructions on the screen to add a photo to your calendar, and then click **Next**.
7. Move or resize your photo on the calendar. Use the corner resize handles to resize the photo proportionally.
8. Click **Done**.

When you create a 12-month calendar, you can add different photos to each of the 12 month pages.

To complete a 12-month calendar:

1. Complete the instructions above to create a 12-month calendar.
2. Open the photos you want so that they appear in the **Files** palette.
3. Use the multi-page palette to switch between pages in the project.
4. Drag photos from the **Files** palette into each of the 12 month pages.

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10 Saving and Printing Pictures

Saving Pictures

If you're like most people, you can't bear to throw photos away, even if they're imperfect. You probably have a large box or two filled with envelopes of old negatives and photographic prints. Keeping track of all of your old prints and negatives can be a formidable task.

Fortunately, digital photography makes saving, storing, and organising photos much easier. However, there are some important things you should know about saving your photos to make sure they'll be in good condition whenever you want to enjoy them.

Saving Multiple Versions

Once you've imported a photo from your camera to your computer and erased it from your camera, your computer's hard disk contains the only copy of that photo. This original version should be treated like a film negative: You don't want to do anything to it that will alter the original content. Except rotation to correct orientation or renaming the file, the original version should be left alone.

When you want to edit a photo or add it to a project, you should always save a copy of the original and work with the copy. That way, if you make some editing changes that you regret later, you can always go back to the original, make a new copy, and start over.

To make a copy of a picture:

1. Open the picture.
2. On the **File** menu, click **Save As**.
   The Save As dialog box opens.
3. Click the folder where you want to save the copy of the original.
4. In the **File name** box, enter a name for the copy.
5. Click **Save**.
   The Save As dialog box closes, with the new copy of the picture open in the workspace.

Choosing a File Format

Microsoft Digital Image allows you to save photos in a number of image file formats. You can determine the best format for saving your photos based on what you will use the photos for, compatibility with other computers, and file size. To help you understand the difference between file formats, here are some important characteristics of three common image formats:

- **Microsoft Digital Image PNG Plus (.png)** saves the individual objects in your photo projects so you can edit them later. PNG offers lossless compression, but not all computers have the software to open PNG files.
- **TIFF (.tif)** is a common format for cameras that produce lossless images. TIFF does not support layers, but is a good format for saving important photos, although the files are relatively large and take up a lot of space.
- **JPEG (.jpg)** is the most common format for images, since the files can be opened on practically any computer. JPEG does not support layers. Too much JPEG compression can reduce image quality, but JPEG is a format that makes relatively small files that work well for most purposes, especially for e-mail and the Web.

To save a photo in a specific file format:

1. On the **File** menu, click **Save As**.
   The Save As dialog box opens.
2. In the **Save as type** box, click a file type.
3. Click **Save**.

Setting PNG Plus Options

Only Microsoft Digital Image can read individual objects saved in PNG Plus files. However, a PNG Plus file contains a flattened PNG version of the picture that can be read by many other programs, including Internet Explorer. By default, Microsoft Digital Image saves the flattened version of the picture at the same size as the original, multi-object picture. But while this flattened version of the picture allows the file to be opened by other programs, it does increase overall file size.

If you don't need to have a full-size, flattened version of the picture embedded in each PNG Plus file, you can choose to save the flattened version of the picture at a smaller size. Limiting the dimensions of the embedded file can decrease the overall file size.

To limit the size of the embedded, flattened PNG file:

1. On the **Tools** menu, click **Options**.
2. Click **PNG Plus options**.
3. Click **No Larger Than**, and then enter values to limit the width and height.
4. Click **OK**, and then click **OK**.

Avoid sending large photos in e-mail

Sending high-resolution photos in e-mail may cause problems for your recipients. For example, a single 5-megabyte (MB), high-resolution image will take over 20 minutes to download on a 28.8-Kbps modem. Also, some e-mail programs limit the size of attachments, and may, for example, block e-mail with attachments larger than 1 MB.

Saving for E-mail and the Web

Unlike photos for printing, photos for e-mail and the Web work best if they are relatively low resolution. Low-resolution photos, such as one that is 440 x 330 pixels, move faster through dial-up modems, and they are the right dimensions for viewing on most computer monitors.

To save a photo for e-mail or the Web:

1. On the **File** menu, point to **Save a Copy For**, and then click **Save for E-mail or Web**.
2. Do one of the following:
   - Click a picture size
   - Set maximum dimensions
3. Click **Save As**.
   The Save As dialog box opens.
4. Click the folder to which you want to save the photo.
5. In the **File name** box, type a file name, and then click **Save**.

Printing Pictures

Printing Single Pictures

Microsoft Digital Image has a simple process for printing single images. When using the single-picture printing task, one copy of the picture will print on the page, and the picture will be centred on the paper.

To print a single picture:

1. Make sure your printer is turned on and connected to your computer.
2. On the **File** menu, click **Print**.
3. Under Select a printer, click the printer you want to use.
4. To specify printer settings, click **Change printer settings**.
5. Select the number of copies, and then select a print size.
6. Click an orientation, and then click **Print**.

Installing printer drivers

When adding a new printer, make sure that you install all the printer software and drivers. If you're installing an older printer, you may be able to find updated printer drivers on the manufacturer's Web site.

Printing from the Library

Microsoft Digital Image Library uses the same printing tools as Microsoft Digital Image. To start the print task, use the Thumbnail pane to select the picture or pictures that you want to print. Then, on the **File** menu, click **Print**.

Printing Multiple Pictures

Microsoft Digital Image has a wide variety of templates that allow you to print multiple pictures on a page. You can print multiple copies of the same picture or multiple pictures together at the same time.

Printing on a multi-photo sheet saves paper and is a convenient way to create prints to give to family and friends.

To print multiple photos on the same page:

1. Make sure your printer is turned on and connected to your computer.
2. Open all the pictures that you want to print so that they are on the Files palette.
3. On the **File** menu, click **Print**.
4. Under **You can also**, click **Print multiple pictures or on special paper**.
5. Under **Select a printer**, click a printer.
6. To specify printer settings, click **Change printer settings**.
7. Select a category of page layout, and then click an orientation.
8. Click a layout in the right pane, and then click **Next**.
9. Drag pictures from the Files palette onto the layout.
10. Click an option for fitting the selected picture to the area, and then click **Next**.
11. Preview the page layout, and then enter the number of copies you want to print.
12. Click **Print**.

Selecting Print Quality

Most desktop printers are capable of printing in a range of qualities, from a low-quality draft mode to a high-quality setting that requires more time and uses more ink. Printer settings for quality and colour vary, but you may be able to specify your paper type, ink type, dots per inch required, and colour management preferences. Some printers have simplified printing options such as "Good," "Better," and "Best." Make sure to read your printer's manual to find out how to take advantage of these different settings.

To select print quality for your printer:

1. On the **File** menu, click **Print**.
2. Click **Change printer settings**.
   Your printer's dialog box opens.
3. Adjust your printer's quality settings, and then click **OK**.

Turning on colour management

Check your printer's manual to see if it offers colour management. Colour management can help your printer to produce colours that match the ones on your monitor. If your printer offers colour management, click **Change picture settings** while performing the Print task. Your printer's dialog box will open, and you can adjust the settings for colour management.

Selecting a Print Size

The quality of photo prints is directly related to the number of pixels in the picture. A high-resolution picture contains a lot of detailed visual information, and can be printed at larger sizes. For example, a picture whose dimensions are 2048 x 1536 pixels (3.1-megapixels) would look good even when printed as large as 8" x 10" on most printers.

A low-resolution picture has less detailed visual information, and therefore cannot be printed in larger sizes. A picture with pixel dimensions of 1280 x 960, for example, lacks the detail needed to fill an 8" x 10" print. The result would be a grainy, pixelated image. But printing this picture at a smaller size, such as 4" x 6", would give you a sharp, detailed print.

As a general rule, try to print around 200 dots per inch (dpi). Take your picture's pixel dimensions and divide by 200 to see how large the print can be in inches.

Choosing Photo Paper

If you want your images to look like traditional photographs, choose paper that is clearly labelled as photo paper. Photo paper comes in a range of thickness and texture. Paper weight ranges from ordinary office-document weight to a fairly heavy watercolour paper. If you choose a heavyweight paper, check your printer's manual to make sure that your printer can handle it.

The quality of the image will be affected by the kind of paper stock you choose. As a rule, you'll see the widest range of colours and get the deepest blacks from paper that has been specially coated to accept inkjet inks. The range of colours appears to be widest on the whitest papers. Glossy surfaces also create the illusion of deeper blacks. However, if you're going to display your prints, glossy surfaces can cheapen the look of the work, and surface glare can make the images more difficult to view.

