PIXEL PAINT™

USER'S MANUAL

SUPERMAC TECHNOLOGY

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Contents

Welcome to PixelPaint

PixelPaint™ is the Macintosh™ II program for creating and manipulating graphics, text, scanned images, and digitized photographs in *full color*.

With PixelPaint, you can:

- create color artwork.
- add color to artwork initially drawn in black-and-white.
- add color to artwork imported to PixelPaint from other applications.
- enhance, or colorize, images generated with a scanner.

PixelPaint allows you to modify, and add colors to, artwork created by other Macintosh applications. Files created with Macintosh applications such as MacPaint®, MacDraw®, Adobe Illustrator 88™, Aldus FreeHand™, Image Studio™, and Cricket Draw™ — and a host of other applications — can be directly imported into PixelPaint. Therefore, almost all of the Macintosh artwork created in black-and-white is available for color enhancement with PixelPaint.

You don't have to be a trained artist to use PixelPaint. If you have graphic arts experience, you'll find many of PixelPaint's features and effects mirror traditional graphics processes.

An Overview of PixelPaint

The Macintosh II can generate over 16 million colors, and PixelPaint allows you to work with all of them. After creating and coloring a few PixelPaint images, you'll get a good feel for how to manipulate computer colors — as well as an appreciation of the color capabilities of the Macintosh II.

The name "PixelPaint" is derived from how color images are created on the Macintosh II. The term "pixel" stands for "picture element." In this case, a picture element is the smallest component of the graphic image. Each individual dot on the monitor screen represents one pixel.

Therefore, PixelPaint gives you the ability to precisely control the smallest picture element: you can individually set the color hue, saturation and brilliance for every dot which comprises the image.

Of course, you don't have to create a piece of artwork pixel by pixel — although you can if you want to. Instead, PixelPaint gives you the ability to draw, sketch, and paint on your computer screen: just as you would with ordinary drawing tools, such as a pencil or paint brush.

In fact, PixelPaint is built on a powerful set of painting tools which incorporate a variety of special effects. If you're familiar with other Macintosh graphics applications (such as MacPaint) you'll recognize many of these tools, and will already know how to work with them in PixelPaint.

The difference with these tools in PixelPaint is that they operate in full color. Every PixelPaint document can work with up to 256 separate colors, and these colors are stored in a special table called a palette. Eighteen standard color palettes are supplied with PixelPaint.

Since all of the colors on the palette can be mixed, changed, or blended to match the needs of the particular image, the color palettes can easily be customized to suit the needs of your artwork. As you become familiar with PixelPaint, you'll find that it's quick and easy to define individual colors, or a range of colors, to create a particular effect.

In addition to being able to specify the colors for your palettes, PixelPaint offers a variety of ways to select the individual colors. PixelPaint can access the standard Apple color picker, as well as systems for choosing colors by Hue, Saturation and Brightness; by Red/Green/Blue intensity; by levels of Cyan/Yellow/Magenta /Black; or specifying Pantone® colors from the Pantone Matching System.

The ability to specify colors in such a variety of ways is a particularly powerful feature of PixelPaint. With over 16 million colors available, customized color palettes enable you to specify exactly the right combinations of colors for your artwork.

Using The PixelPaint Manual

Before working with this PixelPaint User Manual, you should be familiar with the Macintosh and its basic operations. You should be comfortable with menus, the mouse, opening and saving documents, and the other standard techniques. If this is your first experience with the Macintosh, or if you need a refresher course, refer to your Macintosh II owner's guide.

You can work with this User's Manual in a number of ways:

- If you want a brief introduction, read through the rest of this chapter: this chapter concludes with A Quick Preview of PixelPaint. The procedures and examples provided in this preview will give you a good feel for the tools and capabilities of PixelPaint.

- For detailed descriptions of the operation of the drawing tools, refer to Part I, Chapter 2: *The PixelPaint Toolbox*. For detailed descriptions for each of the PixelPaint menu items , refer to the Part II, Chapter 1: *The PixelPaint Menus*. Information about shortcut keys can be found in Part II, Chapter 2: *Shortcuts and Modifier Keys*. Note that much of the information contained in Part II, the reference section, will also be found elsewhere in the manual.

- To see some color examples of special effects, open some of the documents on the supplementary disks included with PixelPaint. As you become more familiar with how PixelPaint works with color, pay particular attention to how the color palettes were created and used for those examples.

The Artwork Examples

Included with your PixelPaint package are three disks — named *Art Disks* — which contain examples of completed artwork. These examples include various special effects such as coloring text, creating color backgrounds, drawing with unique brush and pencil features, and creating fill patterns.

What You Need To Get Started

You can use PixelPaint on any Macintosh II system which has the following components:

- An 8-bit video card.
- A color monitor, or a grayscale monitor. (A grayscale monitor represents PixelPaint's colors only as shades of gray.)
- Two or more megabytes of RAM. See the section "About Memory," later in this chapter for more details.
- A hard disk drive. Color images take up lots of storage space. Though it's *possible* to use PixelPaint without a hard disk, the disk-swapping involved is very inconvenient and not recommended.

The PixelPaint Disks

Five disks are included with PixelPaint:

- *The PixelPaint Disk* contains the program. Copy PixelPaint onto your hard disk, and also make another backup copy on an 800K disk. PixelPaint is not copy protected.
- *The three Art Disks* contain the sample illustrations of PixelPaint projects. Copy these files onto your hard disk, too. *The Utilities Disk* contains a copy of PixelScan. Copy this onto your hard disk if you're going to be working with a scanner.

About Memory

PixelPaint requires a Macintosh II configured with *at least* two megabytes of RAM.

The maximum image size is also determined by the amount of available memory. On a Macintosh II with 2 megabytes of RAM, you will be able to open and work with the maximum PixelPaint document size: 1024 x 1024 pixels. If you have a number of INIT files in your System Folder (which use System memory), you may be limited to a document size as small as 512 x 512 pixels.

If you have *more* than two megabytes of RAM, you can run PixelPaint under MultiFinder. With MultiFinder, make sure the memory partition assigned to

PixelPaint is at least 2560k. For complete information about how to work with MultiFinder, refer to the owner's manual for your Macintosh II.

Sharing Images With Other Applications

PixelPaint allows you to create color images in two ways:

- Draw the image yourself, using the array of painting and drawing tools.
- Work with an existing image. The image can be created in another Macintosh application, or can be generated by a Macintosh image input device (such as an image digitizer, a scanner, or a digitizing tablet).

PixelPaint can work with images stored in MacPaint, PICT, PICT2, TIFF (Tag Image File Format), and EPSF (Encapsulated PostScript™) formats. Most standard Macintosh graphics programs will let you save images in one of these formats. PixelPaint also works with the Macintosh Clipboard and Scrapbook, using the standard Cut, Copy and Paste commands.

PixelPaint is fully compatible with Apple's MultiFinder™ so you can open multiple applications on the screen simultaneously. This will enable you to copy and paste images directly from other applications.

For example, with MacDraw and PixelPaint open at the same time, you can select a MacDraw image, copy it (using Copy, from the Edit menu), click in the PixelPaint window to make it active, and then choose Paste from PixelPaint's Edit menu. With this procedure, the MacDraw image will be copied to PixelPaint to become part of your artwork.

Note: You can also copy images from PixelPaint to other Macintosh applications. PixelPaint has a special set of colors that duplicate the Apple standard System colors so you can be sure that the image colors in both the applications remain the same. This feature allows you to use PixelPaint artwork in Desktop Publishing, Desktop Presentation, and video applications. To use this technique, refer to Part I, Chapter 3: *Colors and Palettes*, for the description of the System color palette.

For more information about incorporating your PixelPaint artwork into other applications and file formats, see Part I, Chapter 4: *Importing and Exporting Files*.

Printing with PixelPaint

PixelPaint is designed to work with any standard printer which attaches to the Macintosh II. This includes any black-and-white PostScript printer such as the Apple LaserWriter®, or color PostScript printer such as the Tektronix 4692D. PixelPaint can also print black-and white draft copies with the Apple ImageWriter®.

With a black-and-white PostScript printer, PixelPaint can generate black-and-white images with complete grayscales, up to the resolution of the printer. Black-and-white PostScript printers can also be used to make color separations of PixelPaint artwork, so the artwork can be printed with an offset press. With a color PostScript printer, PixelPaint can directly generate full-color images.

PixelPaint images are also directly compatible with typesetting machines that use PostScript, such as the Linotronic™ 100, 200 or 300 ImageSetters. Using PixelPaint in conjunction with desktop publishing programs such as PageMaker®, Ready-Set-Go, and XPress, these high-resolution printers enable you to incorporate your color artwork into brochures, books, annual reports, and other printed matter.

For step-by-step instructions for how to print with PixelPaint, see Part I, Chapter 6: *Printing PixelPaint Documents*.

If You Need Help

Each of PixelPaint's features are explained in this User's Manual.

If you have technical questions which are not covered in this manual, call the SuperMac Technical Support at (408) 245-0646, Monday through Friday, 8:00 a.m. to 5:00 p.m., Pacific Standard Time.

SuperMac also maintains a bulletin board with the latest information about SuperMac products and software updates. You are invited to post questions about SuperMac software and hardware products, and to pass along tips and shortcuts you've found while working with our products. The bulletin board supports 300/1200/2400 bps, and is on-line 24 hours a day at (408) 773-4500. Your modem settings should be 8 data bits, no parity, and 1 stop bit.

Technical assistance is also provided on the CompuServe, GEnie, and MacNET commercial networks.

Chapter 1

PixelPaint Basics

This chapter explains how to:

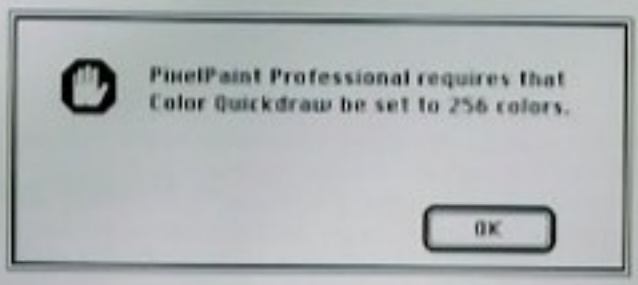
- set your monitor for 256 colors
- start up PixelPaint on your Macintosh II
- open documents
- save documents
- quit the program

All of the steps use the standard Macintosh techniques. PixelPaint also includes a few extra ways to save documents, which makes it faster and easier to save your files, as well as export them to other applications.

Once you're familiar with opening, closing and saving documents, this chapter will conclude with a quick tour of some of the features of PixelPaint.

Setting the Monitor Colors

To work with PixelPaint, your monitor *must* be set to display 256 colors. If you attempt to launch PixelPaint with the monitor set to any other color mode, a dialog box similar to the diagram on the following page will appear:

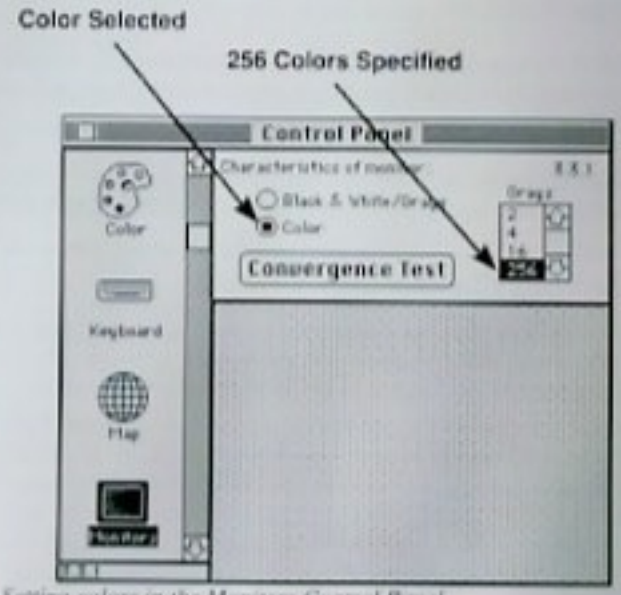


If this dialog box appears, click OK, and you will be returned to the Finder. Use the following procedure to make sure your monitor is set to 256 colors:

1. Choose Control Panel from the Apple menu. The Control Panel dialog box will appear.

2. Scroll through the left column of the Control Panel, and find the icon named Monitors. Click on the Monitors icon to bring up the Monitors control box.

   You may have to scroll through icons in the column to find Monitors.



Setting colors in the Monitors Control Panel

3. Click the button labeled Color.

4. In the scroll box to the right of that button, click on 256.

5. Choose Close from the File menu to close the Control Panel, and lock-in your selection for the monitor display.

The monitor is now set for 256 colors, and you're ready to run PixelPaint.

Some older Macintosh applications aren't compatible with a Macintosh II running in the 256-color mode. For these applications, simply use the Control Panel to reset the monitor to display 2-shade black-and-white. Remember to switch back to the 256-color mode before running PixelPaint.

If you are running PixelPaint under MultiFinder, you must remain in the 256-color mode for *all* applications. In other words, you can not launch PixelPaint, return to the Finder, and switch to 2-shade black-and-white mode to launch another application.

Copying PixelPaint onto your Hard Disk

We recommend that you begin by making a back-up copy of *all* the PixelPaint files on a set of floppy disks. Next, store the original PixelPaint master disks in a "safe" place: in this case, "safe" means away from heat, humidity, and anything magnetic.

Working with your back-up set of PixelPaint disks, use the following procedure to install the files on your hard drive:

1. Create a new folder on your hard disk drive, and name it something appropriate — like "PixelPaint files."

2. Insert the copy of the PixelPaint master disk, and double-click on the icon of the disk to open it.

3. Choose Select All from the Edit menu to select all the files on the disk. When selected, the icons of the files will be highlighted in black.

4. Click on one of the icons, and drag it into your new PixelPaint folder. All the files will automatically be copied into the folder.

5. Eject the disk, and repeat the above steps for each of the PixelPaint disks.

Keeping the PixelPaint program in the same folder as your artwork files will make

it easy to locate the files, as well as customized color palettes and Stationery Pad files.

Note: If you are a former PixelPaint user and are upgrading to the latest version of PixelPaint, make sure to remove the old copy of PixelPaint from your hard disk drive. PixelPaint is designed to be compatible with the previous version of PixelPaint, and will be able to open, edit, and manipulate all of your old files. When you've removed the old copy of PixelPaint, double-clicking on an old PixelPaint file will automatically launch PixelPaint, and bring that file onto the screen.

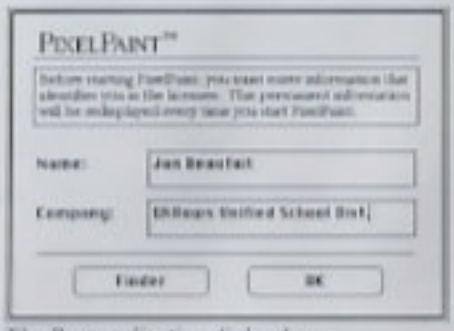
Starting PixelPaint

PixelPaint launches exactly like any other Macintosh application. From the Finder, you can:

- Double-click on the PixelPaint icon.
- Click once on the PixelPaint icon, and then choose Open from the File menu.
- Double-click on the icon of any PixelPaint file.

The very first time PixelPaint is run, you will need to personalize your copy of the program. Type your name, press Tab to move to the next text box, and then enter your company name (entering your company name is optional). Double check to make certain that all the information you have entered is correct, then click the OK button.

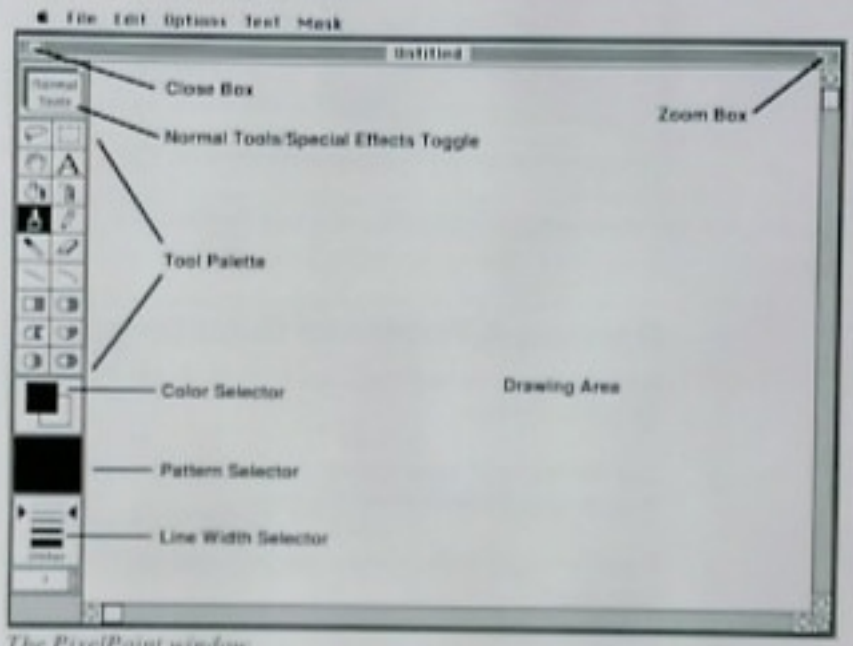
This information will be displayed every time you start up PixelPaint.



The Personalization dialog box.

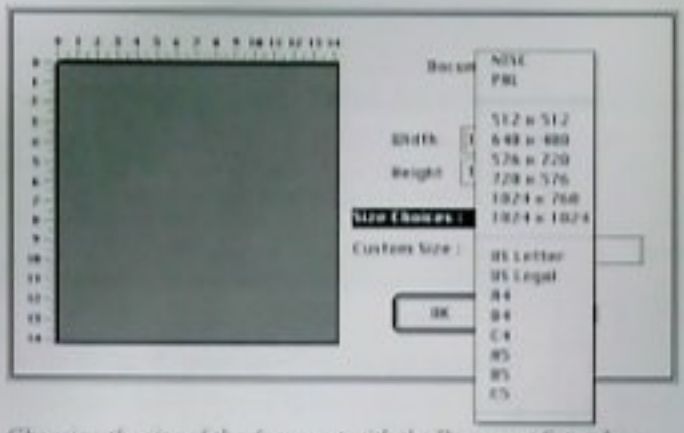
The PixelPaint Window

The maximum size of the PixelPaint window depends on the amount of memory in your Macintosh II. When PixelPaint is launched and loaded into memory, the PixelPaint will appear, similar to the diagram below:



The PixelPaint window.

It's important to note that PixelPaint will always open the largest possible document, based on the memory available in your computer. Before you begin working with a new document, you should select the size of the finished document by choosing Document Setup from the File menu.



Choosing the size of the document with the Document Setup box

Opening A PixelPaint Document

From the Finder (before PixelPaint is open), double-click on the icon of the document you want.

You can also open a document by clicking once on the document's name or icon, then choosing Open from the File menu.

If you're already working with a document and want to open another one, follow these steps:

1. Choose Close from the File menu, or click the close box in the upper-left corner of the window.

   Note: PixelPaint can only work with one document at a time. Even if the document is a new, untitled window, it must be closed before you can open any other PixelPaint file.

   If you haven't saved the document since it was last updated, a dialog box will appear to ask if you want to save the changes. Click the appropriate button. Clicking Yes saves the changes to the document. Clicking No closes the document without saving the changes. Clicking Cancel cancels the close command, and returns you to the document.

2. Choose Open from the File menu.

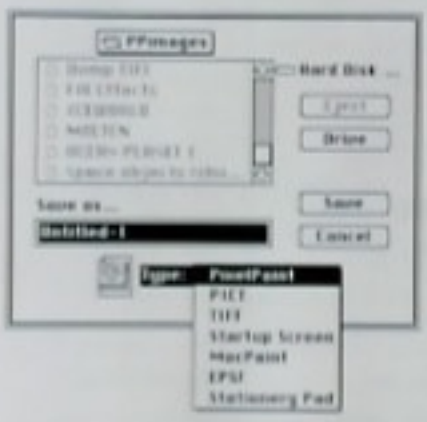
   A dialog box will appear.

If you want to open a new, blank document, choose New from the File menu instead of Open.

3. In the dialog box, click on the name of the document you want, and click Open.

Saving PixelPaint Documents

PixelPaint allows you to save your documents in several different formats. PixelPaint can save documents in PixelPaint format, in PICT2 format, as a TIFF image, as a Startup Screen, as a MacPaint document, as EPSF file, and as a Stationery Pad. The Stationery Pad lets you save customized palettes, paint brushes, and Preferences so that when you open a saved Stationery Pad document, personal choices will be pre-set. For a complete description of the file formats supported by PixelPaint, see Part I, Chapter 4: *Importing and Exporting Files*.



Choices For Saving Documents

Your three choices to save PixelPaint documents are: save and replace the original version; save as a new document under a new name; and save a copy of the document.

Save a New File, or Replace an Existing One
Choose Save from the File menu.

The document is saved, and automatically replaces (overwrites) its original version. The newly saved document will be on the same disk as the original.

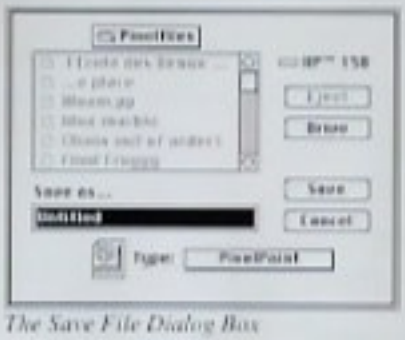
The Save command is for documents that you've already saved. If you're saving a new, untitled document, choose Save As from the File menu and follow the steps for saving the document under a new name.

Save Under A New Name, or a Different Format
Use the Save As command to save a new document, or whenever you want to save a document without overwriting the existing version, or if you want the document to be on another disk.

Also use this procedure when you want to save the document in a new format—for instance, when you want to export it to another program that accepts images only in certain formats.

1. Choose Save As from the File menu.

   The Save File dialog box will appear, similar to the diagram below:



The Save File Dialog Box

2. Type the new name that you want for the document.

   If you have more than one disk drive connected to your Macintosh, you can select the destination disk by clicking on the Drive button.

3. Click on the pop-up menu in the dialog box and choose one of the format types. Notice that when you select a different file format, the file format icon will appear to the left of the file type.

   Usually you'll save documents as a regular PixelPaint document. See Part I, Chapter 4: *Importing and Exporting Files* for a description of the other file formats.

4. Click Save.

The document will be saved under its new name. The original version of the document is not affected.

Save A Copy Of A Document
Use this save option to make a backup copy of a document.

1. Choose Save A Copy As from the File menu.

   The Save File dialog box will appear. The name of the document to be saved is "Copy of" followed by the name of the current document.

   You can edit the name or select another destination disk for the document.

2. Select one of the file formats displayed in the pop-up menu at the bottom of the dialog box.

   A copy of a document does not have to be saved in the same format as the original.

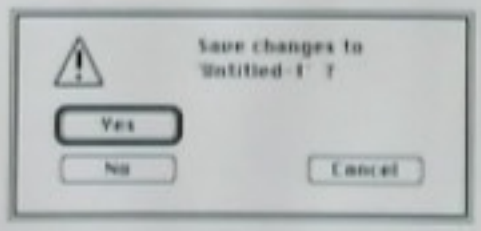
Important Note: When you use the Save A Copy As option, you are returned to the *original* document to continue working. If you want to work on the newly-created copy, you must first Close the original document, and Open the copy of the document.

Quitting PixelPaint

1. Choose Quit from the File menu.

   If you have saved all the changes to the open document, the program quits.

   If you have not saved some changes, a dialog box similar to the diagram below will appear:



2. Click the appropriate button in the dialog box and the program quits.

   If you click Yes, PixelPaint saves your changes and overwrites the original document. It's the same as saving and replacing a document. If you are

working with a new document and have not yet saved it or given it a name, the Save As dialog box appears, letting you name the new document and choose the format in which you wish to save it.

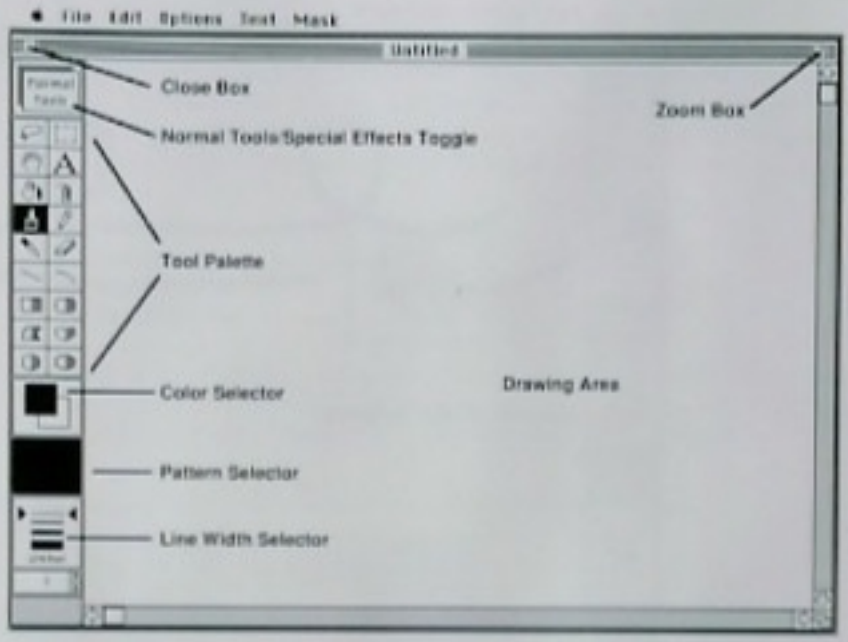
If you click No, PixelPaint quits the program without saving any changes that were not saved before.

If you click Cancel, PixelPaint cancels the Quit command so that you can continue working with the document.

A Quick Preview of PixelPaint

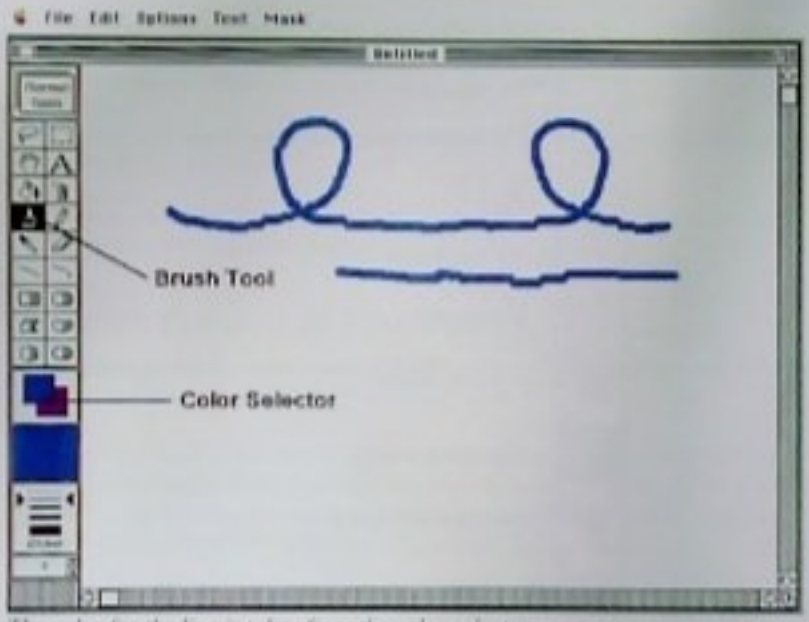
Now that you have mastered some of the PixelPaint basics, you're ready for a short introduction to some of PixelPaint's many features.

- Open PixelPaint in the normal manner by double-clicking on the PixelPaint icon. The blank PixelPaint window appears, ready for your artwork. (If the window doesn't open, see the instructions at the beginning of this chapter. You may have to set your monitor to accept 256 colors.)



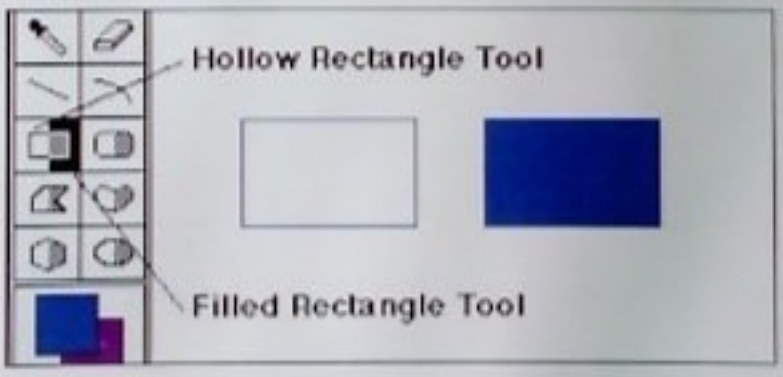
- Click on the paintbrush tool, located on the left side of the Tool Palette. Put the pointer in the window and slowly drag it to draw a solid line. The line will be in the color shown in the color selector.

- Draw the line with a few closed loops in it. You'll see in a moment how to fill the loops with colors. Your screen should look similar to the diagram on the following page.

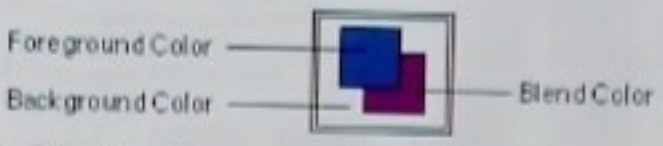


The color for the line is taken from the color selector.

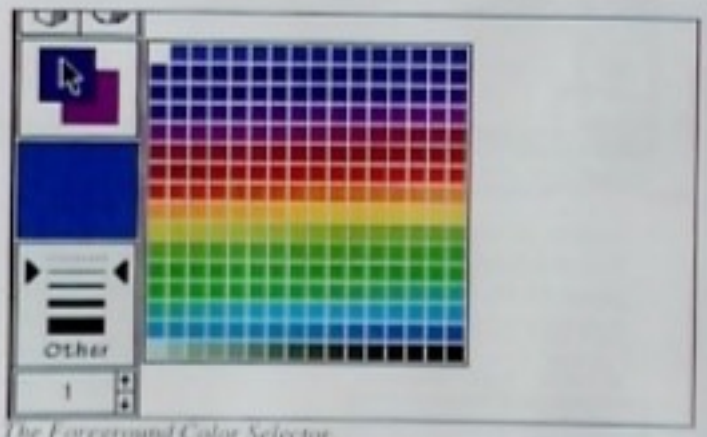
- Click on the left (hollow) side of the rectangle tool and drag the pointer to draw a hollow rectangle. The rectangle is the same color as the line.
- Click on the right (filled) side of the rectangle tool, and draw again. This time the rectangle is filled with color.



- Now, let's change the color. Put the pointer in the middle of the top square in the color selector (the foreground color). Press and hold down the mouse button. A color palette appears. Drag the mouse to a new color and release the button. This is how you can choose new colors for drawing. (For this quick demonstration, choose a color close to the top of the palette. You'll see why in a minute.)

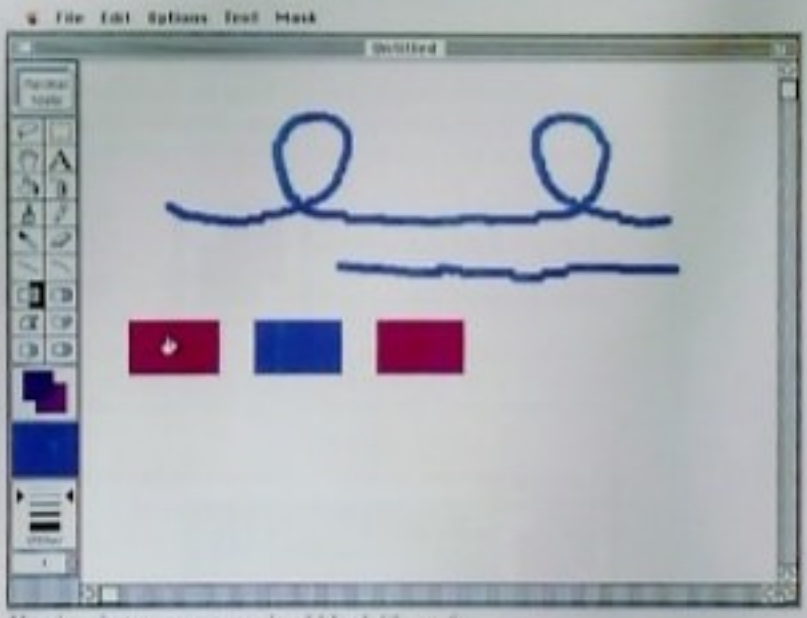


The Color Selector lets you choose the colors of your art. In Normal Tools most tools draw in the Foreground color. Patterns use the Foreground color and the Background color. The Blend color is used when making a multicolored fill.



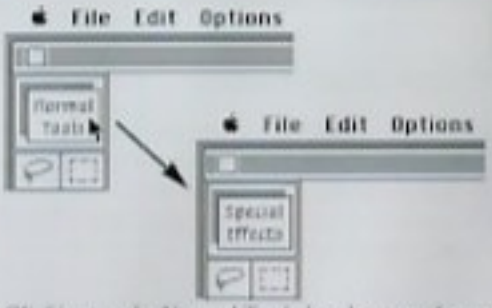
The Foreground Color Selector.

- Draw another filled rectangle. It's in the new color. If you click on the paintbrush tool and draw with it, the paintbrush line is also in the new color. You can also change existing colors to the new one with the bucket tool. Click on the bucket, put its icon on the first rectangle you drew, and click. The rectangle is filled with the new color.



Here's what your screen should look like so far.

- Look at the top of the tools and find the box labeled "Normal Tools". Click on it. It will change to "Special Effects." With Special Effects "on," menus will appear for the tools when you click on them. Those menus list the special drawing effects for the tools.

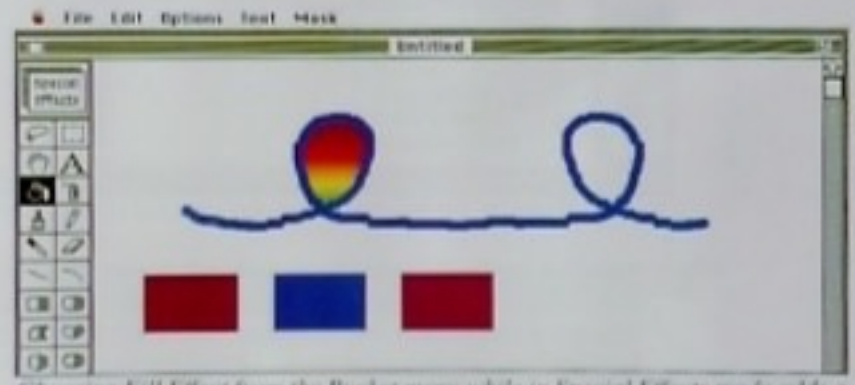


Clicking on the Normal Tools box lets you draw with Special Effects by choosing from the tools' Special Effects menus.

- Click on the paintbrush again, but before drawing a line, choose Cycle from the Brush menu. Now put the pointer on the blend color square in the color selector and press and hold down the mouse button. The color palette appears again.

Drag the mouse to choose a color near the bottom of the palette. As you drag the mouse, the color of the blend color square in the color selector changes. Release the mouse button. Now drag to draw a line. It's a multicolored line that cycles (because you chose the Cycle command) through a range of colors. The range starts with the color you chose earlier near the top of the palette, and ends with the one you just chose.

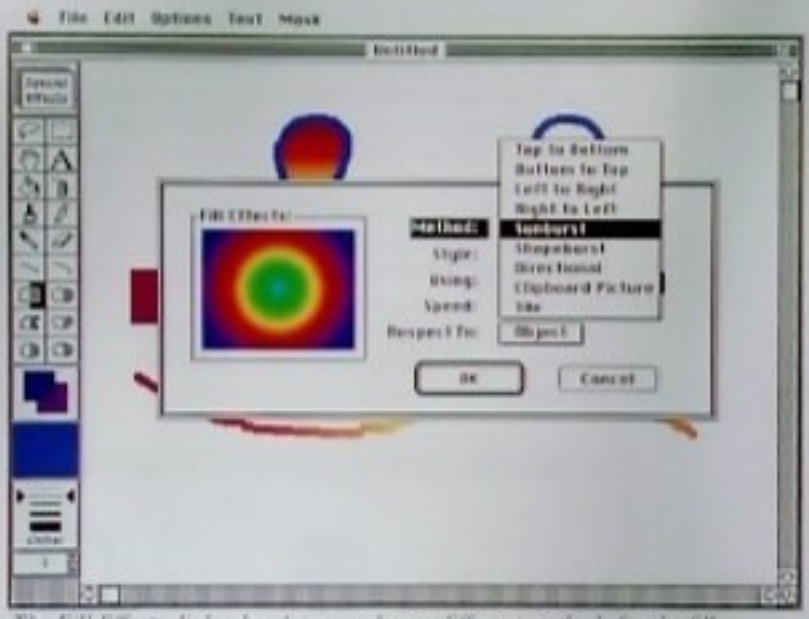
- Click on the bucket again, and choose Use Fill Effect from the Bucket menu. Put the bucket pointer inside one of the loops you drew earlier, and click. The loop now fills with the spectrum of colors. (Oops. If the loop wasn't completely solid, the fill will "leak" out into the rest of the window. If that happens, choose Undo from the Edit menu, draw another loop that doesn't have any gaps in it, and then fill it with the bucket.)



Choosing Fill Effect from the Bucket menu while in Special Effects mode adds a multicolored effect.

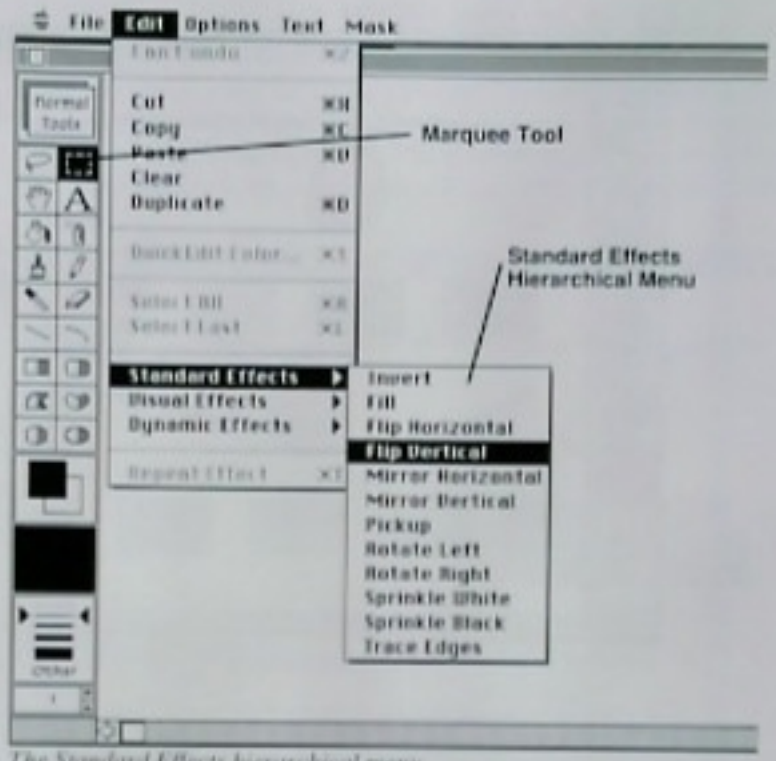
- Click on the filled (gray) rectangle shape tool, and before drawing with it, choose Use Both from the Rectangle menu. Now draw the filled shape. When you release the button, the rectangle gets both a multicolored fill and a shadow.

- Choose Fill Effects from the Options menu. The dialog box that appears is for setting the arrangement of the multicolored fill. Put the pointer on the box that shows the Method (such as Top to Bottom) and hold down the mouse button. A pop-up menu appears listing the types of fill effect methods. Choose Sunburst. The fill effects box shows the new effect. Click OK. Draw another solid rectangle. That one will be filled with the Sunburst fill.



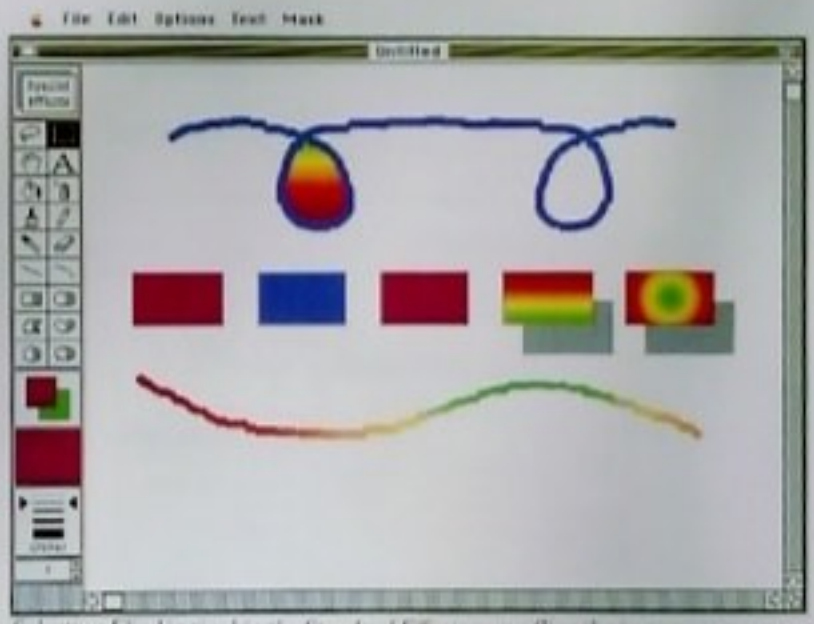
The Fill Effects dialog box lets you choose different methods for the fill.

- Now click on the marquee selector tool, and drag the pointer around any portion of the images in the window. As you drag the pointer, a dotted rectangle indicates the area that you're selecting. From the Edit menu, choose the Standard Effects hierarchical menu. (To use the hierarchical menu, keep the mouse button pressed down, then drag to your choice on the menu.) You can apply the choices on the Standard Effects menu to any image, regardless of the tool originally used to draw it.



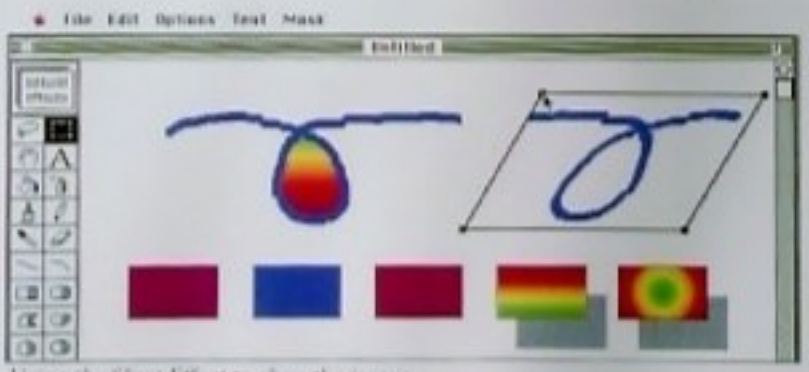
The Standard Effects hierarchical menu

- Choose Flip Vertical. The selection flips upside down. Now choose Invert from the Standard Effects menu. Each color in the selection is mapped to its inverse in the color palette. Choose Undo Inverting from the Edit menu to change the colors back.



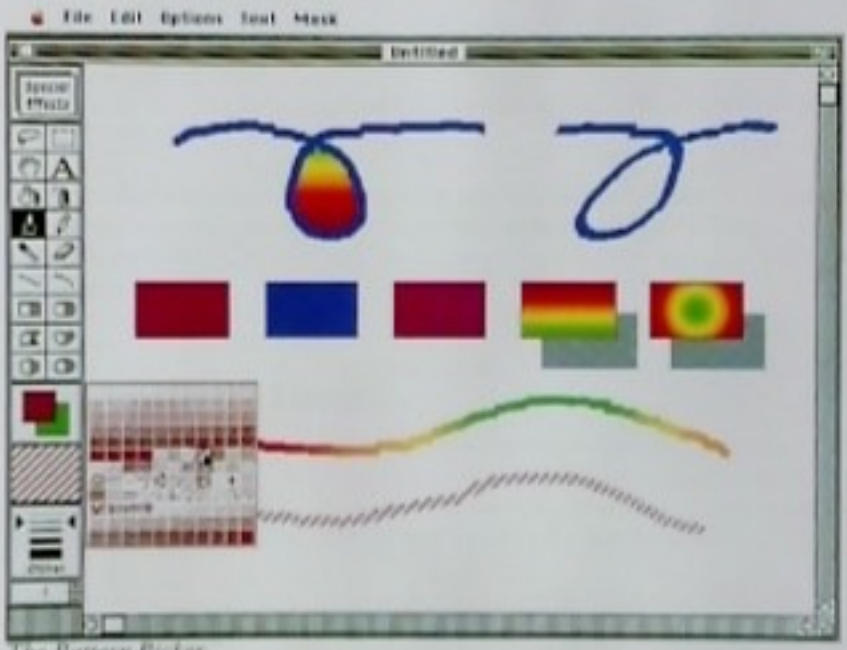
Selecting Flip Vertical in the Standard Effects menu flips the image over.

- Choose Dynamic Effects from the Edit menu. This hierarchical menu can be used on images selected with the Marquee tool, but not on images selected with the Lasso tool. Choose Slant. A box with "handles" (the small squares at the corner of the box) appears around the selection. Drag any one of the handles to skew the image. Release the button and PixelPaint redraws the image at a slant.



Using the Slant Effect to skew the image.

- You can draw in patterns as well as in solid colors. Put the pointer on the pattern selector and press and hold down the mouse button. The pattern selections appear. Drag the pointer to choose a pattern. Now click on the paintbrush again and draw a line. This time the line is drawn in the pattern, instead of as a solid line. If Special Effects is still on, and you choose Cycle from the Brush menu, the patterned line also cycles through the color spectrum.



The Pattern Picker

- To return to a solid color, put the pointer on the pattern selector again, and drag to the solid square at the lower right corner of the pattern selections. Release the mouse button. The pattern returns to a solid color.

- Now, just for fun, press the caps lock key, hold down the shift key, and click the mouse. Don't watch too long. Click the mouse to turn off the "moving colors."

- Double-click on the eraser tool to clear the window if you want to start again. And enjoy PixelPaint!

Chapter 2

The PixelPaint Toolbox

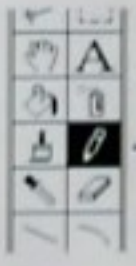
This chapter explains how to use the drawing and editing tools which are available in PixelPaint.

Many of these tools have a Special Effects mode, which offers additional options and control over the appearance of the finished artwork. If Special Effects are available for a particular tool, they are discussed immediately after the description of the tool.

The PixelPaint Tools

The tools available to PixelPaint are displayed in the Toolbox: the gray vertical bar to the left of the drawing area. To use any of these painting and editing tools, first click on the tool to select it: when selected, the tool will be highlighted (turned black). The tool will remain selected until you select a different tool.

The diagram below shows the appearance of the Pencil Tool when selected:



Pencil Tool Selected

The Toolbox has two modes: Normal Tools, and Special Effects. The Normal Tools mode is for painting and editing simple shapes and figures. The Special Effects mode activates a variety of blending and shadowing effects unique to PixelPaint.

Normal Tools/Special Effects Box

Clicking this box switches between Normal Tools and Special Effects for the tools.

Most of the tools have extra capabilities when the Special Effects mode is activated. For tools with Special Effects abilities, an additional menu will appear to show the options available for that tool. This additional menu will appear as the menu farthest to the right, and will appear in the name of the selected tool (Pencil, Brush, Bucket, etc.). Different tools have a different selection of effects available under this menu.

When Normal Tools is turned on, the Special Effects mode is disabled, and the Special Effects menus for the tools do not appear.

Using Undo with Tools

When you work with any of the tools, PixelPaint remembers the last change made to your artwork. If you make a change that you don't want, or activate an effect that isn't what you had in mind, you can restore your artwork by choosing the Undo command under the Edit menu.

The Undo command only affects the last command which was executed. For example, if you drew a line with the pencil tool, and the *very next* thing you did was to choose Undo from the Edit menu, the line would be removed. On the other hand, if you drew a line with the pencil tool, moved to the Toolbox and selected the brush tool, drew a line, and *then* chose Undo from the Edit menu, only the brush line would be removed.

When you choose the Undo command from the Edit menu, it immediately changes to become "Redo..." That is, the Undo command will allow you to alternately remove and replace the last change made to your artwork.

In PixelPaint, the "escape" key (marked "esc," at the upper left corner of the keyboard) performs the same function as the Undo command.

Lasso Tool

Selects an area of the screen.

"Selecting" an area means you can treat that area as a separate object. The selected area can be dragged around the window, cut or copied to the Clipboard, erased, duplicated, or modified.

For the example below, open one of the example files supplied on the PixelPaint Art Disks.

1. Click on the Lasso tool to select it (highlight it in black). When you move back onto the drawing window, the pointer will change into a miniature Lasso.
2. Click and drag the pointer across a portion of the artwork. Note that the pointer draws a line as you drag it.
3. Draw a closed loop around a portion of your artwork.
4. Release the mouse button, and the area of your loop will be selected. A moving outline will appear to show the limits of the selected area.

If the loop isn't completely closed, PixelPaint will close it automatically: the two end points will be connected with a straight line.

To move a selected area, click in the enclosed area and drag.

Once you're through working with a selected area, you can release the selection by clicking anywhere in the window outside the selected area. You can also release the selection by clicking on a different tool.

Working with the Lasso

When you select the lasso tool and click on the drawing area, PixelPaint analyzes the color of the exact pixel you clicked on. Then, when you drag the mouse to enclose an area with the Lasso, PixelPaint examines every pixel enclosed in the loop. Every pixel which is a different color from the first pixel you clicked on will be selected.

You can use this to your advantage to select various portions of your artwork. For example, if you start the Lasso on the figure and then extend the loop into the Background, *only the Background* portion closed in your loop will be selected. If you start the Lasso on the Background but cross into the figure with your loop, *only the figure* portion closed in your loop will be selected.

If you drag a loop within an area which is a solid color, *nothing* will be selected. (The Lasso will not select any pixels which are the same color as the original pixel.)

The Lasso tool has an automatic "shrink to fit" capability. If you draw a figure on a solid-colored Background and then Lasso it, *only the figure* will be selected. This makes it easy to select and move parts of your artwork.

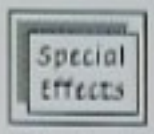
Note that this "shrink to fit" capability has limits: if the area you lasso is too large or complicated, the selected area will remain in the shape you drew with the lasso. If this happens, the Macintosh will "beep" to alert you.

You can use the Lasso to select multiple areas of your artwork. To do this, use the Lasso to select the first area, and then hold down the Shift key while selecting additional areas.

Using the Command key with the Lasso is a fast way to select an entire figure which is all one color. To use this technique, move the Lasso over the figure, hold down the Command key, and click. As long as the figure is a single, unbroken color, the entire figure will be selected. If this technique is used on a figure which has a multicolored fill, only the area which is the same color as the pixel you click on will be selected.

The Command-Lasso technique is particularly useful for selecting text characters that you want to color. Hold down the Shift key *and* the Command key, and click on the characters — one at a time in order to select them all.

Selecting an area with the Lasso tool makes portions of the Standard Effects, and all of the the Visual Effects available in the Edit menu. The Dynamic Effects are not available for areas selected with the Lasso tool. See Chapter 5: *Advanced PixelPaint Techniques* for a complete explanation of the Standard and Visual effects.



Lasso Special Effects Menu

When Special Effects is activated in conjunction with the Lasso tool, several PixelPaint effects can be applied to the selected area. With the Lasso tool selected, a new menu, called Effects, will appear to the right of the other PixelPaint menus.

Note: These options are only activated after an area has been selected with the Lasso.

Use Fill Effects
Fills the selected area with the fill effect as defined in the Fill Effects dialog box. The colors of the fill effect are determined by the fill range on the color palette.

Use Shadow
Adds a shadow to the shape. Your choices in the Shadow dialog box determine the features of the shadow.

Use Both
Simultaneously adds a shadow and the fill effect to the shape.

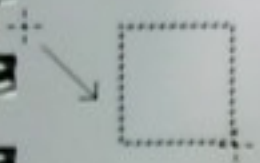
Note: For a complete discussion of the Fill Effects and Shadow dialog boxes, see Part I, Chapter 5, *Advanced PixelPaint Techniques*.

Replace Foreground with Blend
For the selected area, will replace all occurrences of the current Foreground color with the current Blend color.

Reverse Color Range
Reverses the range of a color blend.

Marquee Tool

Selects a rectangular area of the screen.



Marquee selections can be edited and modified in the same manner as Lasso selections. In addition to the Standard and Visual Effects menus, a marquee selection can also take advantage of the Dynamic Effects options from the Edit menu.

To use the marquee tool:

1. Click on the marquee tool.

2. Drag the pointer. It creates a rectangle indicated by blinking dotted lines. Drag so that the rectangle surrounds the area you want to select.

3. Release the mouse button. The area inside the box will be selected.

If you hold down the Command key while selecting a figure with the marquee, the rectangle will shrink to the smallest rectangle which can contain the figure. This only works if the figure is against a solid Background.

If you hold down the Option key, the Marquee tool turns into the Lasso tool.

You can select additional areas of the drawing with the Marquee tool by holding down the Shift key for each successive selection.

Double-clicking on the Marquee tool will select the entire image area shown on the screen.

Marquee Special Effects Menu

Use Fill Effects
Fills the shape with the fill effect as defined in the Fill Effects dialog box. The colors of the fill effect are determined by the fill range on the color palette. Your choice in the line width tool determines the thickness of the shape's border; the border's color is the Foreground color in the color selector.

Use Shadow
Adds a shadow to the shape. Your choices in the Shadow dialog box determine the features of the shadow. The fill is the pattern in the pattern selector, and the border is the Foreground color. The line width tool determines the thickness of the border.

Use Both
Simultaneously adds a shadow and the fill effect to the shape.

Note: For a complete discussion of the Fill Effects and Shadow dialog boxes, see Part I, Chapter 5, *Advanced PixelPaint Techniques*.

Replace Foreground with Blend
For the selected area, will replace all occurrences of the current Foreground color with the current Blend color.

Reverse Color Range
Reverses the range of a color blend.

Grabber Tool

Scrolls the window.

When the grabber pointer is in the window, clicking and dragging the pointer moves the portion of the PixelPaint document that you're able to work with. This has exactly the same effect as moving the view with the horizontal and vertical scroll bars. This tool is particularly useful when working with an enlarged image in Fatbits.

Double-clicking on the Grabber Tool will bring up the Overview dialog box.

If you are using a zoom-in enlargement (which splits the window), the grabber works on either side of the window.

There are no Special Effects for the Grabber Tool. If you can already view the entire document in the window, the grabber won't move it any further.

Text Tool

The Text tool lets you incorporate text into your document. The text can serve as a description of the graphic elements, or can later be manipulated to become a part of the artwork.

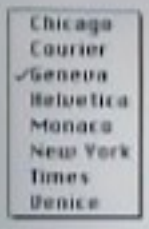
Follow these steps to use the text tool:

1. Click on the tool. The cursor becomes an I-beam.
2. Put the cursor where you want the text to begin and click the mouse button. The I-beam changes to a blinking insertion point.
3. Choose the font, size, style, alignment, and color arrangement of the text from the Text menu.

4. Begin typing. You can also change the fonts and other features before or after you finish typing, but these changes *must be made* before you select any other tool or click in another area.

An important note: Use the keyboard keys for editing text completely before clicking anywhere else in the window. As soon as you click in the window, the text becomes a graphic image and no longer responds to editing. For example, to erase a word, don't drag the pointer over it. Instead, use the delete key to remove the offending characters. If you try to drag over the word to select it, as in a word processing application, the text becomes a graphic image instead of text and can't be edited any further.

When working with the Text tool, the text will appear in the format selected by the Text menu. The first three choices on the Text menu—Font, Size, and Style—are all hierarchical menus.



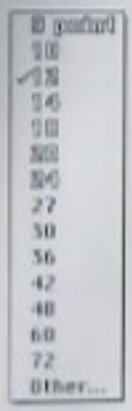
Font

This menu lists the fonts available for your text. The font which is currently selected to be used by the Text tool will have a check-mark beside it.

The default font selection for the Text tool is the Geneva font.

The list of fonts available will be those fonts currently installed in your System file. Installing fonts, and working with font files is described in the *Macintosh System Utilities User's Guide*, which is supplied with your Macintosh computer.

See Part II, Chapter 2: *Shortcuts and Modifier Keys* for command-key equivalents for commands in this menu.



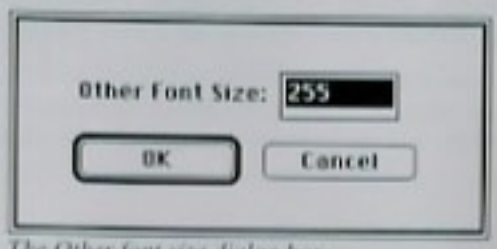
Size

This menu lets you choose the size of the text created by the Text tool. The numbers listed refer to the font size, measured in points (one inch = 72 points).

For any particular font, the exact font sizes which are installed in your System file will appear as outlined numbers in the Size menu. For the sample Size menu to the left, font sizes 9-24 were installed in the System file, and are outlined in the Size menu.

The default size selection is 12-point.

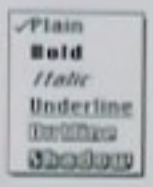
All of these sizes are fixed, except the last one. You can change this variable font size to put any number of different sizes in an image.



The Other font size dialog box

If you change the variable font size, text created previously with a different variable size will not be affected.

See Part II, Chapter 2: *Shortcuts and Modifier Keys* for command-key equivalents which apply to this menu.

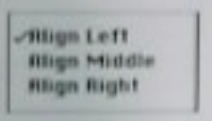


Style

The Style menu shows the different text styles which can be used for the text. You can choose any combination of Bold, Italic, Underline, Outline, and Shadow. The effect of these style choices is similar to how the fonts actually appear in the Style menu. Choosing Plain cancels all other style choices.

The default setting for the font Style is Plain.

See Part II, Chapter 2: *Shortcuts and Modifier Keys* for command-key equivalents which apply to this menu.



Align Left

Aligns the text flush left at the point where you first click to start typing.

Align Middle

Aligns the text centered about the point where you start typing.

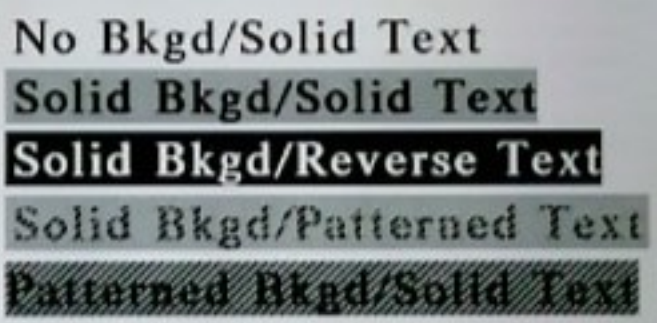
Align Right

Aligns the text flush right where you start typing.

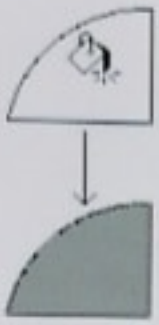
No Background, Solid Background, Patterned Background, Solid Text, Reverse Text, Patterned Text

These choices let you define the combinations of color, pattern, and Background for your text. Text can be in the Foreground color or the current pattern; the Background under the text can be in the Background color, or in the current pattern, or clear.

The diagram below shows the various combinations of Text options.



There are no Special Effects options available for the Text Tool.



Bucket Tool

Fills a closed figure, or a contiguous area of a single color, with the current color and pattern.
Follow these steps to use the bucket tool:

1. Choose the bucket tool, and note that the pointer becomes a paint bucket. Move the paint bucket into a completely closed figure (such as an enclosed "O" as opposed to a partially opened "C"). Make certain that this point is directly over the area you want to fill.

2. After you have positioned the bucket inside the area to be filled, click the mouse button. The area will be filled with the current Foreground color and pattern.

The exact point where the area is filled is determined by the tip of the "flowing paint" on the Bucket Tool, as shown in the diagram below. This is particularly important when filling small areas.

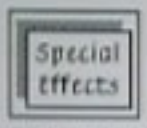
Note: Make certain that the area to be filled is completely enclosed before clicking on it. Otherwise the paint bucket fill "leaks out" and will fill the entire window. If this occurs, choose Undo *before doing anything else*, and the fill will be erased. Redraw the area to enclose it, and try the paint bucket again.

If you position the paint bucket outside a closed figure (so that it's on the Background), and then click, the Background will be filled.

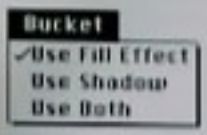
You can also use the paint bucket to fill enclosed areas of images imported from other applications. This technique works especially well for colorizing black-and-white images.

If Special Effects is on, the type of color fill will be determined by the setting of the Bucket menu, and your choices in the Fill Effects dialog box. Choose Fill Effects from the Options menu, or double-click on the Bucket Tool to access the Fill Effects dialog box.

Hint: If you are using the Bucket tool to fill an especially complex area and find that the fill is not completed, choose Undo Fill from the Edit menu and hold down the Option key while filling the area.



Bucket Special Effects Menu



Click on the Normal Tools box to change it to Special Effects. The Bucket menu will appear when you click on the Paint Bucket tool.

Use the Bucket menu to add a fill effect or a shadow to an enclosed area. As with Normal Tools, the Bucket will also add a fill effect or a shadow to any figure consisting of a single, solid color.

Follow these steps to use the Special Effects for the Bucket tool:

1. With one of the drawing tools, draw an enclosed area or a one-color figure.
2. Click on the paint bucket tool.
3. Choose from the paint bucket special effects menu.
4. Put the pointer in the enclosed area, or on the single color, and click.

If you want the paint bucket to fill an area without using any of the special effects (for example, just to fill with a regular pattern or solid color), click on Special Effects to change it back to Normal Tools.

In the Special Effects mode, the fill colors depend on the range of colors located between the Foreground color and the blend color in the color palette table. To view the color palette, choose Colors from the Options menu.

The way the colors actually appear in the fill is determined by the options you choose in the Fill Effects dialog box. Choose Fill Effects from the Options menu to view the Fill Effects dialog box.

Use Fill Effect
Fills an enclosed area or single-color figure. The fill will use the current pattern in the pattern selector, the colors of the fill range, and the features chosen in the Fill Effects dialog box.

Use Shadow
Fills an enclosed area or a single-color figure with the pattern in the pattern selector, and then adds a shadow. The shadow has the features described in the Shadow dialog box. To see that box, choose Shadow from the Options menu.

Use Both
Fills the enclosed area with the Fill Effect and also adds a shadow.

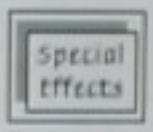
Note: For a complete discussion of the Fill Effects and Shadow dialog boxes, see Part I, Chapter 5, *Advanced PixelPaint Techniques*.

SprayCan Tool

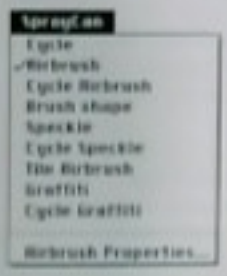
Draws as if spraying paint from a spray can.

Drag the pointer in the window. The spray will be in the current Foreground color, and will be sprayed in the pattern indicated by the pattern selector. The longer the mouse button is held, the greater the buildup of "paint."

To change the color or pattern of the spray, change the colors on the color selector, and the pattern in the pattern selector.



SprayCan Special Effects Menu
Click on the Normal Tools box to change it to Special Effects. This menu will then be available when you select the SprayCan tool.



Cycle
Sprays in the pattern of the pattern selector and cycles through the colors of the fill range on the color palette. If the pattern is a solid color, the spray will also be solid. With the Cycle option selected, the spray begins with the Foreground color, and continues to cycle through the colors of the fill range as you draw the spray across the screen. The longer the spray line you draw with the Cycle SprayCan, the more times the colors repeat (cycle through the fill range).

Airbrush
Turns the spray into an Airbrush. The Airbrush spray is the color designated in the Foreground Color Selector. Holding down the mouse button with the Airbrush option selected will make the Airbrush continue to spray, gradually

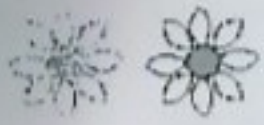
filling the spray area to a solid of the Foreground color. The characteristics of the Airbrush option can be changed with the Airbrush Properties control, described on the next page.

Cycle Airbrush
Turns the spray into an Airbrush. The Airbrush spray will cycle through the colors of the fill range, beginning with the Foreground color.

Brush Shape
Makes the size and shape of the Airbrush spray the same size and shape of the Paintbrush. To choose a Paintbrush shape, choose Brushes from the Options menu (or double-click on the Paintbrush), then click on the Brush you want. After that, choosing Brush Shape from the SprayCan special effects menu makes the spray the size and shape of that Brush. With the Brush Shape option selected, holding down the mouse button will make the selected brush shape continue to spray, gradually filling to a solid of the Foreground color.

Speckle
Sprays with large dots of color to create a speckled effect. The spray is the pattern of the pattern selector. To change the speckling to smaller dots of color, hold down the Option key while using the SprayCan tool. With the Speckle option selected, holding down the mouse button will make the speckling continue to spray, gradually filling to a solid of the Foreground color.

Cycle Speckle
Sprays with large dots of color, in the pattern of the pattern selector, but cycling through the colors of the fill effect range. Hold down the Option key while dragging to spray smaller dots of cycle colors.



Tile Airbrush
Sprays in the pattern of the Tile. See the description of the Tile dialog box from the Options menu to see how to create and modify the tile pattern. Notice that as with spraying in the pattern, moving the SprayCan around on the window maintains the tile image as a single image.

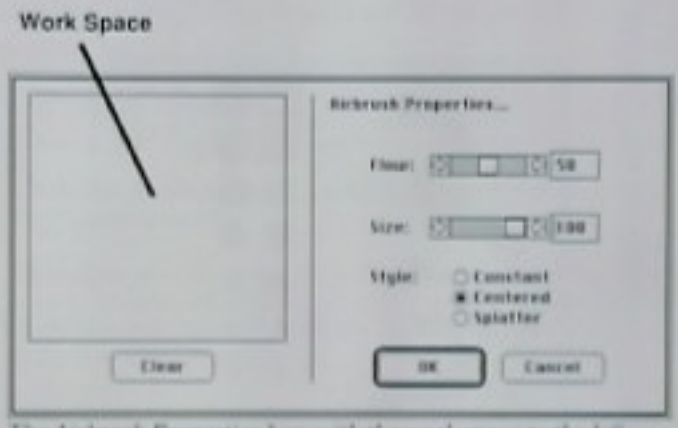
The tile image covers images under the spray unless you hold down the Option key while spraying. With Option held down, the white areas of the tile pattern are transparent and don't obscure images underneath the tile spray.

If a pattern is selected, it will not be used in the Tile Airbrush.

Graffiti
The Graffiti SprayCan has a predetermined seeping action, such as that from a standard spray can when spraying one area for a length of time. Hold down the mouse button for a few seconds over an area when using the Graffiti SprayCan to get the maximum effect.

Cycle Graffiti
Sprays using the Graffiti effect, but cycles through the selected color range while spraying.

Airbrush Properties
Just as actual airbrushes are adjustable for flow and spray characteristics, the Airbrush tool can be adjusted to create a variety of spray effects. Choose Airbrush Properties from the SprayCan menu, or Double-click on the SprayCan tool to reveal the Airbrush Properties dialog box, similar to the diagram below:



The Airbrush Properties box, with the work space to the left

The flow control adjusts how quickly the spray effect builds on the screen. The size control adjusts the diameter of the area sprayed by the airbrush.

Three spray styles are also available: Constant, Centered, and Splatter. With Constant selected, the spray pattern is uniform over the diameter of the spray specified by Size. With Centered selected, the spray pattern is weighted more heavily toward the center of the spray. Splatter gives an effect similar to using a large nozzle with an airbrush: the spray pattern consists of both large and small pixels.

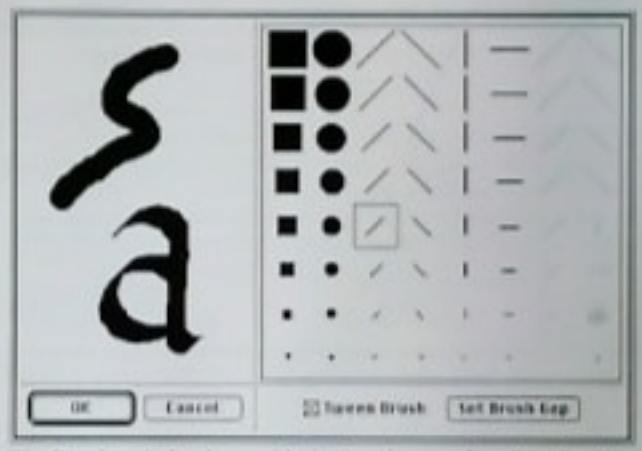
The Airbrush Properties control will affect the Airbrush, and Cycle Airbrush options under the SprayCan menu. It will not affect the Cycle, Speckle, Cycle Speckle, Tile Airbrush, Graffiti, or Cycle Graffiti options.

Brush Tool

Draws as if the pointer is a Paintbrush.

With the Brush tool selected, drag the pointer in the window. The Brush paints in the current color and pattern.

The Brush can be set to various sizes and shapes. To change the Brush size and shape, choose Brushes from the Options menu, or double-click on the Brush tool. A dialog box similar to the diagram below will be displayed:



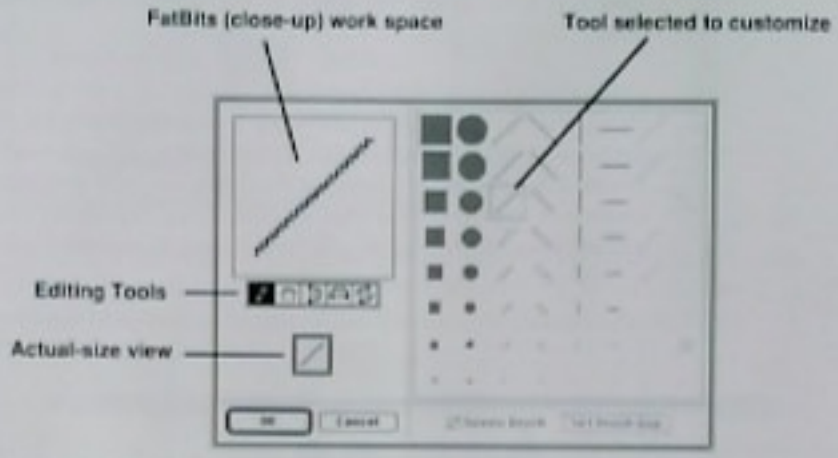
The Brushes dialog box, with the Brush scratch pad on the left.

This dialog box is for setting the shape of the Paintbrush. Click on any of the shapes in the right side of the box to choose one as your new Brush. There is a box around the current Brush shape. To see what the brush stroke will look like, practice drawing in the scratch pad on the left side of the box before you click OK.

Custom Brushes

You can customize the size and shape of any or all of the Brushes in the dialog box. When you then choose a new Brush for your painting, it will be exactly the size and shape you want.

1. Double-click on the shape you want to customize.
   An editing panel will appear on the left side of the box showing a Fatbits (close-up) representation of the Brush. The five tools below the Fatbits box are used to change the shape of the Brush.



2. Choose the pencil tool from the editing panel (not from the tool palette on the main toolbox window).

3. Make changes to the shape of the Brush in the panel. The pencil works as a toggle. Clicking on a blank area adds a dot; clicking on an existing dot erases it. As you draw the new Brush shape, a representation at actual size appears in the box below the tools.

In addition to the pencil, four other tools are available in the editing panel:

- Grabber — scrolls the fat bits window so you can reposition the Brush.

- Horizontal Flip — flips the Brush horizontally.

- Vertical Flip — flips the Brush vertically.

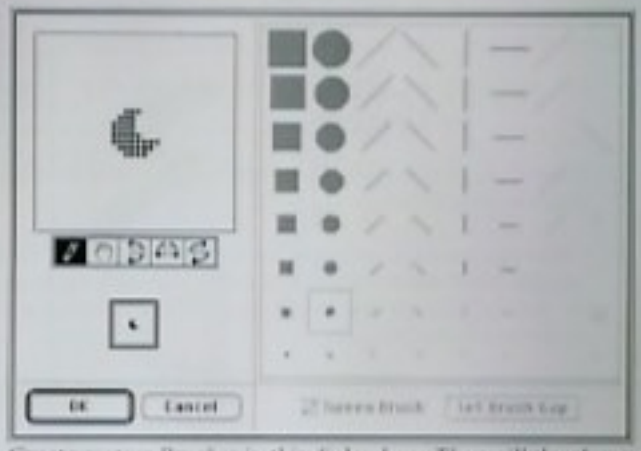
- Rotate — rotates the Brush 90 degrees clockwise.

Note: If you scroll part of the Brush out of the work space, that part is lost and cannot be scrolled back. If you inadvertently lose part of an image, click Cancel and start over.

4. Click OK when the Brush is the shape and size you want.

Your new Brush shape will appear as one of the Brushes on the right side of the box.

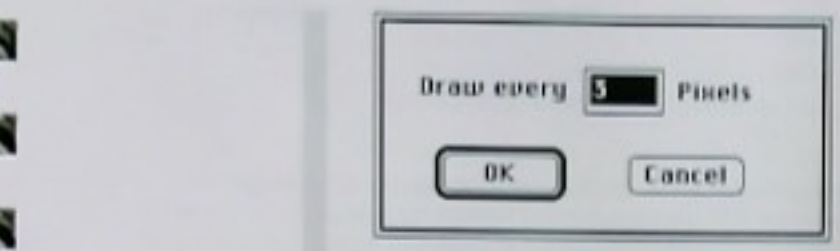
Using the Command key equivalents, you can copy and paste within the Brush dialog box. For instance, if you create a complex Brush and then want to create a similar one, click on the complex Brush, then press Command-C to copy the Brush. Click on another Brush in the dialog box, and then press Command-V. It becomes a copy of the complex Brush that you can modify further. Copying and pasting in this manner saves you from having to recreate the complex Brush a second time.



Create custom Brushes in this dialog box. They will then be available as Brush choices.

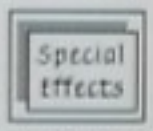
Custom Brush shapes are saved with the document so that you don't have to recreate the brushes every time you work with the file. Also, saving the document as a PixelPaint Stationery Pad file saves all the customized Brush strokes as part of the file (which you can use as a template for creating new documents).

Also in the Brushes dialog box are the Tween Brush check box and the Set Brush Gap button. When the Tween box is checked, you can click the Set Brush Gap button to display the following dialog box:



The Tween Brush option serves to close the gaps left by quickly drawn Brush strokes. Depending on the shape of the Brush, this can create a variety of interesting effects. You can set the Brush Gap between 1 and 50 pixels.

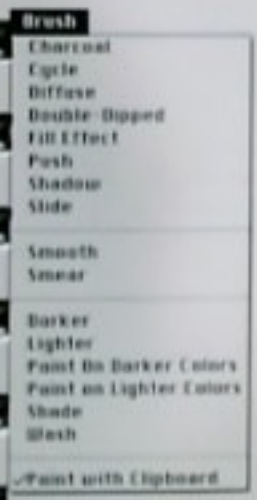
The top portion was drawn with Tween Brush on, with the Brush Gap set to Draw every 3 Pixels. The bottom portion was drawn with Tween Brush off.



Brush Special Effects Menu

The Brush tool offers a wide variety of special effects choices. The effects range from simulating a charcoal line used in sketching, to special effects for colorizing black-and-white images.

Click on the Normal Tools box to change it to Special Effects. The following menu items will then be available when you click on the Brush tool:



Charcoal

Adds a lighter shade of the Foreground color to the image. If there isn't a lighter shade of that color on the palette, a light gray is added to the image. The effect is cumulative so that painting back and forth over the same spot makes the color progressively approach the Foreground color. As implied by the name of this option, using Charcoal is like drawing with a charcoal stick.

If a pattern is specified in the Pattern Selector, that pattern will be used with the Charcoal option.

Cycle

Paints in the current pattern, cycling through the range of colors between the Foreground color and the blend color. If the pattern is a solid, the painting is in solid colors. To change the colors of the cycle, change the Foreground and

blend colors on the color palette. The longer the line, the more times the colors cycle.

Cycle is the default setting for the Special Effects Brush.

Diffuse
Diffuse uses the current brush shape to scatter the pixels of the image. The individual pixels will be moved randomly beneath the area swept by the brush. The scattered pixels will retain their color characteristics (hue, saturation, and value).

On solid-color areas, the scattering of the pixels will have no apparent effect, since pixels will be rearranged among pixels of the same color. The Diffuse option has the greatest effect at the edges of objects, or between areas of contrasting colors.

Double-Dipped
Paints in two colors: the Foreground and the blend color. The Double-Dipped option senses the original direction of the paint motion, and alternates the colors each time you make a significant change in direction. This gives the line a distinct three-dimensional look. The paint is in the pattern of the pattern selector.

Fill Effect
Adds the Fill Effect to the painted line. As you first draw the line, it will appear in the Foreground color, in the pattern of the pattern selector. When the mouse button is released, the line will be redrawn with the current Fill Effect (as defined by the Fill Effects dialog box). Choose Fill Effects from the Options menu to set the Fill Effect.

Push
Slightly moves the portion of the image under the Brush as you move the pointer. That is, with Push chosen, the portion of the image under the Brush moves one pixel in the direction that you move the mouse. Pushing an edge of an image outward gives it a bump, pushing it inward gives it an indentation. Pushing inside an image moves colors around.

Shadow
Draws with a drop shadow as defined by the Shadow dialog box. The shadow makes painted lines appear to be floating above the screen.

Slide
Paints in the colors that are under the pointer when you start drawing. Essentially, Slide is like moving a dab of paint with your thumb.

Choose larger Brush sizes to see the Slide effect clearly.

Smooth
Smoothes jagged edges. Smoothing gradually fades sharp black edges to gray, and finally to white.

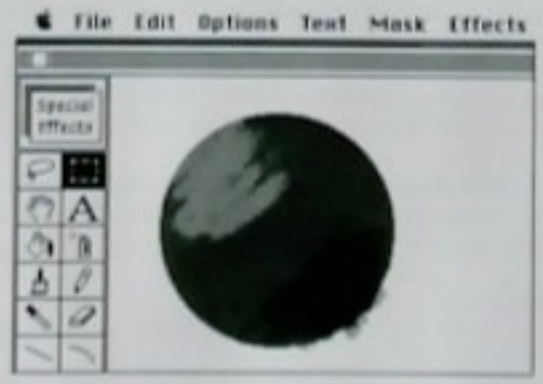
Smear
Smear is like running your thumb along wet paint to smear its colors. To maximize the Smear effect, click on the desired location and drag *slowly*. With a black-and-white image, Smear maintains the same gray as you smear outward.

Pressing the Option key while smearing adds a dab of the Foreground color as you smear.

The Smooth and Smear Brushes work appropriately with both color and grayscale palettes provided that the True Colors option is checked in the Preferences dialog box. For more information about the True Colors option, see Part II, Chapter 1: *The PixelPaint Menus*.

Darker
Adds additional color to an image as you paint over it. If the True Colors is selected, the color painted will be a darker shade of the original color.

Lighter
The opposite of Darker. If the True Colors is selected, the color painted will be a lighter shade of the original color.