Paper formulations also contribute greatly to resisting fading and colour shifting. If you're using "fade-resistant" or "archival" inks, look for coated, acid-free papers that are also advertised as fade-resistant or archival.

Creating Long-lasting Prints

When buying supplies for your printer, check which types of ink and paper are recommended by the manufacturer of your printer, and find out about the ink's lifespan rating. Some six-colour printers use inks specially formulated for long life. When printed on high-quality heavyweight matt paper, photos from these printers can last approximately 40 years before perceptible fading occurs.

Fade ratings are given as the amount of time before any colour shift in the print can be seen by the naked eye. The actual time it would take for the print to become unacceptably discoloured would be several times that. These ratings are based on indoor exhibition under glass in an atmosphere that is not chemically polluted. Ozone is especially harmful to dye-based printing inks. Do not display these prints in rooms where oxygen tanks or electric air fresheners are used—both produce high amounts of ozone.

Ordering Prints

Order prints of your photos online and have the prints sent to you or your family and friends. You can also use your photos to create a variety of photo gifts.

To order prints and enlargements:

1. On the **File** menu in Microsoft Digital Image, click **Order Professional Prints**.
2. Your Web browser should display a photo printing page. On the Web, click **Order Prints**.
3. Follow the directions on this Web site to place your order for photo prints. The pictures will be uploaded to the photo printing site, processed, printed, and mailed to your home.

11 Organising and Viewing Pictures in Microsoft Digital Image Library

Microsoft Digital Image Library is a powerful tool that helps you organise, find, and view your pictures and short videos. Microsoft Digital Image Library does not store or make a copy of your pictures and videos. Instead, it stores information about your pictures and videos, including a thumbnail version of each picture, so you can conveniently organise and find them on your computer.

Microsoft Digital Image Library automatically tracks information about each picture and video you add to the library, including the date the picture was taken, file size, image size, and the folder where the picture is stored. You can add labels, such as ratings, keywords, and captions, to pictures and videos. Tools like the Label Painter and the Preview pane make it easy to add labels to an entire collection of pictures at one time.

Using the information that you provide about each picture, Microsoft Digital Image Library helps you locate your pictures and videos by using powerful filtering and grouping. Even if you have many pictures taken over several years, you can locate pictures that share the same keywords, dates, ratings, and more.

Microsoft Digital Image Library also allows you to make simple changes to multiple pictures at the same time, such as batch editing in the Mini Lab, renaming, converting file formats, and resizing.

Microsoft Digital Image Library is just a catalogue

Remember that Microsoft Digital Image does not copy your pictures elsewhere on your computer; it simply creates a catalogue of your pictures. Don't delete the original pictures in the My Pictures folder (or elsewhere), thinking that your pictures are stored in Microsoft Digital Image. If you delete a picture from its original location on your computer, it will be deleted from Microsoft Digital Image Library as well.

Opening Microsoft Digital Image Library

The Microsoft Digital Image Library can be opened from the Windows Start menu or from the Microsoft Digital Image Start-up Window or File menu.

Adding Pictures from CDs or other removable media

You can use Microsoft Digital Image Library to catalogue pictures located on CDs or other removable media. To import these photos into the Library, click the **Import** button on the toolbar to launch the Import Pictures Wizard.

Adding Pictures and Videos to Microsoft Digital Image Library

Any pictures and videos you have in your My Pictures and My Videos folders—and their subfolders—are automatically added to Microsoft Digital Image Library's database. You can also add pictures and videos from other folders on your computer.

The first time that you open Microsoft Digital Image Library, the **Welcome to Microsoft Digital Image Library** window will open to help you add pictures and videos from folders other than the My Pictures and My Videos folders. After the first use of the Library, you use the same process to add additional pictures to Microsoft Digital Image Library.

To add pictures and videos from a folder on your computer:

1. On Microsoft Digital Image Library's **File** menu, click **Add Pictures and Videos to Library**.
   The **Add Pictures and Videos to Library** window opens. The folders already catalogued in Microsoft Digital Image Library are displayed.
2. Click **Browse**.
3. Navigate to the folder containing the items you want to add, click the folder, and then click **OK**.
4. Click **Done**.

Scanning for Pictures and Videos

Microsoft Digital Image Library can scan your computer's hard disk drive to locate items to add to Microsoft Digital Image Library. This feature is helpful if you have pictures and videos stored in multiple locations or if you don't remember where your pictures are stored. The scanning process can take some time if there are many picture files on your computer.

To scan for pictures and videos on your computer:

1. On Microsoft Digital Image Library's **File** menu, click **Add Pictures and Videos to Library**.
   The Add Pictures and Videos to Library window opens. The folders already catalogued in Microsoft Digital Image Library are displayed.
2. Click **Scan**.
3. In the **Beginning Picture Scan** dialog box, click **OK**.
   The hard disk drive is scanned, and the folders containing pictures are displayed.
4. Clear the check box next to any folder you don't want to add.
5. Click **OK**, and then click **Done**.

Use Microsoft Digital Image Library for your videos, too

If your digital camera can capture videos in addition to still pictures, you can import, store, organise, and view those videos right along with your pictures. To view a video, double-click its thumbnail and it will play in the Library.

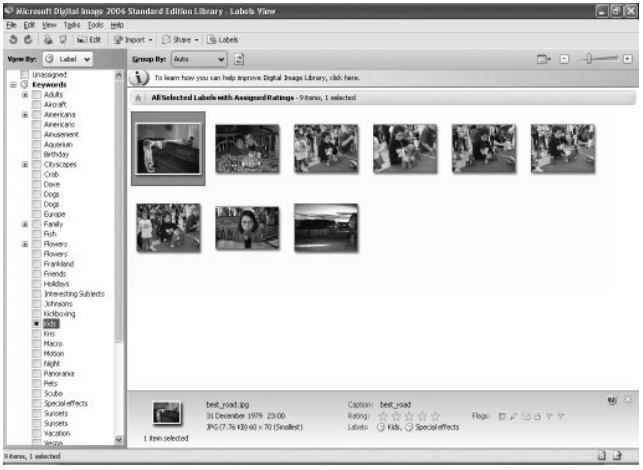
Adding Labels

Adding labels to your pictures is one of the most powerful ways to organise and locate your pictures. Labels are bits of information that you apply to your pictures—information that helps to identify the pictures. Labels do not change the appearance of your pictures in any way; they are simply tiny bits of information that get stored in the Library and associated with each picture. There are a number of labels available in the Library, including the following:

- People. Create People labels for friends and family, then click that person's label to find all the pictures of that person.
- Places. Label your pictures with Places that help you instantly find photos you took last year in Tunisia or five years ago in Spain.
- Events. Use these labels to identify pictures by activities or occasions, such as birthday parties or holidays.
- Keywords. You can turn any word or phrase into a keyword, making it easy to label pictures any way you like. You're not limited to the people, places, events, or keywords that come with Microsoft Digital Image, since you can add your own.
- Ratings. With a click, you can rate your pictures on a scale of one to five. This can make it easy to find your best pictures.
- Flags. These little icons help you mark certain pictures for special reasons. You can add the To Print flag to pictures you want to print for a holiday greeting card, for instance.

Don't forget that you can create your own labels to identify the subjects of your pictures, and you can add multiple labels to each picture, or add the same label to multiple pictures.

In addition, labels can have hierarchy (sometimes referred to as *parent* or *child* labels). Imagine that you want to create labels to represent the members of your family. You might want to create a subcategory in People called Family and then add one label for each family member to that group.



Your labels can have sublabels. You can use this feature to help you organise your labels into logical groups.

The Label Painter is a fast way to add multiple labels to pictures in Microsoft Digital Image Library.

Applying labels with the Label Painter

1. On the **Tools** menu, click **Label Painter**.
2. If desired, add a new label by right clicking where you want it to appear and clicking Create label. To create a label that is not a child of another label, right click on the category (People, Places, Events, or Keywords) that you want to place it in.
3. Click the label or labels you want apply to pictures. The label's checkbox is filled to show that it is ready to be painted onto pictures and videos.
4. Click the pictures you want to assign those labels to.
5. To close the Label Painter, click the close button on the Label Painter title bar.

Finding Your Pictures

Once you have added your pictures to Microsoft Digital Image Library and added some labels to your pictures, you can use the Library to quickly locate pictures or browse your photo collection by any criteria you choose.

The left pane of Microsoft Digital Image Library is called the View By pane. The View By pane allows you to filter the pictures displayed in the Thumbnail pane.

If you are viewing by date or by folder, you can click the All Pictures and Videos View at the top of the View By pane, so that all of your pictures appear in the Thumbnail pane.

Viewing by Label

Viewing by labels is the most powerful way to use Microsoft Digital Image and it might be the way you prefer to find and organise your pictures.