The Darker and Lighter Brush

Paint on Darker Colors
This command is primarily for coloring black-and-white images. Choosing Paint on Darker Colors, and then painting over the image changes the black portions of the image to the Foreground color.

Follow these steps to use Paint on Darker Colors:

1. Change the Foreground color on the color selector to the one you want to use for colorizing an image.

2. With Special Effects on, choose the Brush tool.

3. Choose Paint on Darker Colors from the Brush special effects menu.

4. Drag the Brush over the lines in the black-and-white image that you want to change to the new color. Only the black portions are colored. The white portions are unaffected.

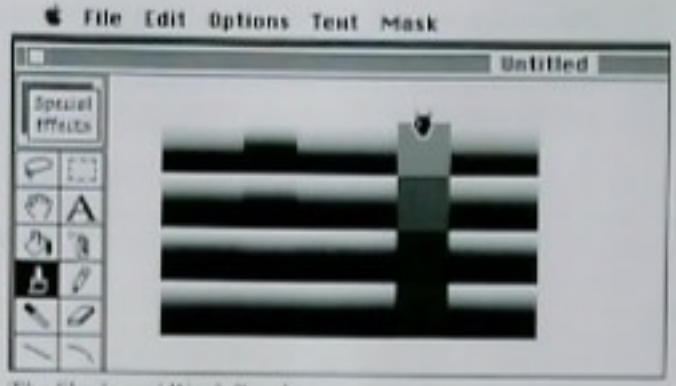
Although not designed for use on an image that is already in color, Paint on Darker Colors can change an existing color to a new color. The new color is determined by the mix of primary colors in the existing color and the Foreground color. For example, with Paint on Darker Colors selected and a yellow Foreground color, painting over a blue region would result in white (the blue plus yellow mix to create white).

Paint on Lighter Colors
This command is also designed for coloring black-and-white images. Choosing Paint on Lighter Colors and then painting over the image changes the white portions of the image to the Foreground color. Follow the same steps as for Paint on Darker Colors. With a black-and-white image, the Brush will color the white portions, and leave the black portions unaffected.

As with the Paint on Darker Colors command, using Paint on Lighter Colors on a color image changes the existing color relative to the mix of primary colors.

Shade
Maintains the *hue* of the colors you paint over, but changes each color's intensity to that of the current Foreground color.

Wash
Maintains the *intensity* of the colors you paint over, but changes each color's hue to that of the current Foreground color.



The Shade and Wash Brushes.

Paint with Clipboard
Paints with the image on the Clipboard as the brush shape. If no image is currently on the Clipboard, the paintbrush will have no effect.

Note that with the Paint with Clipboard option selected, the contents of the clipboard will be used as a brush *regardless of the source* of the clipboard. For example, if you're running PixelPaint under MultiFinder, and copy a word from a word-processor, that word will be used as the paintbrush shape for PixelPaint.

Pencil Tool

Draws thin freehand lines.

Dragging the pencil draws a line in the window. Release the mouse button when you want to move the pencil without drawing a line. The pencil is always the same width and is not affected by the line width tool.

The color the pencil draws in depends on where you first start to draw with it. If you start the pencil on a portion of the image that is in the Foreground color, the pencil draws in the Background color.

If you start the pencil on any other color, including white, the pencil draws in the Foreground color. You change the color of the pencil by changing the Foreground color in the color selector.

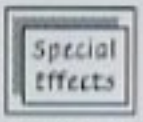
The pencil tool serves a second function in addition to drawing. Double-clicking on the pencil zooms in (splits the screen and enlarges) the image to its maximum 800% enlargement. Then, clicking in the left side of the window with the pencil tool automatically scrolls the enlargement to the point on which you clicked.

To zoom back out, either double-click again on the pencil tool, or choose Zoom Out from the Options menu. You can also hold down the Command-Shift keys while clicking on the normal-*size* area to zoom-out to a normal view.

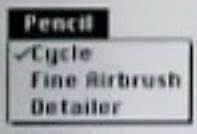
To zoom in on an image in 200% incremental steps, hold down the Command key when the pencil tool is selected. The cursor will turn into a magnifying glass with a plus sign in the center and you can position it on the area you want enlarged and click.

To return to a normal view, double-click on the pencil tool, or choose Zoom Out from the Options menu.

If you want to draw with the pencil tool while the image is enlarged, draw in the right-hand side of the window (the enlarged side). Clicking the pencil in the left-hand side scrolls the image.



Pencil Special Effects Menu



Click on the Normal Tools box to change it to Special Effects. When you click on the pencil tool this menu will be available.

Cycle
Draws a line which cycles through all the colors between the Foreground and blend colors of the color palette. The longer the line, the more times the colors cycle through the range.

Fine Airbrush
Turns the pencil into an Airbrush with a nozzle that's only three pixels wide. The spray of the Airbrush is always in the Foreground color.

Detailer
Shows an enlargement of the line as you're drawing it with the pencil. The detailer box follows the line around the window.

When Normal Tools is on, pressing the Tab key also activates the Detailer.

Dropper Tool

Changes the Foreground color to the color under the tip of the eyedropper pointer.

This tool is for matching the colors in the color selector with colors already on the screen. For example, if one part of an image has a certain shade of red that you want to use on another part of the image, you can use the eyedropper tool to "pick up" that shade of red. When you click the mouse button over the desired color area, the Foreground color changes to the selected color. Think of the eyedropper as a shortcut for getting the exact color you want without using the color palette.

Follow these steps to use the dropper tool:

1. Click on the dropper tool. The pointer for the dropper tool will become an eyedropper symbol.

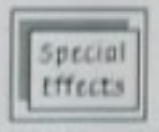
2. Press the mouse button and drag the pointer to the color you want to pick up. Put the end of the pointer on the color. Watch the color change in the color selector as you move the pointer.

3. When the color you want appears in the color selector, release the mouse button. The Foreground color will become the color at the end of the pointer.

If you decide not to change the color selector, drag the pointer out of the window. The Foreground color will revert to its original color.

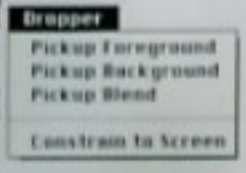
The dropper is very precise — it will only pick up the color of the single pixel under the tip of the pointer. To see that exact pixel, press the Tab key while dragging the pointer. The detailer Fatbits box appears, making it easy to place the pointer exactly where you want it.

Note: The Undo command in the Edit menu does not apply to the dropper tool.



Dropper Special Effects Menu

With Normal Tools on, the eyedropper picks up colors only for the Foreground color. With Special Effects turned on, the eyedropper can pick up colors for the Foreground, Background, or Blend colors.



Pickup Foreground
Changes the Foreground color. This command makes the dropper tool work as it does in the Normal Tools mode.

Pickup Background
Changes the Background color to the one under the pointer.

Pickup Blend
Changes the blend color to the one under the pointer.

Constrain to Screen
This option allows you to pick up colors from anywhere on the screen — including the Scrapbook, or other windows which show color images. With this option selected, click the mouse button in the drawing area, and drag the pointer to the area of the screen you want to pick up color from. Likewise, when operating under MultiFinder, click first in the PixelPaint window, and then drag onto the window of another application to select colors from that application.

To pick up colors from other windows (not necessarily PixelPaint windows), follow these steps:

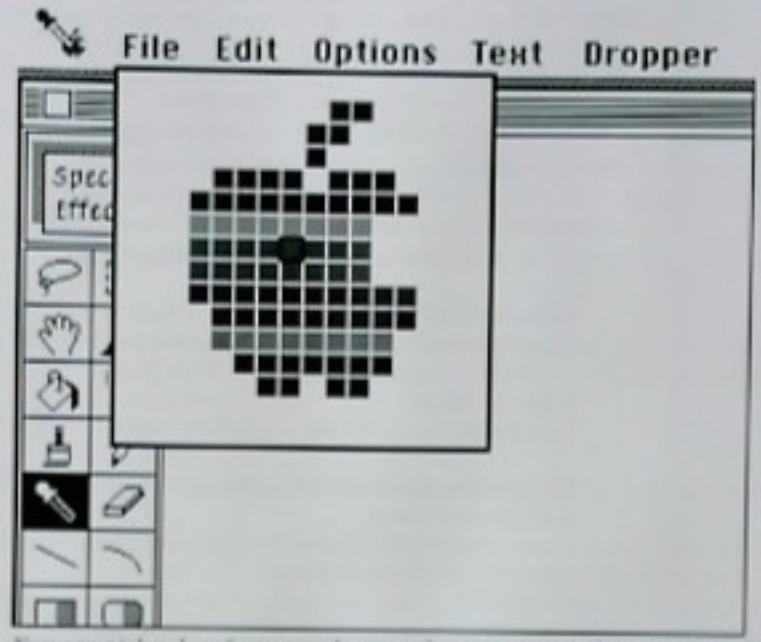
1. Choose Constrain to Screen from the Dropper menu.

2. Also from the Dropper menu, choose one of the other three choices.

3. Starting in the PixelPaint window, drag the pointer to the color you want to pick up. The color can even be from the menu bar, or the tools. As you drag the Dropper tool, the Color Selector will reflect which color you've selected with the Dropper.

4. Release the mouse button. The color in the color selector will immediately become the new color.

When using the dropper tool with the Constrain to Screen command, dragging out of the window does not change the Foreground color in the color selector back to its original color.



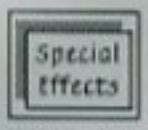
You can pick colors from anywhere on the screen, even the menu bar. Press the Tab key to see the Fathits box while dragging.

Eraser Tool

Changes the pointer to an eraser.

Hold down the mouse button to erase. While the mouse button is down, anything the eraser touches is erased to the Background color. Release the mouse button to move the eraser without having it erase. You can use the Undo command with the eraser. To erase to pure white rather than the Background color, press the Option key while you erase.

Double-clicking on the eraser tool erases the entire image in the screen window. If the document is larger than the screen window, only the portion of the document in the screen window will be erased.



Eraser Special Effects Menu

The eraser special effects let you erase to white, to black, or to one of the colors of the color selector.

A reminder: If you erase the wrong thing, choose Undo from the Edit menu immediately. Your erased image will reappear.

Clear to White
Erases whatever the eraser touches and replaces it with white.

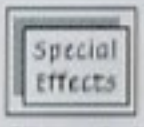
Clear to Black
Erases whatever the eraser touches and replaces it with black.

Clear to Foreground Color, Clear to Blend Color, Clear to Background Color
Erases whatever the pointer touches and replaces it with the Foreground, blend, or Background color.

Line Tool

Draws straight lines of various widths.

Choose this tool, then drag the pointer to draw a straight line. The width of the line is controlled by the line width tool, the color by the Foreground color, and the pattern by the pattern selector. When Normal Tools is on, the color of the line is the Foreground color. To draw lines with the pattern in the pattern selector, hold down the Option key as you drag.



Line Special Effects Menu

Click on the Normal Tools box to change it to Special Effects. The line Special Effects menu will then be available when you click on the line tool. The special effects you choose from this menu appear when you release the mouse button after drawing a line.

Fractal
Fractal is a term which relates to randomness. A fractal line is a mathematically deduced random jagged line. The amount of jaggedness is the

amount of randomness (or fractality) applied to the line. You set the amount of fractality by choosing Set Fractality at the bottom of this menu. The fractal line tool is useful for drawing certain shapes which appear in nature, such as coastlines and mountains.

Radial
Draws a sweep of lines around a fixed point. Put the pointer where you want the fixed point to occur, then drag the pointer to draw the sweep of lines.

The sweep will be in the Foreground color.

Cycle Radial
Draws a sweep of lines around a fixed point and also cycles the lines through the colors of the fill range. The more sweeps you make, the more times the range is repeated.

Cycle
Draws a straight line, and cycles it through the colors of the fill range.

Neon
Draws a line with colored edges, giving it the effect of a neon tube. The edging color is the Foreground color. The thickness of the neon line is not necessarily the same as that indicated by the line width tool. The line may have to be thicker to accommodate the edges.

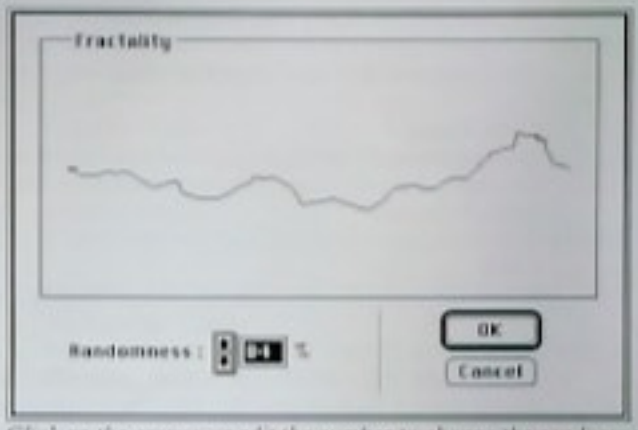
Tube
Draws a line so that it looks like a three-dimensional tube. The interior of the tube is the Foreground color, and its edges are black. The thickness of the tube may be larger than that indicated by the line width tool in order to accommodate the edging color.

Set Fractality
Shows a dialog box that lets you set the amount of fractality (randomness) to be automatically added to lines you draw. The fractality appears as crookedness in the line.

Click on the up and down arrows to increase or decrease the percentage of fractality. A 100% fractality is completely random, a fractality of 0% is a completely straight line. As you change the percentage, the image changes to approximate how the line will appear when you draw it in the window. Note that this dialog box only shows examples of randomness, not the exact shape of a fractal line. In fact, because they have randomness added to them, no two fractal lines will be exactly the same shape (unless they have 0% fractality and are therefore straight lines).

You can also change the percentage of fractality by highlighting the percentage and typing a new one. If the number isn't already highlighted, drag over the number, or double-click on the number to highlight it.

The Fractality dialog box can also be invoked by double-clicking on the Line tool.



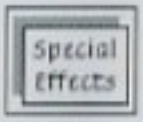
Click on the arrows or edit the number to change the randomness of the line.

Arc Tool

Draws arcs of various widths.

The Arc tool draws the same way as the line tool.

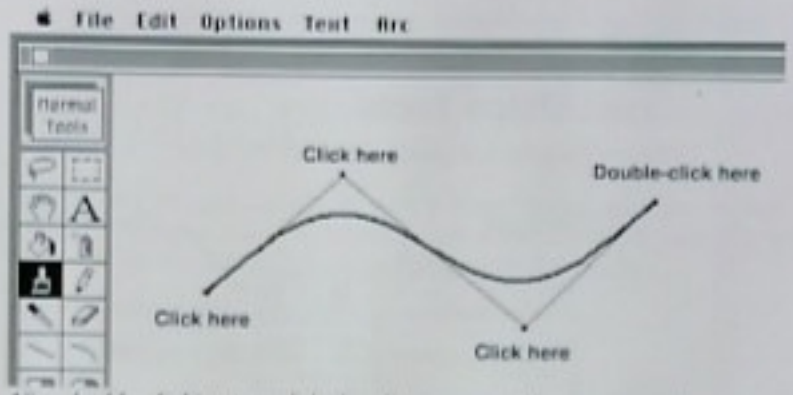
The width of the arc is controlled by the line width selector. With Normal Tools on, the color of the arc is the Foreground color. To draw an arc with the current pattern in the pattern selector, hold down the Option key as you drag.



Arc Special Effects Menu

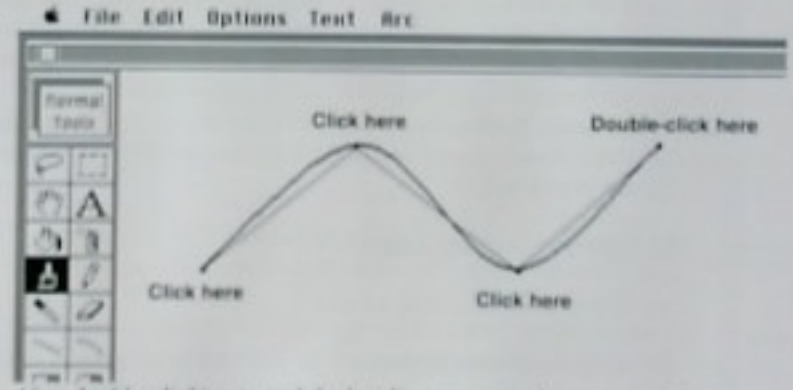
Depending on the menu choice, you can draw arcs as normal curved lines, or as a series of straight line segments. When drawing segments, click each time you want to begin a new segment. When you've finished drawing the segments, double-click, and a curve fitted to the line segments appears. If you have trouble getting the mouse to stop drawing, wait a moment before double-clicking.

Bezier
Draws a curve tangent to the line segments. The points of tangency are the midpoints of the line segments.



After double-clicking to end the last line segment, the segments disappear and the Bezier curve is formed.

Spline
Draws a curve that passes through each point where the lines change direction. The shorter the lines, the more closely the segments represent the arc.



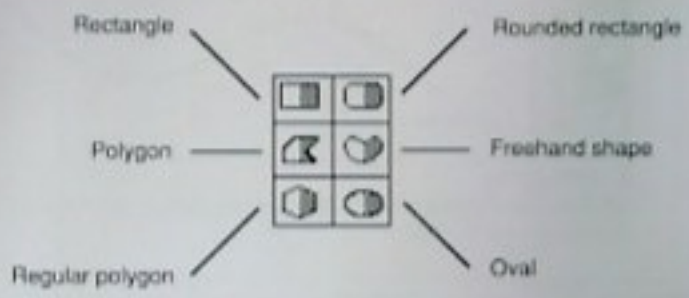
After double-clicking to end the last line segment, the segments disappear and the Spline curve is formed.

Cycle Arc
Draws an arc in the normal manner, but cycles colors through the fill range in the color palette.

Cycle Bezier and Cycle Spline
Draws a Bezier or spline curve, and cycles the colors of the curve through the fill range of the color palette.

Shape Tools

Draws the indicated shapes. These are the tools:



The shape tools.

Each tool is divided into a hollow and a filled half. You can choose either half of a shape. The hollow half is for drawing outlines of the indicated shapes; the filled half is for drawing the shapes with fills. The fill is the current color and pattern.

With Normal Tools turned on, the fill color will be the Foreground color. If Special Effects is turned on, the fill is determined by your choices on the Fill Effects dialog box.

To draw with the shape tools:

1. Click on either half of the tool.
2. Drag the pointer in the window. It draws the shape you chose.

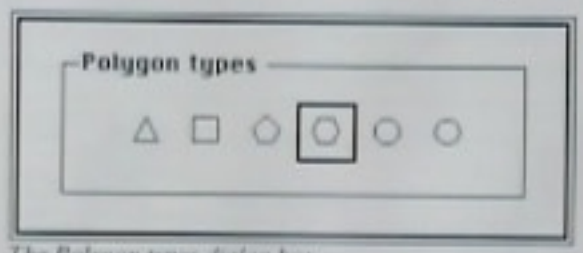
Shapes have borders around them in the thickness of the line chosen in the line width tool. The border will be created in the color of the Foreground color. You can create shapes without borders by picking the dotted line in the line width tool.

Note that the vertical and horizontal portions of the border can be of different widths. See the description of the line width tool (later in this chapter) for more details.

To create a shape which has a border in the current pattern of the Pattern Selector, hold down the Option key while dragging the pointer.

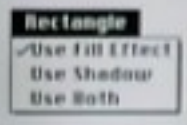
Double-clicking on any of the Shape Tools except the Regular Polygon will bring up the Fill Effects dialog box.

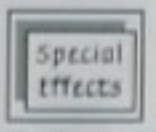
The Regular Polygon tool can draw six different shapes: triangle, square, pentagon, hexagon, octagon, or circle. Double-click on the Regular Polygon tool to choose the desired shape from the Polygon types dialog box.



The Polygon types dialog box

Holding down the Command key while drawing with the Polygon tool will double the number of sides of the polygon. In other words, if a triangle is selected with the Polygon types dialog box, hold down the Command key to create a hexagon.





The Special Effects Menus for the Shape Tools

The Special Effects menu is the same for each of the shape tools.

The menu appears only when Special Effects is turned on and you click on the filled half of a shape tool. The hollow halves of the tools do not have special effects menus.

Use Fill Effects

Fills the shape with the fill effect as defined in the Fill Effects dialog box. The colors of the fill effect are determined by the fill range on the color palette. Your choice in the line width tool determines the thickness of the shape's border; the border's color is the Foreground color in the color selector.

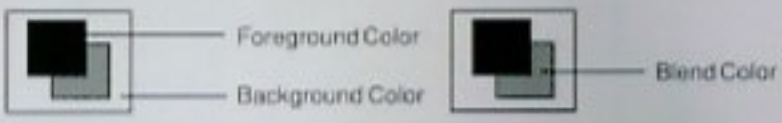
Use Shadow
Adds a shadow to the shape. Your choices in the Shadow dialog box determine the features of the shadow. The fill is the pattern in the pattern selector, and the border is the Foreground color. The line width tool determines the thickness of the border.

Use Both
Simultaneously adds a shadow and the fill effect to the shape.

Note: For a complete discussion of the Fill Effects and Shadow dialog boxes, see Chapter 5, *Advanced PixelPaint Techniques*.

The Color Selector

Shows the current Foreground, blend, and Background colors.



The Color Selector allows you to select the colors in use in a document.

The **Foreground Color**, when Normal Tools is turned on, determines the color of lines and images drawn with the line tool, pencil, Paintbrush, and SprayCan. It is also the color of text characters and of fills created with the bucket tool, as well as the color of borders around shapes. When Special Effects is turned on, the Foreground color is the first color in the range for a fill.

The **Blend Color** indicates the end of the range for the fill colors. All the colors between the Foreground color and the blend color in the color palette table constitute the color range which will be used to compose the fill.

The **Background Color** and the Foreground color are the two colors of the patterns in the pattern selector. The Background color appears behind text typed in the Foreground color if Solid Background is chosen from the Text menu.

To use the color selector:

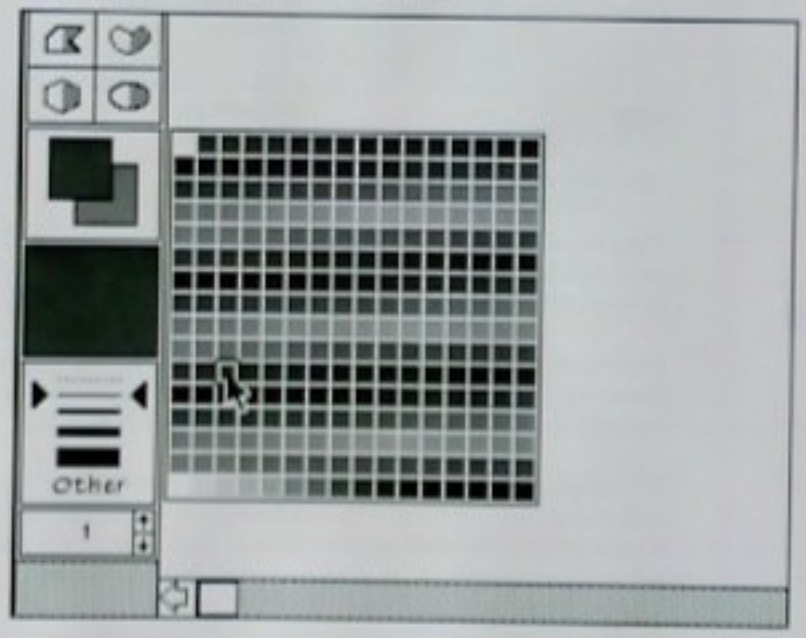
1. Put the pointer on any one of the three colors in the color selector that you want to change.

2. Press and hold down the mouse button. A small color palette opens in the window.

3. Drag the pointer on the palette to a new color. An outline indicates the color you've chosen. Simultaneously, the color in the color selector also shows the new color.

4. Release the button when the pointer is on the color you want.

If, after opening the palette, you decide not to change the colors, move the pointer off the palette and release the mouse button. The color selector reverts to its original state without changing the colors.



Put the pointer on a color, drag to the window, release the mouse button on the color you want. The color changes.

Changing the colors on the color selector does not change the colors of images already drawn on the screen, except in active text mode.

You can change any of the color selector colors, or the entire palette, by choosing Colors from the Options menu.

You can also use the dropper tool to change the colors of the color selector.

The Color Queue

The color palette "remembers" the last 16 colors that you've worked with. These colors are recorded, in the order that they're selected, at the bottom of the Color Queue. You can select any of these 16 colors at any time.

As you select additional colors, the most recent color will appear to the right on the Color Queue. When you have selected 16 colors and fill the Color Queue, it will begin recording new colors again on the left-hand side.

The colors stored in the Color Queue are not saved as part of the document: the Color Queue is cleared every time you restart PixelPaint.

The Pattern Selector

Shows the pattern for painting and filling images.

The pattern selector, which is located below the color selector, determines the pattern of the paint. The default value of the Pattern Selector is a solid color: that is, no pattern will be used for painting and filling unless you select one.

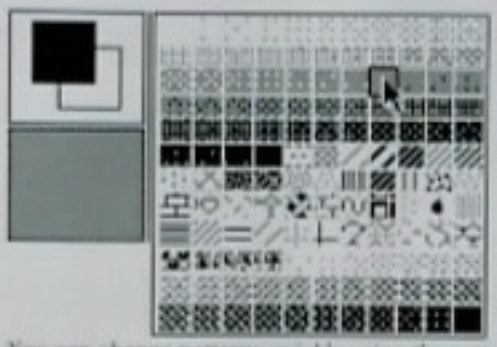
Patterns are in two colors: the Foreground and Background colors. The Brush, SprayCan, bucket, and filled shape tools will draw or fill in the pattern shown in the pattern selector.

To change the pattern from a two-colored pattern back to a solid color, choose one of the solid colors in the pattern selections. The solid colors are the upper left and lower right choices on the pattern selection box. Choose any one of the solid colors if you want the drawing tools to draw in solids instead of patterns.

To set the current pattern or make your own custom pattern, choose Patterns from the Options menu (or double-click on the pattern selector). For a complete description about how to manipulate patterns, see Chapter 5, *Advanced PixelPaint Techniques*.

You can also change patterns quickly from a small palette of pattern selections:

1. Put the pointer on the pattern selector.
2. Press and hold down the mouse button. A small pattern selection palette will appear.
3. Drag the pointer to a new pattern. An outline indicates the one you've chosen. As you drag to the new pattern, the Pattern Selector will display the pattern you've chosen.
4. Release the button when the pointer is on the pattern you want.



You can change patterns quickly using the pattern selector.

The Line Width Tool

Lets you choose the width of the line for the line tool, the arc tool, and the borders on shapes.

To use the line width tool:
Click on the *center* of any line in the line width tool box to select it as the width. As you click on the line selections, the number at the bottom of the tool indicates the width of the line in pixels. You can click to specify lines that are 1, 2, 4, or 8 pixels wide.

To create a line width other than those shown in the Line Width tool:

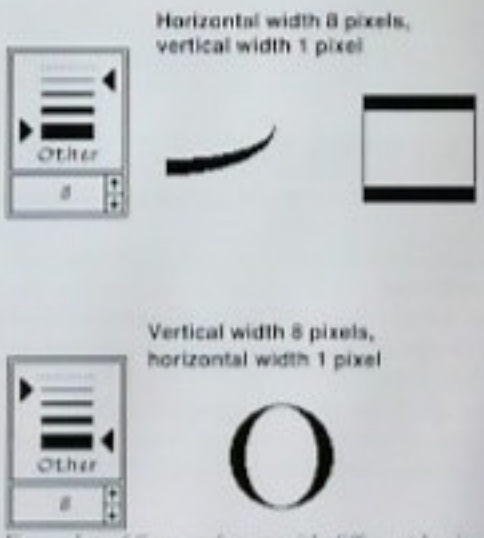
1. Click Other.
2. Click on the up or down arrows to increase or decrease the width. You can specify line widths in one pixel increments between 1 and 100 pixels.
3. Draw with the line, arc or shapes tools, and the lines will be at the new width.

You can also set a width for horizontal lines that is different from that for vertical lines. The left-hand triangle pointer indicates the width for vertical lines, and the right-hand one the width for horizontal lines.

1. Click in the left side of the tool next to the vertical width you want. Click in the right side to choose the horizontal line width.
2. Draw with the line, arc, or shapes tools and their horizontal and vertical lines will be in the chosen widths.

By moving the pointers to the Other option, you can define a custom horizontal and vertical width.

To draw filled figures without any borders, choose the dotted line at the top of the line width tool.



Examples of figures drawn with different horizontal and vertical line widths.

Chapter 3

Color and Palettes

This chapter explains the system of color measurement used by the Macintosh II and the various methods of selecting and manipulating colors and palettes in PixelPaint. This chapter also includes an in-depth description of the Watercolor palettes, and their use with the Wash, Shade, Paint on Darker Colors, and Paint on Lighter Colors brushes.

Effective color and color combinations are subjective. Hundreds of books have been written about color theory, the psychology of color, and the "proper" uses of color combinations. However, you don't need to be a color expert to use PixelPaint. PixelPaint offers several systems for creating colors, allowing you to work with the method that best suits your needs.

Additive and Subtractive Colors

The color wheel used for mixing pigments uses the primary colors cyan (a greenish-blue), magenta (a deep, purplish red), and yellow. These are called the *subtractive primaries* because when you mix them together, the color gets darker. If you combine equal amounts of pure cyan, magenta and yellow paints, the result is pure black paint.

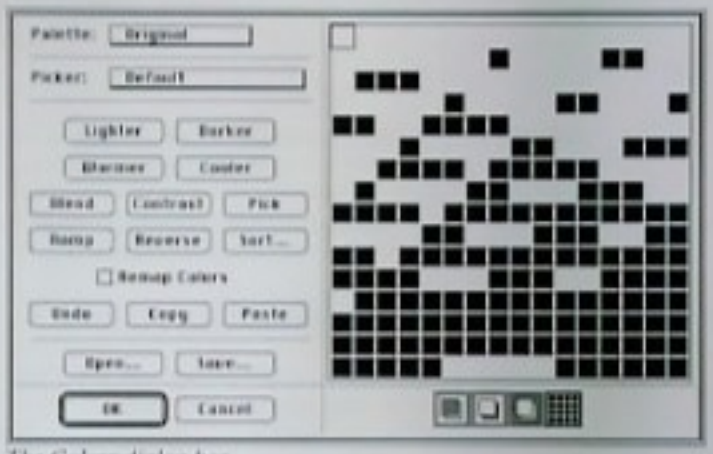
However, when you are mixing different colors of light instead of paint, the primary colors are red, green, and blue. These are called the *additive primaries* because when you mix them together, the color gets brighter. If you combine red, green, and blue light in equal amounts, you get white light.

Only one method of color selection and manipulation in PixelPaint uses subtractive colors: the Process Color (CMYK) Picker. The other methods are all based on the additive primaries.

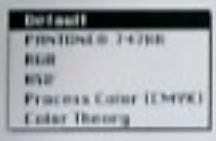
Choosing Colors

There are three ways to access the Colors dialog box:

- choose Colors from the Options menu
- press Command-K
- double-click on the color selector



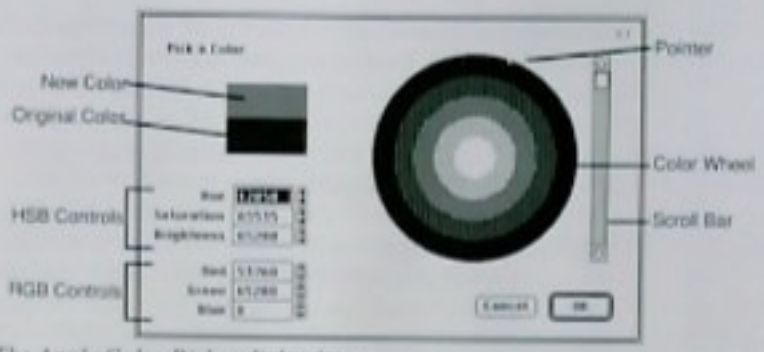
The Colors dialog box.



The Apple Color Picker

The Default Picker is the Apple Color Picker, which is part of the operating system of the Macintosh II. This is the same color picker which is brought up by the Control Panel when changing colors for the desktop background.

To access the Apple Color Picker, make sure that the Picker method is set to Default, select a color in the Colors dialog box and click Pick.



The Apple Color Picker dialog box.

The Apple Color Picker lets you specify colors in any of three ways: by specifying the amounts of red, green, and blue (RGB values); by specifying the hue, saturation, and brightness (HSB values); or by using the color wheel and scroll bar to set the color interactively. The Apple Color Picker dialog box lets you choose from the over 16 million colors the Macintosh II can generate.

The RGB values are simply the amounts of red, green, and blue, the additive primary colors. The minimum value is zero, and the maximum value is 65,535 (2^{16}-1). If the three values are all equal, the color will be a shade of gray: the higher the values, the lighter the shade of gray. If all three colors are set to zero, there are zero amounts of any color and the resulting color will be black. If all three colors are set to the maximum value, the resulting color will be pure white.

The other set of controls in the Apple Color Picker affect the Hue, Saturation and Brightness of the color: the HSB values for the color. These values also range from a minimum of zero to a maximum of 65,535.

- **Hue** — an arbitrary number which describes the pure color. For example, red has a hue value of 0, and is positioned at approximately 3:00 on the Color Wheel. The numbers which describe the Hue increase as you move counter-clockwise on the Color Wheel. Therefore, green has a Hue value of 21,845, and is positioned at approximately 11:00. Blue has a Hue value of 43,690, and is positioned at approximately 7:00.

  Continuing to move counter-clockwise on the Color Wheel, the number of the Hue value eventually wraps around: that is, a hue of 65,535 is very close to a hue of 0 at the 3:00 position of the Color Wheel. Both Hue values represent a shade of red.

- **Saturation** — a measure of the amount of white in the color. Maximum (65,535) saturation is the purest color with no admixture of white; minimum (zero) saturation means none of the pure hue is left and the color is some shade of gray (depending on the brightness). More intuitively, saturation is a measure of the "vividness" of a color. A color with high saturation is "hot"; a color with low saturation looks washed-out.

- **Brightness** — a measure of the amount of black in the color. Maximum (65,535) brightness is the purest color with no admixture of black; minimum (zero) brightness means none of the pure hue is left and the color is black.

For example, a high level of brightness and low saturation yields a pastel tone, since there is a lot of white mixed in. On the other hand, a combination of low brightness and high saturation gives a dark, deep color.

You can change the values in the Apple Color Picker by using the up-and-down arrows to adjust the numbers, or by double-clicking on the numerical value and typing in the new value. Once the new value is entered, use the mouse to click on the value to lock it in. The table below shows a few of the shades of blue you can get by varying the saturation and brightness:

Hue	Saturation	Brightness	Result
43690	65535	65535	a bright, vivid shade of blue
43690	20000	65535	pale, pastel blue
43690	65535	35000	dark blue
43690	20000	35000	dull grayish blue
43690	65535	10000	blue-black
43690	20000	10000	dark gray with a bluish tinge

Notice that all these colors have the same hue value. Also notice that a spot appears on the Color Wheel to indicate the Color Wheel coordinates for the values you're defined.

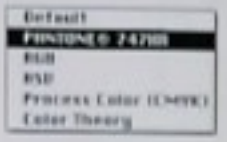
In addition to literally typing the values for the RGB and HSB settings, you can also select a color by clicking and dragging the pointer to any spot on the color wheel. Dragging the pointer *around* the wheel changes the hue. Dragging the pointer toward the center decreases the saturation; dragging the pointer toward the rim increases the saturation. The scroll bar to the right of the Color Wheel controls the brightness.

Note: With the Apple Color Picker, the three methods of changing colors (changing the RGB values, changing the HSB values, and using the color wheel) are interrelated. For example, if you change the hue, saturation, or brightness, the

RGB values will change to those of the new color, and the pointer on the color wheel will change position. Likewise, if you drag the pointer to a new position, the RGB and HSB values will change to those of the new color.

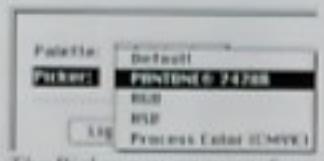
As you change the color, using any of the three methods described above, the color in the "New Color" box will change to reflect the new values. The best way to understand how the Apple Color Picker operates is to simply experiment: make adjustments to the various values, note the resulting color in the New Color box, and note that color's position on the Color Wheel.

In addition to the Default Apple Color Picker, PixelPaint allows you to change colors using four other methods. No one particular method is best, but you may find that one fits your needs and style of work better than the others.



The PANTONE MATCHING SYSTEM Picker

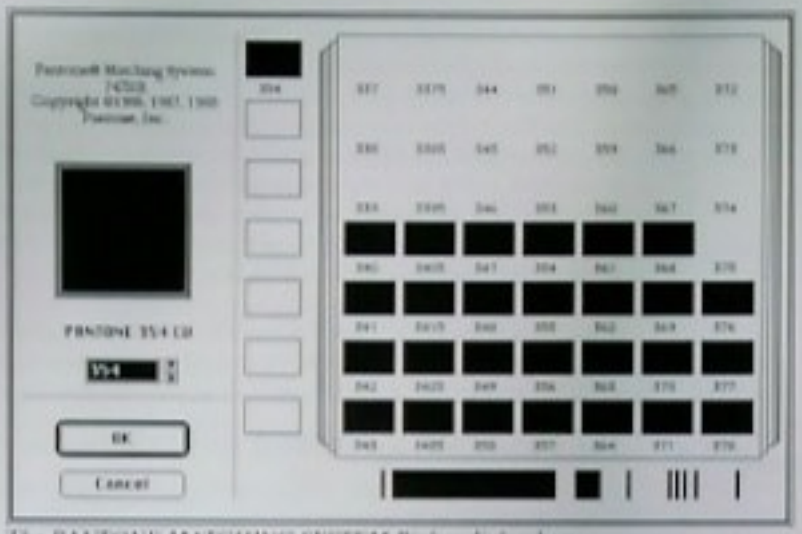
From the Colors dialog box, click on the Picker pop-up menu and select PANTONE® 747XR.



The Picker pop-up menu from the Colors dialog box.

Since its introduction in 1963, the PANTONE MATCHING SYSTEM has achieved international recognition in the graphic arts industry as the standard for color matching. The wide array of color matching tools available to ink manufacturers, commercial printers, graphic designers and others in the industry allow all to speak a common language of color.

Included in your PixelPaint package is a PANTONE MATCHING SYSTEM Color Formula Guide listing the 747 PANTONE colors available. You can access the electronic version of the Color Formula Guide by selecting a color in the Colors dialog box and clicking Pick, or by double-clicking on a color.



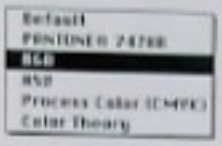
The PANTONE MATCHING SYSTEM Picker dialog box.

When the PANTONE MATCHING SYSTEM Picker is displayed, PixelPaint will display the color and PANTONE number of the *closest match* to the color you selected. You can change your selection by:

- clicking on a color
- editing the PANTONE MATCHING SYSTEM number
- clicking the arrows to page up or down through the PANTONE numbers
- clicking the "pages" on either side of the chart
- holding down the mouse button while dragging the pointer across the color ramp at the bottom of the chart

PixelPaint will allow you to keep a temporary comparison palette of seven PANTONE colors stored in the swatch palette to the left of the chart. PixelPaint will automatically place a selected color in the next available swatch box or you can select a color and drag it to a particular position in the swatch palette.

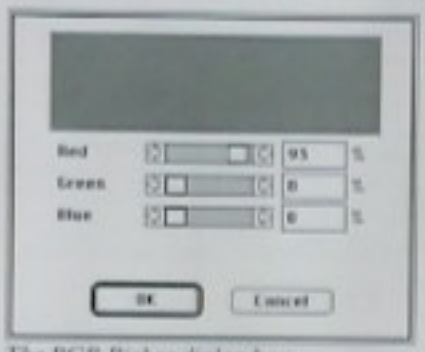
Note that the monitor adjustment and lighting condition will affect the way that you see color on the screen. The PANTONE color displayed on the screen may not perfectly match the color in your PANTONE MATCHING SYSTEM Color Formula Guide. This is a normal limitation of computer color display. By using the PANTONE MATCHING SYSTEM Formula Guide, you can compare the actual PANTONE colors with the screen colors and adjust your monitor accordingly.



The RGB Picker

From the Colors dialog box, click on the Picker pop-up menu and select RGB.

The RGB Picker is similar to the RGB controls of the Apple Color Picker. The main difference is that the RGB Picker lets you specify the red, green, and blue additive primary colors as a percentage. You'll probably find the RGB Picker easier to use, and more intuitive for creating a specific color.

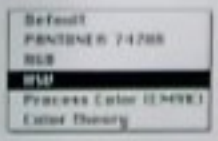


The RGB Picker dialog box.

To select a percentage of either red, green, or blue, you can:

- enter the percentage value in the text box
- click on the scroll arrows to scroll through the percentages
- click, and drag the scroll box to scroll through the percentages

Remember that you are selecting percentages of the additive primaries, red, green, and blue, and that as you increase the percentage of a color, the resulting color will be brighter. Selecting 100% of the red, green, and blue additive primaries will produce pure white; selecting 0% of the red, green and blue additive primaries will result in pure black.

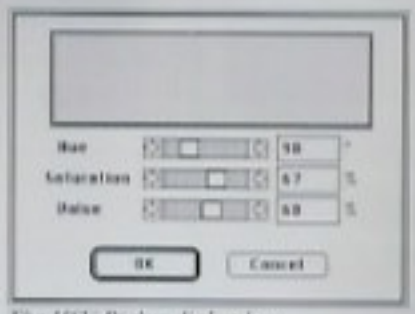


The HSV Picker

From the Colors dialog box, click on the Picker pop-up menu and select RGB.

The HSV Picker is similar to the HSB controls found in the Apple Color Picker. Instead of specifying the relative intensities of primary colors, the HSV Picker allows you to choose hues by defining their position on a color wheel. To completely define the color, the Saturation and Value (or brightness) can be specified by percentage.

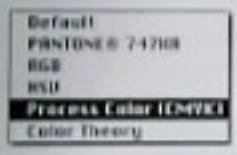
In the HSV Picker, the Hue is determined by degrees on the color wheel – for instance the primary colors of red, green, and blue are, respectively, at 120 degrees, 240 degrees, and 360 (and 0) degrees when the Saturation and Values percentages are set at 100%. Saturation measures the percentage of white in the color: the higher the number, the more white Value (or brightness) percentages measure the amount of black in the color. For a more complete discussion about Saturation and Value, see the beginning of this chapter titled "The Apple Color Picker".



The HSV Picker dialog box.

To select a degree of Hue and the percentages of Saturation and Value

- enter the degree or percentage value in the text box
- use the scroll arrows to scroll through the degrees and percentages
- click and drag the scroll box to scroll through the degrees and percentages



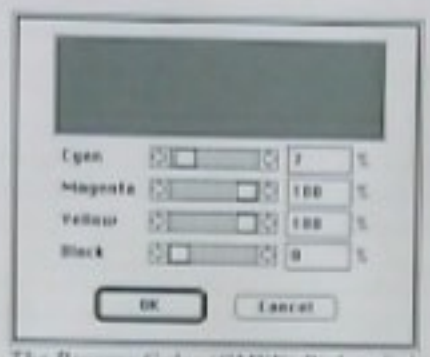
The Process Color (CMYK) Picker

Choose the Picker pop-up menu in the Colors dialog box and select Process Color (CMYK).

Unlike the other methods of choosing and manipulating colors, the Process Color (CMYK) Picker uses subtractive colors. The standard colors used in four-color process printing are cyan (a light blue-green), magenta (a purplish-red), yellow, and black. Because these are the colors used in four-color process printing, they are known as the "process colors." Therefore, the cyan, magenta, yellow and black process colors are often abbreviated with the acronym CMYK.

CMYK colors are specified by percentages, and PixelPaint lets you choose a percentage from 0% to 100% for each process color. If you are producing artwork in PixelPaint that will be separated and printed using the four-color process, you may want to use the Process Color Picker to select and manipulate the colors in

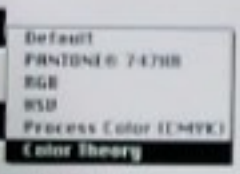
your image. For information on printing color separations, see Part I, Chapter 6: *Printing PixelPaint Documents*.



The Process Color (CMYK) Picker dialog box.

To select a color based on a percentage of Cyan, Magenta, Yellow, and Black, you can:

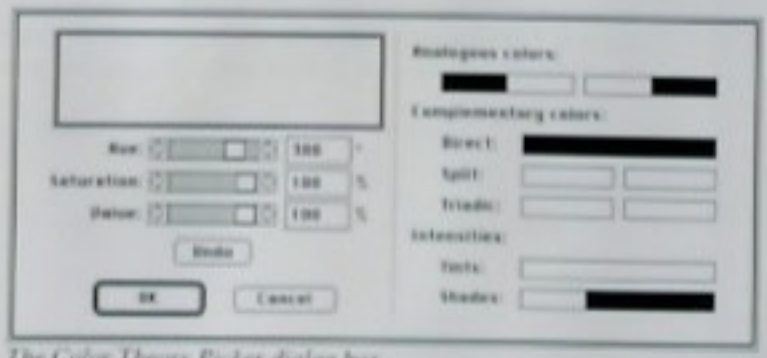
- enter the percentage value in the text box
- use the scroll arrows to scroll through the percentages
- click and drag the scroll box to scroll through the percentages



The Color Theory Picker

Choose the Picker pop-up menu in the Colors dialog box, and select Color Theory.

The Color Theory color picker is designed to make it easy to select color schemes which work together effectively. The Color Theory dialog box will appear similar to the diagram below:



The Color Theory Picker dialog box

The color currently selected on the color palette will appear in the upper left corner of the Color Theory box, and is considered to be the Key Color for deriving other colors. The Key Color is displayed along with its Hue, Saturation and Value numbers. Like the HSV color picker, the Key Color can be changed by adjusting the Hue, Saturation and Value sliders, or by typing the numbers for those settings directly into the boxes.

The right-hand side of the Color Theory box displays an array of colors which relate to the Key Color. Analogous Colors, Complementary Colors, and Intensities are displayed: you can select any of these colors by clicking on them.

The Color Theory color picker is based on the color wheel — the same color wheel which appears in the Apple color picker, described earlier in this chapter.

Analogous Colors

The Analogous Colors section displays the six neighboring colors on the color wheel, based on the Key Color. The bar to the left displays the six colors going counter-clockwise from the Key Color; the bar to the right displays the six colors going clockwise from the Key Color.

Complementary Colors

The Complementary Colors section displays colors which appear at various positions around the color wheel, based on the position of the Key Color.

- **Direct Complementary**
  The Direct Complementary color is the color exactly opposite the position of the Key Color on the color wheel. If the Direct Complementary color were mixed with the Key Color, the result would be black (or a shade of gray).

- **Split Complementary**
  The Split Complementary colors are those which are located 30 degrees from the direct complementary color, as illustrated in the diagram on the next page:

Direct Complementary, and Split Complementary color positions on the color wheel

- **Triadic**
  The Triadic colors are those colors which are located 120 degrees in each direction from the Key Color. In other words, Triadics are any three colors which are equidistant from one another on the color wheel, as illustrated in the diagram below:

The positions of the Triadic colors on the color wheel

Intensities

The Intensities section displays the Key Color mixed with varying levels of black and white

- **Tints**
  Tints displays the Key Color mixed with varying levels of white. In other words, the Tints represent the Key Color with varying Saturation levels.

- **Shades**
  Shades displays the Key Color mixed with varying levels of black. In other words, the Shades represent the Key Color with varying Value levels.

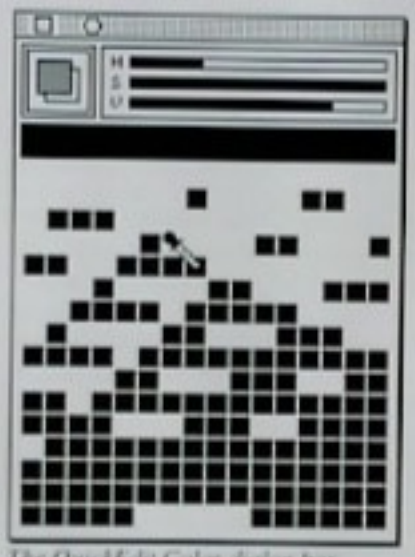
Any time you click on a color in the Color Theory box to select it, that color instantly becomes the new Key Color. You can restore the Key Color to its original setting by clicking the Undo button.

If you are looking for colors which work well with a particular color in your palette, you should first copy that color to another position on the palette, and edit the copy.

The QuickEdit Color Picker

Choose QuickEdit Color from the Edit menu, or use the Command-1 shortcut keys.

The QuickEdit Color dialog box is used to quickly edit a color visually, without the precise numerical controls afforded by the other color pickers. The QuickEdit Color dialog box allows you to select colors and fine-tune them using either the HSV or RGB values.

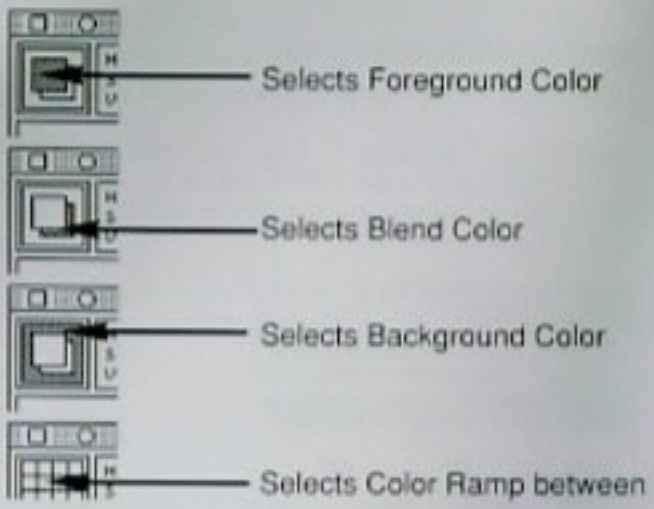


The QuickEdit Color dialog box.

The QuickEdit Color dialog box defaults to the HSV method of selecting a color, but by clicking on the circle to the right of the close box, you can switch to the RGB method.

Click the circle to the right of the close box to change from the HSV to the RGB method.

With the QuickEdit Color box activated, you can choose to modify the Foreground Color, the Blend Color, the Background Color, or the selected color range of the palette.



To QuickEdit a color:

1. Choose the method of color manipulation you want to use — HSV or RGB.
2. Click on the color you want to change.
3. Use the RGB or HSV "slide" controls to visually change the selected color. Click on the control you want to modify, and drag left or right to alter the setting.

Use the pointer along the slide controls to adjust the HSV or RGB values.

Note that the QuickEdit Color dialog box can be positioned anywhere on the screen. Since any changes made with QuickEdit Color are immediately reflected in your artwork, this makes it easy to position the QuickEdit Color dialog box so you can see the effect on the artwork. If you want to revert to the original color, choose Undo from the Edit menu.

Warning: If you use QuickEdit Color to change a color, the previous color is not stored in the Color Queue, along the bottom row of the Color Selector grid. Therefore, you cannot use the Color Queue to revert to previous colors generated by QuickEdit Color. Use the Dropper tool to match the colors on your artwork.

Working with Palettes

PixelPaint has several built-in color palettes that you can use in your document. Each palette contains 256 individual squares of color. While a palette is chosen, the colors available *on that palette* are the ones you can draw with in the window.

Think of the palettes as an artist's tubes of paint. Just as the artist mixes the paints to create dabs of paint for a particular painting, you can modify the individual colors to create custom colors for your on-screen artwork.

In all of the palettes, the square at the upper left is reserved for pure white, and the square at the lower right is reserved for pure black. PixelPaint does not allow you to alter those two squares, because the Macintosh must have black and white available in order to form its menus. This means that you will always have black and white on your palette for drawing.

The colors of the palette will immediately change to reflect the colors of the new palette. The foreground, background, and blend colors will also change to reflect the new color palette. For example, if the foreground color is the fourth row down, second color from the left, the foreground color will still be fourth row down, second square from left with the new palette — whatever that color may be.

Changing color palettes of an existing PixelPaint will alter the colors of any existing image. This enables you to experiment with existing PixelPaint images (such as those supplied on the Art Disks), and note the effect of the various color palettes. You may find it useful to examine the custom color palettes which were created for the examples supplied with PixelPaint.

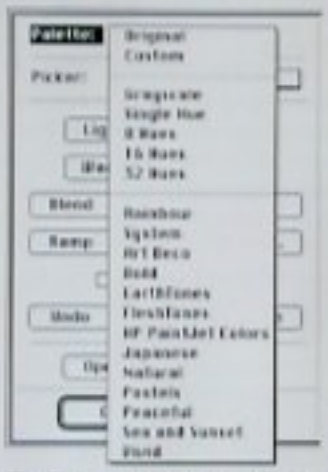
Since changing color palettes will alter the colors used to create the image, the Colors dialog box features an option to match existing colors as closely as possible. If the Remap Colors option is checked in the Colors dialog box, PixelPaint will match the colors with their closest counterparts in the new color palette. This re-mapping will only be a close approximation — unless the exact same colors are present in the new palette.

If you choose a new Palette while the Remap Colors option is checked and click OK, PixelPaint will prompt you with a window that shows the image remapped to the new palette and will ask if you really wish to Remap the Canvas to the new Colors. You can then choose to cancel the selection of the new palette, or click OK to remap the colors to the new palette.

Note: The Undo (Command-Z) feature doesn't work when the Remap Colors option is activated. To make sure you can always get your original work colors back again, save a copy of your document before switching among the color palettes.

To choose one of the pre-set palettes, follow these steps:

1. Choose Colors from the Options menu.
2. Put the pointer on the Palette pop-up menu, and hold down the mouse button. The list of pre-set palettes will appear.
3. Hold down the mouse button, and move the pointer to select the palette you want. Release the mouse button.



The Palette pop-up menu lets you choose from PixelPaint's built-in palettes.

The easiest way to see the colors of the different palettes is to choose each of the palettes from the Palette pop-up menu in the Colors dialog box. These are the built-in palettes:

Original
This palette appears when you first choose Colors from the Options menu. If you're working with a custom palette (either your own custom palette, or one of PixelPaint's optional palettes), it will always appear as the "Original" one when you open the Colors box. If, you decide you don't like the changes you've made in the new palette, choose Original to restore the palette to the condition when you opened the Colors box.

Custom
As soon as you make a change to one of the pre-set palettes, the name in the palette selector will change to "Custom." You can go on to modify the new Custom palette in any way you want. If you decide you don't want the changes, choose Original to get your original palette back again.

After creating a Custom palette, clicking OK will impose the colors of the new Custom palette onto your artwork — making the Custom palette the Original palette for the file. Therefore, the next time you open the Colors dialog box, your custom palette is listed as the original palette.

Warning: If you start with one palette and then choose another one and click OK, that second palette instantly becomes the new palette. If the first palette had customized features, such as new colors, those features will be lost. Be careful when switching palettes, especially if you've specified custom colors and blends for your document.

Grayscale
The Grayscale palette ranges from pure white to pure black in steps that are shades of gray. Use this palette when you want to see an approximation of what your image will look like printed on a black-and-white printer.

Single Hue
Shows shades of the same color from lightest to darkest. As with any palette, pure white will be in the upper left corner, and pure black in the lower right. To use this palette, click on any color in any palette, then choose Single Hue from the pop-up Palette menu. The entire palette will become graduated hues of the color you selected.

8 Hues, 16 Hues, and 32 Hues
These palettes show shades of 8, 16, and 32 hues progressing from light to dark.

In the 32 Hues palette, the colors are repeated in two sequences. While all 256 colors are actually unique, the palette is divided into two halves which are very similar. This allows you to make changes on one half to suit your artwork, while keeping the other half intact.

Note: For a complete explanation of the uses of the Grayscale, Single Hue, 8 Hues, 16 Hues, and 32 Hues palettes, see the section titled "The Watercolor Palettes" later in this chapter.

Rainbow
Contains a full spectrum of bright colors and a selection of grays.

System
Contains the colors which are a part of the Macintosh II's system. Use the System palette whenever you plan to export your color work to some other application. This assures that all the colors of your artwork will be available to the new application.

HP PaintJet Colors
Contains a range of colors specifically designed for use with the Hewlett-Packard PaintJet Color Graphics Printer. If you know the finished artwork is destined for the PaintJet, you should use this palette to create the artwork. If you are printing artwork created with another palette, you should choose this palette, and use the Remap Colors option before printing.

Artwork Specific Palettes

- **Art Deco**
- **Bold**
- **EarthTones**
- **FleshTones**
- **Japanese**
- **Natural**
- **Pastels**
- **Peaceful**
- **Sea and Sunset**
- **Vivid**

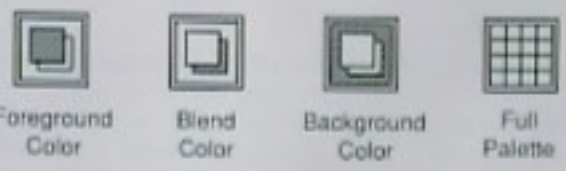
Each of these palettes contains a set of colors which correspond to the palette name. You can use the colors of these palettes as they are, or use them as a starting point for modification. The next section describes how to customize the colors of a palette.

Customizing the Colors in a Palette

You can use the palettes as they are, or you can change any of the colors in any palette to customize both the color and palette for your artwork.

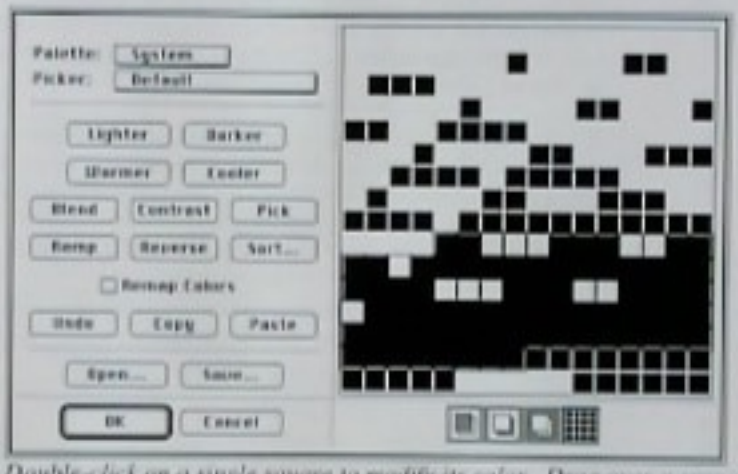
To change a color or a range of colors:

1. Choose Colors from the Options menu. The icons below the colors determine the effect of the controls in the Colors box. When the Colors dialog box is first opened, the Full Palette icon will be selected, meaning that your changes will affect the full color palette used by PixelPaint.



2. To change a single color, click on it and use any of the Picker methods to modify the color; to change a group of colors simultaneously, drag over them. When a color is selected, it will be highlighted (surrounded by a black border).

3. Click on the appropriate buttons in the left side of the dialog box.



Double-click on a single square to modify its color. Drag over a group of squares to modify their colors together.

The buttons on the left side of the Colors dialog box control a wide range of options for customizing your color palette.

Lighter

Lighter
Adds white to the selected colors. Each time you click Lighter more white is added.

Darker

Darker
Adds black to the selected colors. Each click on Darker adds more black to the color.

Warmer

Warmer
Adds red to the selected colors. Each click adds more red.

Cooler

Cooler
Adds blue to the selected colors. Each click adds more blue.

Note: Warmer and Cooler are *not* opposites. If you click one of them and then decide you want to return to the original color, you have to choose Original from the palette menu. The Undo button will only reverse *the last click* on the color effects buttons; it will not restore the color as it was in the Original palette. The same is true for Lighter and Darker.

Blend

Blend
Creates a smooth mixture of the first and last colors in a selected range of colors. For example, select a group of colors in a palette, where the first color is blue and the last one green. When you click the Blend button, the blend will be from blue to green. The blend will run from blue to yellow (a mixture of blue and green), and finally to green.

If, after selecting the range of colors, you click Pick, the selected Color Picker dialog box appears for the first color in the range. After you have finished changing the first color and click OK, the Color Picker dialog reappears to let you change the last color in the range. You can thus define the exact colors for the range in order to get precisely the blend you want.

Note: If you use the Blend button to create a smooth gradation of color, and then use the Lighter, Darker, Warmer, or Cooler buttons on the range of color, you should click Blend again to resmooth the color gradation.

Contrast

Contrast
Reverses the highlighted colors to their complementary colors. To see the of any color on the palette, select the color, and click Contrast. Complementary colors are opposite one another on the color wheel. Since the complementary color is the exact opposite, repeatedly clicking Contrast will alternate between the original color, and the complementary color.

The Default (Apple) color picker makes it easy to see the relationship between colors and their compliments.

Pick

Pick
For changing the color of an individual color square. When you click on a single square, and then click Pick, the specified Color Picker dialog box appears.

You can also define all the colors of a range by holding down the Option key while choosing Pick. The Option-Pick technique will allow you to successively specify each color in the range.

Ramp

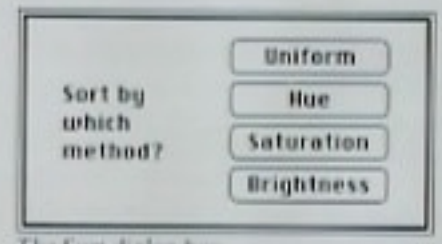
Ramp
Creates a ramp of colors, from white to black, using the first color chosen in a selection as the middle color of the Ramp.

Reverse

Reverse
Reverses the ordering of colors, but doesn't change the colors themselves. Reverse can be used with Blend so you can make the colors blend from the last color in the selection to the first one. To use Reverse in this manner, select the range of colors, click Reverse, and then click Blend.

Sort

Sort
Allows the sorting of a selection of colors using the Uniform method, or by Hue, Saturation, or Brightness.



The Sort dialog box

Undo

Undo
Cancels the last action performed in the Colors dialog box. Note that if you click a button several times, Undo only cancels the effect of the last click. For instance, if you click Warmer four times, and then click Undo, only the fourth click is canceled. Clicking Undo again will not step back through the effects of the third, second, or first clicks on Warmer.

Also, in the Colors dialog box, Undo does not have a Redo feature. That is, clicking on Undo will not switch back and forth between the last click action and its undone state.

You can use the command-key equivalent Command-Z for Undo.

If you don't like the cumulative changes made to the color palette, click the Cancel button to revert to the state of the Color palette *before* you opened the Colors dialog box.

Copy

Paste

Copy, Paste
Lets you copy color(s) from one palette to another to create your own combinations for a palette. Copying and pasting colors among the palettes lets you create a library of palettes for your own work.

The Copy and Paste buttons work just like the Copy and Paste commands from the Edit menu:

1. From the menu of palettes, choose the palette you want to copy colors from.

2. Select the colors to copy by dragging over them (or just clicking on individual colors).

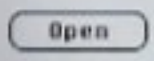
3. Click Copy.

4. From the menu of palettes, choose the palette you want to copy colors to.

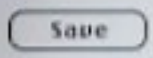
5. Select the color, or range of colors you want to replace, and click Paste. Each of the copied colors replaces the color in the corresponding position in the copy-to palette.

You can use the command-key equivalents Command-C and Command-V for Copy and Paste.

The Copy and Paste commands can also be used with custom palettes which have been saved. Use the Open button to select, and open, the custom palette. Copy the color, or range of colors, and paste them into a new custom palette.



Open
Opens a palette that you saved earlier. Opening a color palette automatically makes it the color palette for the current document.



Save
Saves a customized color palette that you want to use later with other PixelPaint documents.

The Watercolor Palettes

PixelPaint's built-in palettes include Grayscale, Single Hue, 8 Hues, 16 Hues, and 32 Hues. Each of these palettes is made up of *hue blocks*. Each hue block starts with a white square, runs through the hue from pale pastel through vivid to dark, and ends with a black square. The 8 Hues palette consists of eight hue blocks that are each 32 squares long, the 16 Hues palette has sixteen hue blocks that are each sixteen squares long, and so on. Use the Colors command from the Options menu to look at these built-in palettes.

Each hue block runs through identical levels of saturation and brightness for each hue. For example, the third color from a white square has the same saturation and brightness as the third color from any other white square in the same palette.

The Wash, Shade, Paint on Darker Colors, and Paint on Lighter Colors Brushes

The wash and shade brushes, and the Wash dynamic effect, treat each set of colors that starts with white and ends with black as a hue block. Therefore, if you use these commands with a palette other than the Grayscale and Hues palettes, your results may be unpredictable.

Wash

The wash brush doesn't change the brightness, but it changes the hue and saturation of the area you're painting over to the hue and saturation of the current foreground color. For example, if you are using the wash brush to paint over an area of bright green, and the current foreground color is pale pink, the areas the brush touches will become bright pink.

You can also apply a wash to any selected area by choosing Wash from the Visual Effects hierarchical menu in the Edit menu.

The wash effect is especially useful for adding color to grayscale art, such as scanned images. Suppose your grayscale document has an area — for instance, a draped piece of cloth — that originally consisted of shades of blue. Use a shade of blue as the foreground color; either use the wash brush on the area, or select the area and choose Wash from the Visual Effects hierarchical menu. Each different gray tone in the affected area changes to the corresponding tint of blue.

Shade

The shade brush leaves the hue alone, but changes the saturation and brightness of the area you're painting over to the saturation and brightness of the current foreground color. For example, if you are using the shade brush to paint over an area of bright green, and the current foreground color is pale pink, the areas the brush touches will become pale green.

Paint on Darker Colors

The Paint on Darker Colors brush is intended for colorizing black areas of a black-and-white graphic. However, it can also be used to change a colored image. Paint on Darker Colors compares each of the RGB values of the foreground color and

the area being painted over. The higher value of each primary becomes the value for the area being painted over. Here is an example:

	Red	Green	Blue	color
foreground color	29184	65280	0	yellow-green
color to paint over	65280	0	16128	bright red
result	65280	65280	16128	lemon yellow

Note: There may not be a color in the palette that corresponds exactly to the result color. Paint on Darker Colors will find the closest match in the current palette.

It is easy to see that when you are coloring a black area, the maximum values will always be exactly those of the foreground color, since pure black has RGB values of zero. However, a color that is so dark that it looks almost black on the screen may still have small amounts of red, green, and blue. An image imported from a black-and-white program, however, usually consists of true black and white.

Paint on Lighter Colors

The Paint on Lighter Colors brush is intended for colorizing the white portions of a black-and-white graphic. However, like Paint on Darker Colors, it can also be used on a color image.

Like Paint on Darker Colors, the Paint on Lighter Colors brush compares the RGB values of the foreground color and the color being painted over. However, it uses the *lower* values for red, green, and blue. Here is an example:

	Red	**Green**	**Blue**	**color**
foreground color	29184	65280	0	yellow-green
color to paint over	65280	0	16128	bright red
result	29184	0	0	warm red-brown

Note: There may not be a color in the palette that corresponds exactly to the result color. Paint on Lighter Colors will find, and use the closest match in the current palette.

Chapter 4

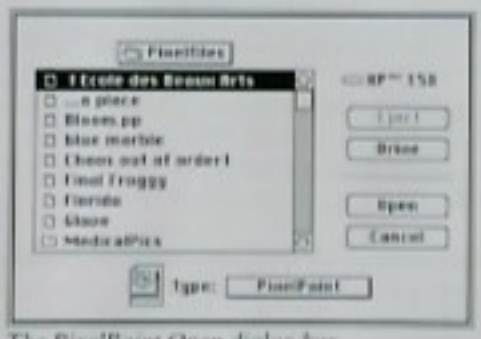
Importing & Exporting Files

One of the most versatile features of PixelPaint is its ability to share files with other Macintosh applications. Artwork created in other applications can be opened in PixelPaint and enhanced with PixelPaint's unique features and special effects. Likewise, artwork created in PixelPaint can be saved in a variety of file formats, which allows the art to be used by other applications.

This chapter covers importing art from other Programs and sources, as well as exporting PixelPaint files in formats to be used in other applications.

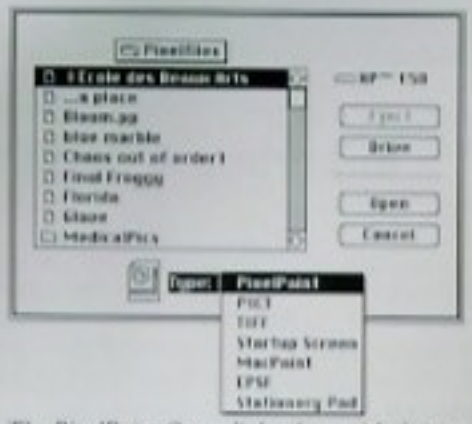
Importing Images from Other Programs and Sources

When choosing Open from the File menu in PixelPaint , a dialog box similar to the diagram below will be displayed:



The PixelPaint Open dialog box.

At this point, you have a choice of opening a regular PixelPaint document, or opening a graphics document saved in another file format. Clicking on the file Type box will activate a pop-up menu which allows you to select the various file formats.



The PixelPaint Open dialog box, with the pop-up menu displayed.

The file formats that can be opened by PixelPaint are:

- PixelPaint – the native PixelPaint file format
- PICT, and PICT2 – standard Apple file formats
- TIFF – the Tagged Image File Format
- StartupScreen – a file format for displaying a color screen when starting the Macintosh II
- MacPaint – standard MacPaint black-and-white format
- EPSF – Encapsulated PostScript Format
- Stationery Pad – a file format for storing a variety of PixelPaint preferences.

Each file format has its own distinctive icon. This makes it easy to identify the file types when the files are viewed from the Finder. As you select different file types with the Type box pop-up menu, the icon to the left of the Type box will reflect the format selected.

Almost every Macintosh graphics application can save files in one or more of these formats. This section will focus on working with non-PixelPaint files. In other words, how to use PixelPaint to enhance images created with other applications.

The PixelPaint Format

PixelPaint has its own file format, and the files have a distinctive icon when viewed in the Finder. Unless you specify otherwise, this is the file format which will be used for saving your PixelPaint artwork.

Note that documents saved in the latest PixelPaint format cannot be opened by users working with PixelPaint version 1.0 or 1.1. If you need to share files with users of the older PixelPaint versions, save the document as a PICT file.

The PICT and PICT2 Formats

PICT and PICT2 are standard Apple file formats that are used by a variety of Macintosh graphics applications. PixelPaint supports both the original black and white PICT file format and the color PICT file format, PICT2. Standard QuickDraw PICT files will not display any color information when opened in PixelPaint. PICT2 files, with the necessary Color QuickDraw resources, will display color or grayscale information stored with the file.

To open a PICT file:

1. Choose Open from the File menu.
2. Select PICT from the Open dialog box file Type pop-up menu.

The PICT Type selection from the Open dialog box.

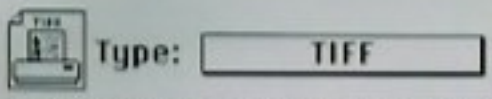
3. Both PICT and PICT2 files will appear in the scroll box — either type can be opened by PixelPaint. Select a PICT file and click the Open button.

The Tagged Image File Format

The Tagged Image File Format, or TIFF, is a file format which is a standard for black-and-white line art, as well as grayscale scanned images. Most scanners, and several graphics applications support TIFF. You can use PixelPaint to manipulate the image, and the image can be saved in TIFF format for use in a page layout program such as PageMaker.

To open a TIFF Image:

1. Choose Open from the File menu.
2. Select TIFF from the Open dialog box file Type pop-up menu.



The TIFF Type selection from the Open dialog box.

3. Only TIFF files (and folders) will appear in the scroll box. Select a TIFF file and click the Open button.

The most likely source of a TIFF file is a scanner, and scanners vary as to the number of grays they can generate. When you open a TIFF file in PixelPaint, the Grayscale palette is automatically activated. Regardless of the number of grays in the source image, PixelPaint allows you to use the full range of 256 levels of gray to enhance the TIFF image.

You can use any of PixelPaint's Normal or Special Effects tools to enhance a TIFF file.

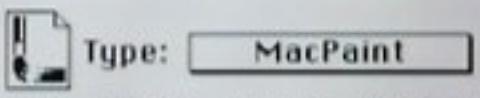
The MacPaint Format

Since MacPaint was the first graphics application available for the Macintosh, it has become a standard file format for black and white artwork. Most Macintosh graphics applicatoens have the capability of saving files in the MacPaint format. With PixelPaint, you can add the richness of color to any MacPaint file.

To open a MacPaint document:

1. Choose Open from the File menu.

2. Select MacPaint from the Open dialog box file Type pop-up menu



The MacPaint Type selection from the Open dialog box.

3. Only MacPaint files (and folders) will appear in the scroll box. Select a MacPaint file and click the Open button.

Now that you have a MacPaint document in the PixelPaint window, you can begin to enhance it with color. You may want to begin by switching to Special Effects, and using the Paint on Darker Colors brush to colorize the black areas of the image. Likewise, you can use the Paint on Lighter Colors brush to add color to the white areas of the image.

A wide variety of professionally-drawn black-and-white "clip art" is available in the MacPaint file format. PixelPaint enables you to use this artwork as a starting point for a new color images, or to colorize the individual clip art components for inclusion in other documents. You can use all of the PixelPaint Normal and Special Effects tools to colorize MacPaint art.

The Encapsulated PostScript (EPSF) Format

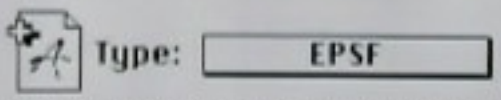
The Encapsulated PostScript Format (EPSF) files are created by applications such as Adobe Illustrator 88, and Aldus FreeHand. EPSF files store two separate components of a graphic image:

- The actual PostScript code which describes the image, and is used for output to a PostScript printer such as the Apple LaserWriter.
- A PICT-format representation of the PostScript image, so the image can be displayed on the screen.

When working with a document saved as EPSF, PixelPaint uses *only* the PICT image information. Some applications store some color information with the file and some do not. You can use any PixelPaint tools and effects to enhance an EPSF image.

To open an EPSF file:

1. Choose Open from the File menu.
2. Select EPSF from the Open dialog box file Type pop-up menu

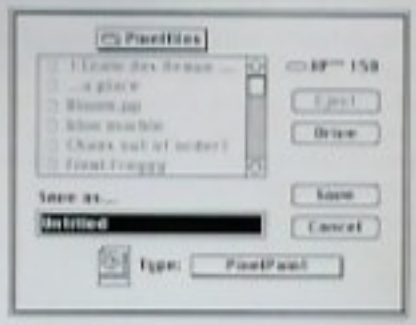


The EPSF Type selection from the Open dialog box.

3. Only EPSF files (and folders) will appear in the scroll box. Select an EPSF file and click the Open button.

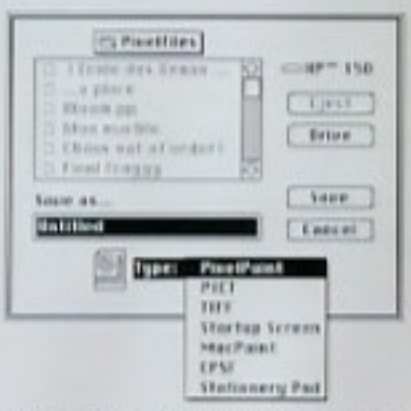
Exporting PixelPaint Files

PixelPaint can share files with any other Macintosh graphics application. The ability to export, or save, PixelPaint files in other file formats makes it easy for you to use art created in PixelPaint with other applications. When you choose Save As from the File menu, the following dialog box will be displayed:



The PixelPaint Save As dialog box.

You can choose to save a document in the PixelPaint file format, or any other file format supported by PixelPaint.



The PixelPaint Save As dialog box, with the pop-up menu displayed.

You now have the option of saving your file in one of the following file formats:

- PixelPaint – the native PixelPaint file format
- PICT, and PICT2 – standard Apple file formats
- TIFF – the Tagged Image File Format
- StartupScreen – a file format for displaying a color screen when starting the Macintosh II
- MacPaint – standard MacPaint black-and-white format
- EPSF – Encapsulated PostScript Format
- Stationery Pad – a file format for storing a variety of PixelPaint preferences.

In this section, you'll learn how to save PixelPaint documents so that they can be used by other applications. The Stationery Pad format will also be discussed, since it is used to store PixelPaint preferences.

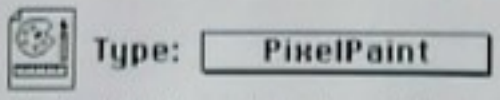
A Note About Color Palettes: The Macintosh II currently has the ability to display 256 colors. Many applications use specialized color palettes — that is, a special combination of the 256 colors. Documents saved with such a customized palette may not show the correct colors when opened by another application. Most applications, however, will use the standard Apple System palette. When creating a PixelPaint file which is destined to be exported to another application, the safest technique is to use the System color palette.

The PixelPaint Document Format

The PixelPaint format saves all information related to the document, such as image size, color palette, etc. Some applications will allow you to open a document saved in the PixelPaint file format.

To save a file in the PixelPaint file format:

1. Choose Save As from the File menu.
2. Choose PixelPaint from Save As dialog box file Type pop-up menu.



The PixelPaint Type selection from the Save As dialog box.

3. Name the document.
4. Click the Save button.

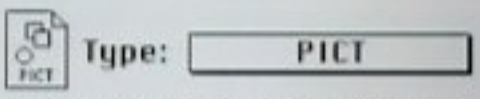
Warning: The most recent version of PixelPaint uses a file format which is different from earlier versions of PixelPaint. Therefore, PixelPaint cannot be used to open, or work with, PixelPaint 1.0 or 1.1 files. If you need to create an image with the latest PixelPaint which will later be used with PixelPaint 1.0 or 1.1, you should save it in the PICT file format, described below.

The PICT and PICT2 Formats

Because many applications can open files saved as a PICT file, you may want to save a PixelPaint document in the PICT format. PixelPaint saves files in the PICT2 format: the format which includes Color QuickDraw information. Keep in mind that some applications — even though they support color graphics — may not take advantage of the color information provided with the PICT2 format.

To save a file in PICT2 format:

1. Choose Save As from the File menu.
2. Select PICT from the Type pop-up menu.



The PICT Type selection from the Save As dialog box.

3. Name the document.
4. Click the Save button.

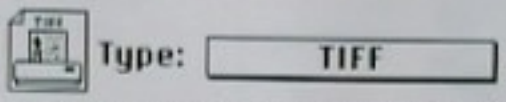
The Tagged Image File Format

When saving an image as a TIFF document, PixelPaint automatically uses the Grayscale palette. If you are using a color palette, and save the image as a TIFF file, no color information will be stored.

You may want to open the Colors dialog box, select Remap Colors, and convert to the Grayscale palette to get a better idea of how your image will look using grayscales instead of colors. TIFF files can be placed directly in many page layout programs; some, such as PageMaker 3.0, will allow further manipulation of the TIFF image.

To save a TIFF Image:

1. Choose Save As from the File menu.
2. Select TIFF from the Save As dialog box file Type pop-up menu.



The TIFF Type selection from the Save As dialog box.

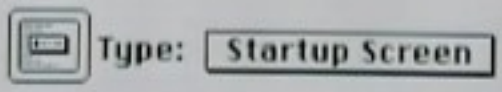
3. Name the document.
4. Click the Save button.

The StartupScreen Format

One of the facets of the Macintosh that has proved endearing to users is the way that the user can personalize various aspects of the computing environment. One way to boldly, and colorfully, personalize your computer is to create a custom StartupScreen that is displayed each time you start your Macintosh II. Files used as Startup Screens should always be created using the System color palette.