Use the View By pane to quickly find pictures with certain labels.

To view by label:

1. On the **View By** menu, click **Label**.
3. Click the labels that represent the pictures you are trying to find. Pictures with those labels appear in the Thumbnail pane.
4. To deselect a label, click the label to clear its check box.
5. To find pictures with no labels assigned, click the **Unassigned**.
6. To view all pictures regardless of labels, click **Folder** on the **View By** menu, and then click **All Pictures View**.

Viewing by Folder

Viewing by folder allows you to find your pictures based on where the pictures are stored on your computer. Remember, Microsoft Digital Image Library does not actually store pictures, it just remembers where they are located. When viewing by folder, the folders shown mimic the folder structure on your computer. When you click a folder or drive in the View By pane, only pictures in that folder (and its subfolders) are displayed in the Thumbnail pane.

To filter by folder:

1. On the **View By** menu, click **Folder**.
2. In the folder structure, click a folder or drive.
   Pictures in that folder are displayed in the Thumbnail pane.
3. To view pictures from all folders and removable media, click **All Pictures View**.

Viewing by Date

Viewing by date allows you to filter your pictures based on the dates the pictures were taken. You can set the filter to display pictures taken in a particular year, month, or even a single day. When you click a year, month, or date in the View By pane, only pictures taken during that timeframe are displayed in the main viewing area.

To filter by date:

1. On the **View By** menu, click **Date**.
2. Click a year to display the months within that year.
3. To display the days in a month, click a month.
4. To display the pictures from a particular day, click the day.
5. To view pictures from all dates, click **All Pictures View**.

Using the Thumbnail Slider

The thumbnail slider, in the upper right of the Thumbnail pane, allows you to change the size of the thumbnails. With larger thumbnails, you must scroll more to see all your pictures, but more detail is visible. With smaller thumbnails, you can see more pictures at once.

You can adjust the size of the thumbnails in the Thumbnail Pane, but don't forget that you can see a large thumbnail just by holding the mouse pointer over a picture.

To use the thumbnail slider:

1. To increase the size of the thumbnails, do one of the following:
   - Drag the slider to the right.
   - Click the plus (+) button.
2. To decrease the size of the thumbnails, do one of the following:
   - Drag the slider to the left.
   - Click the minus (-) button.

Showing Thumbnail Data

There are three ways to view the thumbnails and their associated data in the Thumbnail pane.

Tiles View

Along with the thumbnail, the tiles view displays:

- Caption
- Time and date taken
- File size
- Image size (pixel dimensions)
- File name
- Rating

Thumbnails View

The thumbnails view displays only the thumbnail with no data.

Thumbnails with Text View

The *Thumbnails with text* view displays the thumbnail and the field that the pictures are arranged by.

To switch views in the Thumbnail pane:

1. On the **View** menu, click one of the following:
   - Tiles
   - Thumbnails
   - Thumbnails with text

Grouping Your Pictures

You can group the pictures in the Thumbnail pane according to date, ratings, labels, or other information.

Grouping by rating, for example, will separate all the one-star pictures into one group, the two-star pictures into another group, and so on.

To group your pictures:

1. On the **Group By** menu above the Thumbnail pane, click a grouping option.

Showing the Table of Contents

You can open the table of contents, which is hidden by default, to list all of the groups currently in the Thumbnail pane. The table of contents is located along the left of the Thumbnail pane. To see the pictures of a particular set, just click the group in the table of contents.

To show the table of contents:

1. On the **View** menu, click **Table of Contents**.

Using the Preview Pane

The Preview pane, located under the Thumbnail pane, is a convenient way to view and edit information about a picture or pictures. The Preview pane displays the information about the pictures selected in the Thumbnail pane. You can click any of the fields (except file size and image size) in the Preview pane to edit the information.

To use the Preview pane:

1. In the Thumbnail pane, select the picture you want to preview. To select multiple pictures, press CTRL while you click the thumbnails.
2. Click one of the following fields:
   - **File name** will change the file name for all selected pictures. If more than one picture is selected, the file names will be the base name that you enter, followed by a sequential number.
   - **Caption** will apply the caption that you enter to all selected pictures, replacing any previously associated captions.
   - **Date taken** will change the date taken field for all selected pictures, which is useful if your camera recorded incorrect dates. If the selected pictures have more than one date taken, this field will appear as **Date Range**.
   - **Labels** opens the Labels Editor to add new labels to the selected pictures; existing labels will not be deleted.
   - **Flags** displays convenient labels that you can use as personal reminders to edit, e-mail, print, or perform other actions on indicated pictures.
   - **Rating** assigns a new rating to each selected picture, replacing any pre-existing rating.

Showing the Preview pane

The Preview pane can be hidden from view to make more room in the Thumbnail pane. If the Preview pane is hidden, you can show it again by checking **Preview Pane** on the **View** menu.

Editing and File Management from Microsoft Digital Image Library

With its powerful organisational tools, Microsoft Digital Image Library is an easy way to locate pictures in your collection. Once you have found the pictures you want to work with, you can select those pictures for editing and file management.

Editing Pictures

From Microsoft Digital Image Library, you can open pictures in a picture editing program, perform your editing tasks, and then return to Microsoft Digital Image Library.

To edit pictures:

1. In the Thumbnail pane, select the pictures you want to edit.
2. On the **Tasks** menu, click **Edit**.
   The pictures open in the picture editing program.
3. Edit and save the pictures.
4. Close the picture editor.
   Thumbnails in Microsoft Digital Image Library will be updated to show your changes.

By default, Microsoft Digital Image Library will open the pictures to be edited in Microsoft Digital Image. But you can set Microsoft Digital Image Library to open a different photo editor.

To change the photo editor associated with Microsoft Digital Image Library:

1. On the **Tools** menu, click **Options**.
2. Click the **General** tab.
3. Under **Change picture editor**, do one of the following:
   - Click **Use Microsoft Digital Image 2006**.
   - Click **Use a different picture editor**, and then locate the picture editing program you want to use.

Editing in Mini Lab

Mini Lab allows you to perform the most common editing tasks to multiple pictures at the same time. Some of these tasks include:

- Colour auto fix
- Contrast auto fix
- Rotate
- Crop

The Mini Lab you can access from Microsoft Digital Image Library is the same Mini Lab you can access from Microsoft Digital Image.

To batch edit pictures in Mini Lab:

1. In the Thumbnail pane, select the pictures you want to edit.
2. On the **Tasks** menu, click **Batch Edit in Mini Lab**.
   Mini Lab opens with the selected pictures.
3. For each batch-editing task, select the pictures you want to edit, and then click an editing option.
4. Click a file saving option. You must save the files for the Mini Lab changes to be saved.
5. Click **Done**.
   Mini Lab closes and thumbnails in Microsoft Digital Image Library will be updated to show your changes.

Batch File Management

Microsoft Digital Image Library has its own tools for batch file management. These tools include batch rename, batch convert file format, and batch resize. These file management options save you time when you need to perform the same task on multiple files.

To begin batch file management:

1. In the Thumbnail pane, select the pictures you want to manage.
2. On the **File** menu, click one of the following:
   - **Batch Rename**
   - **Batch Convert File Format**
   - **Batch Resize**
3. Follow the instructions on the screen.

12 Taking Great Pictures

No matter how polished and creative you are as a photographer, Microsoft Digital Image is a valuable tool for helping you get the most out of your pictures. With Microsoft Digital Image features, you can easily correct common photo problems such as red eye and overexposure. And you can use features like filters and layers to create photos strikingly different from your originals.

Although Microsoft Digital Image is a powerful photo-editing program, it's important to get the best photo you can at the time you take it. Microsoft Digital Image can do a lot to correct minor problems with the originals, but certain problems, such as severely blurred or underexposed photos, cannot easily be fixed with computer software. And if you can develop your photography skills to take higher-quality photos, you can spend your time doing creative photo editing with Microsoft Digital Image, rather than fixing avoidable mistakes.

Many cameras available today offer a high degree of automation: just turn the camera on and press the shutter, and the camera does the rest. While this approach is quick and easy, it isn't perfect in all situations. As a photographer, you can learn to fine-tune the settings on your camera to gain greater control of the camera and get the best possible photo for each situation.

Because of the range of cameras available—from basic point-and-shoot models to professional SLR (single-lens reflex) cameras—this chapter cannot cover specifics for all features available on all cameras. But it will provide a foundation of photography concepts that are vital to taking consistently good photographs.

The first section of this chapter contains information specific to digital cameras: concepts such as resolution and compression that don't have direct counterparts in film photography. Later sections cover universal photography concepts that apply to both film and digital cameras.

Opening photos from your digital camera

For information about opening pictures from your camera in Microsoft Digital Image, see the digital camera section in the "Opening and Importing Pictures" chapter.