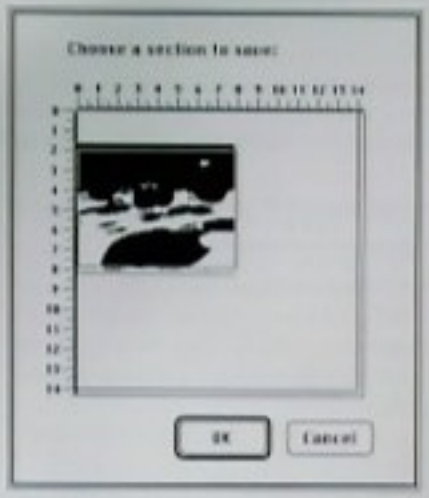
To create a Startup Screen:

1. Choose Save As from the File menu.
2. Select StartupScreen from the Save As dialog box file Type pop-up menu



The StartupScreen Type selection from the Save As dialog box.

3. Name the document StartupScreen and select the System Folder.
4. Click the Save button. A dialog box similar to the diagram on the next page will be displayed:



The Section to Save dialog box.

5. The dialog box will show a rectangular area which represents the size of your monitor. Position the selection rectangle over the portion of the image to appear as the Startup Screen, and click OK.

The new Startup Screen file will appear on the screen when the Macintosh II is restarted. If it doesn't, check the following:

- The file must be named StartupScreen. Note the capitalization of the letter "S", and make sure there's no space between the words.
- The file must be placed in the System Folder.
- The image saved as a StartupScreen must use the standard Apple System palette.

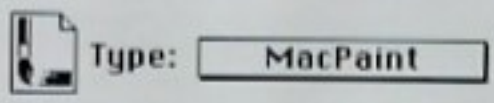
Note : You can save as many documents that you wish in the StartupScreen format, but *only one* file called StartupScreen can be in the System Folder at one time. If you want to have a variety of Startup Screens available, you may want to create a folder with files in StartupScreen format. When you're ready to use one of these files, just drag the old StartupScreen out of the System Folder, put the new file in the System Folder and rename it StartupScreen.

The MacPaint Format

Not everyone has access to a Macintosh II. If you have created a PixelPaint document, and need to have that image available to Macintosh computers without color capabilities, you can save the PixelPaint file as a MacPaint document. PixelPaint will convert the document to a one bit, or black-and-white, image. That is, all grayscales will be omitted, resulting in a high-contrast black-and-white image.

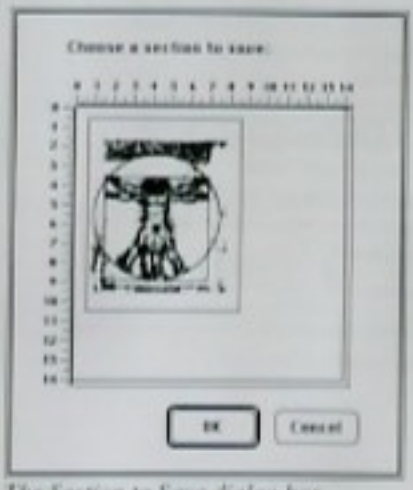
To save PixelPaint art as a MacPaint document:

1. Choose Save As from the File menu.
2. Select MacPaint from the Save As dialog box file Type pop-up menu.



The MacPaint Type selection from the Save As dialog box.

3. Name the document.
4. Click the Save button.
5. If you're working with an image larger than the standard size used by MacPaint, a dialog box similar to the diagram below will appear:



The Section to Save dialog box.

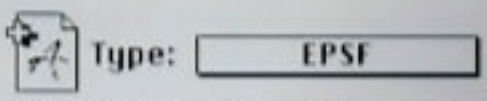
6. Dragging the rectangle within the image area allows you to select the portion of the image you wish to save in MacPaint format. Select the desired portion of the image and click OK.

The Encapsulated PostScript Format

The Encapsulated PostScript Format (EPSF) stores the color image produced in PixelPaint, as well as the PostScript code to produce that image. The image can then be placed into any application which accepts EPSF files, such as Illustrator 88, Freehand, ImageStudio, PageMaker, XPress, Ready Set Go, etc.

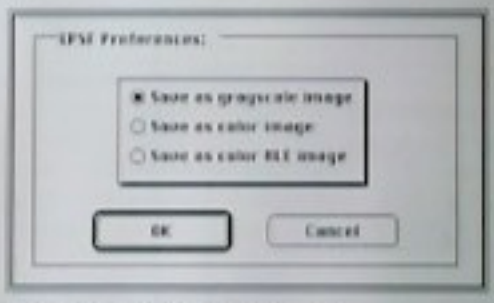
To save an image as an EPSF file:

1. Choose Save As from the File menu.
2. Select EPSF from the Save As dialog box file Type pop-up menu.



The EPSF Type selection from the Save As dialog box.

3. Name the document.
4. Click the Save button. A dialog box similar to the diagram below will be displayed:



The EPSF Preferences dialog box.

The EPSF Preferences dialog box gives you the option of selecting whether you want the file saved as a grayscale image, a color image, or a color RLE (Run Length Encoded) image. Saving as an RLE image usually requires less disk space than saving as a grayscale or color image.

Both grayscale and color image EPSF files require enormous amounts of memory, and disk space to work with. For example, a 6" x 6" image, saved as a color image in EPSF, requires about a minute-and-a-half to save, consuming 1,500k of disk space.

5. After you've specified your preference for the EPSF file, click OK.

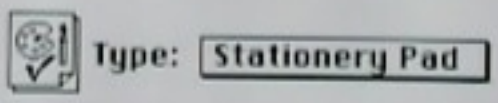
You can now work with the EPSF file in applications which accept EPSF files.

The Stationery Pad Format

The Stationery Pad format allows you to save custom brush styles, colors, patterns, window layout, and all other customizable features of a PixelPaint document. If there is an image on-screen, saving a document as a Stationery Pad will also save the image. If you wish to save only the customized tools and other preferences, you can erase the image before saving. The Stationery Pad format can be thought of as a personalized template for creating new works of art with your personal preferences intact.

To save a Stationery Pad file:

1. Choose Save As from the File menu.
2. Select Stationery Pad from the Save As dialog box file Type pop-up menu.



The Stationery Pad Type selection from the Save As dialog box.

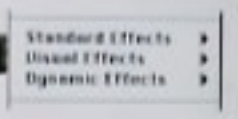
3. Name the document.
4. Click the Save button.

Chapter 5

Advanced PixelPaint Techniques

This chapter describes the advanced techniques which can help you make the most of PixelPaint. PixelPaint has a variety of special effects which can be applied to areas of the artwork selected by either the Lasso or the Marquee tools.

In addition, Fill Effects are available to adjust the way that solid areas of your artwork are filled with color. Shadows can be added to objects, or selected areas of the artwork. Finally, this chapter will look at customizing the color palette to flatter a specific visual effect.

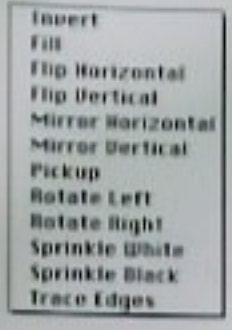


Standard, Visual, and Dynamic Effects

Once an area of your artwork has been selected with the Lasso or Marquee tools, it can be altered with a variety of PixelPaint's special effects. These effects are available as options located under the Edit menu. To apply options from the Standard Effects, Visual Effects, and Dynamic Effects hierarchical menus, choose those options while the area is still selected.

Any of these effects can be reversed by immediately choosing Undo from the Edit menu, or by immediately pressing the Escape key ("esc," at the upper-left corner of the keyboard).

All of the Standard, Visual, and Dynamic Effects are available when a selection is made with the Marquee Tool. Portions of the Standard Effects and all of the Visual Effects are available when the Lasso Tool is used.



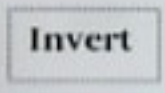
The Standard Effects Hierarchical Menu

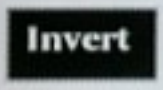
This menu choice becomes active whenever you select an area with the Lasso or Marquee tool. Standard Effects is a hierarchical menu which contains special effects for modifying or editing the selected area.

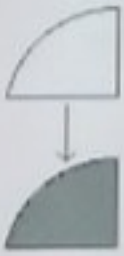
All of the menu choices are available for an area selected with the Marquee tool. For an area selected with the Lasso tool, all options are available except those that flip, rotate, or mirror the selection.

To use Standard Effects:

1. Select an area with the Lasso or Marquee tools.
2. Choose Standard Effects from the Edit menu. A hierarchical menu will pop out to the right.
3. Without releasing the mouse button, drag the pointer over to the hierarchical menu.
4. Drag the pointer down to the command you want, and release the mouse button.







Invert
Changes the colors of the selected area as if you had flipped the color palette upside down and reversed the order of the colors (as in a mirror image). For example, the color of the upper left corner becomes the color of the lower right corner. This feature is particularly useful when you are working with the grayscale palette and you want an image to appear as a negative image of itself.

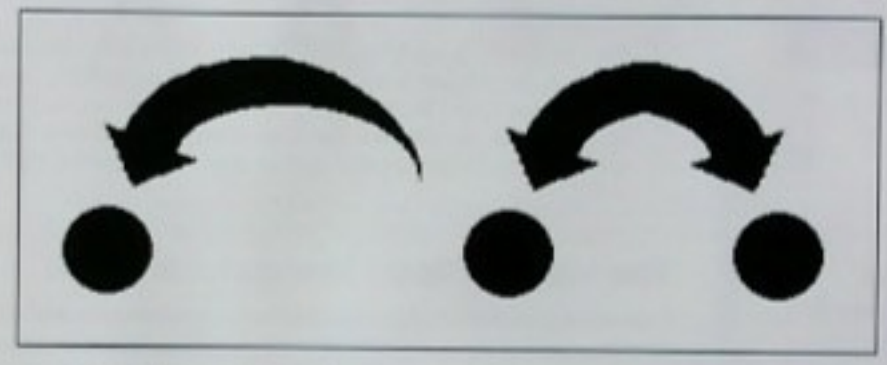
Fill
Fills the selected area with the foreground color, using the pattern in the pattern selector. This menu choice lets you fill any selected region, even those that were not originally drawn with a pattern or fill.

If you want to fill the selection with the fill effect, choose Use Fill Effect from the Effects menu while using Special Effects.

Flip Horizontal
Flips the selected area from right to left.

Flip Vertical
Flips the selected area from top to bottom.

Mirror Horizontal
Similar to creating an "inkblot" of the left side of the selected area. The left side of the area is mirrored onto the right side of the area. Whatever originally appeared on the right side is replaced. Mirror Horizontal does *not* mirror the entire image, only its left side.



Original image (left), and image after applying the Mirror Horizontal command (right).

Mirror Vertical
Works just like Mirror Horizontal, except that the top half of the selection is mirrored onto the bottom half of the area.

Pickup
Selects the colors and patterns under the selection area and applies them to the selection. The shape and size of the pickup area are exactly the same as those of the selected area.

This option is useful for picking up the colors under circular (or odd-shaped) areas, as well as color patterns.

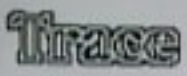
Rotate Left
Rotates the selected area 90 degrees counterclockwise.

Rotate Right
Rotates the selected area 90 degrees clockwise.

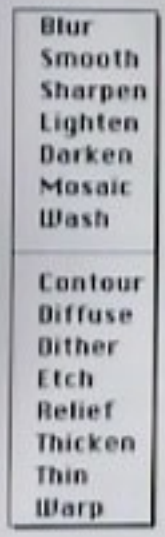
Sprinkle White
Adds a random pattern of white speckles to the selection. Each time you choose Sprinkle White for the selection, more white speckling is added.

Sprinkle Black
Adds a random pattern of black speckles to the selection. Each time you choose Sprinkle Black, more black speckling is added.

Note that the random patterns for Sprinkle White and Sprinkle Black are not the same. That is, after choosing Sprinkle White, you can't cover the white speckling by choosing Sprinkle Black.



Trace Edges
Puts an outline around the edges of the selected area. The outline is one pixel wide. If the original line is a solid color, it is replaced by an outline of itself, in the same color. If the original line is multicolored, each section of the line is replaced by an outline in the same color as that section. Each time you choose Trace Edges, another outline appears around the edge lines.



The Visual Effects Hierarchical Menu

This menu choice becomes active whenever you select an area with the Lasso or Marquee tool. The Visual Effects hierarchical menu contains special effects for modifying or editing the selection. All of the menu choices are available with either the Marquee or Lasso tool.

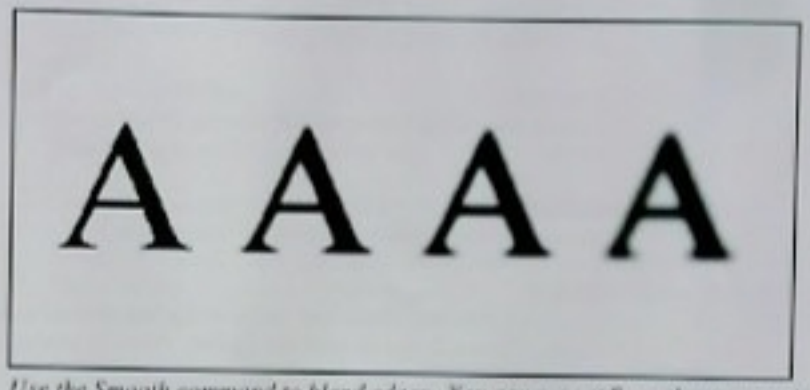
To use Visual Effects:

1. Select an area with the Lasso or Marquee.
2. Choose Visual Effects from the Edit menu.
3. Without releasing the mouse button, drag the pointer over to the hierarchical menu.
4. Drag the pointer to the command you want, and release the mouse button.

Blur
Creates an extremely diffused, or blurred, image of the selected area.

Smooth
Blends edges of the images in the selected areas to smooth out any jagged appearance. Smooth is designed to work best when the True Color option is selected in the PixelPaint Preferences dialog box.

Each time you choose Smooth, PixelPaint further softens the edges of the image in the selected area. Use the Smooth option repeatedly to make an image appear to be "out of focus." For a shortcut, use the Repeat Effect choice (Command-T) to repeat the smoothing.



Use the Smooth command to blend edges. You can repeat Smooth as many times as you like.

Note: Smoothing is useful for changing the high contrast blacks and whites of an imported MacPaint image into shades of gray. Starting with a grayscale palette, smooth the image, then change to a palette with color (or one with at least eight levels of gray). The image will take on gradations of gray or color.

Sharpen
Adds a sharp edge to the images in the selected area.

Lighten
Maintains the hue of the colors in the selected area, but decreases, or lightens, the color saturation.

Darken
Maintains the hue of the colors in the selected area, but increases, or darkens, the color saturation.

Mosaic
Creates a mosaic of pixel "tiles" from the selected area. The size of the pixel tiles can be manipulated by pressing one of the 1-9 keys *while* selecting the Mosaic option. Pressing 1 will size the tiles to the smallest blocks available, and pressing 9 will size the tiles to the largest size available.

Pressing the Shift *or* Option key while selecting Mosaic will double the size of the Mosaic tile. Pressing *both* the Shift and Option keys will quadruple the size of the tile.

Wash
Maintains the intensity of the colors in the selected area, but changes the hues to the hue of the current foreground color.

For best results, use Wash with the True Color option selected from the PixelPaint Preferences dialog box.

Contour
Creates an outline tracing of the selected image area using the Foreground color.

Diffuse
Scrambles the pixels in the selected image area.

Dither
Creates a dithered, single hue image of the selected area using the Foreground color. Choose Zoom In from the Options menu to examine the effects of the dithering.

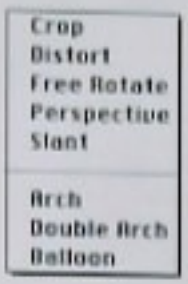
Etch
Achieves an high-contrast etched effect by selectively removing color from the image, leaving black.

Relief
Creates an offset bas-relief type effect on the selected area.

Thicken
The pixel block within the selected area thickens, and the pixels in the area are driven toward black. Thicken works best with monochromatic palettes, such as a single hue palette or the grayscale palette.

Thin
The pixel block within the selected area thins, and the pixels in the area are driven toward white. Thin works best with monochromatic palettes, such as a single hue palette or the grayscale palette.

Warp
Creates a variety of warping effects on the selected area. The various Warp techniques can be changed by pressing one of the number keys, 1 through 0, (across the top of the keyboard) while selecting Warp. These keys affect the dynamics of the Warp effect upon the selected image area.



The Dynamic Effects Hierarchical Menu

This menu choice becomes active whenever you select an area with the Marquee tool. The Dynamic Effects are available from a hierarchical menu, and allow you to change the dynamics of a selected area.

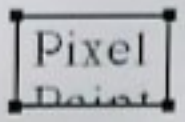
To Use Dynamic Effects:

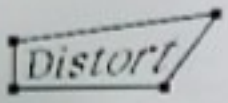
1. Select an area with the Marquee tool.
2. Choose one of the options from the Dynamic Effects hierarchical menu.

   A box with small black squares at its corners will surround the selected area. The small black squares — called handles — are used to manipulate the selected area.
3. Click on a handle, and drag it in the direction for the desired effect.
4. Click outside the selection to lock-in the effect — although you can still choose to Undo the effect.

At that point, the area will still appear to be selected. However, in order to choose *another* dynamic effect, you must reselect the area with the Marquee. You can, however, choose from the Visual Effects menu without reselecting. (The exception to reselecting is Crop. After you crop an area it remains selected and the dynamic effects are still available for it.)

If you want to undo a dynamic effect, choose Undo in the Edit menu, or press the Escape key. You can also stop the calculation of the effect by pressing the Escape key.



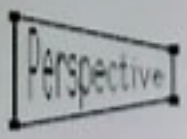


Crop
Trims the selected area. Using the pointer, grab one of the handles and move it. The further the pointer is moved, the smaller (or larger) the selected area. The area always remains a rectangle. Use Crop to permanently trim away parts of the image that you don't want.

Distort
Changes the shape of the selected area. The image inside the area changes in direct relation to the new shape. After selecting an area with the Marquee and choosing Distort, drag one of the handles. Only the two sides attached to that corner move; the rest of the box stays in place. When you release the mouse button, the image is redrawn—distorted—to fit inside the new box shape. The

box remains around the new shape and you can continue distorting it until you click elsewhere in the window, or select another tool. Distorting produces unusual shapes and is useful when you want to radically change the perspective view of the selected area.

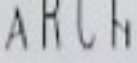
Free Rotate
Lets you rotate the selected area — either clockwise or counterclockwise. Select the area, choose Free Rotate, grab one of the handles, and move the pointer. The area rotates in that direction. When you release the mouse button, the image is redrawn in its new orientation.



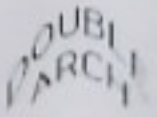
Perspective
Gives the selected area the appearance of a three-dimensional image. Select the area, then choose Perspective. Drag a handle in the direction of the perspective. That handle and the one next to it move in the direction of the perspective. Release the button, and the image is redrawn in a stretched manner that gives it a three-dimensional appearance.

Slant
Skews the selected area. Select the area, choose Slant, then grab one of the handles. Drag the handle, and the selection area will change into an adjustable trapezoid. Release the mouse button, and the image inside the area will be redrawn to fit inside the new shape.

Click any handle and drag to slant the selected image.



Arch
Creates a distortion based on one side of the selected area. Select the area, choose Arch, then grab one of the handles. Drag the handle, and the selection area can be bulged inward or outward. Release the mouse button, and the image inside the area will be redrawn to fit inside the new shape.



Double Arch
Creates a distortion based on two parallel sides of the selected area. Select the area, choose Double Arch, then grab one of the handles. Drag the handle, and the selection area can be bulged to arch both sides of the selection. Release

the mouse button, and the image inside the area will be redrawn to fit inside the new shape.

BALLOON

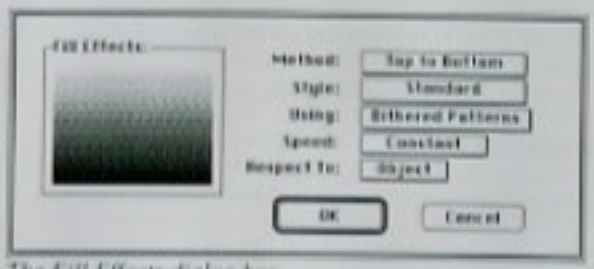
Balloon
Creates a distortion by pulling two parallel sides away from, or toward, the center of the selected area. Select the area, choose Balloon, then grab one of the handles. Drag the handle, and the selected area will balloon away from, or toward the center of the selection. Release the mouse button, and the image inside the area will be redrawn to fit inside the new shape.

Using Fill Effects

The Fill Effects are among the most popular and powerful features of PixelPaint. Fill Effects have a variety of options which interrelate to fill areas of PixelPaint artwork. These options are all accessed with the Fill Effects dialog box.

You can access the Fill Effects dialog box in one of three ways:

- Choose Fill Effects from the Option menu.
- Double-click on the bucket tool, or any of the shape tools except the regular polygon.
- Press Command-F.



The Fill Effects dialog box.

The Fill Effects dialog box is for defining the fill effects. The colors shown in the Fill Effects box will always represent the range between the currently-selected foreground and blend colors.

You can create a fill effect for your image in three ways:

- Under Special Effects, draw with a tool that has Fill Effect as an option in its tool menu. For example, the Brush menu has a Fill Effect option. When Fill Effect is chosen, the Paint Brush tool will employ the Fill Effect colors and style.

- Select an image with the Lasso or Marquee tools, and then choose Fill Effect from Visual Effects in the Edit menu.

- Under Special Effects, choose the bucket tool, and then click on the portion of the image you want to fill. The fill changes all connected portions of the color you clicked on, up to the boundaries of a different color.

Each of the Fill Effects features — Method, Style, Using, Speed, and Respect To — has a pop-up menu listing other choices. Click on the menu rectangles to see these choices.

Method
The Method selection determines the way the colors will fill the area. As you choose the different fill methods, a sample of the fill will immediately appear in the dialog box using the foreground and blend colors currently selected. The following fill methods are available in PixelPaint:

Note: These descriptions assume that the Standard fill is used, as selected in the Style Fill Effect feature. The Standard fill is the default setting for PixelPaint.

Top to Bottom
Fills using the blend range of color palette colors. The foreground color will appear at the top of the fill, and the blend color will be at the bottom of the fill. This is the default Method setting for the Fill Effects.

Bottom to Top
Fills using the blend range of palette colors. The foreground color will appear at the bottom of the fill, and the blend color will be at the top of the fill.

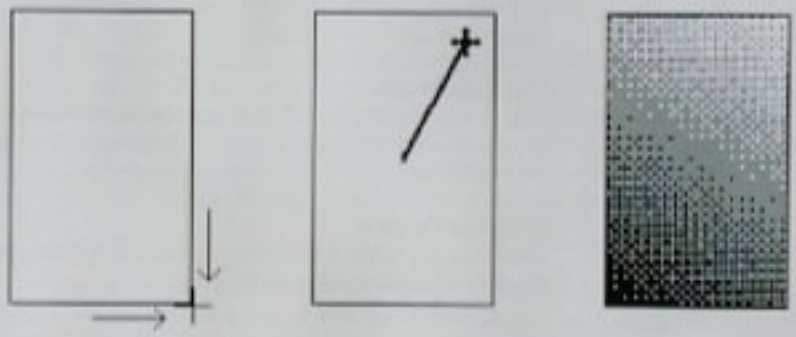
Left to Right
Puts the foreground color to the left side of the fill, shading into the blend color on the right side of the fill.

Right to Left
Puts the foreground color to the right side of the fill, shading into the blend color on the left side of the fill.

Sunburst
Starts the fill at the edges of the fill area and moves in a concentric blend pattern towards the center. The foreground color is at the outside of the fill area, shading into the blend color at the center.

Shapeburst
When used with one of the filled shape tools, Shapeburst starts at the edges of the area, and blends in towards the center, following the contours of the shape. If you use the Lasso or Marquee tools to select an area, and then choose Use Fill Effect from the Effects menu, the fill will begin at the perimeter of the selected area, following the contours, and blending towards the center.

Directional
Lets you determine the direction of the blend of colors for the fill area. When using one of the filled shape tools, once you've completed the graphic, a "cross-hair" will appear to allow you to select the direction of the blend. You can position the cross-hair anywhere on the screen: it will become the "target" for the direction of the blend. Once the cross-hair is positioned where you want, click the mouse to fill the area.



Draw a filled shape. Move the line to the direction for the fill. Click and the shape is filled in that direction.

Clipboard Picture
Instead of colors from the palette, Clipboard Picture uses the image on the Clipboard as the fill. The Clipboard image is centered in the area you're filling. If the Clipboard image is smaller than the area to be filled, the area surrounding the image will be filled in the foreground color. If no image is currently copied into the clipboard, the foreground color will be used for the fill.

Tile
Uses the image in the Tile as the fill. The Tile fill effect also uses the image on the Macintosh clipboard, but repeats portions of that image as defined by

Tile under the Options menu. When Tile is the method chosen, the other pop-up menus in the Fill Effects dialog box have no effect. If no image is currently copied to the clipboard, then Tile will fill the area with the default image, which is a drawing of a flower pot.

Standard
Dual Blend
Full Range
Venetian Blinds
Dithered FadeOut

Style
Determines the features of the colors in the fill. Each time you select a different Style, its affect is immediately shown in the Fill Effects dialog box. The following fill Styles are available with PixelPaint:

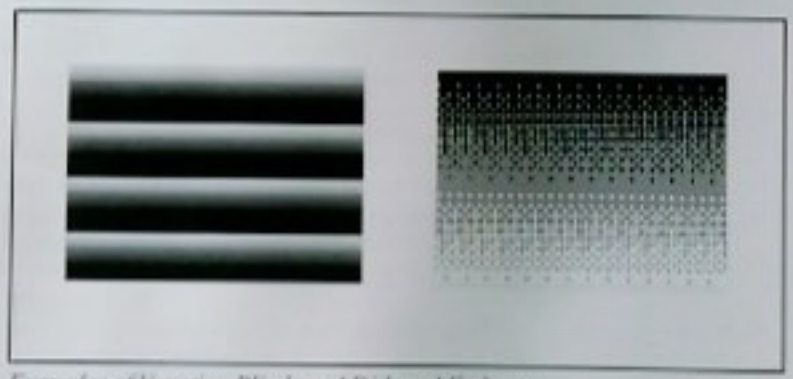
Standard
The fill uses all the colors in the selected range, starting at the foreground color and ending with the blend color.

Dual Blend
The fill starts with the foreground color, runs to the blend color, and then returns to the foreground color.

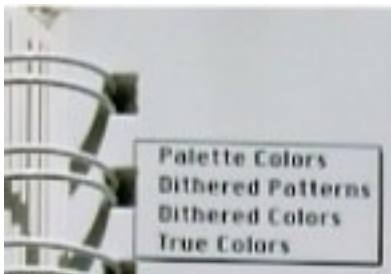
Full Range
Uses all the colors in the color palette, regardless of the selections for the foreground and blend colors.

Venetian Blinds
Shows the colors in slits like a venetian blind pattern. The number of repetitions of the "blinds" pattern is determined by the width chosen on the line width tool.

Dithered Fadeout
Uses only the foreground color, and uses a dithered pattern to fade from the foreground color to pure white.



Examples of Venetian Blinds and Dithered Fadeout



Using
Lets you choose how the colors of the fill are generated.

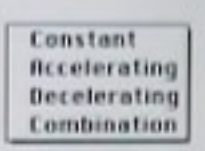
Palette Colors
Fills with all the colors in the blend range — that is, the colors ranging from the foreground color to the blend color. If a pattern is selected, the pattern will also be used in the fill.

Dithered Patterns
Fills with only the foreground and blend colors; no other colors will be used. A dithered pattern will span between the two colors. The colors between the foreground and blend colors on the palette are not included on this pattern.

Dithered Colors
Similar to the Palette Colors option, but uses dithered patterns between the colors. Using the Dithered Colors option is particularly useful if you have a limited range of blend colors available in the palette.

Dithered Colors is the default setting for the Using option of the Fill Effects.

True Colors
Creates a smooth, graduated fill based only on the foreground and blend colors. Unlike the other Using options, True Colors ignores all the intermediate colors on the palette; the blend will be filled with the most appropriate colors, depending on the colors available on the palette. True Colors is particularly useful when you're working with palettes that contain a wide variety of colors and shades, such as the System palette.



Speed
Lets you adjust the linearity of the color fills. Constant is the default setting, which means that the colors will blend with even spacing from the foreground to the blend color.

Constant
Fills at a constant and even rate. All colors will have even spacing from the foreground to the blend color.

Accelerating
Gives the appearance that the fill "accelerates" as it progresses. The color bands will be wider at the beginning of the fill (foreground color), gradually becoming narrower at the end (blend color).

Decelerating
Gives the appearance that the fill "decelerates" as it progresses. The color bands will be narrower at the beginning of the fill (foreground color), gradually becoming wider at the end (blend color).

The Accelerating and Decelerating Speeds are particularly useful for conveying perspective to a filled object.

Combination
Combines the Accelerating and Decelerating speeds, resulting in an precisely even fill. The Combination Speed option is useful for conveying a sense of depth to a filled object.

Object
Window
Canvas

Respect to
This option controls whether the sequence of Fill Effect colors will be placed relative to object being filled, the window, or the entire document (canvas).

Object
Uses the full color range on the object.

Window
Fills objects only with the portion of the range that would be in the object if you filled the entire window. The fill in the object and the window would match each another if you filled them both.

Canvas
Fills objects only with the portion of the range that would be in the object if you filled the entire document. Canvas is useful when you're filling several areas of your artwork which are not connected to each other.

Fills with respect to object, window and canvas.

Using Shadows

Placing drop shadows, or blended shadows behind a graphic is a tedious task for the traditional artist. However, PixelPaint includes a variety of techniques to makes it easy to create sophisticated drop and blend shadows.

To access the Shadow dialog box, choose Shadows from the Options menu.

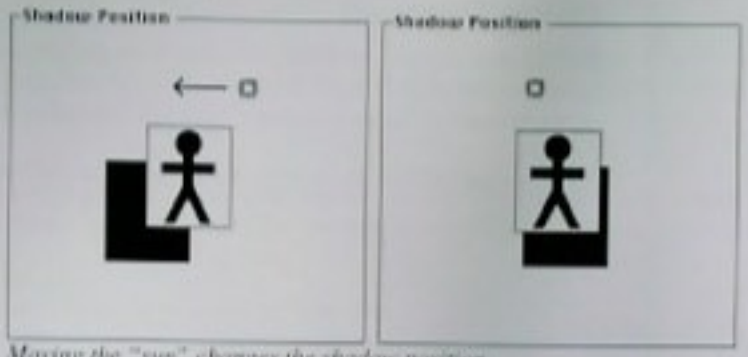
The most significant adjustment for the Shadow option is the position of the shadow with respect to the graphic. In the Shadow dialog box, this is represented by a box behind the graphic of a stick figure.

To change the shadow position:

1. Click down and drag in the portion of the box labeled Shadow Position. The pointer becomes a "sun" to indicate the apparent light source for the shadow.

2. Drag the "sun" around the box until the shadow is in the position you want.

3. Release the mouse button, and the shadow will be locked in position. All subsequent shadowed images will include the shadow at that angle, and depth behind the image.



Moving the "sun" changes the shadow position.

When the Shadow dialog box is first opened, the black square at the lower right corner of the color palette will be selected. The intensity of the shadow is determined by the Ending setting of the Pattern Intensities. The default setting for the Ending Pattern Intensity is 49% — therefore, the default shadow appears as 49% black, or a medium gray.

To choose a color for the shadow, click on a color in the color palette. The color you choose becomes the color for the shadow. To increase the intensity of the color of the shadow, increase the number for the Ending Pattern Intensity.

Two pop-up menus are available to define the characteristics of the shadow: Method and Using.

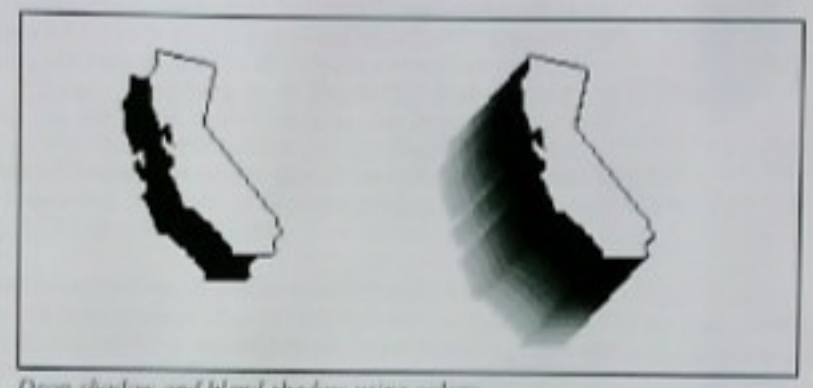
Drop shadow
Blend Shadow

Method
The Method option determines whether the shadow will lie flat behind the object (or selected area), or whether the shadow will "blend" up to surround the object (selected area).

Two choices are available for Method. They are:

Drop Shadow
This is the default setting for the Shadows dialog box: it generates a flat shadow in the shape of the image.

Blend Shadow
This method generates a three-dimensional shadow, blending up to the shape of the image. Based on the settings of the Using option, described below, the Blend Shadow setting can generate a variety of shadow effects.



Drop shadow and blend shadow using colors.

Colors
Patterns
Color Patterns

Using
The Using option controls whether a solid color, or a patterned color will be used for the shadow. The default setting is to use black as a color, set to a 49% intensity (medium gray).

There are three choices available for Using. They are:

Colors
Makes the shadow the color selected in the Shadow palette. The Pattern Intensities settings have no effect on the shadow when Color is selected as the Using option. If Blend Shadow is used with Color, the shadow color is a blend between the foreground color (shown on the color selector) and the color selected on the shadow palette.

Patterns
Draws the shadow in a dithered pattern, using the color selected on the palette. The density of the dithering is a is set with the Pattern Intensities.

If Patterns is activated when using the Drop Shadow method, the Ending setting of the Pattern Intensity controls the density of the shadow. If the Blend Shadow method is used, Ending will control the density of the shadow furthest from the graphic: Beginning will control the density of the shadow closest to the graphic.

Color Patterns
When Drop Shadow is activated, the Color Patterns option allows you to adjust the density of the shadow. The density is adjusted with the Ending control of the Pattern Intensities.

When Blend Shadow is activated, this option draws a shadow in the range of blend colors. The Foreground color will be closest to the graphic; the color selected on the Shadow palette will be furthest from the graphic.

With Color Patterns activated, the Pattern Intensities will control the density of the shadow. The Beginning setting will control the density of the color closest to the graphic; the Ending setting will control the density of the color furthest from the graphic.

To change the Pattern Intensities, click on the arrows for Beginning and Ending. As you click on the arrows, the percentage of intensity increases or decreases, as indicated by the percentage numbers. A representation of the intensity you've selected will appear in the boxes next to the arrows. (As an alternative to clicking on the arrows, you can type the desired percentages directly into the boxes.) Varying the settings for Beginning and Ending shows how you can vary the rate of change of the blend: for instance, to make the shadow more intense close to the image and fainter further away.

Two examples of blend shadows with different intensities.

To draw with a shadow, follow these steps:

1. Click on a drawing tool.
2. Make sure Special Effects is on.
3. Choose Shadows... from the Options menu, and set the effects and direction desired for the shadow.

4. Choose Use Shadow or Use Both from the tool's special effects menu.

5. Draw with the tool. When you release the mouse, the shadow will be generated using the effects you've selected. Depending on the complexity of the effects, it may take a few seconds for the shadow to appear on the screen.

Customizing the Palette for Special Effects

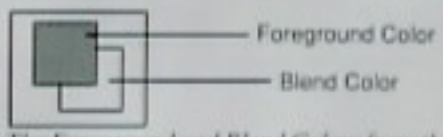
While experimenting with Fill Effects, Shadows, and some of the Cycle features of the PixelPaint tools, you may have noticed that some effects aren't particularly attractive with some of the color palettes. Many PixelPaint effects work best when used with a customized range of colors.

The preceding sections of this chapter discussed the use of Fill and Shadow Effects, but the results that you achieve will be dependent on the color palette. Of the palettes built into PixelPaint, the Rainbow palette and the Grayscale palette give you the fullest range of blends available.

However, the colors that you require for your artwork probably will not be included in these two palettes. You may need to add a range of colors to a palette to fit your particular needs. Exporting artwork to other Macintosh applications can restrict you to working with the standard Apple System palette.

If you haven't read Part I, Chapter III: *Color and Palettes*, you should do so before you begin to read about customizing the palette for Special Effects.

The Color Selector portion of the PixelPaint Toolbox is used to select the Foreground and Blend Colors. When using Fill and Shadow Effects, and Cycle, the colors in the palette which fall *between* these two colors define the range of the effects.



The Foreground and Blend Colors from the PixelPaint Toolbox.

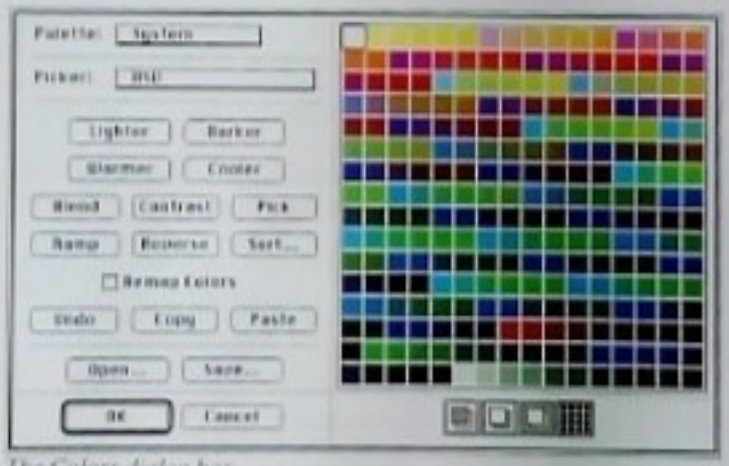
The palettes in PixelPaint are laid out in a grid that is read from left to right, top to bottom. The smoothest color blends result when the range between the Foreground Color and the Blend Color contain a range of colors that subtly change in hue, saturation, and value. In some of the PixelPaint built-in palettes, you'll notice a number of such ranges are already available. If such a range is not

available in the palette you're working with, you can easily create one using the procedures described in this section.

Even within the limited Apple System palette, there are a few predefined ranges that work quite well with a Fill Effect blend that uses Dithered Colors. But what if you need a range of colors that gently blend into one another? What if you don't want the dithering used in Dithered Colors in your artwork? When specialized color needs arise, manipulation of the color palette is the only way to achieve the desired blends.

Adjustments to the color palette are made through the Colors dialog box. To access the Colors dialog box, you can:

- Choose Colors from the Options menu.
- Press Command-K.
- Double-click on the color selector.



The Colors dialog box.

For the following examples, select the Apple System palette by choosing System from the Palette pop-up menu. Two of the buttons in the colors dialog box are particularly powerful for generating a pleasing range of blend colors – the Blend button and the Ramp button.

Using the Blend Button

The Blend button does just what its name implies: it's used to create a range of intermediate, or "blended" colors for a range of the color palette.

Suppose that you want to create a blend range for a piece of artwork showing a sunset. What you need is a range of colors which begins with vivid yellow, ends with red, and includes a full range of orange in between. The example below describes how to take a section of a color palette, and create a custom blend range:

1. Choose Colors from the Options menu, and choose the System color palette from the Palette pop-up menu.

2. Select a bright yellow in the top row of the color palette. Continue holding down the mouse button, and drag down across the palette until you reach a bright red a few rows down. As you drag across the range, the selected palette squares will be highlighted in black. Your palette should appear similar to the diagram below:

3. With this range of colors selected, click the Blend button. The range of colors will immediately change to reflect the blend from yellow to red, similar to the diagram on the next page:

4. Click the OK button to lock-in the changes to the color palette.

5. Finally, use the Color Selector of the PixelPaint Toolbox to set the Foreground Color to the first yellow of the new color range. Set the Blend Color to the red at the end of the range.