About Digital Cameras

If you're new to using digital cameras, several camera features might seem foreign to you. Some of these features, such as digital zoom and compression, do not exist with film camera. But it's important to understand what these features do and when it's appropriate to use them.

Photo Quality

A digital photograph is composed of tiny coloured squares called *pixels* (short for *picture elements*). Like a mosaic, the pixels blend together to form a picture. Each digital picture consists of a set number of pixels, ranging from a few thousand to millions. When a digital camera takes a photo, it creates a digital file that includes some number of pixels, each with a precise colour.

Pixels are not a set size, so they can shrink or enlarge depending on the size at which the picture is printed or displayed. When a photo is enlarged too much, the individual pixels become visible, making a jagged looking, poor-quality photo.

The original photo on the left was saved at high resolution, and you can see sharp detail. The photo on the right has been saved at such low resolution that you can see the individual pixels.

The number of pixels that make up a picture is the *resolution*. Resolution and *compression* are key factors in determining the quality of a digital photo. The following sections explain resolution and compression.

Resolution

Resolution is one of the main factors that determine picture quality, since it is a measure of the total number of pixels that make up a photograph. Resolution is sometimes expressed as the total number of pixels, such as 3 megapixels (3 million pixels), or in pixel dimensions, such as 1600 by 1200 pixels (which equals 1,920,000 total pixels, or 1.9 megapixels).

Resolution is important primarily because it determines how much you can enlarge a picture. Everything else being equal, a 3-megapixel picture and a 320 pixel x 240 pixel picture look the same in a wallet-size print. But if you enlarge those two pictures to 5" x 7" prints, the quality of the 320 x 240 picture is very low: you can see the individual pixels. The 3-megapixel picture still looks sharp at the larger size, since its pixels are still too small to be seen.

Resolution is also important because it determines file size. High-resolution pictures contain colour information for many more pixels than low-resolution pictures, so the files for high-resolution pictures can be significantly larger. File size becomes an issue if you have limited storage on your camera or hard disk, or if you need to send the picture through e-mail.

The following chart gives an estimate of file size and maximum print size for various resolutions. The chart lists file sizes for JPEG format, which is a common (but not the only) format for pictures. This is just a general guide to file sizes—you might produce good printing results by using larger or smaller files.

Dimensions	Total pixels	Approx. JPEG file size (with slight compression*)	Maximum print size
320 x 240	76,800	23 KB	Web and e-mail
640 x 480	307,200	91 KB	Web and e-mail
1280 x 960	1,228,800 (1.2 megapixels)	363 KB	4" x 6"
1600 x 1200	1,920,000 (1.9 megapixels)	576 KB	5" x 7"
2,048 x 1,536	3,145,728 (3.1 megapixels)	970 KB	8" x 10"
3008 x 2000	6,016,000 (6 megapixels)	1.5 MB	11" x 14"

* Compression, which is explained in the following section, varies by camera, so you might find different file size results.

Megapixel rating

One of the main factors in the price of a digital camera is its megapixel rating. The megapixel rating indicates the maximum number of pixels (in millions) that are captured by the camera's image sensor.

Instead of film, a digital camera uses an *image sensor*—usually a CCD (charge-coupled device) or CMOS (complementary metal oxide semiconductor) chip—to capture the visual information when you take a picture. The image sensor on a simple, low-resolution camera might capture just over 76,000 pixels. The image sensor on a high-quality digital camera might capture more than 6 megapixels. As you can imagine, the 6-megapixel camera can produce very large, high-quality pictures (with very large files). The 76,000-pixel camera can capture a relatively small number of pixels, so photo quality would be fair to poor, even at small print sizes.

On many cameras, you can set the resolution at which the image sensor captures the picture. As a general rule, always use the highest resolution possible—you'll get higher-resolution pictures that you can print in larger sizes. However, in some cases you might want to lower the resolution so that the files will be smaller. This allows you to store more photos on the camera's storage media, but you must sacrifice some quality for quantity.

Make sure to check your camera's manual to find out what resolution you will get from the photo-quality settings on your camera. Beware of settings that offer "enhanced" or "interpolated" resolution. These features add extra pixels not found in the original photo to product a higher-resolution picture, but might reduce overall sharpness or quality.

Compression

You've seen one way to reduce picture file size: lower the picture resolution. You can also reduce file size by having the camera compress the picture file as it saves the file to the camera's memory. Compression consolidates similar information in the picture, and discards some information. With JPEG compression, for example, series of similarly coloured pixels are grouped together and considered to be the same colour. In the code that makes up the file, the colour information for these grouped pixels only has to be listed once instead of hundreds, or even thousands, of times. This shortcut can reduce file size considerably. Taken to extremes, a picture in highly compressed JPEG format might be 95 percent smaller than the same photo in an uncompressed format.

Although compression does reduce file size, it also reduces visual quality. Slight to moderate compression might not noticeably reduce picture quality, but high compression produces visible areas of blotchy colour called *artefacts*. Even with slight compression, artefacts become more pronounced each time the photo is resaved and compression is applied.

The left photo has been saved with lossless compression, so all of the image quality is retained. The photo on the right was saved with heavy JPEG compression—which is not lossless—and the compression significantly reduced the image quality.

For important pictures that you want to print, it's good practice to use little or no compression. Or, if your camera offers it, you can take your photos in a format, such as TIFF, that offers *lossless* compression. Lossless compression reduces file size, but retains all of the photo quality once the photo is restored.

File size and picture quality

Lowering resolution and increasing compression both reduce file size and picture quality. Bearing this in mind, you can use file size as a rough way to judge the overall visual quality.

File Formats

There are many file formats designed for digital pictures. Microsoft Digital Image can work with JPEG, TIFF, and many other file formats. If your camera allows you to choose file formats for your pictures, you can decide which format to use based on your particular criteria: photo quality, file size, or compatibility with other programs.

The JPEG format is the most common format for photos. JPEG files are versatile, since they can accommodate over 16 million colours, can be compressed, and can be viewed on almost any computer and in any Web browser. To reduce file size, the JPEG format always uses compression, although the degree of compression varies by camera. Experiment with the compression settings on your camera to find a low-compression setting that produces good or excellent results. Because JPEG uses some compression every time a file is saved, many photo purists prefer formats like TIFF over JPEG.

The TIFF format provides an extremely accurate recording of digital-image data. Some cameras can use a lossless compression method with TIFF. But even with some compression, TIFF files are much larger than JPEG files for pictures with the same resolution. For example, a single uncompressed 5-megapixel TIFF image is larger than 10 MB. To work with pictures of that size, you need a lot of memory on your computer and a high-volume storage disk.

Using Zoom Features

A zoom lets you adjust the focal length of the lens, making your subject appear closer to or farther from the camera. Some cameras have built-in adjustable zoom lenses; others accommodate interchangeable zoom lenses of different focal lengths.

Digital cameras might offer *optical zoom* or *digital zoom*. An optical zoom feature uses the same principle as a zoom lens on a film camera: the lens itself moves to change the focal length. In any of the zoom positions, the resulting resolution is the same.

A digital zoom feature does not move the lens. Instead, the software inside the camera crops the photo to make the subject appear closer. Because the pixels are removed from the area that's cropped out, the overall resolution is lower. Many cameras offer a combination of optical and digital zoom. For best results, use only optical zoom. Then, if necessary, use Microsoft Digital Image to crop the photo to enlarge part of the scene.

Both "digital zoom" and "enhanced resolution" features use *interpolation* to add pixels to the original photo, a process that increases the overall size or resolution. Interpolation assigns colours to the added pixels based on the colours of the surrounding pixels. While these features technically do increase the pixel count in a picture, they do not achieve the same visual quality as a picture that has not been interpolated. If your camera has digital zoom or enhanced resolution, test it and make sure you like the results before you use it for important pictures. For true zoom capability and highest image quality, use optical zoom.

Expand your perspective

Zoom lenses are great for capturing objects you can't get close to, such as a ship sailing in water far from the shore. Use a zoom lens to get close-up, candid shots of people without seeming intrusive or conspicuous.

Memory Cards, Disks, and Sticks

After the image sensor captures a picture in your digital camera, the digital information is stored on removable media, such as a CompactFlash, xD Card, Secure Digital card, Memory Stick, SmartMedia, Microdrive, floppy disk, or CD-R.

While you can still find digital cameras that store pictures on CD-R or floppy disk, such models are almost entirely overshadowed by cameras that use removable memory cards. Compared to removable memory, floppy disks and CDs are slow, bulky, and limited in capacity.

Memory cards are small, durable, and have almost unlimited reusability. And while higher capacity cards are always priced higher than lower capacity cards, storage technology advancements invariably lower price barriers.