   You can also use the Foreground color and Blend color selectors in the Colors dialog box to lock-in the blend range. This would allow you to continue creating color blend ranges without having to return to the Colors Dialog box.

When the Special Effects tools are activated, the color blend range you've created will be employed the next time you use a Fill Effect.

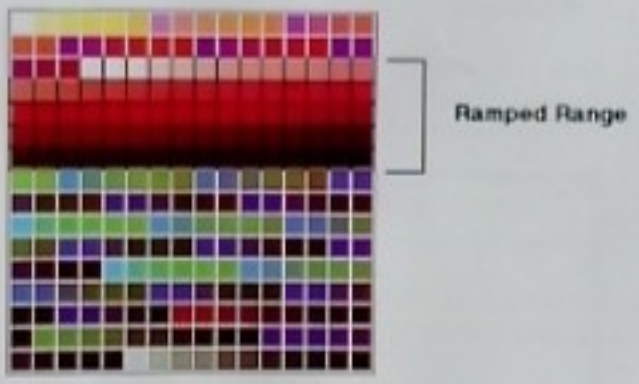
Using the Ramp Button

The Ramp button generates an effect that's very different from the Blend button. When you select a particular color, Ramp will create a range of *hues* for that color — starting with pure white, and ranging to pure black.

For the example below, suppose you want to use a Fill Effect as a background for a slide presentation. In this case, the desired effect will be a full range of a particular hue — red — which will begin with white, and end with black. A blend which will encompass a full range of red hues.

1. Reset the palette to the Apple System palette, and select a range of colors that *begins* with a red color square near the top of the color palette. Continue holding down the mouse button, and drag down across the palette until you reach the red color square several rows down. As you drag across the range, the selected palette squares will be highlighted in black. Your palette should appear similar to the diagram on the next page.

2. With the range of colors selected, click on the Ramp button. The palette will immediately change to show a range from white to black, incorporating a range of red hues.



3. Click the OK button to lock-in the changes to the color palette.

4. Finally, use the Color Selector of the PixelPaint Toolbox to set the Foreground Color to the first white of the new color range. Set the Blend Color to the black at the end of the range.

When the Special Effects tools are activated, the color ramp you've created will be employed the next time you use a Fill Effect.

Of course, you're not limited to using the colors in any of the predefined palettes to use with PixelPaint's Special Effects. As described in Part I, Chapter 3: *Color and Palettes*, there are a variety of methods for creating custom palettes.

Working with Patterns

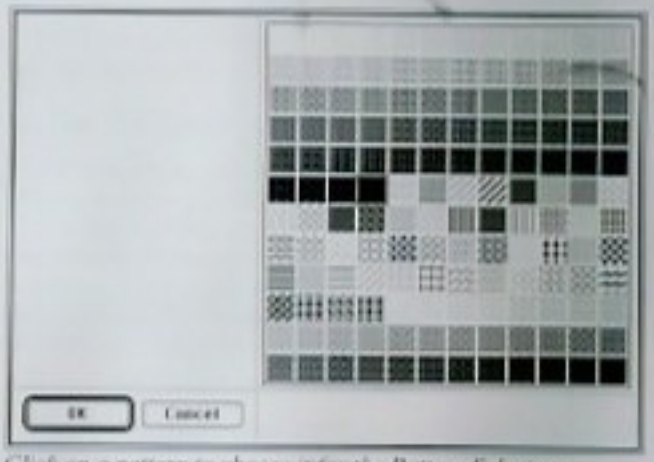
The Macintosh II has the ability to display 256 colors on screen at any one time. When you begin working with complex images, this may seem to be a limited range of colors. One of the ways to simulate other colors is to use the patterns built into PixelPaint. In addition to simulating new colors, Patterns can be used to simulate textures within a color.

PixelPaint also allows you to customize any of the patterns to work with your selected Foreground and Background colors.

There are two ways to access the Pattern dialog box:

- Choose Patterns from the Options menu.
- Double-click on the Pattern Selector.

Once the Pattern box is open, the patterns are shown in the current Foreground and Background colors shown in the Color Selector. If you change these colors, the pattern colors will also change.



Click on a pattern to choose it for the Pattern Selector.

Note: These patterns may be *very* difficult to see if you've selected light colors for both the Foreground and Background colors. If this is the case, return to the Color Selector, and choose a dark color for the Foreground color.

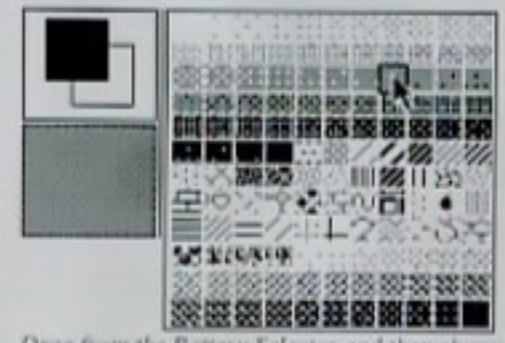
Note that the upper left pattern is the solid background color, and the lower right pattern is the solid foreground color. There is also a solid color in the middle of the selections. All of the patterns can be changed to suit the needs of your artwork.

Patterns can also be selected directly from the Pattern Selector:

1. Put the pointer on the Pattern Selector, and hold down the mouse button. A small patterns box will appear to the right of the Pattern Selector.

2. While holding down the mouse button, drag the pointer to the new pattern. Note that the pattern in the pattern selector changes as you drag the mouse.

3. Release the button when the pointer is on the pattern you want.



Drag from the Pattern Selector and then choose a new pattern.

Like most of the tools and effects in PixelPaint, the patterns that you use can be customized. Customized patterns, used with customized colors, can create a variety of textures for your artwork.

Any of the patterns in the Patterns dialog box can be modified. Use the following procedure to create a customized pattern:

1. Choose Patterns from the Options menu. The Patterns dialog box will appear.

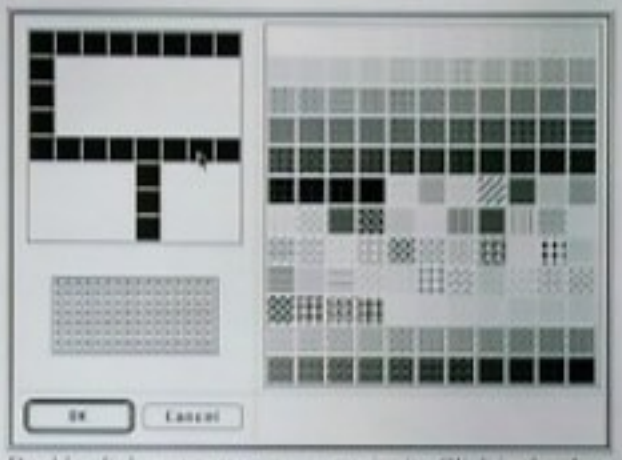
2. Double-click on the pattern you want to modify.
   A close-up view of that pattern will appear.

3. The close-up view shows the individual pixels (squares) which make up the pattern. Clicking on a pixel will cause it to change color. That is, clicking on a pixel which is a Foreground color will change it to the Background color, and vice versa.

As you work with the pattern, the area to the lower left will show what the finished pattern will look like when used as a fill.

4. When you're through making changes to your new pattern, click OK.

The new pattern will be one of the pattern selections in the dialog box, and can be chosen as a pattern in the Pattern Selector.



Double-click on a pattern to customize it. Click in the close-up view to make changes.

If you've made any changes to the patterns, they will be saved with your document. If you save a document as a PixelPaint Stationery Pad file, your custom patterns will be saved as part of that file.

Using the Mask Menu

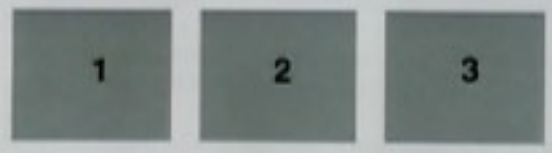
The Mask menu allows you to select areas of the image which will be unaffected when using tools and effects. With traditional graphic arts tools, such as an airbrush, it's common to use an overlay material to act as a frisket, or mask. The idea is to have the overlay cover a portion of the image to protect it from the effects of the airbrush. PixelPaint's mask works exactly the same way: it allows you to work with tools on selected portions of the image, while protecting other areas of the artwork.

You can add any object or area to a mask by using the Lasso and the Marquee tools. Once you have selected an area (or multiple areas) to be masked, choose Turn Mask On from the Mask menu to activate the mask.

With the Mask activated, any tool or effect that you use will not affect the masked area in any way. You can continue to add areas to the mask by selecting the area, and choosing Add to Mask from the Mask menu. Likewise, you can remove selected areas from the mask by using the Remove from Mask menu item.

The following example illustrates the use of the Mask:

1. Activate the Normal Effects tools, and draw three boxes filled with the foreground color (for this example, choose a shade of red).



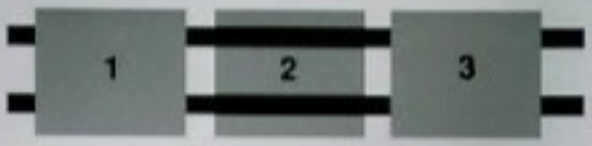
2. Use the Lasso tool to select the first box, and choose Add to Mask from the Mask menu. Then use the Lasso tool to select the third box, and choose Add to Mask from the Mask menu.

3. To confirm that the boxes have been added to the mask, choose Show Mask from the Mask menu. When Show Mask is activated, all items included in the mask will appear in their normal colors; items *not* covered by the mask will appear to be dimmed. In this case, the box in the center is not included in the mask, and will appear as a light red.

4. Click anywhere to make the mask disappear. Choose Turn Mask On from the Mask menu to activate the mask.

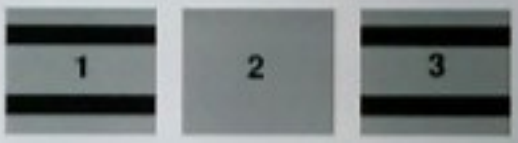
5. Use the color selector to change the Foreground color to some color which will contrast with the boxes, such as blue.

6. Use the Line tool to draw two straight lines through the boxes, as in the diagram below:



Notice that the lines will only appear in the unmasked areas: boxes one and three were unaffected by the Line tool.

You can also reverse the masked area by using the Reverse Mask item. When Reverse Mask is chosen, *only the masked areas* will be affected by the use of a tool or effect — the remainder of the image will act as the masked area. Using the boxes and lines of the above example, choosing Reverse Mask from the Mask menu would allow you to draw lines *only* on boxes one and three:



When you're through working with a Mask, you can remove the Mask from your document by choosing Clear Mask from the Mask menu.

If you use the masking feature extensively, with a multitude of objects masked, it's easy to lose track of exactly which areas are masked. Activating the Show Mask command from the Mask menu will always show which areas will be affected by the tools and effects.

Note that the Mask is not saved along with your document. If you have created a complex Mask for your artwork, make sure you're through using that Mask before saving your work and quitting PixelPaint.

Working with Scanned Images

Most black-and-white and color scanners, digitizers, and frame grabbers allow you to scan an image at a variety of resolutions (that is, vary the dots per inch of the scanned image). It is important to consider that the best output can usually be achieved with images scanned at around 75 dpi — near the same as the 72 dpi resolution of the Macintosh II screen.

Although PixelPaint will accept images which are scanned at higher resolutions, you may not be able to open and view an entire image scanned at 300 dpi because of memory and screen size limitations. In fact, scanning at the higher resolutions has the effect of magnifying the scanned image. Since each dot of resolution will be represented as one pixel on the screen, scanning at 150 dpi produces a 2x enlargement, and 300 dpi produces a 4x enlargement.

Generally speaking, images destined to be imported to PixelPaint should be scanned between 72-75 dpi.

You should note that most artwork printed in books and magazines is copyrighted — therefore, it cannot be reproduced for public or commercial use. If you are using scanned artwork that you have not personally created, it's prudent to check with the original copyright holder to make certain that your scanning and enhancement of the work does not infringe on current copyright laws. It may also be advisable to keep abreast of developments in copyright laws because with the advent of near commercial quality scanners and sophisticated paint programs such as PixelPaint, the copyright laws may change to reflect the use of manipulated images.

This section will present techniques for working with color and grayscale scanned images.

Editing Grayscale Scanned Images

For working with images generated by grayscale scanners, PixelPaint provides a Grayscale palette designed for creating, editing, and enhancing grayscale images.

Most black-and-white scanners have the ability to scan an image using between 16 and 256 shades of gray. The PixelPaint Grayscale palette gives you access to the full range of 256 shades of gray. Therefore, even if your scanned image only contains 16 gray levels, you can use the full Grayscale palette for editing, retouching, and manipulating the scanned artwork.

Using Soft Copy with Scanned Images

PixelPaint includes a variation of the Cut and Copy commands which is particularly well-suited for working with scanned images: Soft Cut, and Soft Copy.

When Soft Copy is activated, the selected area is copied to the clipboard in the usual manner. However, when the selection is pasted back into the document, the edges of the selection blend into the colors of the surrounding area.

Use the following procedure to work with Soft Copy:

1. Select an area of the document using either the Lasso or the Marquee tool.

2. Hold down the "S" key on the keyboard while choosing Copy from the Edit menu. Note that while the "S" key is down, the Copy selection on the Edit menu becomes "Soft Copy." Be sure to hold down the "S" key for the entire duration of the copy.

3. Choose Paste from the Edit menu. The new "soft copy" of the selected area will appear over the original selection.

4. Relocate the selection to another area of the document. When you click outside the selected area, the soft copy will blend into the colors of the surrounding area.

Soft Copy can also be used to take a selection from one document, and paste it into another.

As more color input devices such as video digitizers and frame grabbers are introduced into the Macintosh market, it's likely that all will have the ability to save in a file format which can be opened by PixelPaint. Before purchasing an input device for use with PixelPaint, check with SuperMac Technical Support at (408)-245-0646 to ensure file compatibility.

Editing color scanned images is much different from editing grayscale scanned images. While grayscale images can be edited using the standard Grayscale palette, color scanner software usually creates a unique color palette for each scanned image. Some software, such as PixelScan, can use the standard Apple System palette and a proprietary dithering method to simulate colors which are out of the range of the Apple System palette.

It is very important to realize that the 256 color range of the Macintosh II is a limiting factor when working with color scanned images: images which may contain thousands of color combinations. You should be familiar with how your particular scanner creates color palettes before editing the scanned image in PixelPaint.

Here are a few tips for working with color scanned images:

- The True Color option should be selected in the Preferences dialog box for effects such as Blur, Smooth, Sharpen, Lighten, Darken, Wash, Smear, etc. If the True Color option is not selected, you'll get some bizarre, but colorful, results. For more information on selecting PixelPaint Preferences, see Part II, Chapter 1: *The PixelPaint Menus*.

- Depending on your palette, you'll probably get the most satisfactory Fill Effects by selecting True Colors from the Using pop-up menu. See the section on using Fill Effects, earlier in this chapter.

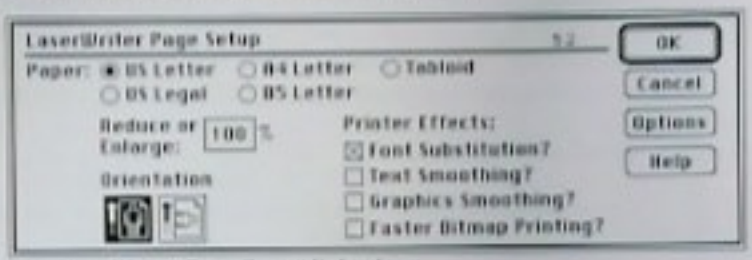
- You should be familiar with the layout of the color palette, and with the various methods of manipulating color palettes before working with color scanned images. For complete details, see Part I, Chapter 3: *Color and Palettes*.

You can use the full range of PixelPaint tools and effects to edit your color scanned artwork, almost just as you would use them when creating artwork from a new document.

PixelPaint uses standard graphic arts and commercial printing terminology for a number of printing effects. If you are unfamiliar with some of the terms used, refer to the Glossary near the end of this manual.

To print a PixelPaint document to a PostScript printer:

1. Choose Page Setup... from the File menu.



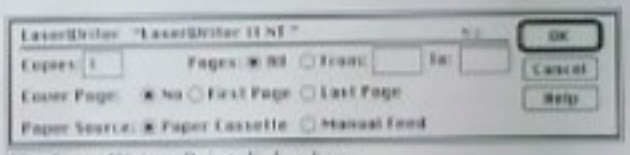
The LaserWriter Page Setup dialog box.

2. Make your selections for Paper size and Orientation. PixelPaint will print in either vertical or landscape orientation.

   Note: the output from PixelPaint to a PostScript printer will be a *PostScript bitmap*. Therefore, selecting Printer Effects — such as Font Substitution, Text Smoothing, Graphics Smoothing, and Faster Bitmap Printing — will have no effect on the final output.

3. Click OK.

4. Choose Print... from the File Menu.



The LaserWriter Print dialog box.

5. Make your selections for number of Copies, Cover Page, and Paper Source, and click OK.

6. After you click OK, PixelPaint will display the PostScript Printing Control dialog box.

Chapter 6

Printing PixelPaint Documents

PixelPaint is designed to work with any printer which is compatible with the Macintosh II, including the Apple LaserWriter® series of printers, and the Apple ImageWriter® series of printers. Other color output devices, such as QuickDraw-based color printers and slide imaging devices, are also supported.

This chapter explains how to:

- print PixelPaint images with PostScript printers (black-and-white and color)
- print PixelPaint images with other color output devices
- print PixelPaint images with an ImageWriter

PixelPaint images are also directly compatible with professional typesetting machines which use PostScript, such as the Linotronic™ 100, 200 and 300. Using PixelPaint in conjunction with desktop publishing programs enables you to integrate your color artwork into brochures, books, annual reports, and other printed matter.

Printing to PostScript Devices

When printing to a black-and-white PostScript printer, such as the Apple LaserWriter or the Linotronic 300, PixelPaint can render excellent grayscale simulations of your color artwork. (And, in fact, PixelPaint was used to generate the black-and-white half-tones printed in this manual.)

When the selected printer is a color PostScript device, such as the QMS ColorScript™ 100, PixelPaint provides high quality full-color prints.

In addition, PixelPaint offers a variety of PostScript effects which can be used to manipulate the output of the printer. For example, PixelPaint can instruct PostScript printers to print spot colors, color separations, halftones, mirror images, and much more.

PostScript Methods

The PostScript methods are selected with the four buttons in the upper-left corner of the PostScript Printing Control dialog box. PixelPaint will allow you to choose any *one* of the four methods when printing: Grayscale, Color Image, Spot Color Printing, or Color Separations.

Grayscale

Grayscale is the default setting for the PostScript printing methods: that is, the printing method which will be used unless you specify one of the other methods. Grayscale is also the setting you should use for printing a black-and-white rendition of your color artwork.

You can alter the printing techniques applied to the Grayscale image by clicking the Halftone button. The use of the Halftone button is explained in the section on PostScript Effects, later in this chapter.

Color image

This is the method for printing a full color rendition of your artwork with a color PostScript printer. The Color Image method instructs PixelPaint to generate color PostScript commands. With this printing method, the final output will resemble a four-color process print.

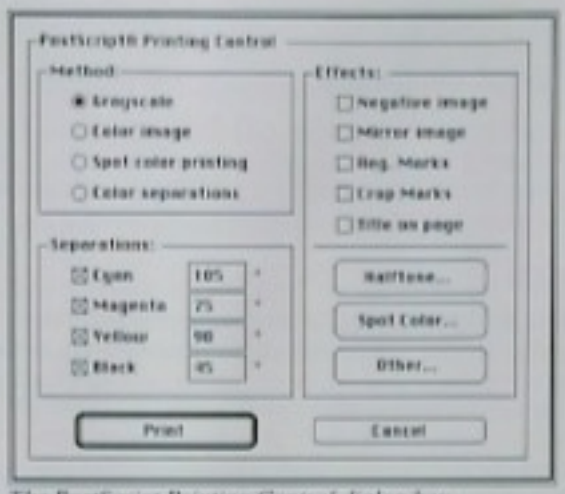
Warning: Color PostScript commands are completely different from standard, black-and-white PostScript commands. Therefore, never attempt to print color images on a black-and-white PostScript printer, such as the Apple LaserWriter.

Spot color printing

This printing method is used to print *just one single color* from your PixelPaint artwork. With this method selected, you must specify the particular spot color by clicking on the Spot Color button. The use of the Spot Color button is explained in the section on PostScript Effects, later in this chapter.

Color separations

The Color Separations printing method is used to create separate copies of the Cyan, Magenta, Yellow, and Black layers which comprise the your PixelPaint artwork. The section which immediately follows describes how to adjust the settings for correct color separations.



The PostScript Printing Control dialog box.

This dialog box allows you to select the options and special effects available for PostScript printers. The following sections of this chapter describe these PostScript options. In some cases, it may be necessary to use combinations of options to achieve a particular printed effect.

7. After you have selected the options that you require in the PostScript Printing Control dialog box, click Print. If your artwork is too large to fit on a single page as defined in the Page Setup settings, a dialog box will prompt you to choose the portion of the image to be printed. Position the printing area and click OK.

Because of the 300 dot per inch limitation of the LaserWriter and most other laser printers, you will achieve better quality finished artwork by printing color separations to a higher resolution output device. For example, the Linotronic 300 is a PostScript printer which can print in up to 2540 dots per inch.

Also note that when the Halftone Control box appears, it is *possible* to make changes to the Texture and Angle settings — however, these settings only function for printing grayscales. The Texture and Angle settings, if any, are ignored by PixelPaint when printing color separations.

- You can specify a percentage of Undercolor Removal, Maximum Ink Buildup, and Density Ranges in the Other Separation Controls dialog box. The use of these controls is described in the Other printing control under Printing Effects immediately following this section.

PostScript Effects:

PixelPaint allows you to choose a variety of PostScript Effects when printing. You may call these effects separately, or combine them to suit your needs.

Checking the box next to the effect activates that effect for printing: the default setting is to have none of the PostScript Effects activated.

Negative Image

When printing to a black-and-white printer, prints a negative of the image: that is, substitutes black for the white areas, and white for the black areas. When printing to a color PostScript printer, choosing Negative Image prints the inverse of the standard process color.

Mirror Image

As the name implies, this effect instructs the PostScript printer to create a "mirror image" of the artwork. That is, the left-hand side of the artwork will appear on the right-hand side of the print, and vice-versa.

Reg. Marks

Instructs the PostScript printer to create Registration Marks. With PixelPaint, the Registration Marks appear as cross-hair lines printed *outside* the image area. The Registration Marks enable a commercial print shop to correctly position color separations for offset printing. This effect is ordinarily used in conjunction with four-color separations, and with spot-color separations.

PostScript Separations

Color separations are required to print PixelPaint images on an offset lithographic printing press. When the Color Separations method is selected in the PostScript Printing Control dialog box, the four adjustments of the Separations area are activated: the adjustments for Cyan, Magenta, Yellow, and Black.

Since commercial print shops may be unfamiliar with the color separation output from PixelPaint, you should work closely with the print shop to ensure that the final printed result will be what you want.

Warning!: Preparing and printing perfect color separations is a task requiring tested knowledge and skill. Preparing PixelPaint documents for color printing should be handled only be those familiar with printing technology. There are a variety of sophisticated separation controls built into PixelPaint, and you should be familiar with the four-color process and with the separation controls before attempting to create artwork for four-color process printing. For best results, rely on color photomechanical, electrophotographic, or press proofs for color matching before going to press.

PixelPaint gives you the following options for printing color separations:

- You can print one, two, three, or all four layers of the color separation. The check boxes to the left of the Cyan, Yellow, Magenta and Black settings determine which layers will be printed. The default setting is to have all four layers printed.

- You can adjust the screen angles for each of the four separations. The industry-standard screen angles are already pre-set as the default, and these settings should not ordinarily need to be changed. Again, we recommend that you work with your print shop to set the screen angles for the desired effect.

- You can specify the lines-per-inch of printing resolution for the color separations. Click on the Halftone button, and then click on the Use Custom Halftones button to activate the resolution options.

  Note that the resolution specifies the lines per inch, rather than dots per inch. When using a 300 dpi printer such as the Apple LaserWriter, you should choose a resolution of 50 or 65. You can specify higher resolutions when working with high-resolution PostScript printers such as the Linotronic 100, 200, or 300.

Note: None of the effects available in the Halftone Control dialog box will be used unless you click on the Use Custom Halftones. It is possible to enter numbers for a percentage of Texture, degrees for Angle, and a Lines-per-inch resolution — but none of those numbers will influence the final printout if the Use Printer's Default Halftones button is selected.

Traditionally, Halftones are reproductions of continuous-tone artwork produced by placing a special contact screen over photographic film. The contact screens were comprised of dots, and different halftone contact screens were used to achieve different textures, densities, and angles of the dot pattern. Therefore, with the traditional photographic techniques, special effects were achieved by the use of specialized contact screens or exposure techniques.

PixelPaint allows you to duplicate such effects directly at the PostScript printer by selecting different Textures, Angles, and Resolutions when printing. You can specify the style of dots or lines that you want to use, you can choose to print a percentage of the Threshold, or contrast, of the image, or produce a very high-contrast image by selecting a level of Posterization.

The angle of the Textured screen can change the visual impact of an image. Normally a 45-degree angle is used — but you can customize the angle of the screen to fit your particular printing need.

Resolution refers to lines per inch, not dots per inch. When printing to a 300 dpi printer, such as the LaserWriter, you should select a Resolution of 50 or 65 lines per inch. You can use a higher Resolution when printing to a PostScript device such as the Linotronic 100, 200 or 300.

Crop Marks

This effect generates crop marks. The Crop Marks are lines printed at the boundaries of the image area. The Crop Marks are used to define which portion of the page comprises the image area.

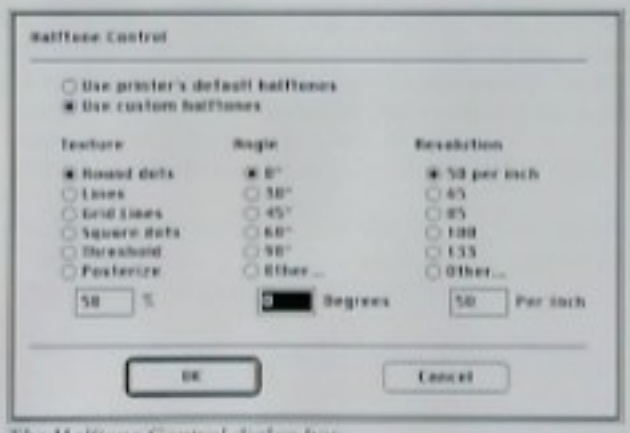
Title on page

The Title on page effect prints the document title, as well as the date and time the document was printed, at the top left corner of the page. The printing method and/or process color will appear at the bottom left hand corner of the page.

Halftone Control

The Halftone Control dialog box is used to adjust the printing parameters for producing black-and-white halftones of the PixelPaint image. The Halftone Control dialog box is also used to select the printing resolution when printing color separations.

When you click on the Halftone button, a dialog box similar to the diagram below will appear:

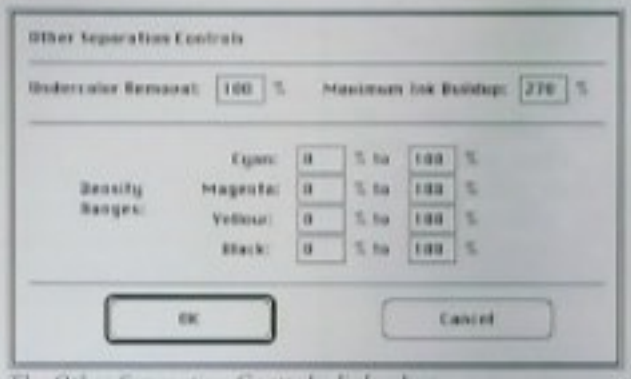


The Halftone Control dialog box

You can customize the Halftone image by checking the Use Custom Halftones radio button and specifying the desired Texture, Angle, and Resolution.

Other Separation Controls

The Other button gives access to the Other Separation Controls dialog box. The controls available are Undercolor removal, Maximum Ink Buildup, and settings for Density Ranges of the four process colors. Clicking on the Other button will produce a dialog box similar to the diagram below:



The Other Separation Controls dialog box.

Undercolor Removal

Undercolor Removal, or UCR, is a method used to enhance detail when making separations for use in four-color process printing. Undercolor Removal also provides more consistent grayscales in four-color printing.

Undercolor removal replaces percentages of the cyan, magenta, and yellow process-color layers that are neutral (black) by increasing the percentage of the black layer. Not only are grayscale areas and shadow detail enhanced, but you can often save drying time and ink costs.

You should note that registration problems can occur when using maximum undercolor removal, and that using a partial percentage is preferred. To select the percentage of undercolor removal desired, simply enter the percentage in the text box of the Undercolor Removal dialog box.

Maximum Ink Buildup

This control refers to the percentage of ink buildup allowed on the printed page. Although usually controlled on the printing press, you can control Maximum Ink Buildup when you are printing separations from PixelPaint. The range can be set

Spot Color

If you have specified Spot Color Printing in the Method portion of the PostScript Printing Control dialog box, you will need to specify the exact color you want to print by clicking on the Spot Color button. When you click on the button, a dialog box similar to the diagram below will appear:

The Spot Color dialog box

The dialog box will prompt you to select a Spot Color. You can select a single Spot Color to print by clicking a color in the palette. PixelPaint will then display the PANTONE MATCHING SYSTEM number that is the closest match for the color you have selected. Click OK. PixelPaint will return to the PostScript Printing Control dialog box, and you can click OK to print.

After printing the Spot Color, you will be returned to the PostScript Printing Control dialog box. At this point, you can continue printing Spot Color separations, or select other printing Methods.

destination for your artwork, it's best to create the artwork using this palette. If a different palette was used to create the artwork, make sure to change to the HP PaintJet palette before printing, using the Remap Colors option of the Colors dialog box.

For information on the Mirus FilmPrinter, contact the Mirus Corporation at 1-800-654-0808. In California, call 1-415-949-5544.

Check with the manufacturers of other color output devices to assure compatibility with PixelPaint.

Since printers which are compatible with PixelPaint continue to evolve, SuperMac Technical Support will maintain up-to-date information on color output devices — as well as service bureaus —supporting color output. Contact Technical Support at 415-964-9660 for the latest information.

Printing to the Apple ImageWriter

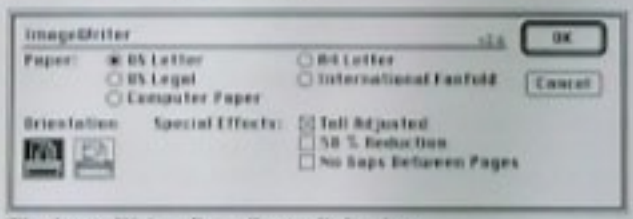
PixelPaint can create far more colors than can be generated by an Apple ImageWriter II, or ImageWriter LQ. Therefore, PixelPaint *will not* print in color on these devices. For printing on the ImageWriter, PixelPaint substitutes black-and-white for the colors present in a document.

In other words, printing to an ImageWriter provides only a very rough, black-and-white approximation of the appearance of the document. However, you may find that this approximation is suitable for creating "for position only" copies when mechanically pasting up page layouts.

Use the following procedure to print a PixelPaint document with an ImageWriter:

1. Choose the Chooser from the Apple menu, and make sure that the ImageWriter is selected for printing.

2. Choose Page Setup from the File menu. A dialog box similar to the diagram on the next page will appear:



The ImageWriter Page Setup dialog box.

for 0% to 400%. (The range cannot exceed 400% as the maximum percentage of each process color is 100%, resulting in the 400% limitation.)

The default setting for Maximum Ink Buildup is 270% and this percentage should be used in most instances. However, if separations appear too light, you can increase the Maximum Ink Buildup or, if too dark, the percentage can be decreased.

Density Range

The Density Range allows you to set and control the percentage of density for each of the process colors. Specifying a minimum and maximum density range can help improve final output by setting limits on the density of each separation. This, in turn, puts limits on the ink density of the image as it's created on the offset press.

The default values for the four process colors are 0%–100%, and should only be changed if your printed proofs suffer from a fault which can be traced to the density range of the separations. Note that density ranges cannot be set below 0% or above 100%.

Printing to Other Color Devices

There are a variety of color output devices currently available which will print PixelPaint images. Among the devices currently available are the Tektronix 4693D Color Image Printer, the Hewlett-Packard PaintJet color printer, and the Mirus™ Digital FilmPrinter™. These products provide device drivers which are compatible with PixelPaint.

Using these devices, PixelPaint can be used to prepare materials such as overhead transparencies and presentation slides.

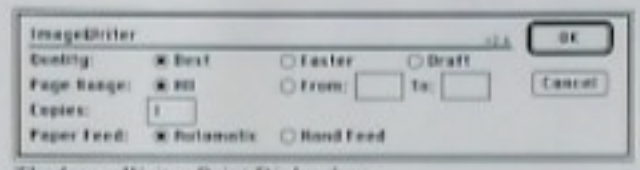
The Tektronix printer uses QuickDraw and a specialized smoothing algorithm for printing PixelPaint documents. Special printing software is included which will allow you to print high-quality text along with the document. Using this software, it's possible to create giant posters of your PixelPaint artwork. For more information on the Tektronix 4693D Color Image Printer, contact Tektronix at 1-800-225-5434. In Oregon, call 1-235-7202.

The Hewlett-Packard PaintJet includes a special Macintosh print driver. Simply install the print driver in the System Folder, and use the Chooser to specify that driver when printing. Since the PaintJet has a limited range of colors, a special HP PaintJet palette is included with PixelPaint. If the PaintJet will be the final

3. Make your selections for Paper size and Orientation. For best rendition of the image, choose Tall Adjusted in the Special Effects section, as shown in the diagram above.

4. Click OK.

5. Choose Print from the File Menu.

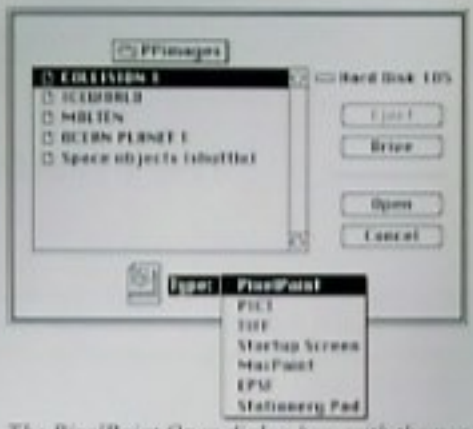


The ImageWriter Print Dialog box.

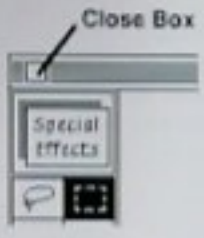
6. Select either Best or Faster Quality print mode. PixelPaint does not work with Draft Quality printing. Select the number of Copies you want to print, and choose the Paper Feed method.

7. Click OK. If the document is larger than the size of the paper you've selected, a dialogue box will prompt you to choose a portion of the area to printed. Position the printing area, and click OK.

Part II
Reference



The PixelPaint Open dialog box, with the pop-up menu displayed.



Close

Closes the current document on the screen. If you've made changes, an alert box offers you the chance to save the document first. Another way to close the document is to click its close box.

Save

Saves the current PixelPaint document, updating the original version with any changes you made to it.

Save As...

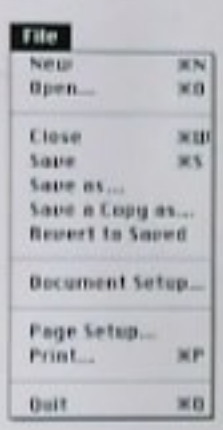
Saves the current document. Use the Save As command when you want to save a document with a new name, on a different disk, or in a different format. Choose Save As, then choose the file Type from the Type pop-up menu. Enter a new name, then choose the disk or folder. If you are working on a document that has been previously saved, the dialog box will automatically enter "Copy of (document name)". Click the Save button or press Return. The original version of the document is not affected.

In other words, the Save As command is for saving both the original and the updated version of a document as two separate documents.

After saving a document as a PixelPaint document with the Save As command, the current document on the screen is the one that was saved with the Save As command, not the original version that was opened initially. In other words, if you have a document on the screen named "Test Image" and you use the Save As

The PixelPaint Menus

Use this chapter as your in-depth reference section that describes PixelPaint's menu items in detail. You'll find answers here to your questions about menu choices and information directing you to specific chapters for more detailed discussion of individual tools.



The File Menu

This menu is for opening, closing, saving, setting document size, and printing files. The dialog boxes that appear for these functions are similar to those in other Macintosh applications, except that some dialog boxes have pop-up menus at the bottom and extended printing capabilities. The pop-up menus are for opening and saving images in various formats, as described in Part I, Chapter 4: *Importing and Exporting Files*.

New

Opens a new PixelPaint document. The color palette, preferences, tools, rulers, and other choices will be the same ones used for the last document you worked on. The drawing area is blank, ready for you to create a new image.

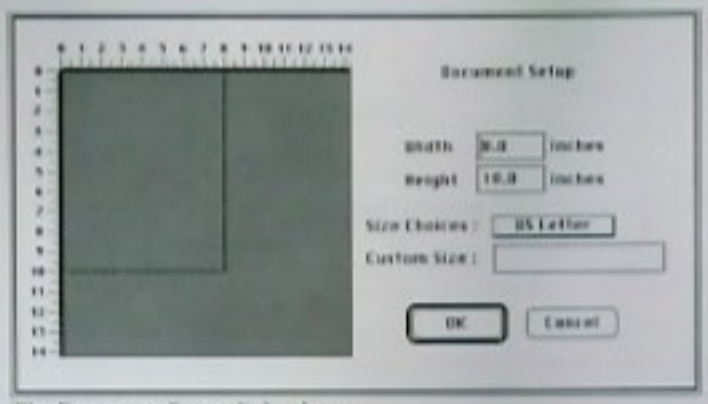
The New command is dimmed if another PixelPaint document is currently on the screen. In order to choose New, you must first close the current document.

Open

Opens an existing document. When Open is selected from the File menu, the Open dialog box will appear. Choose the file Type representing the format of the document you want to open from the Type pop-up menu. Only the names of the documents in that format will be available to be opened. Open the document in the normal Macintosh manner by clicking on its name and choosing Open, or by double-clicking on its name.

Document Setup

The Document Setup dialog box lets you set the size of the document. Be aware that on a Macintosh II with two megabytes of RAM, the maximum document size will be limited.



The Document Setup dialog box.

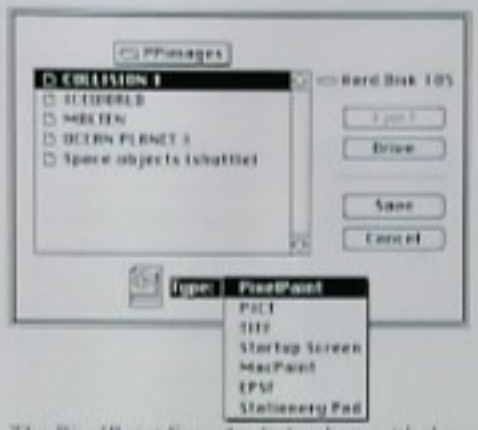
There are three ways to specify the size of a PixelPaint document:

- Typing numbers, in inches, for the desired Width and Height of the document. As you enter the numbers in the appropriate box, the ruled area on the left will immediately change to reflect the new dimensions.

  Also note that as you enter numbers for the Width and Height of the document, the Custom Size box will immediately reflect the document size in pixels.

  When you click in OK to lock-in your new Height and Width settings, these new settings will be saved as a part of Pixel Paint. That is, these custom dimensions will appear at the bottom of the Size Choices pop-up menu.

command to save a version named "Final Image", the document then on the screen is "Final Image".



The PixelPaint Save As dialog box, with the pop-up menu displayed.

Save a Copy as...

Saves a copy of the document currently on the screen, but does *not* close the original version of the document. In other words, if the current document is named "Test Image" and you choose Save A Copy As, the copy is saved but "Test Image" is still the current document.

Normally, you use this command when you want to save a sequence of interim changes to your document while working toward a final piece of artwork. The copies are like a paper trail that you can follow to see how a piece of artwork was created. With Save A Copy As, you're always working on the original version of the document.

The Save A Copy As dialog box is the same as the Save As dialog box, but all document names will always be preceded by "Copy of".

Revert to Saved

Abandons any changes you made to the current document, and re-opens the last saved version of the document. Use this command when you want to discard changes that cannot be undone. The Revert To Saved command is dimmed until the document is saved in PixelPaint format.

As you drag, notice that the precise document dimensions will be reflected in the Width and Height boxes, as well as in the Custom Size pixel-dimension box.

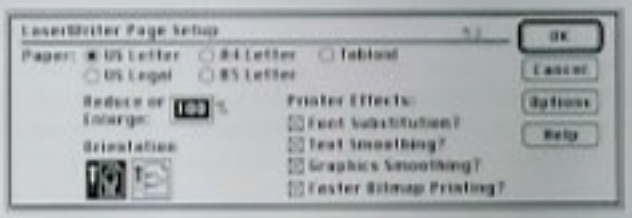
2. When you define the size you want, click and drag through the numbers in the Custom Size box to highlight them in black.

3. Type in the name that you want to use for your custom document size, and click OK. Type carefully: once you click OK, there is no way to remove the name from PixelPaint.

The next time you choose Document Setup from the File menu, your custom size will appear on the list of the Size Choices pop-up menu. Selecting the name will cause the dimensions of the custom size to appear in the ruled area, as well as in the Width and Height boxes.

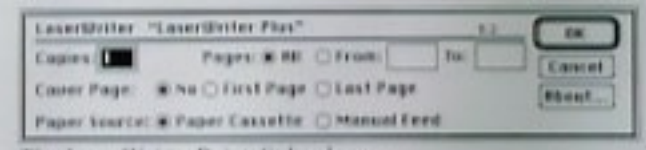
Page Setup

Lets you specify printing options for the printer you have selected in the Chooser desk accessory.



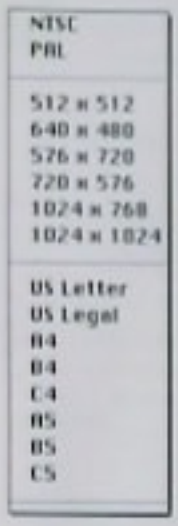
Print...

Use this command to print your document in grayscales or colors. On black-and-white printers such as the LaserWriter, this command prints the document in shades of gray.



The LaserWriter Print dialog box.

A note about printing: For a complete discussion of printing options for PixelPaint documents, see Part I, Chapter 6: *Printing PixelPaint Documents.*



- Clicking on the Size Choices pop-up box, and selecting one of the sizes listed. Sizes are listed in pixel dimensions, as well as in standard (and international) paper sizes.

  At the top of the Size Choices are settings for document dimensions which correspond to NTSC and PAL screen dimensions.

  If you are using a Macintosh II with less than 4-megabytes of memory, some of the larger document sizes will not be available. Those sizes will appear as dimmed in the pop-up box.

- Moving the pointer to the desired size on the Document Setup ruled area. Click anywhere in the ruled area, and drag to select the desired document size. As you drag on the ruled area, the dimensions will be shown in inches in the Width and Height boxes, and in pixels in the Custom Size box.

  When you click in OK to lock-in your new custom document dimensions, these dimensions will be saved as a part of Pixel Paint. That is, these custom dimensions will appear at the bottom of the Size Choices pop-up menu every time you start PixelPaint.

  Warning: Custom document sizes, once defined and stored as a part of PixelPaint, cannot be removed. A maximum of eleven custom sizes may be stored in PixelPaint. If you want to change or remove any custom sizes, begin with a fresh copy of PixelPaint.

Document sizes are always saved as part of the document. If you need to define more than eleven custom document sizes, they can be saved along with a Stationery Pad document.

Naming Document Sizes

PixelPaint allows you to assign names to any custom document sizes that you create. This is useful if a name is more meaningful that pixel dimensions. For example, for doing design work with 6" x 6" ceramic tile, you might assign the name "Tile" to a document size, rather than dealing with the 432 x 432 pixel label.

To name a custom document size:

1. Click and drag in the ruled area of the Document Setup dialog box, to select a custom document size.

Pasted text is changed to the font, style, and size specified in the Text menu. If you are pasting in text that was cut or copied from a word processing program such as MacWrite, select the desired font attributes from the Text menu before you paste.

If you accidentally paste in text with the wrong font attributes, choose Undo immediately from the Edit menu, select the desired attributes from the Text menu, and Paste again.

If you have selected an area with the Marquee tool and choose paste, the image on the Clipboard will be constrained to fit the selected area.

Clear

Erases a selection. Select an area with the lasso or marquee, then choose Clear. The area is erased, including any background color or fill underneath the image. In other words, the selection area is erased to the current Background color. Areas which are Cleared are totally erased, and are not stored on the Clipboard.

A shortcut for Clear is pressing the Delete key. After you have selected an area, pressing Delete has the same effect as choosing Clear.

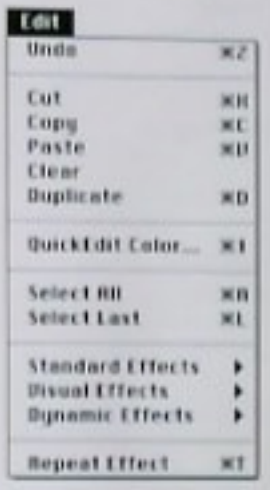
Duplicate

Creates a copy of the selected area and pastes the copy exactly on top of the original selection. The copy is automatically selected: click on the copy, and drag it to reveal the original image again.

The Duplicate command works exactly the same as selecting an area, and holding down the Option key while dragging the selection. That is, a duplicate of the selection will be dragged.

QuickEdit Color...

If you would like to quickly edit a color visually, you can use the QuickEdit Color dialog box. The QuickEdit Color dialog box allows you to select a color and visually edit the color using either the HSV or RGB values.



Quit

Leaves the PixelPaint program. If the image includes changes that you haven't saved yet, an alert box will appear, giving you the opportunity to save the document.

The Edit Menu

This menu contains options for editing a document. It includes three hierarchical menus, Standard Effects, Visual Effects and Dynamic Effects, which have special options for editing selected portions of an image.

Undo

Reverses the last editing change you made to an image, returning the image to its previous state.

Choose Undo when you change your mind about an editing change. You can also "undo" the Undo command. After you choose Undo, the menu choice changes to Redo. If you decide to keep the change after all, choose Redo, and the change will reappear.

The Escape key is a shortcut for the Undo command. Pressing the Escape key undoes the last action; pressing it again is the same as choosing Redo. However, don't use the Escape key when working with the Dynamic Effects menu – the Escape key does not have the Redo capability with the Dynamic Effects menu.

Cut

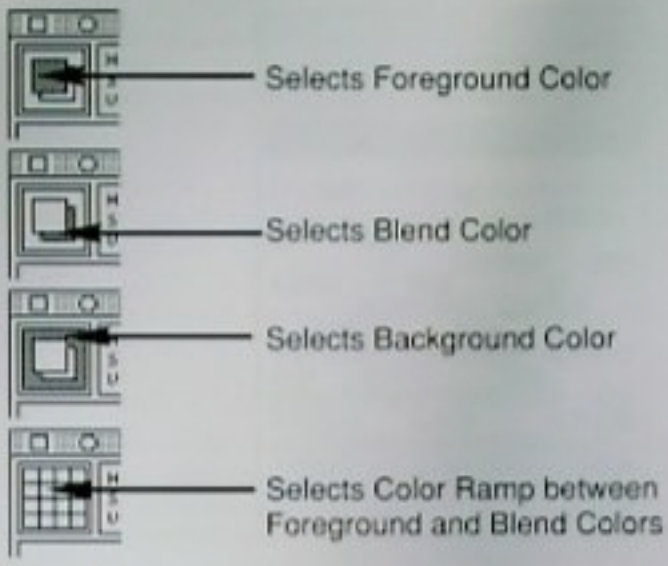
Removes the selected portions of the image and puts them on the Clipboard. The previous contents of the Clipboard are replaced with the selected items. You select images with the lasso or marquee tools.

Copy

Places a copy of selected portions of the image on the Clipboard. The original selections are not removed from the image as they are when you use Cut. However, like Cut, the copied items replace the contents of the Clipboard.

Paste

Puts the contents of the Clipboard into the document. The pasted image is automatically selected, so you can move it wherever you want it on the image. As soon as you click anywhere other than the pasted image, it will no longer be selected, and you will not be able to move it.



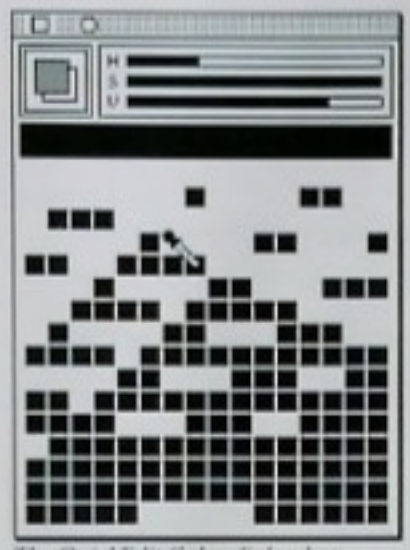
To QuickEdit a color:

- Choose the method of color manipulation you want to use — HSV or RGB
- Choose the color you want to change
- Use the RGB or HSV "slide" controls to visually change the selected color.

Use the pointer along the slide controls to adjust the HSV or RGB values.

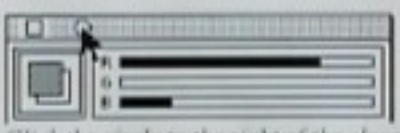
Note that the QuickEdit Color dialog box can be positioned anywhere on the screen. Since any changes made with QuickEdit Color are immediately reflected in your artwork, this makes it easy to position the QuickEdit Color dialog box so you can see the effect on the artwork. If you want to revert to the original color, choose Undo from the Edit menu.

Warning: If you use QuickEdit Color to change a color, the previous color is not stored in the Color Queue, along the bottom row of the Color Selector grid. Therefore, you cannot use the Color Queue to revert to previous colors generated by QuickEdit Color. Use the Dropper tool to match the colors on your artwork.



The QuickEdit Color dialog box.

The QuickEdit Color dialog box defaults to the HSV method of selecting a color, but by clicking on the circle to the right of the close box, you can switch to the RGB method.



Click the circle to the right of the close box to change from the HSV to the RGB method

By clicking on the Color Selector Icons, you can choose to QuickEdit the Foreground Color, the Blend Color, the Background Color, or the selected color ramp, or range, of the palette. If you accidently choose the wrong color, choose Undo from the Edit menu to revert to the previous color.

Invert
Changes the colors of the selected area as if you had flipped the color palette upside down and reversed the order of the colors (as in a mirror image). For example, the color of the upper left corner becomes the color of the lower right corner. This feature is particularly useful when you are working with the grayscale palette and you want an image to appear as a negative image of itself.

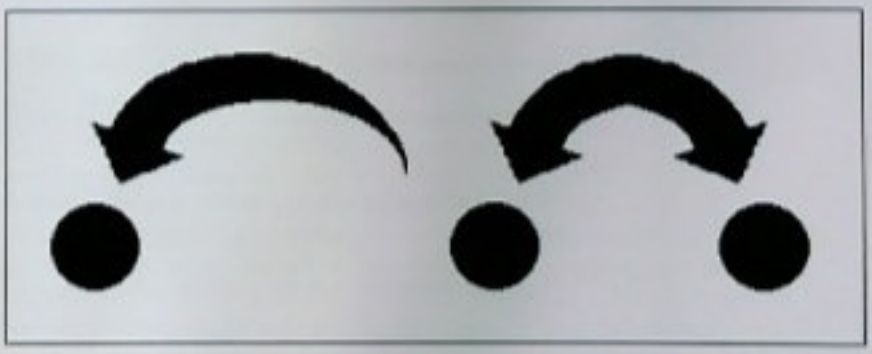
Fill
Fills the selected area with the foreground color, using the pattern in the pattern selector. This menu choice lets you fill any selected region, even those that were not originally drawn with a pattern or fill.

If you want to fill the selection with the fill effect, choose Use Fill Effect from the Effects menu while using Special Effects.

Flip Horizontal
Flips the selected area from right to left.

Flip Vertical
Flips the selected area from top to bottom.

Mirror Horizontal
Similar to creating an "inkblot" of the left side of the selected area. The left side of the area is mirrored onto the right side of the area. Whatever originally appeared on the right side is replaced. Mirror Horizontal does *not* mirror the entire image, only its left side.



Original image (left), and image after applying the Mirror Horizontal command (right).

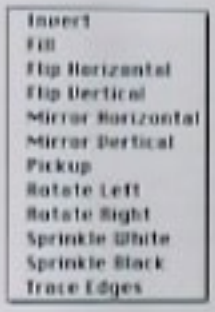
Select All

Selects the entire window with the marquee rectangle. Double-clicking on the marquee tool achieves the same effect as Select All.

Select Last

Selects the last paint area drawn. You can use the pointer to move the area around the screen, or use any of the commands available to an area selected using the Lasso.

Note that when you choose Select Last, the selected area will be the *color difference* between what's currently on the screen, and what was previously on the screen. Therefore, if you paint blue on a blue background, Select Last will see no difference, and will have no effect.



Standard Effects

This menu choice becomes active whenever you select an area with the Lasso or Marquee tool. Standard Effects is a hierarchical menu which contains special effects for modifying or editing the selected area.

All of the menu choices are available for an area selected with the Marquee tool. For an area selected with the Lasso tool, all options are available except those that flip, rotate, or mirror the selection.

To use Standard Effects:

1. Select an area with the Lasso or Marquee tools.
2. Choose Standard Effects from the Edit menu. A hierarchical menu will pop out to the right.
3. Without releasing the mouse button, drag the pointer over to the hierarchical menu.
4. Drag the pointer down to the command you want, and release the mouse button.

Blur
Smooth
Sharpen
Lighten
Darken
Mosaic
Wash

Contour
Diffuse
Dither
Etch
Relief
Thicken
Thin
Warp

Visual Effects

This menu choice becomes active whenever you select an area with the Lasso or Marquee tool. The Visual Effects hierarchical menu contains special effects for modifying or editing the selection. All of the menu choices are available with either the Marquee or Lasso tool.

To use Visual Effects:

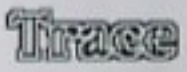
1. Select an area with the Lasso or Marquee.
2. Choose Visual Effects from the Edit menu.
3. Without releasing the mouse button, drag the pointer over to the hierarchical menu.
4. Drag the pointer to the command you want, and release the mouse button.

Blur
Creates an extremely diffused, or blurred, image of the selected area.

Smooth
Blends edges of the images in the selected areas to smooth out any jagged appearance. Smooth is designed to work best when the True Color option is selected in the PixelPaint Preferences dialog box.

Each time you choose Smooth, PixelPaint further softens the edges of the image in the selected area. Use the Smooth option repeatedly to make an image appear to be "out of focus." For a shortcut, use the Repeat Effect choice (Command-T) to repeat the smoothing.

Use the Smooth command to blend edges. You can repeat Smooth as many times as you like.



Mirror Vertical
Works just like Mirror Horizontal, except that the top half of the selection is mirrored onto the bottom half of the area.

Pickup
Selects the colors and patterns under the selection area and applies them to the selection. The shape and size of the pickup area are exactly the same as those of the selected area.

This option is useful for picking up the colors under circular (or odd-shaped) areas, as well as color patterns.

Rotate Left
Rotates the selected area 90 degrees counterclockwise.

Rotate Right
Rotates the selected area 90 degrees clockwise.

Sprinkle White:
Adds a random pattern of white speckles to the selection. Each time you choose Sprinkle White for the selection, more white speckling is added.

Sprinkle Black:
Adds a random pattern of black speckles to the selection. Each time you choose Sprinkle Black, more black speckling is added.

Note that the random patterns for Sprinkle White and Sprinkle Black are not the same. That is, after choosing Sprinkle White, you can't cover the white speckling by choosing Sprinkle Black.

Trace Edges
Puts an outline around the edges of the selected area. The outline is one pixel wide. If the original line is a solid color, it is replaced by an outline of itself, in the same color. If the original line is multicolored, each section of the line is replaced by an outline in the same color as that section. Each time you choose Trace Edges, another outline appears around the edge lines.

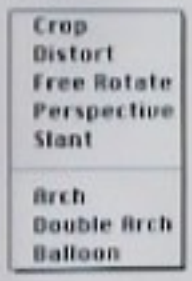
Etch
Achieves an high-contrast etched effect by selectively removing color from the image, leaving black.

Relief
Creates an offset bas-relief type effect on the selected area.

Thicken
The pixel block within the selected area thickens, and the pixels in the area are driven toward black. Thicken works best with monochromatic palettes, such as a single hue palette or the grayscale palette.

Thin
The pixel block within the selected area thins, and the pixels in the area are driven toward white. Thin works best with monochromatic palettes, such as a single hue palette or the grayscale palette.

Warp
Creates a variety of warping effects on the selected area. The various Warp techniques can be changed by pressing one of the number keys, 1 through 0, (across the top of the keyboard) while selecting Warp. These keys affect the dynamics of the Warp effect upon the selected image area.



Dynamic Effects

This menu choice becomes active whenever you select an area with the Marquee tool. The Dynamic Effects are available from a hierarchical menu, and allow you to change the dynamics of a selected area.

To Use Dynamic Effects:

1. Select an area with the Marquee tool.
2. Choose one of the options from the Dynamic Effects hierarchical menu.

   A box with small black squares at its corners will surround the selected area. The small black squares — called handles — are used to manipulate the selected area.
3. Click on a handle, and drag it in the direction for the desired effect.
4. Click outside the selection to lock-in the effect — although you can still choose to Undo the effect.

At that point, the area will still appear to be selected. However, in order to choose *another* dynamic effect, you must reselect the area with the Marquee. You can, however, choose from the Visual Effects menu without reselecting. (The

Note: Smoothing is useful for changing the high contrast blacks and whites of an imported MacPaint image into shades of gray. Starting with a grayscale palette, smooth the image, then change to a palette with color (or one with at least eight levels of gray). The image will take on gradations of gray or color.

Sharpen
Adds a sharp edge to the images in the selected area.

Lighten
Maintains the hue of the colors in the selected area, but decreases, or lightens, the color saturation.

Darken
Maintains the hue of the colors in the selected area, but increases, or darkens, the color saturation.

Mosaic
Creates a mosaic of pixel "tiles" from the selected area. The size of the pixel tiles can be manipulated by pressing one of the 1-9 keys *while* selecting the Mosaic option. Pressing 1 will size the tiles to the smallest blocks available, and pressing 9 will size the tiles to the largest size available.

Pressing the Shift *or* Option key while selecting Mosaic will double the size of the Mosaic tile. Pressing *both* the Shift and Option keys will quadruple the size of the tile.

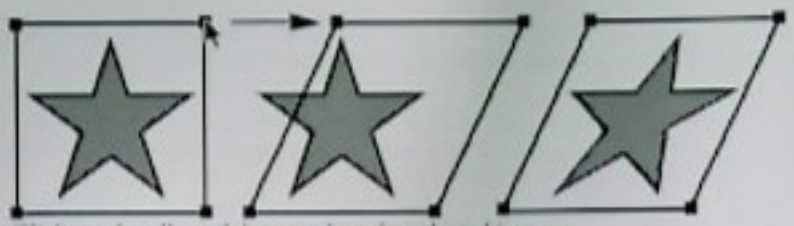
Wash
Maintains the intensity of the colors in the selected area, but changes the hues to the hue of the current foreground color.

For best results, use Wash with the True Color option selected from the PixelPaint Preferences dialog box.

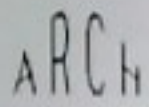
Contour
Creates an outline tracing of the selected image area using the Foreground color.

Diffuse
Scrambles the pixels in the selected image area.

Dither
Creates a dithered, single hue image of the selected area using the Foreground color. Choose Zoom In from the Options menu to examine the effects of the dithering.



Click any handle and drag to slant the selected image.



Arch
Creates a distortion based on one side of the selected area. Select the area, choose Arch, then grab one of the handles. Drag the handle, and the selection area can be bulged inward or outward. Release the mouse button, and the image inside the area will be redrawn to fit inside the new shape.

Double Arch
Creates a distortion based on two parallel sides of the selected area. Select the area, choose Double Arch, then grab one of the handles. Drag the handle, and the selection area can be bulged to arch both sides of the selection. Release the mouse button, and the image inside the area will be redrawn to fit inside the new shape.

Balloon
Creates a distortion by pulling two parallel sides away from, or toward, the center of the selected area. Select the area, choose Balloon, then grab one of the handles. Drag the handle, and the selected area will balloon away from, or toward the center of the selection. Release the mouse button, and the image inside the area will be redrawn to fit inside the new shape.

Repeat Effect

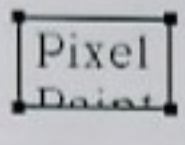
Repeats the Standard Effect, or the Visual Effect you just made to the selected area. Repeat Effect is simply a shortcut for choosing the same effect again from the Visual Effects menu.

When appropriate, the Repeat Effect choice will name the effect, such as Repeat Invert, or Repeat Fill. This menu choice is especially useful for effects which are cumulative, such as Smooth. The shortcut key combination for Repeat Effect is Command-T.

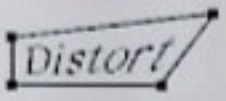
Repeat Effect is not available with the commands from the Dynamic Effects menu.

exception to reselecting is Crop. After you crop an area it remains selected and the dynamic effects are still available for it.)

If you want to undo a dynamic effect, choose Undo in the Edit menu, or press the Escape key. You can also stop the calculation of the effect by pressing the Escape key.

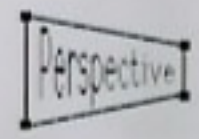


Crop
Trims the selected area. Using the pointer, grab one of the handles and move it. The further the pointer is moved, the smaller (or larger) the selected area. The area always remains a rectangle. Use Crop to permanently trim away parts of the image that you don't want.



Distort
Changes the shape of the selected area. The image inside the area changes in direct relation to the new shape. After selecting an area with the Marquee and choosing Distort, drag one of the handles. Only the two sides attached to that corner move; the rest of the box stays in place. When you release the mouse button, the image is redrawn—distorted—to fit inside the new box shape. The box remains around the new shape and you can continue distorting it until you click elsewhere in the window, or select another tool. Distorting produces unusual shapes and is useful when you want to radically change the perspective view of the selected area.

Free Rotate
Lets you rotate the selected area — either clockwise or counterclockwise. Select the area, choose Free Rotate, grab one of the handles, and move the pointer. The area rotates in that direction. When you release the mouse button, the image is redrawn in its new orientation.



Perspective
Gives the selected area the appearance of a three-dimensional image. Select the area, then choose Perspective. Drag a handle in the direction of the perspective. That handle and the one next to it move in the direction of the perspective. Release the button, and the image is redrawn in a stretched manner that gives it a three-dimensional appearance.

Slant
Skews the selected area. Select the area, choose Slant, then grab one of the handles. Drag the handle, and the selection area will change into an adjustable trapezoid. Release the mouse button, and the image inside the area will be redrawn to fit inside the new shape.

Three shortcuts for Zoom In are:

- Pressing Command-Equal is the same as choosing Zoom In once.
- Double-clicking on the pencil is the same as choosing Zoom In three times (to the maximum 800% enlargement).
- With Normal Tools turned on, and the pencil tool selected, hold down the Command key. The pencil will turn into a magnifying glass with a plus sign and you can position the tool over an area to Zoom In. Each Command-click will zoom into a clover view, up the the maximum 800% enlargement.

To scroll the two sides of the window, use any of the following techniques:

- Drag the scroll bars.
- Click on the grabber tool and drag either side of the window.
- Click on the pencil tool and then click in the left side of the window. The right side scrolls to center on the point on which you clicked.
- Choose Overview from the Options menu. Drag the outline box in the overview.

Zoom Out

If the enlargement window is showing, Zoom Out reduces the enlargement by one step (for example, from 400% to 200%).

The four shortcuts for Zoom Out are:

- Pressing Command–Minus is the same as choosing Zoom Out once.
- If you have used the magnifying class, or chosen Zoom In from the Options menu, double-clicking on the pencil tool is the same as choosing Zoom Out once.
- Clicking in the left side of the window (the original-sized side) with any tool except the pencil and grabber is the same as choosing Zoom Out. If the enlargement was created by double-clicking on the pencil, this shortcut removes the enlargement side of the window.

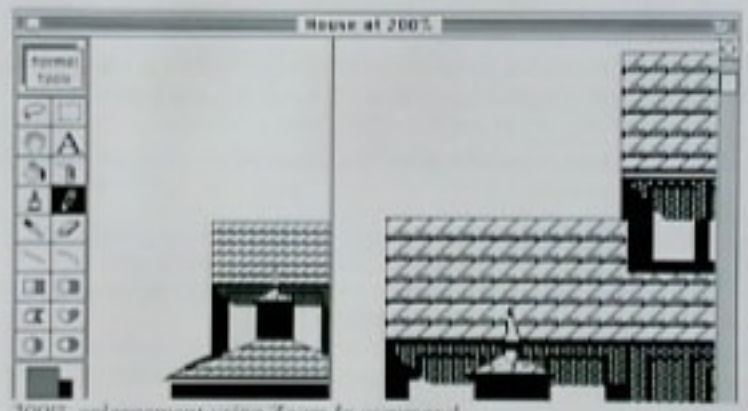
The Options Menu

This menu lets you customize PixelPaint so that it has the options you want for creating and coloring text and artwork. Most of the choices in the Options menu show you dialog boxes for choosing exactly the features that you want.

Zoom In

Splits the window vertically and shows an enlargement of the image.

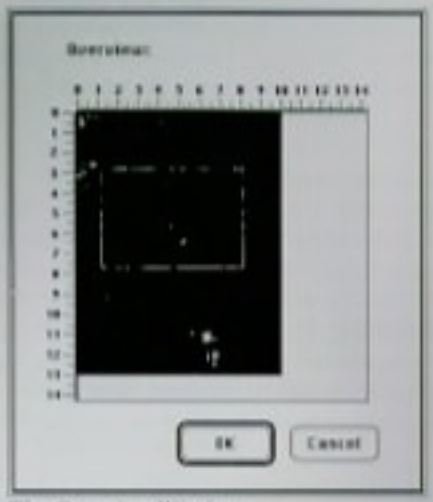
The left side of the window is the original image; the right side is the enlargement of it. None of the image is lost. Scrolling either side of the window reveals the rest of the image. You can choose Zoom In up to three times for a 200%, 400%, and 800% enlargement. The 800% enlargement shows you a Fatbits representation of the image.



200% enlargement using Zoom In command.

To draw while the enlargement is on the screen, choose a drawing tool and then draw in the enlargement side (the right side) only. At first the tools may seem to draw at too large a scale, but look at the left side of the window while drawing and you'll see the normal images. The eraser, however, erases in a size relative to the enlarged view.

Note: If you try to draw on the left side with any tool except the pencil, dropper, or the grabber, the enlargement will zoom out (because clicking with any of those tools in the original side is a shortcut for Zoom Out).



The Overview Window.

The Overview Window will also allow you to reposition your artwork on the canvas. To do this, hold down the Command key while clicking and dragging in the Overview Window.

Be aware that the Command-key repositioning technique can actually move a portion of the image off the canvas. If you move a portion of the image off the canvas and click OK, an alert box will appear to warn that the image off the canvas will be lost.

Pose...

"Poses" the PixelPaint image for a screen shot. All elements of the window except the image disappear from the screen until the mouse button is pressed.

When activating Pose, make sure that the Caps Lock key is not depressed. If the Caps Lock key is down, the Pose view will continuously cycle through the colors between the current Foreground and Blend color.

- With Normal Tools turned on, and the pencil tool selected, hold down the Command and Shift keys. The pencil will turn into a magnifying glass with a minus sign and you can position the tool over an area to Zoom Out.

Note on using the pencil tool with Zoom In and Zoom Out:
If used together, the pencil tool and the Zoom In and Zoom Out commands act as opposites. If you enlarge the image by double-clicking on the pencil tool, then choosing Zoom Out is like double-clicking again on the pencil tool. On the other hand, if you enlarge with the Zoom In command, double-clicking on the pencil tool is like choosing Zoom Out. For example, double-clicking on the pencil enlarges the image to its maximum of 800%. Then choosing Zoom Out just once returns the image to normal. Similarly, choosing Zoom In twice to enlarge to 400%, and then double-clicking on the pencil, zooms out to 200%.

Overview...

Shows a reduction of the entire document in a small window. The primary use of this window is to show you an overview of your artwork. A ruled outline box in the overview shows the area of the window, so you can orient yourself to the whole canvas and quickly access the window area you want.

To use Overview:

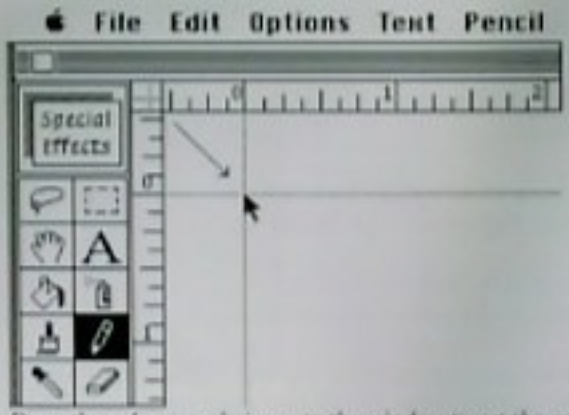
1. Choose Overview from the Options menu, or double-click on the grabber tool. The overview window appears. The outline box in the overview window shows the portion of the full PixelPaint window that is enlarged.

2. Drag the outline box so it covers the portion of the document that you want to work with.

3. Click OK. The overview window closes.

You can also use the Overview window with a zoomed-in (Fatbits) view to change the area you want to see enlarged.

To close the overview without moving the outline box, click Cancel.



Drag the ruler crosshairs onto the window to set the origin for your on-screen coordinate system

When you turn the rulers on, the menu choice becomes Hide Rulers.

Note that when you are working with a zoomed-in enlargement, the ruler markers show the position on the original image, not the enlarged one.

Hide Tools

Hides the PixelPaint Toolbox. You can also press Command-H or press the space bar to hide the tools. When the Tools are hidden, the menu item becomes Show Tools and you can select from the menu, press Command-H, or press the space bar to show the Tools again.

Brushes

Shows the dialog box for setting the size and shape of the paintbrush. Click on any of the shapes in the right side of the box to choose one as your new brush. There is a box around the current brush shape. To see what the brush stroke will look like, practice drawing in the scratch pad on the left side of the box before you click OK.

Two shortcuts for seeing this dialog box are:

- press Command-B.
- double-click on the brush tool.

Turn Grid On (or Off)

When the grid is on and you draw with the line tool, arc tool, or any of the shapes, they will draw in increments of the grid. The grid does not affect the movement of selections.

You set the grid increments from the Preferences dialog box. To see that dialog box, choose Preferences from the Options menu.

When the grid is not active (turned off), choose Turn Grid On to make it active. When you turn the grid on, this menu choice changes to Turn Grid Off.

The grid is especially useful for drawing regular shapes such as the boxes for an organization chart, or the bars of a bar chart. Note that if you draw an object with the grid on, the object doesn't appear until its size reaches the grid increment amount. Thus, if you draw a rectangle with the increment set at one inch, the rectangle doesn't appear until it's at least one inch long on a side.

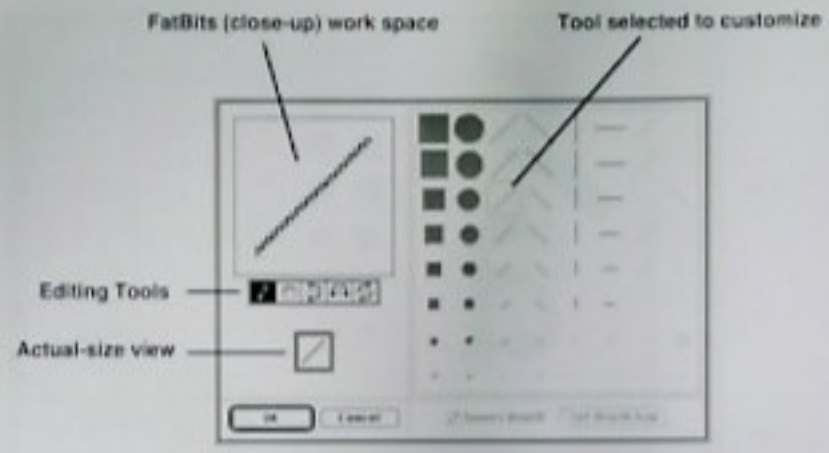
Show (Hide) Rulers

The rulers are on-screen guides for drawing images to size, manually aligning them, and measuring relative distances on the window. In effect, the rulers give you an on-screen coordinate system.

Choosing Show Rulers displays the rulers on the top and left side of the window. When you draw an image with one of the drawing tools, a marker on the rulers shows you the relative vertical and horizontal position of the tool.

The rulers are marked in the units that you set with Preferences in the Options menu.

You can set the origin (zero point) for the rulers at any point in the window. Drag the small crosshairs from the upper left corner of the window. Wherever you release the mouse button, that point becomes the origin on both rulers. To reset the origin to its original, default position, click on the crosshair in the upper left corner of the window.



2. Choose the pencil tool from the editing panel (not from the tool palette on the main toolbox window).

3. Make changes to the shape of the Brush in the panel. The pencil works as a toggle. Clicking on a blank area adds a dot; clicking on an existing dot erases it. As you draw the new Brush shape, a representation at actual size appears in the box below the tools.

In addition to the pencil, four other tools are available in the editing panel:

- Grabber — scrolls the fat bits window so you can reposition the Brush.

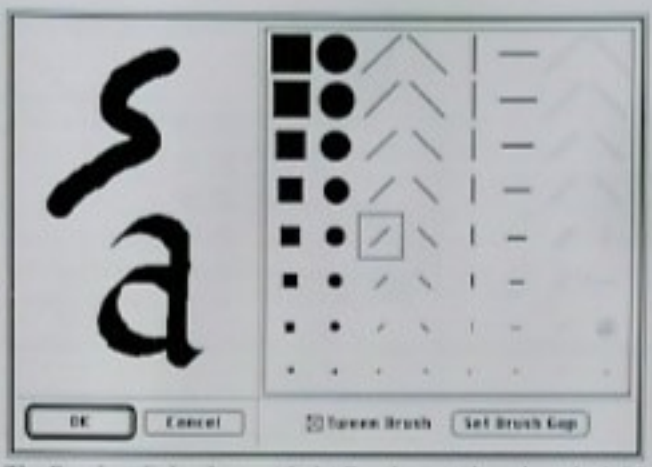
- Horizontal Flip — flips the Brush horizontally.

- Vertical Flip — flips the Brush vertically.

- Rotate — rotates the Brush 90 degrees clockwise.

Note: If you scroll part of the Brush out of the work space, that part is lost and cannot be scrolled back. If you inadvertently lose part of an image, click Cancel and start over.

4. Click OK when the Brush is the shape and size you want.



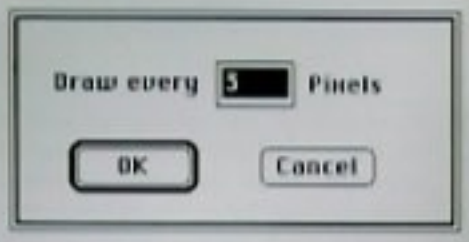
The Brushes dialog box, with the Brush scratch pad on the left.

This dialog box is for setting the shape of the Paintbrush. Click on any of the shapes in the right side of the box to choose one as your new Brush. There is a box around the current Brush shape. To see what the brush stroke will look like, practice drawing in the scratch pad on the left side of the box before you click OK.

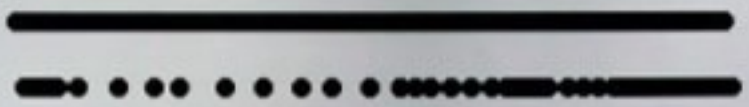
Custom Brushes

You can customize the size and shape of any or all of the Brushes in the dialog box. When you then choose a new Brush for your painting, it will be exactly the size and shape you want.

1. Double-click on the shape you want to customize.
   An editing panel will appear on the left side of the box showing a Fatbits (close-up) representation of the Brush. The five tools below the Fatbits box are used to change the shape of the Brush.



The Tween Brush option serves to close the gaps left by quickly drawn Brush strokes. Depending on the shape of the Brush, this can create a variety of interesting effects. You can set the Brush Gap between 1 and 50 pixels.



The top portion was drawn with Tween Brush on, with the Brush Gap set to Draw every 3 Pixels. The bottom portion was drawn with Tween Brush off.

Colors...

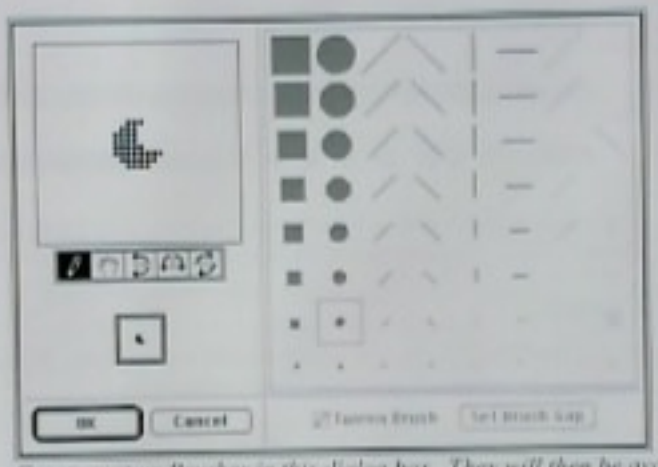
Shows the Colors dialog box with the entire color palette. You use this palette to choose and to edit the colors you want to work with.

Five functions are controlled with the Colors dialog box:

- setting the colors of the color selector
- setting the range for the Fill Effect
- choosing a color palette
- modifying the colors in the palette or copying a color or range of colors from one palette to another
- opening or saving a palette for use with new documents.

Your new Brush shape will appear as one of the Brushes on the right side of the box.

Using the Command key equivalents, you can copy and paste within the Brush dialog box. For instance, if you create a complex Brush and then want to create a similar one, click on the complex Brush, then press Command-C to copy the Brush. Click on another Brush in the dialog box, and then press Command-V. It becomes a copy of the complex Brush that you can modify further. Copying and pasting in this manner saves you from having to recreate the complex Brush a second time.



Create custom Brushes in this dialog box. They will then be available as Brush choices.

Custom Brush shapes are saved with the document so that you don't have to recreate the brushes every time you work with the file. Also, saving the document as a PixelPaint Stationery Pad file saves all the customized Brush strokes as part of the file (which you can use as a template for creating new documents).

Also in the Brushes dialog box are the Tween Brush check box and the Set Brush Gap button. When the Tween box is checked, you can click the Set Brush Gap button to display a dialog box similar to the diagram on the next page:

3. Click on a color in the palette. That color will be the new one for the color you chose to change in the color selector.