Buying additional storage media, like these CompactFlash cards, allows you to take many more photos in a single session.

The size of your storage media dictates how many picture you can store. The media that is included with some cameras can only hold a few high-resolution pictures. This type of low-capacity card can be impractical for situations such as travelling. To give yourself more flexibility, you might want to purchase additional removable storage media.

Battery Life

Compared to film cameras, many digital cameras use batteries at a surprising rate. The LCD preview screen and the flash on the camera both put a heavy drain on the batteries. And unlike some manual film cameras, digital cameras cannot function without batteries or an AC power adapter.

To maximise the amount of time you can use your digital camera before the batteries fail, you can buy rechargeable batteries, which last longer than disposable alkaline batteries. Keep your spares charged so they'll be ready when you need them. If you are running low on power and don't have a spare battery, conserve remaining power by trying the following:

- Turn off your LCD screen and compose through the viewfinder.
- Turn off your flash so that it doesn't fire automatically. Turn the flash on only when you need it.
- Wait until you're home to preview your photos.

The best rechargeable batteries

Lithium-ion batteries and nickel metal hydride (NiMH) batteries both work very well with cameras, providing excellent power and convenience.

Upgrading your flash

If your camera supports an external flash, consider buying one, especially if you take a lot of indoor photos of people. An external flash will give you much more control and often better results.

The range of your flash

Check your camera's manual to find out the recommended range for your flash. Most on-camera flashes are designed to illuminate a subject that is 10 to 15 feet from the camera. If the flash is too close, your subject might look too bright or washed out in the photo. If you're too far away, the flash won't provide enough light.

Using the Flash

Learning to use the flash is one of the easiest ways to get better pictures both indoors and outdoors. Especially when you're photographing people, overpowering light from the flash can ruin the shot, often in ways that are difficult to correct with picture-editing software.

Most cameras come equipped with a built-in flash. The flash might be programmed to go off automatically when the camera senses that the flash is needed. But relying on the camera's judgment will not always give you the best results. Built-in flashes can create harsh shadows, overexposed areas, and unnatural-looking light.

Read your camera's manual to learn what the recommended flash range is, and to find out how to adjust different flash settings. Three of the most common flash settings are outlined in the following sections.

Automatic Flash

Contrary to what you might think, you might be better off without your flash in many situations. If you think the scene is too dark to take without a flash, try increasing the ambient light by turning on lamps or opening the drapes. On most digital cameras, you can increase the ISO equivalent setting, in effect making the image sensor more sensitive to the available light, which allows you to take pictures in low light without a flash.

Many newer cameras offer low-light modes and night-flash settings that improve the quality of low-light photos. If your camera offers these options, use them. Otherwise, always stay within the recommended range of the flash.

Red-Eye Reduction Flash

One of the most common problems with flash photos of people and pets is red eye. This problem is caused by a flash located very close to the camera lens. The light from the flash reflects off the blood vessels in the subject's retina, causing the pupils to look red. This problem occurs frequently in low-light situations, when pupils are likely to be dilated. There are several things you can do to help avoid red eyes in your photos:

- Increase the ambient light in the room. Turning on lights and opening up the drapes reduces the size of your subjects' pupils.
- Use your camera's red-eye reduction setting. This feature fires preflash bursts that help reduce the dilation of the pupils before the exposure.
- If you have an off-camera flash, move it away from the camera lens. Then, even if your subjects' pupils are dilated, the light comes from a different angle and reduces or eliminates the red-eye effect.

Fixing red eye with Microsoft Digital Image

If you end up with red eyes in your pictures, Microsoft Digital Image makes it very easy to remedy this problem. For more information, see the section about removing red eye in this book's "Basic Touch-up" chapter.

Fill Flash

You can use the fill flash setting to fill in deep shadow areas caused by bright overhead light or in a scene where the light is behind the subject.

In the left photo, the strong backlighting creates a shadow that covers the subject's whole face. For the photo on the right, fill flash was used to counteract the backlighting and keep the shadows off the subject's face.

If your flash is using the automatic setting, bright daylight can prevent it from firing. Turn on the flash manually, or, if your camera has a fill-flash setting, turn it on. If you see shadows on your subjects' faces as you're composing the shot, fill flash is a good idea.

An alternative to using the fill flash is moving to a different place where the light from the sun is diffuse and indirect, which produces a softer, more flattering portrait light.

Using Your Camera's Manual Settings

In today's camera marketplace, the lines between manual and automatic cameras have become blurred. It used to be that manual cameras were 35mm SLR (single-lens reflex) cameras with manual controls for focusing, aperture, shutter speed, and film speed. On the other end of the spectrum were fully automatic cameras with very limited controls, possibly only a shutter button.

For serious camera users, the manual SLR cameras were usually the best option, since they offered so much control. The creative process was not left to the automatic settings of a camera. Automatic point-and-shoot cameras were good for novice photographers who didn't want to worry about setting the camera controls. Many automatic cameras could produce adequate or even excellent photos without requiring knowledge of advanced photography concepts.

While you can still find fully automatic and fully manual cameras, many of today's cameras offer different modes for different degrees of automatic and manual control. For example, some SLR film cameras let you switch to an automatic mode where the camera determines everything from focusing to setting the aperture. Many compact digital cameras are designed to be used primarily in automatic mode, but also allow you to switch to program and manual modes to control exposure settings, like shutter speed and aperture.

With digital cameras, the adjustments that you make are often digital approximations of the equivalent function in film cameras, as with shutter speed or ISO. But the photographic result is the same. The following sections provide an overview of the most important manual camera settings and concepts.

Exposure

Exposure describes the amount of light that comes into your camera when you take a picture. Setting the camera to the correct exposure is crucial to getting the proper tones and colours in your pictures. *Overexposure* occurs when too much light has reached the image sensor (or film in a film camera), which decreases detail and causes the photo to look washed out. *Underexposure* occurs when insufficient light has been let into the camera, and the picture looks dim and murky.

Exposure is controlled by three factors: the *aperture*, the *shutter speed*, and the *ISO rating*. Aperture is the size of the opening that lets light into the camera. Shutter speed is how long light is allowed into the camera. ISO rating (the film speed in a film camera) is the sensor or film's sensitivity to light.

The water glass analogy

When taking a picture, your goal is to achieve a perfect exposure. To create the right exposure, you need to understand the relationship between the three exposure factors: aperture, shutter speed, and ISO rating. Achieving perfect exposure can be compared to filling a glass completely without spilling any of the water. For a perfect exposure, the glass should become completely full with no water spilling over. In this analogy, the tap symbolises the aperture: the wider the tap is open, the faster the glass fills up. The time that the tap is open represents the shutter speed: leaving it open longer lets more water into the glass. To fill the glass to exactly the right level, the rate of flow must be set according to the time the tap is open.

The third factor, ISO rating, can be equated to the size of the water glass. A smaller glass, representing a faster ISO rating, fills up more quickly than a larger glass, representing a slow ISO.

Understanding automatic exposure

As a photographer, you will come across a wide range of lighting conditions, and each condition requires that you adjust your camera to different exposure settings. For example, taking a photo on a beach on a sunny day calls for different exposure settings you would use on the same beach on a cloudy day.

For many conditions, the camera's automatic exposure setting gives you good or even excellent results. But for some situations, the automatic exposure does not perform as well.

Automatic exposure assumes that the scene you are photographing has a few bright spots, many midtones, and a few dark areas. As the camera's meter reads the available light in your scene, it averages the light in the bright, middle, and dark areas, and then calculates the exposure necessary to bring the average level to a tone of medium brightness called *middle grey*.

Automatic exposure does not work well if your scene is dominated by large sections of very light or very dark colours. A bright field of snow, for example, has so much bright light that the automatic exposure lowers the brightness until the snow looks grey. To work around this shortcoming, you can use *exposure compensation*.

Exposure Compensation

Some cameras have an exposure compensation feature that lets you manually override the automatic exposure setting. Exposure compensation lets you adjust the exposure with settings such as +2, +1, -1, and -2. A +1 setting, for example, tells the camera's automatic exposure system to make the middle tones brighter. When taking a picture dominated by bright snow, increasing the exposure with the +1 setting might correct the light level for the snow-filled scene. Your actual results will vary according to your camera and the brightness of the day.

With bright snow in a scene, setting your camera's exposure compensation setting to +1 or +2 might help you to get the right exposure.

Increasing your chances with bracketing

If you're not sure what the best exposure setting is, try bracketing. Bracketing involves taking multiple photos of the same scene. Start by using the automatic exposure, and then use exposure compensation to take additional frames with increased and decreased exposure levels. With a series of photos taken at different settings, there is a good chance that one has perfect exposure.

Program modes

If your camera offers program modes for specific types of pictures like portraits or action shots, read your camera's manual to find out the aperture settings used for those modes.

Aperture

The *aperture* is the opening through which light passes to reach the film, or, in digital cameras, the image sensor. Aperture is measured by *f*-number, where a specific setting is called an *f-stop*. With *f*-stops, a low number, such as *f*/4, represents a wider opening that lets in more light. A small aperture, such as *f*/16, lets in significantly less light.

Some cameras have a fixed aperture that can't be adjusted. If you're adjusting the aperture yourself, a setting of *f*/8 is a good place to start, since it gives you a fairly wide zone of sharpness.

If your camera allows you to adjust the aperture, use the settings to regulate the *depth of field* in your picture. Depth of field refers to the zone in your photo that is in acceptably sharp focus. A wide aperture gives you a shallow depth of field, while a small aperture allows a very deep zone—maybe even everything in the picture—to be in focus.

Imagine pointing your camera down a railway line which goes all the way to the horizon. With a wide aperture, like *f*/2.8, if you focus on a sleeper a short distance away, only a few of the other sleepers are in sharp focus. With a narrow aperture, like *f*/22, many more of the sleepers are in focus, even those quite a distance from your main focal point.

A wide aperture will give you a short depth of field, as illustrated in the photo on the left, where only the eagle is in focus. The photo on the right was taken with a small aperture, so almost everything is in focus.

For portrait photography, a wide aperture helps to limit the focus. Your subject's face is clear and sharp, but objects in the background are blurred. But if you're taking a holiday photo of someone posing in front of a monument, a narrow aperture might be in order. With the narrow aperture, both the person and the monument can be in focus in the same photo.

Of course, adjusting the aperture also affects how much light is let into the camera. But if a specific depth of field is important for your shot, you might want to switch to manual mode, set the aperture, and then set the shutter speed to get the correct exposure level. Some cameras also offer an *aperture priority mode* that automatically selects the correct shutter speed to produce the correct exposure for the aperture you select.

Shutter Speed

In most cameras, the *shutter* is the curtain in front of the film or image sensor that is retracted for a precise amount of time to let light into the camera. Shutter speed can be adjusted to let light into the camera for a longer or shorter amount of time.

When determining the correct exposure for a picture, both shutter speed and aperture must be considered in relation to each other. An increase in shutter speed, which lessens the time the film is exposed to light, requires that you widen the aperture to let in more light.

Shutter speeds are measured in fractions of seconds. In automatic mode, many cameras will use a shutter speed of about 1/125th of a second. For action photography, a very fast shutter speed, like 1/500th of a second, can help to stop action and reduce blurring caused by movement of your subject.

The shutter speed determines whether you freeze the action or show motion blur.

On the other extreme, you might set the shutter to stay open for four seconds, or even more for low-light night photography without a flash. But shutter speeds slower than 1/30th of a second increase the likelihood that slight movements in your hand while you take the shot will cause a blurred photo. To avoid camera shake, mount your camera on a tripod or other firm surface for slow shutter speeds.

To accommodate the low light of this twilight scene, the camera was mounted on a tripod and set to a slow shutter speed.

Some cameras offer a *shutter priority mode* that sets the aperture automatically after you set the shutter speed. This can be useful if you're in a situation where shutter speed is more important than aperture, like when you're photographing a subject in motion.

ASA versus ISO

If you have an older camera, the film speed dial might be labelled ASA instead of ISO. These film speed ratings are the same, and the ratings are interchangeable.

Avoid sharpening pictures that have noise

Do not use the sharpen feature in Microsoft Digital Image on digital photos with noticeable noise; sharpening accentuates the inaccurate pixels.

ISO Setting or Equivalent

When taking pictures on film, you have the opportunity to select different types of film for specific uses. Films are available in different *speeds* that are more sensitive or less sensitive to light.

The film speed is measured by ISO number. A high-speed film, such as ISO 800, is ideal for low-light situations or action photography, since the film requires less light to properly expose the photo. Slow-speed films, such as ISO 100 or ISO 200, are good for photographing in bright daylight, since they require a lot of light. If you plan on using the same roll of film for multiple settings and light levels, ISO 400 film is a good compromise and does relatively well in most situations.

Faster films generally produce grainier pictures than lower-speed films. Some of the newer varieties of professional grade high-speed films produce a finer grain structure, which is less noticeable.

Since digital cameras use an image sensor instead of film, there is no way to actually change the film speed. However, many digital cameras provide the digital equivalent of an ISO. Sometimes called the *sensitivity setting*, this feature, in effect, allows you to change the ISO setting. For example, if you are in a low-light situation, you can switch from ISO 100 to ISO 400.

With most digital cameras, setting the digital equivalent of the ISO setting to a faster speed can introduce noise into the picture. Similar to the graininess from high-ISO film, noise is pixels of random colour that mar the picture. Cameras vary widely, so you should experiment with your digital camera's ISO settings and examine the results.

In low-light situations, consider turning off the flash and setting the camera to a faster ISO setting. This might produce some noise in the picture. But that result might be preferable to what you'd get by taking the photo at a slower ISO setting with the harsh lighting of the on-camera flash.

Setting the White Balance

Surprisingly, digital cameras do not automatically know what colours are your picture. Instead, your camera must figure out which colour in a scene is white, and use that information to colour the rest of the picture. This is called setting the *white balance*. To calculate the white balance, the camera assumes the lightest spot in the picture is white, and adjusts the other colours accordingly. Under most circumstances, this automatic function should prevent an off-colour cast in your photos.

However, in some lighting conditions, the camera fails to correctly set the white balance. If you're taking pictures indoors, for example, incandescent lights give off a yellowish or reddish glow. This colour is not really visible to the naked eye, but often shows up in indoor pictures. To counteract this problem, most digital cameras have pre-programmed colour balance settings that compensate for different kinds of light. Typical settings include cloudy, shaded, incandescent, flash, fluorescent, and sunny. These settings compensate for the different colours of light likely to be present in those conditions, and should produce pictures that require little or no colour correction. Read your camera's manual to find out about specific white balance settings it offers.

With film cameras, there is no way the camera itself can compensate for different lighting conditions. But there are two ways you can compensate for the coloured light:

- Use film designed for specific lighting situations. Tungsten-balanced films, for example, help to neutralise the colour of tungsten or halogen illumination.
- Use a filter on your camera lens. For example, if you're using daylight-balanced film but want to take pictures indoors, you can use a blue-coloured filter to absorb the overriding yellows and reds of the indoor incandescent lights.

Setting the white balance manually

Some digital cameras offer manual white balance control. This feature allows you to set the white balance by focusing on a pure white object, such as a piece of paper, and then locking down the white balance before you take the photo.

Using Automatic Modes on Your Camera

Many of the automatic cameras sold today—even some of the less-expensive models—have pre-programmed modes that are designed for special situations. Sometimes called *program modes*, these modes automatically adjust your camera to special settings designed specifically for things like macro photography, action shots, portraits, panoramic mode, or picture series.

If you're a beginning photographer and are not always confident enough to adjust your camera's manual settings, use the automatic modes to help you take better pictures.

If your camera does not allow you to adjust settings manually, the automatic modes might produce the most successful pictures in these situations.

The following sections describe the most common automatic modes available on many digital and film cameras. Since the type and implementation of automatic modes vary for each camera, read your camera's manual for availability and usage instructions.

Macro Mode

Most cameras in automatic mode have trouble focusing on objects that are less than 12 inches (30 centimetres) away. So when you're taking close-up pictures, for example, capturing a special piece from your coin collection, you need to set your camera to *macro mode*. Macro mode adjusts the focal length to accommodate the unusually short distance to the subject.

Macro mode usually reduces aperture, which widens the depth of field, and increases the chances that the whole subject is in focus.

The camera's macro mode was used to capture the fine detail of the jewellery.

When using macro mode, make sure to turn off the flash, since the flash does not provide proper illumination at such close range. Tripods are a good way to keep the camera steady for a close-up shot. If you don't have a tripod, set the camera on a firm surface, focus the picture, and then activate the shutter with the self-timer.

Action Mode

If you're photographing subjects such as athletes, moving cars, or even fast-moving children, a camera's action mode helps keep your subject in focus. The most significant characteristic of action mode is the faster shutter speed of at least 1/500th of a second, which helps to freeze the action of your moving subject. The action mode in most cameras also uses a wider aperture setting (to offset the fast shutter speed), and multipattern light metering, which compensates for overly bright and overly dark areas.

Action mode uses a fast shutter speed to freeze the action of a fast-moving subject.

When the lag is a drag

Some digital cameras have a much shorter shutter lag than others. You might want to consider this factor when buying your next camera.

Digital cameras create a unique challenge for action photography: the time lag between when you press the shutter button and the actual exposure. With film cameras, pressing the shutter button causes the shutter to open virtually simultaneously. But some digital cameras are much slower and you might have to wait as long as a second before the picture is taken. When photographing moving objects, one second can seem like an eternity.

One way to compensate for the shutter lag is to anticipate your shot. Imagine you are photographing a runner with a camera that has a lengthy shutter lag. (The shutter lag will not be highlighted on the camera's packaging, but you can figure it out through your own experience.) First, focus your camera on a spot that the runner will cross in about 10 seconds. When the runner is approximately one second away from your target spot, press the shutter button. The exposure should occur just as the runner comes into your field of focus.

Another way to photograph a moving subject is to pan your camera with the action. While a stop-action photo freezes everything in the photo, panning your camera keeps your moving subject in focus, but blurs the background. For this effect, you do not want to use the action mode, because you do not want a fast shutter speed. To accomplish this effect, follow your moving subject in the viewfinder (or LCD screen) as it moves, but pan the camera so that your subject remains in the same position in the frame. Your result won't show the subject in as clear a focus as stop action, but the blurred background helps to pronounce the speed and movement of your subject.

Since the camera panned with the subject, the girl is in fairly sharp focus and the background is blurred. This helps convey movement.

Burst Mode

Burst mode is a feature that allows you to take a series of pictures in quick succession. Many cameras include a burst mode that allows you to take a series of pictures in quick succession, such as 3 frames per second for up to five seconds.

Even on digital cameras with slow shutter lags, the burst mode still allows you to take many frames in a short time span. The burst feature uses a *buffer* to temporarily hold the information from the image sensor. After the maximum number of frames is stored in the buffer, the camera processes each frame separately and sends them to the removable storage media.

If your camera has a burst mode feature, you can use it to overcome the slowness of the shutter lag. When photographing a child, for example, it can be hard to get the child to pay attention for the few seconds that it takes to take the picture. But with burst mode, you might be able to shoot 10 frames within 10 seconds. During those 10 seconds, you can encourage the child to talk, look at the camera, and make different movements and expressions. It's doubtful that all 10 exposures will turn out to be great pictures, but you're much more likely

to get at least one good shot than if you'd just taken a single frame.

Another great use of the burst mode feature is to take an action sequence. Create a series of pictures of a golf swing, a child riding a bike, or a pet moving across the yard. Then you can assemble the whole series in a slide show, or mount the pictures together in a frame.

Portrait Mode

For portraits and candid shots, using your camera's portrait mode is a convenient way to get good results. Portrait mode is set to use a relatively wide aperture, creating a shallow depth of field. With only your subject in focus, objects in the background are less distracting, and your subject dominates the frame.

With a shallow depth of field, it's crucial that you get your subject in sharp focus. If your depth of field is so short that you can't focus on every part of your subject at the same time, focus on the subject's eyes, and let hands and feet be in less focus.

For this portrait, the Diffuse Glow filter was applied in Microsoft Digital Image to soften the focus.

For successful portraits, remember to fill the frame, and use a medium telephoto lens (around 105mm, or zoomed about halfway between wide angle and maximum telephoto). Keep the background very simple, unless you are using objects in the background as context for your subject. If you are taking pictures indoors, an off-camera flash or other light source works best.

Relaxing your subject

An important aspect of portrait photography is to get your subject relaxed and comfortable for the pose. Try using conversation or other pleasant distractions to get your subject's mind away from the camera.

Panoramic Mode

For landscapes, large groups of people, and other long horizontal shots, a camera's panoramic mode helps you compose the picture without too much sky or ground in the photo. Panoramic shots have a different *aspect ratio* from standard shots, meaning the width of the frame is proportionally much greater than in a picture with a standard aspect ratio.

Some panoramic cameras take pictures with an aspect ratio of 4:11 (four units tall by 11 units wide), compared to the aspect ratio of 3:4 for standard shots on most digital cameras. As with the shape of a cinema screen versus a television screen, the wider frame gives you some new creative territory when composing your photo.

Switching your camera to panoramic mode gives you new compositional possibilities.

True panoramic cameras use a wide-angle lens to let you capture more width of the scene by staying in the same position. Many cameras, including digital cameras and APS cameras, offer a panoramic mode without a wide-angle lens. Instead, the panoramic effect is achieved by simply cropping off the top and bottom of the frame. This type of panoramic shot does give you a wider aspect ratio, but not a wider angle. On some digital cameras, using the panoramic mode means that each photo has fewer pixels (since the top and bottom are cropped), so each panoramic shot takes up less space on your storage media.

Using the Self-Timer

Many digital cameras, even inexpensive ones, come with a self-timer feature. Some self-timers open the shutter after a preset amount of time, such as 10 seconds; others allow you to adjust the length of time before the shutter fires. Either way, this fairly simple feature is great for getting yourself into a photo and taking long exposure shots.

Getting Yourself into a Picture

To get yourself into a picture, plan where you want to position yourself for the shot. Then set up the camera by putting it on a tripod, a table, or any other flat, stable surface. With your camera in position, focus the camera on your subject, which should be close to the position where you will stand for the picture.

If your camera has autofocus, press the shutter halfway down to focus, press the self-timer button, and then press the shutter all the way down. Then you've got about 10 seconds to get yourself in position for the shot.

Taking Long Exposure Shots

Another great use of the self-timer is for exposures with a relatively slow shutter speed. For speeds slower than 1/30th of a second, there is a good chance the slight movements in your hands will cause blurring in your picture. Even if you have very steady hands, the slight movement of your finger pressing the shutter button can create movement. Using the self-timer will eliminate this problem. By setting the camera on a tripod or firm surface and using the timer, your hands don't have to be anywhere near the camera while the shutter is open.

Creating a makeshift tripod

If you're outdoors, try propping the camera on a rock or car roof. Then fine-tune the positioning by putting the camera on a jacket or other object that you can shape to adjust the camera angle.

Ten Tips for Great Pictures

The following 10 tips offer suggestions for developing your photography approach, technique, composition, and habits. If you are an inexperienced photographer, some of these tips might be new ideas for you. If you're a photography veteran, these tips might be a good reminder of things you haven't heard in a while.

1. Know Your Gear

Having command of your equipment is an important aspect of enjoying and being successful with photography. As you get to know your gear and gain confidence in a camera's capabilities, the camera can become an extension of yourself. When you have reached this level of competence, you can concentrate more on the creative aspects of photography.

When you get a new camera, read the manual. With digital cameras especially, operating the controls might not be intuitive, since many digital cameras' controls must be accessed through menus on the LCD screen.

After you've read the manual and understand how and when to use your camera's features, go out and take a variety of pictures using the different settings. Take some pictures outdoors and indoors, with the flash and without the flash, with automatic settings and with manual settings. As you take pictures, take notes to record the settings used for each picture. Later, look at your photos and take note of both the settings that worked well and the settings that produced poor results.

Missing a great photo because of worrying about technical issues is frustrating. Spend time getting to know your gear and prepare for great photo opportunities.

2. Perfect Exposures

In a finished photo, exposure is something that you usually only notice when it is wrong. A perfect exposure is not something that jumps out at you, but a problem exposure definitely stands out. In an overexposed picture (caused by too much light), the shadow areas are light, and the highlighted areas are almost entirely white. In an underexposed picture, too little light has been let into the camera, creating a photo that lacks detail, with filled-in shadow areas and dull highlighted areas.

Special lighting situations can fool the built-in light meter in your camera. If you want to start with the camera's automatic exposure, use *exposure compensation* to fine-tune the exposure. The following list describes some common lighting problems and the recommended exposure compensation for each:

- For a side-lit subject: increase exposure by one half of a stop.
- For a backlit subject: increase the exposure by one stop. Or step in close and meter directly on the subject, step back and recompose, and then take the picture at the reading you took on the subject. You can also switch to spot metering.
- For a small dark subject against a bright background, or any subject in a very bright scene: use exposure compensation of +1 to +3, or increase exposure by one to two stops, for example, from *f*/8 to *f*/5.6 or *f*/4.5.
- For a small, light subject against a dark background: use exposure compensation of -1, or decrease exposure by one stop, for example, from *f*/8 to *f*/11.

Planning for the imperfect

Learning to get the perfect exposure takes a lot of experience, and no one gets it right with every shot. If you suspect the lighting might make it difficult to get the correct exposure, you can increase your chances of success by bracketing.

3. Capture a Moment in the Story

Consider driving licence and passport photos. We think of these as uninteresting and unrepresentative of how people usually look. Why are these photos dull?

One problem with these photos (but certainly not the only problem) is that they capture people out of their element, without context or a story. There are no interesting details in the background to draw in the viewer, and the subject often looks impatient or uncomfortable.

When you are the photographer, you can strive to capture people, events, and places that tell a story. In addition to getting your subject to look natural and not posed, details in front of the subject or in the background can stimulate the imagination to re-create the story of the photo.

This photo captures the destruction of an earthquake just hours after the event. Since the photo was taken before the rubble was cleared away, the photographer was able to capture the many details of the scene that tell the story.

With enough of these details, and a strong relationship between your subject and the other elements, the photo can suggest ideas that are not even in the frame. You can take the old cliché "A picture paints a thousand words," and make it your goal to paint more than a thousand words with your photographs.

4. Look for the Light

Many of the best pictures are taken early in the morning, late in the afternoon, and at twilight. At these times the lighting is most dramatic.

Many pictures are shot in bright or moderately bright sunlight. This type of light produces photos that closely match the way we remember seeing the scene. That is part of the reason we respond to them with a positive sense of familiarity.

However, colours photographed in the cooler light at twilight or in overcast conditions, or in the warmer light of sunrise and sunset, offer a new perspective on familiar colours and subjects, and provide a more creative backdrop for photographs. Overcast and after-the-rain conditions, in particular, produce richer, more saturated colours. For example, red leaves photographed against a twilight backdrop, instead of in daylight, create a moody interpretation that suggests a sense of mystery or drama.

For interior pictures, look for strong sources of natural light, as from a window or a skylight. The glow of light coming from one direction can illuminate your subject dramatically.

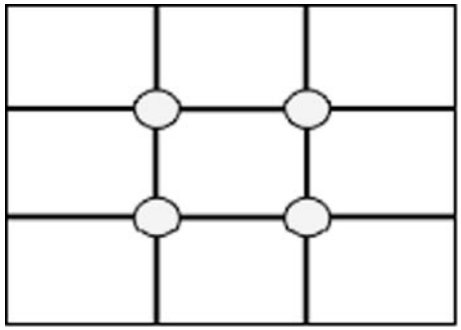
Recomposing a photo with Microsoft Digital Image

After a photo has been transferred to your computer, use the crop tool in Microsoft Digital Image to change the composition. By clipping away the edges of the photo, you can reposition your subject to comply with the rule of thirds.

5. Follow the Rule of Thirds

When composing a photograph, many beginning photographers always centre their subject directly in the middle of the frame. While this technique might be the easiest way to get the subject in focus with a point-and-shoot camera, it is not always the most interesting way to present the subject.

Most advanced photographers follow the *rule of thirds* when composing the space inside a picture frame. The rule of thirds divides the frame into thirds both horizontally and vertically, and places the point of interest on one of the four spots where these dividing lines intersect. The rule of thirds is used throughout the graphic design world, because it helps to create balance between the subject and the background.



To apply the rule of thirds, divide your scene into three sections horizontally and vertically. Place the focal point of your photo on one of the intersections of the dividing lines.

Following the rule of thirds, the bicycle in this photo lies on the points where the dividing lines intersect. The top of the dock also roughly follows the horizontal line that runs one-third down from the top of the frame.

If you have a person or animal in your picture, you can place the subject's face on one of the four points, looking towards the centre of the scene. If the horizon is in a picture, it should run about one-third from the top or one-third from the bottom, depending on whether the terrain or the sky is the centre of focus.

The rule of thirds is not an absolute law, and there have been many great pictures taken that don't abide by it. But the rule can be a great way to add balance and interest to your pictures.

6. Find a Unique Perspective

You can challenge yourself to take original pictures that convey unique perspectives. Rather than just pressing your shutter button as soon as you have the urge to capture a scene, take some time to assess your camera angle, proximity to your subject, and background elements. You might transform your composition by taking one or more of the following simple steps:

- Get closer to your subject to show more detail and eliminate distractions in the background.
- Include just a portion of your subject in the frame.
- Take your original subject and place it in the background. Find a new subject that adds context to the object in the background.
- Get lower to the ground, and point the camera up towards your subject.
- Move to a higher location, above your subject, so you are pointing down when you take the photo.

For example, if you are travelling, your natural instinct might be to take straightforward pictures of local monuments. But with this approach, you might end up with the same lacklustre pictures taken by scores of other tourists before you. And there would be a good chance that a nearby souvenir shop would sell superior, professionally photographed prints and slides of the same monuments. For that matter, you could have just stayed at home and ordered the photos from a professional.

Use your imagination to compose some original, creative photos that you won't find anywhere else. Capture some of the local colour by photographing a lively food vendor stationed near the monument, and the monument can be the backdrop in your frame. Or use the self-timer to capture you and your companion sampling the local fare that you've bought from the food vendor in front of the monument.

7. Bracket

The term *bracket* means to create exposures that are both lighter and darker than the camera or light meter indicates. The idea is to second guess the purely mechanical exposure meter, so that you get the right exposure.

If you're taking photos of a sunset, a scenic vista, or a plant, you have the time to bracket. With these subjects, you're also likely to have a wider range of tones to record than your camera can handle, especially if your subject is brightly lit.

So how do you bracket with an automatic camera? Most digital cameras, and many automatic cameras, have an exposure compensation feature, sometimes called the *EV setting*. If you set the exposure compensation for -1, the shot is one stop underexposed (darker than normal). If you set the camera for +1, the shot is one stop overexposed (lighter than normal). So you can bracket by taking three pictures, one each at the -1, 0, and +1 settings.

Some cameras offer an automatic feature, which takes a range of photos, each with a different exposure setting.

Even if your camera doesn't permit you that much control (or if you don't want to take the time to change the exposure settings), another technique will give you results similar to bracketing. To get a lighter exposure, aim your camera at a darker portion of the subject, and then press the shutter button part way down (until you begin to feel a little resistance). Next, without releasing pressure on the shutter button, reframe your photo to include what you want, and then push the shutter button all the way down to take the photo.

This technique will only work if pressing the shutter button halfway down locks in the exposure, so you might want to check your camera's manual to be sure. You will also need to set the exposure on an object that is roughly the same distance away from the camera as the subject. Otherwise, your subject will not be in focus when you take the picture.

8. Analyse and Try Again

Photography takes practice. And you will progress at a faster rate if some of your practice time is focused on developing specific skills. One way to do that is to analyse your pictures and then take them again.

When you get a chance to look at your pictures on a computer or as prints, you can assess their quality of composition, lighting, exposure, and white balance. Upon close inspection, you might realise that you placed your subject too close to the centre of the frame, or that incandescent lights caused an orange glow. The next time you're taking pictures, take this same photo again, and make adjustments for the problems you encountered before.

When you look at the results of your second round of pictures, you might find that you got excellent results, or you might find that one of your adjustments disrupted something else in the photo. Or maybe the different lighting conditions of the different day made it more difficult to get the perfect exposure.

To continue the exercise, photograph the same subject or scene on a regular basis. You must always compensate for the differences in lighting each day, but you can try new approaches to the composition. Learning to photograph the same subject under different conditions or with a different approach gives you valuable experience and ideas when you encounter new situations.

A quick check with the LCD

One of the benefits of digital photography is that you can get a look at your photos on the LCD preview screen right after you've taken the shot. This feature is great for a quick analysis of the photo's composition, exposure, and colour tone. Because preview screen is so small, however, it often does not reveal problems with focus.

9. Take Pictures Every Day

To become a talented and confident photographer, make photography part of your daily routine. Fortunately, digital cameras have made it much more convenient and inexpensive to take lots and lots of pictures. Once you've purchased your digital camera, you can take as many photos as you want. The only cost is for batteries and storage for your pictures.

The more you practise, the more confident you'll become in your skills and in your equipment. You'll also develop the habit of keeping your camera close by, and having it ready for photo opportunities. Train yourself to look for these opportunities, and take advantage of them when they come to you. Some of the world's most memorable pictures were taken by amateur photographers who happened to be in the right place at the right time. So to be ready to take that once-in-a-lifetime shot, know how to use your gear, have your equipment handy, and be on the lookout for great photo material.

10. Show Your Pictures to Other People

Even when you are making great progress with your photography skills, it's easy to overlook the shortcomings in your own work. To continue improving your abilities, show your photos to other people. Getting others' opinions is an invaluable learning experience.

Good pictures should be visually exciting to people, eliciting a "Wow, this is great!" response. If you find that people are not very excited by your photos, ask them what they think is missing, and what you could do to make them better. You'll be surprised what some people like and do not like about your pictures.

Find other photographers in your community. You can look at each others' work and give feedback. This kind of mutually beneficial arrangement also helps you to develop your critical eye.

While it's important to show your photos to others, remember that you are the ultimate judge of your own work. Photography is an art and, as an artist, you should establish your own voice and style. You don't have to listen to every piece of advice, and you might produce your best work by taking chances and following your own instincts.

That said, photographs are made to be seen! As you improve you photography skills, showing off your photos can be the best part.

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