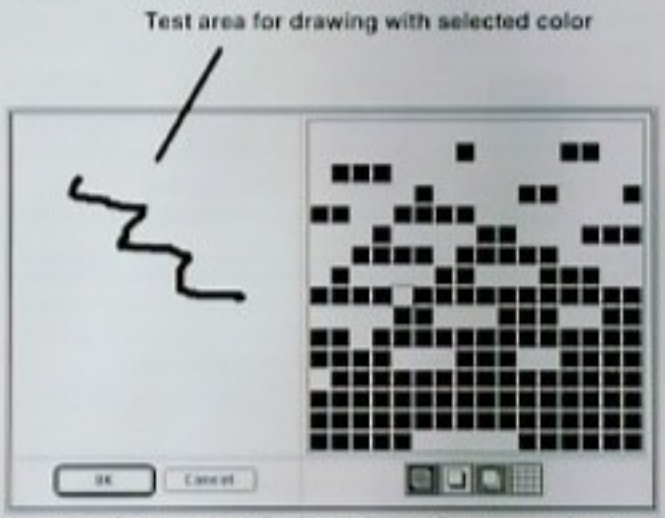
4. If you want to test the color, drag the pointer in the blank area on the left side of the box to draw a test image. The test drawing will not appear on your image.

5. Click on the other icons (one at a time) and change the colors for their color selectors in the same way.

6. Click the OK button. The colors of the color selector will change accordingly.

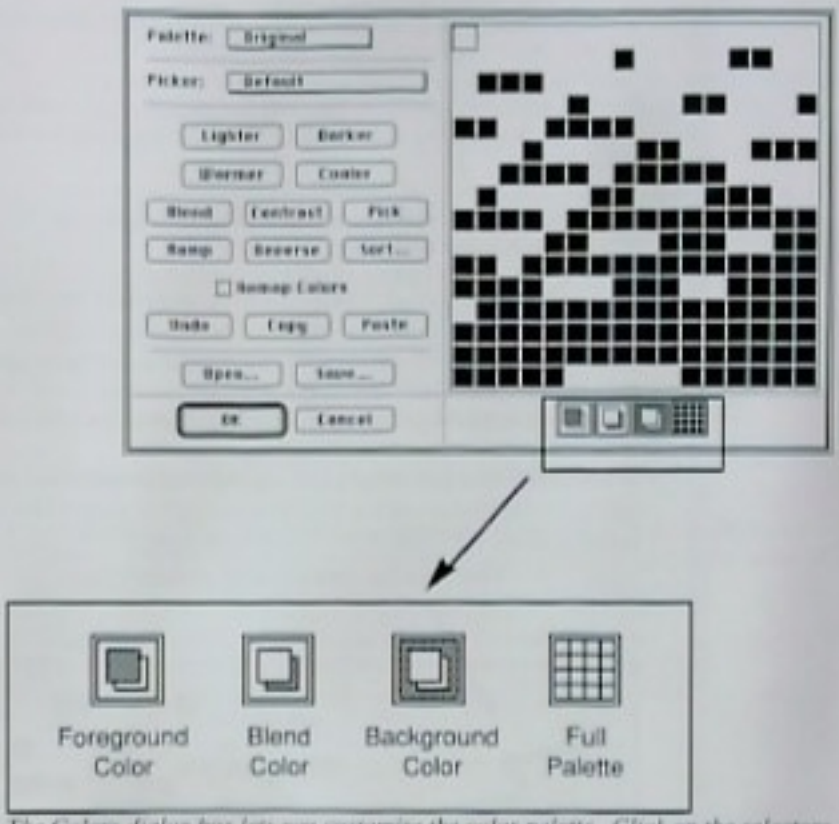
Note that changing the colors of the color selector does not affect any colors already in the window. This means that you can draw in one color, change the color selector, and then draw in another color and have both colors in your image.

When you choose one of the color selector icons, the buttons on the left side of the dialog box disappear and the area for drawing test images appears. The buttons reappear when you click on the Full Palette icon.



Selecting the Foreground color activates the test area for drawing with the color

The Full Palette icon is for modifying the palette, not for setting a color on the color selector.



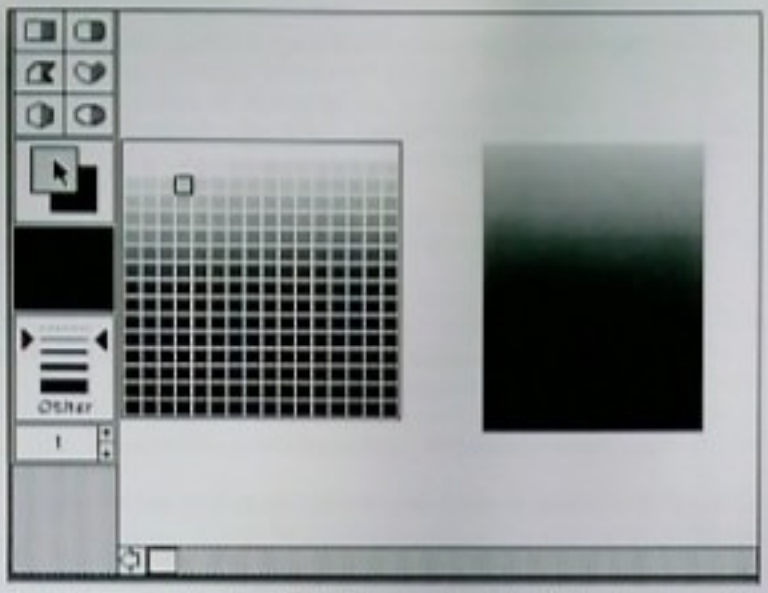
The Colors dialog box lets you customize the color palette. Click on the selectors below the palette to select Foreground, Blend, Background, or Full Palette colors.

Two shortcuts for seeing the Colors dialog box are:

- pressing Command-K
- double-clicking on the color selector.

To set the colors of the color selector:

1. Choose Colors from the Options menu.
2. The icons at the bottom of the Colors dialog box are used to determine which color you're working with: Foreground, Blend, Background, or Full Palette colors. Click on the icon which represents the color you want to change.



With Standard Fill selected, Fill Effect paints with all the colors from the foreground color to the blend color.

Choosing the Palette

PixelPaint has several built-in palettes that you can choose from. While a palette is chosen, its colors are the ones you can draw with in the window. Each palette contains 256 individual squares of color.

In all of the palettes, the upper left and lower right squares are reserved for white and black respectively. PixelPaint does not allow you to alter those two squares because the Macintosh must have black and white available in order to form its menus. For artwork purposes, this means that you will always have black and white on your palette for drawing.

To work with one of the pre-set palettes, use the following procedure:

1. Choose Colors from the Options menu.

2. Put the pointer on the Palette pop-up menu, and hold down the mouse button. The list of pre-set palettes will appear.

3. Drag the pointer to the palette you want, and release the mouse button.

The palette will change to the colors of the new palette. When you switch palettes, the colors in the color selector change to the colors in the new palette whose

The following procedure is a shortcut for changing the colors of the color selector.

1. In the color selector, put the pointer on the color you want to change. Hold down the mouse button. You'll see a small palette which doesn't include any of the icons or buttons.

2. Drag the pointer to the new color. Note that in the color selector, only the color you clicked on changes as you drag the mouse across the palette.

3. Release the button when the pointer is on the color you want.

The following procedure is a shortcut for changing only the foreground color from any position on the screen:

1. Press and hold the Option and Command keys.

2. The pointer or tool icon will change to the palette icon.

3. Continue pressing the Option and Command keys and hold down the mouse button. The pop-up palette will appear and you can move the pointer to select the new foreground color.

3. Release the button when the pointer is on the color you want.

   If you decide not to change the original color, drag the mouse off the palette and release the button.

Setting the Range for the Fill Effect

The fill effect — a special effect available with the drawing tools — lets you cycle through the colors as you draw. The range of the colors is determined by the foreground color and the blend color.

Use the following procedure to set the color range used by the fill effect:

1. Choose Colors from the Options menu.

2. Click on the icon for the foreground color and choose a color from the palette.

3. Click on the icon for the blend color and choose a color from the palette.

4. Click the OK button.

Now when you use the fill effect, the colors of the fill will be all the colors on the palette between the two you just chose. To see the new fill effect colors, choose Fill Effects from the Options menu.

The easiest way to see the colors of the different palettes is to choose each of the palettes from the Palette pop-up menu in the Colors dialog box. These are the built-in palettes:

Original

This palette appears when you first choose Colors from the Options menu. If you're working with a custom palette (either your own custom palette, or one of PixelPaint's optional palettes), it will always appear as the "Original" one when you open the Colors box. If, you decide you don't like the changes you've made in the new palette palette, choose Original to restore the palette to the condition when you opened the Colors box.

Custom

As soon as you make a change to one of the pre-set palettes, the name in the palette selector will change to "Custom." You can go on to modify the new Custom palette in any way you want. If you decide you don't want the changes, choose Original to get your original palette back again.

After creating a Custom palette, clicking OK will impose the colors of the new Custom palette onto your artwork — making the Custom palette the Original palette for the file. Therefore, the next time you open the Colors dialog box, your custom palette is listed as the original palette.

Warning: If you start with one palette and then choose another one and click OK, that second palette instantly becomes the new Original palette. If the first palette had customized features, such as new colors, those features will be lost. Be careful when switching palettes, especially if you've specified custom colors and blends for your document.

Grayscale

The Grayscale palette ranges from pure white to pure black in steps that are shades of gray. Use this palette when you want to see an approximation of what your image will look like printed on a black-and-white printer.

Single Hue

Shows shades of the same color from lightest to darkest. As with any palette, pure white will be in the upper left corner, and pure black in the lower right. To use this palette, click on any color in any palette, then choose Single Hue from the pop-up Palette menu. The entire palette will become graduated hues of the color you selected.

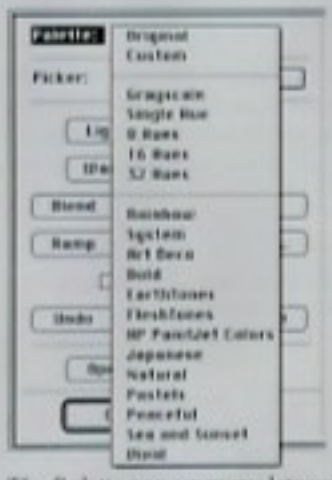
8 Hues, 16 Hues, and 32 Hues

These palettes show shades of 8, 16, and 32 hues progressing from light to dark.

positions correspond to those of the original colors. That is, if the foreground color was the color at square 4 in the earlier palette, it will be the color of square 4 in the new palette.

When you switch palettes, and the Remap Colors option in the Colors dialog box is not turned on, *any artwork already in the window also changes to reflect the colors of the new palette!* This means that you can try out new palettes to see their effect on the images in the window. If the Remap Colors option is turned on, however, PixelPaint tries to match (map) the original colors of the image with their closest counterparts in the new palette, and although the image colors may change, it usually won't be as drastic a change as when Remap Colors is turned off. If you choose a new Palette while Remap Colors is selected and click OK, PixelPaint will prompt you with a window that shows the image remapped to the new palette and will display a dialog box asking if you really wish to Remap the Canvas to the new Colors. You can then choose to cancel the selection of the new palette or you can click OK.

Note: To make sure you can always get your original work colors back again, save a copy of your document before switching among the color palettes.



The Palette pop-up menu lets you choose from PixelPaint's built-in palettes.

Customizing the Colors in a Palette

You can use the palettes as they are, or you can change any of the colors in any palette to customize both the color and palette for your artwork.

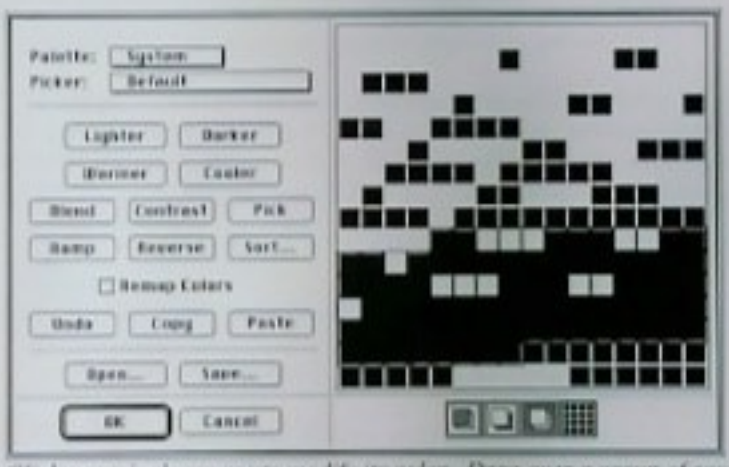
Think of the palettes as an artist's tubes of paint. Just as the artist mixes the paints to create dabs of paint for a particular painting, you can modify the individual colors to create custom colors for your on-screen artwork.

To change a color or colors:

1. Click on the Full Palette icon to show the buttons on the left side of the dialog box.

2. To change a single color, click on it and use any of the Picker methods described in Part I, Chapter 3 to modify the color; to change a group of colors simultaneously, drag over them. Highlighting indicates the color(s) that you select.

3. Click on the appropriate buttons in the left side of the dialog box.



Click on a single square to modify its color. Drag over a group of squares to modify their colors together.

The buttons on the left side of the box control a wide range of options for customizing your color palette, and are described in the following section.

In the 32 Hues palette, the colors are repeated in two sequences so you can change those in one set while keeping the others intact.

Note: For a complete explanation of the uses of the Grayscale, Single Hue, 8 Hues, 16 Hues, and 32 Hues palettes, see the section titled "The Watercolor Palettes" later in this chapter.

Rainbow
Contains a full spectrum of colors and a selection of grays.

System
Contains the colors which are a part of the Macintosh II's system. Use the System palette whenever you plan to export your color work to some other application. This assures that all the colors of your artwork will be available to the new application.

HP PaintJet Colors
Contains a range of colors specifically designed for use with the Hewlett-Packard PaintJet Color Graphics Printer. If you know the finished artwork is destined for the PaintJet, you should use this palette to create the artwork. If you are printing artwork created with another palette, you should choose this palette, and use the Remap Colors option before printing.

Artwork Specific Palettes

- **Art Deco**
- **Bold**
- **EarthTones**
- **FleshTones**
- **Japanese**
- **Natural**
- **Pastels**
- **Peaceful**
- **Sea and Sunset**
- **Vivid**

Each of these palettes contains a set of colors which correspond to the palette name. You can use the colors of these palettes as they are, or use them as a starting point for modification. The next section describes how to customize the colors of a palette.

Pick

Pick
For changing the color of an individual color square. When you click on a single square, and then click Pick, the specified Color Picker dialog box appears.

Ramp

Ramp
Creates a ramp of colors, from white to black, using the first color chosen in a selection as the middle color of the Ramp.

Reverse

Reverse
Reverses the ordering of colors, but doesn't change the colors themselves. Reverse can be used with Blend so you can make the colors blend from the last color in the selection to the first one. To use Reverse in this manner, select the range of colors, click Reverse, and then click Blend.

Sort

Sort
Allows the sorting of a selection of colors using the Uniform method, or by Hue, Saturation, or Brightness.

Undo

Undo
Undoes only the last action performed in the Colors dialog box. Note that if you click a button several times, Undo only undoes the last click. For instance, if you click Warmer four times, and then click Undo, only the fourth click is undone. Clicking Undo again will not undo the third, second, or first clicks on Warmer.

You can use the command-key equivalent Command-Z for Undo, or click the Cancel button to begin anew.

Copy
Paste

Copy, Paste
Lets you copy color(s) from one palette to another to create your own combinations for a palette. Copying and pasting colors among the palettes lets you create a library of palettes for your own work.

The Copy and Paste buttons work just like the Copy and Paste commands from the Edit menu:

1. From the menu of palettes, choose the palette you want to copy colors from.

2. Select the colors to copy by dragging over them (or just clicking on individual colors).

3. Click Copy.

Lighter
Adds white to the selected colors. Each time you click Lighter more white is added.

Darker
Adds black to the selected colors. Each click on Darker adds more black to the color.

Warmer
Adds red to the selected colors. Each click adds more red.

Cooler
Adds blue to the selected colors. Each click adds more blue.

Note: Warmer and Cooler are *not* opposites. If you click one of them and then decide you want to return to the original color, you have to choose Original from the palette menu. The Undo button will only reverse *the last click* on the color effects buttons; it will not restore the color as it was in the Original palette. The same is true for Lighter and Darker.

Blend
Creates a smooth mixture of the first and last colors in a selected range of colors. For example, if you select a group of colors in a palette, and the first color is blue and the last one brown, the blend will be of blue and brown running from blue to violet (a mixture of blue and brown) and finally to brown.

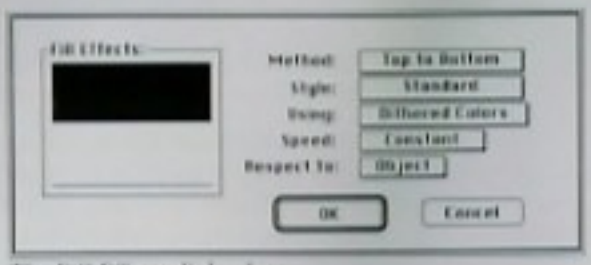
If, after selecting the range of colors, you click Pick, the selected Color Picker dialog box appears for the first color in the range. After you have finished changing the first color and click OK, the Color Picker dialog reappears to let you change the last color in the range. You can thus define the exact colors for the range in order to get precisely the blend you want.

Note: If you use the Blend button to create a smooth gradation of color, and then use the Lighter, Darker, Warmer, or Cooler buttons on the range of color, you should click Blend again to resmooth the color gradation.

Contrast
Reverses the highlighted colors to their complementary colors. To see the complementary colors, click Pick. Complementary colors are opposite one another on the color wheel.

Fill Effects...

This dialog box is for defining the fill effects. The colors shown in the dialog box are the range between the foreground and blend colors.



The Fill Effects dialog box.

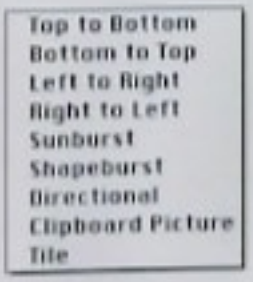
You can use a fill effect in your image in three ways:

- Under Special Effects, draw with a tool that has Fill Effect as an option in its tool menu. For example, the Brush menu has a Fill Effect option. When Fill Effect is chosen, the Paint Brush tool will employ the Fill Effect colors and style.

- Select an image with the lasso or marquee tools, and then choose Fill Effect from Visual Effects in the Edit menu.

- Under Special Effects, choose the bucket tool, and then click on the portion of the image you want to fill. The fill changes all connected portions of the color you clicked on, up to the boundaries of a different color.

Each of the Fill Effects features — Method, Style, Using, Speed, and Respect To — has a pop-up menu listing other choices. Click on the menu rectangles to see these choices.



Method
The Method selection determines the way the colors will fill the area. As you choose the different fill methods, a sample of the fill will immediately appear in the dialog box using the foreground and blend colors currently selected. The following fill methods are available in PixelPaint:

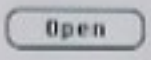
Note: These descriptions assume that the Standard fill is used, as selected in the Style Fill Effect feature. The Standard fill is the default setting for PixelPaint.

4. From the menu of palettes, choose the palette you want to copy colors to.

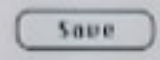
5. Click Paste. Each of the copied colors replaces the color in the corresponding position in the copy-to palette.

You can use the command-key equivalents Command-C and Command-V for Copy and Paste.

The Copy and Paste commands can also be used with custom palettes which have been saved. Use the Open button to select, and open, the custom palette. Copy the color, or range of colors, and paste them into a new custom palette.



Open
Opens a palette that you saved earlier. Opening a color palette automatically makes it the color palette for the current document.



Save
Saves a customized color palette that you want to use later with other PixelPaint documents.

Choosing the Color Picker Method

Lets you choose between six different color Pickers:

- The Default Apple Color Picker
- The PANTONE MATCHING SYSTEM Color Picker
- The RGB Color Picker
- The HSV Color Picker
- The Process Color (CMYK) Picker
- The Color Theory Picker

For more information about using the different color Pickers, see Part I, Chapter 3: *Color and Palettes*.

Draw a filled shape. Move the line to the direction for the fill. Click and the shape is filled in that direction.

Clipboard Picture
Instead of colors from the palette, Clipboard Picture uses the image on the Clipboard as the fill. The Clipboard image is centered in the area you're filling. If the Clipboard image is smaller than the area to be filled, the area surrounding the image will be filled in the foreground color. If no image is currently copied into the clipboard, the foreground color will be used for the fill.

Tile
Uses the image in the Tile as the fill. The Tile fill effect also uses the image on the Macintosh clipboard, but repeats portions of that image as defined by Tile under the Options menu. When Tile is the method chosen, the other pop-up menus in the Fill Effects dialog box have no effect. If no image is currently copied to the clipboard, then Tile will fill the area with the default image, which is a drawing of a flower pot.

Standard
Dual Blend
Full Range
Venetian Blinds
Dithered FadeOut

Style
Determines the features of the colors in the fill. Each time you select a different Style, its affect is immediately shown in the Fill Effects dialog box. The following fill Styles are available with PixelPaint:

Standard
The fill uses all the colors in the selected range, starting at the foreground color and ending with the blend color.

Dual Blend
The fill starts with the foreground color, runs to the blend color, and then returns to the foreground color.

Top to Bottom
Fills using the blend range of color palette colors. The foreground color will appear at the top of the fill, and the blend color will be at the bottom of the fill.

Bottom to Top
Fills using the blend range of palette colors. The foreground color will appear at the bottom of the fill, and the blend color will be at the top of the fill.

Left to Right
Puts the foreground color to the left side of the fill, shading into the blend color on the right side of the fill.

Right to Left
Puts the foreground color to the right side of the fill, shading into the blend color on the left side of the fill.

Sunburst
Starts the fill at the edges of the fill area and moves in a concentric blend pattern towards the center. The foreground color is at the outside of the fill area, shading into the blend color at the center.

Shapeburst
When used with one of the filled shape tools, Shapeburst starts at the edges of the area, and blends in towards the center, following the contours of the shape. If you use the lasso or marquee tools to select an area, and then choose Use Fill Effect from the Effects menu, the fill will begin at the perimeter of the selected area, following the contours, and blending towards the center.

Directional
Lets you determine the direction of the blend of colors for the fill area. When using one of the filled shape tools, once you've completed the graphic, a "cross-hair" will appear to allow you to select the direction of the blend. You can position the cross-hair anywhere on the screen: it will become the "target" for the direction of the blend. Once the cross-hair is positioned where you want, click the mouse to fill the area.

True Colors
Creates a smooth, graduated fill based only on the foreground and blend colors. Unlike the other Using options, True Colors ignores all the intermediate colors on the palette: the blend will be filled with the most appropriate colors, depending on the colors available on the palette. True Colors is particularly useful when you're working with a limited color palette, such as the System palette.

Constant
Accelerating
Decelerating
Combination

Speed
Lets you adjust the linearity of the color fills. Constant is the default setting, which means that the colors will blend with even spacing from the foreground to the blend color.

Constant
Fills at a constant and even rate. All colors will have even spacing from the foreground to the blend color.

Accelerating
Gives the appearance that the fill "accelerates" as it progresses. The color bands will be wider at the beginning of the fill (foreground color), gradually becoming narrower at the end (blend color).

Decelerating
Gives the appearance that the fill "decelerates" as it progresses. The color bands will be narrower at the beginning of the fill (foreground color), gradually becoming wider at the end (blend color).

The Accelerating and Decelerating Speeds are particularly useful for conveying perspective to a filled object.

Combination
Combines the Accelerating and Decelerating speeds, resulting in an precisely even fill. The Combination Speed option is useful for conveying a sense of depth to a filled object.

Object
Window
Canvas

Respect to
This option controls whether the sequence of Fill Effect colors will be placed relative to object being filled, the window, or the entire document (canvas).

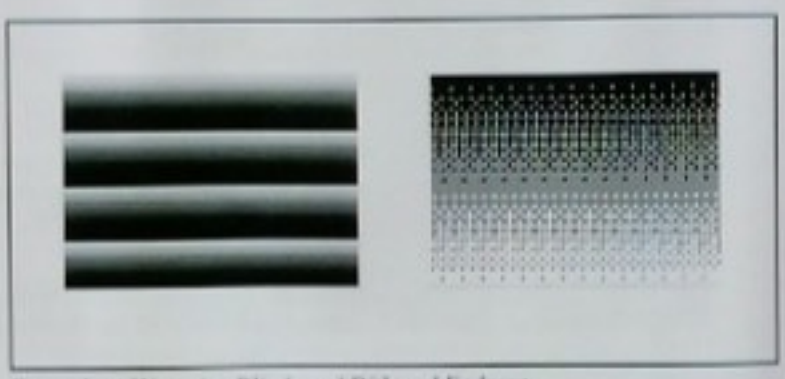
Object
Uses the full color range on the object.

Window
Fills objects only with the portion of the range that would be in the object if you filled the entire window. The fill in the object and the window would match each another if you filled them both.

Full Range
Uses all the colors in the color palette, regardless of the selections for the foreground and blend colors.

Venetian Blinds
Shows the colors in slits like a venetian blind pattern. The number of repititions of the "blinds" pattern is determined by the width chosen on the line width tool.

Dithered Fadeout
Uses only the foreground color, and uses a dithered pattern to fade from the foreground color to pure white.



Examples of Venetian Blinds and Dithered Fadeout.

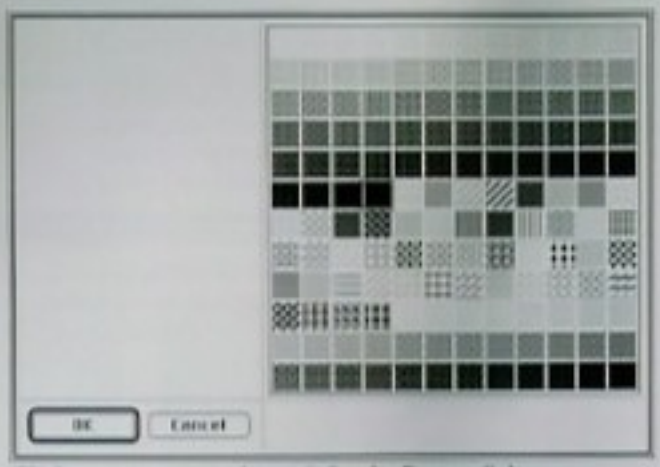
Palette Colors
Dithered Patterns
Dithered Colors
True Colors

Using
Lets you choose how the colors of the fill are generated.

Palette Colors
Fills with all the colors in the blend range — that is, the colors ranging from the foreground color to the blend color. If a pattern is selected, the pattern will also be used in the fill.

Dithered Patterns
Fills with only the foreground and blend colors; no other colors will be used. A dithered pattern will span between the two colors. The colors between the foreground and blend colors on the palette are not included on this pattern.

Dithered Colors
Fills with all the colors of the blend range, but with dithered colors added for a smoother blend. Using the Dithered Colors option is particularly useful if you have a limited range of blend colors available in the palette.



Click on a pattern to choose it for the Pattern Selector.

Note: These patterns may be very difficult to see if you've selected light colors for both the Foreground and Background colors. If this is the case, return to the Color Selector, and choose a dark color for the Foreground color.

Note that the upper left pattern is the solid background color, and the lower right pattern is the solid foreground color. There is also a solid color in the middle of the selections. All of the patterns can be changed to suit the needs of your artwork.

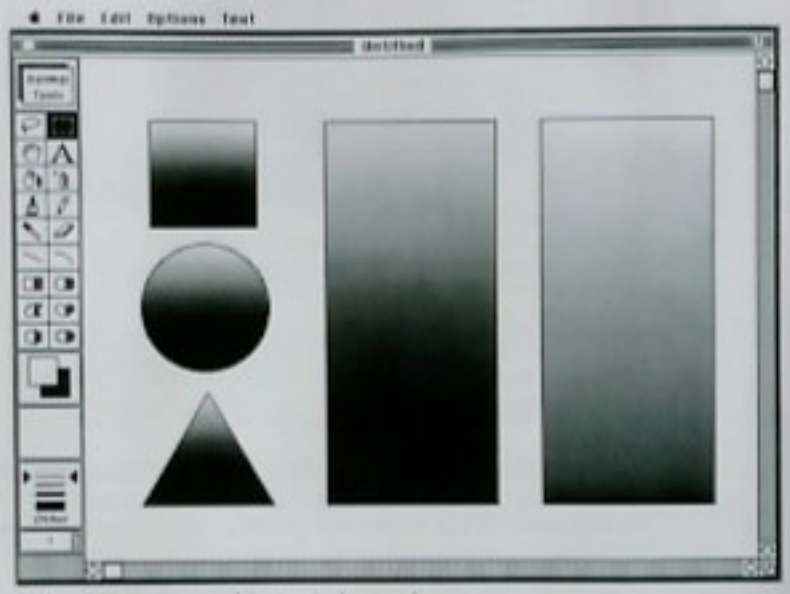
Patterns can also be selected directly from the Pattern Selector:

1. Put the pointer on the Pattern Selector, and hold down the mouse button. A small patterns box will appear to the right of the Pattern Selector.

2. While holding down the mouse button, drag the pointer to the new pattern. Note that the pattern in the pattern selector changes as you drag the mouse.

3. Release the button when the pointer is on the pattern you want.

Canvas
Fills objects only with the portion of the range that would be in the object if you filled the entire document.

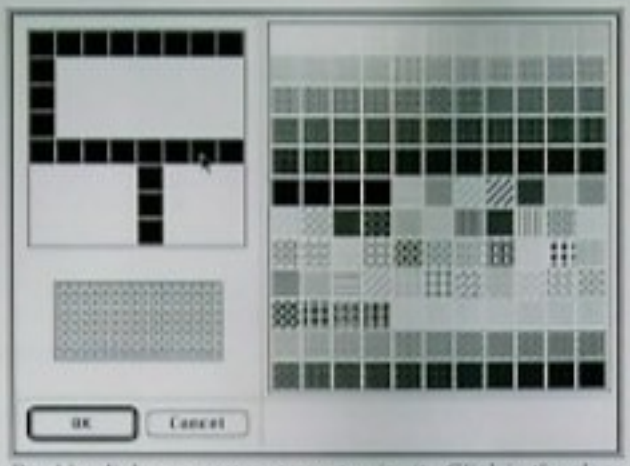


Fills with respect to object, window and canvas.

Patterns...

Shows the Patterns dialog box. Click on any one of the patterns to make it the current pattern, then click OK.

Once the Pattern box is open, the patterns are shown in the current Foreground and Background colors shown in the Color Selector. If you change these colors, the pattern colors will also change.

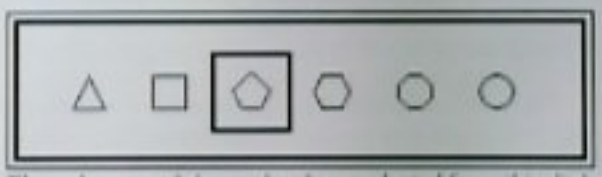


Double-click on a pattern to customize it. Click in the close-up view to make changes.

If you've made any changes to the patterns, they will be saved with your document. If you save a document as a PixelPaint Stationery Pad file, your custom patterns will be saved as part of that file.

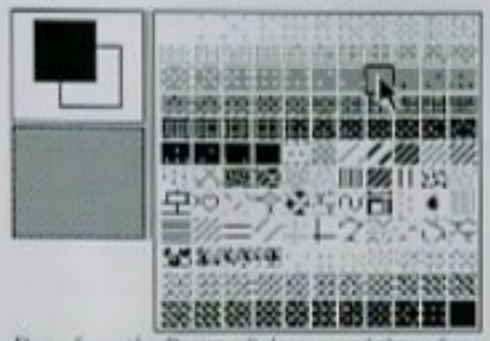
Polygons...

Lets you specify the polygon that appears when you draw with the regular polygon tool. Choose Polygon from the Options menu, and the Polygon Types dialog box appears. When you click on one of the polygon types, the dialog box will immediately disappear, and that shape will be used by the Polygon tool. That shape will be used by the Polygon tool until you choose a different shape.



The polygon tool draws the shape selected from this dialog box.

A Hint: When drawing with this polygon tool, don't release the mouse button right away. The Polygon tool automatically grabs a handle on the polygon, which lets you enlarge, reduce, and rotate the polygon by moving the mouse. As soon as you release the button, however, the handle is no longer available, and the polygon is locked in position on the screen.



Drag from the Pattern Selector and then choose a new pattern.

Like most of the tools and effects in PixelPaint, the patterns that you use can be customized. Customized patterns, used with customized colors, can create a variety of textures for your artwork.

Any of the patterns in the Patterns dialog box can be modified. Use the following procedure to create a customized pattern:

1. Choose Patterns from the Options menu. The Patterns dialog box will appear.

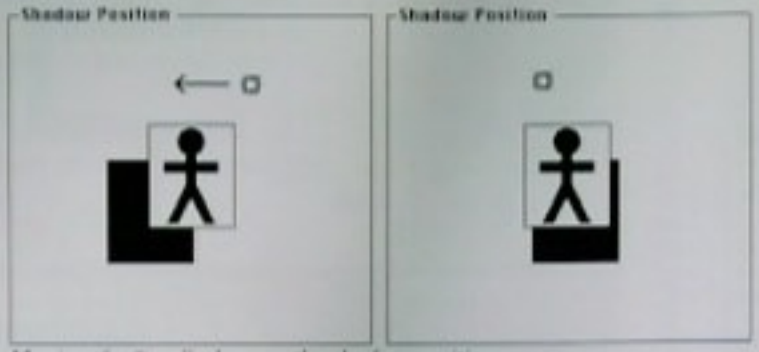
2. Double-click on the pattern you want to modify.
   A close-up view of that pattern will appear.

3. The close-up view shows the individual pixels (squares) which make up the pattern. Clicking on a pixel will cause it to change color. That is, clicking on a pixel which is a Foreground color will change it to the Background color, and vice versa.

   As you work with the pattern, the area to the lower left will show what the finished pattern will look like when used as a fill.

4. When you're through making changes to your new pattern, click OK.

The new pattern will be one of the pattern selections in the dialog box, and can be chosen as a pattern in the Pattern Selector.



Moving the "sun" changes the shadow position.

When the Shadow dialog box is first opened, the black square at the lower right corner of the color palette will be selected. The intensity of the shadow is determined by the Ending setting of the Pattern Intensities. The default setting for the Ending Pattern Intensity is 49% — therefore, the default shadow appears as 49% black, or a medium gray.

To choose a color for the shadow, click on a color in the color palette. The color you choose becomes the color for the shadow. To increase the intensity of the color of the shadow, increase the number for the Ending Pattern Intensity.

Two pop-up menus are available to define the characteristics of the shadow: Method and Using.

Drop shadow
Blend Shadow

Method
The Method option determines whether the shadow will lie flat behind the object (or selected area), or whether the shadow will "blend" up to surround the object (selected area).

Two choices are available for Method. They are:

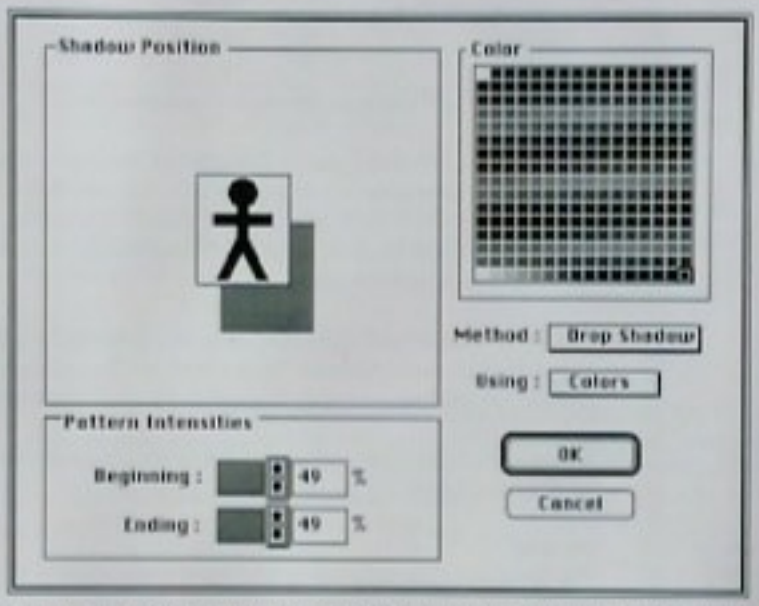
Drop Shadow
This is the default setting for the Shadows dialog box: it generates a flat shadow in the shape of the image.

Blend Shadow
This method generates a three-dimensional shadow, blending up to the shape of the image. Based on the settings of the Using option, described below, the Blend Shadow setting can generate a variety of shadow effects.

If you hold down the Command key while drawing with the Polygon tool, the polygon will have twice as many sides. For example, if a triangle is selected as the polygon shape, hold down the Command key to draw with a hexagon shape.

Shadows...

Shows the dialog box for defining the attributes of the shadow.



The most significant adjustment for the Shadow option is the position of the shadow with respect to the graphic. In the Shadow dialog box, this is represented by a box behind the graphic of a stick figure.

To change the shadow position:

1. Click down and drag in the portion of the box labeled Shadow Position. The pointer becomes a "sun" to indicate the apparent light source for the shadow.

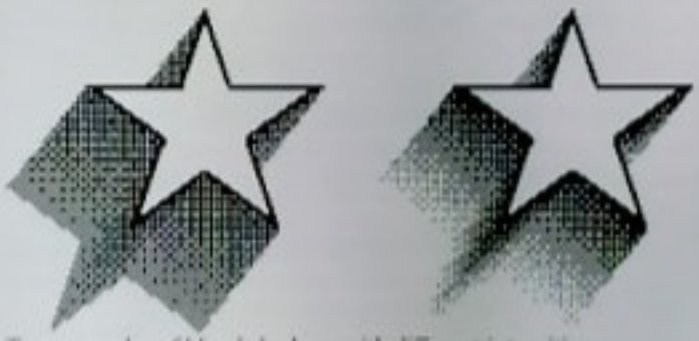
2. Drag the "sun" around the box until the shadow is in the position you want.

3. Release the mouse button, and the shadow will be locked in position. All subsequent shadowed images will include the shadow at that angle, and depth, behind the image.

blend colors. The Foreground color will be closest to the graphic; the color selected on the Shadow palette will be furthest from the graphic.

With Color Patterns activated, the Pattern Intensities will control the density of the shadow. The Beginning setting will control the density of the color closest to the graphic; the Ending setting will control the density of the color furthest from the graphic.

To change the Pattern Intensities, click on the arrows for Beginning and Ending. As you click on the arrows, the percentage of intensity increases or decreases, as indicated by the percentage numbers. A representation of the intensity you've selected will appear in the boxes next to the arrows. (As an alternative to clicking on the arrows, you can type the desired percentages directly into the boxes.) Varying the settings for Beginning and Ending shows how you can vary the rate of change of the blend: for instance, to make the shadow more intense close to the image and fainter further away.



Two examples of blend shadows with different intensities.

To draw with a shadow, follow these steps:

1. Click on a drawing tool.
2. Make sure Special Effects is on.
3. Choose Shadows... from the Options menu, and set the effects and direction desired for the shadow.
4. Choose Use Shadow or Use Both from the tool's special effects menu.
5. Draw with the tool. When you release the mouse, the shadow will be generated using the effects you've selected. Depending on the complexity of the effects, it may take a few seconds for the shadow to appear on the screen.

Drop shadow and blend shadow using colors.

Colors
Patterns
Color Patterns

Using
The Using option controls whether a solid color, or a patterned color will be used for the shadow. The default setting is to use black as a color, set to a 49% intensity (medium gray).

There are three choices available for Using. They are:

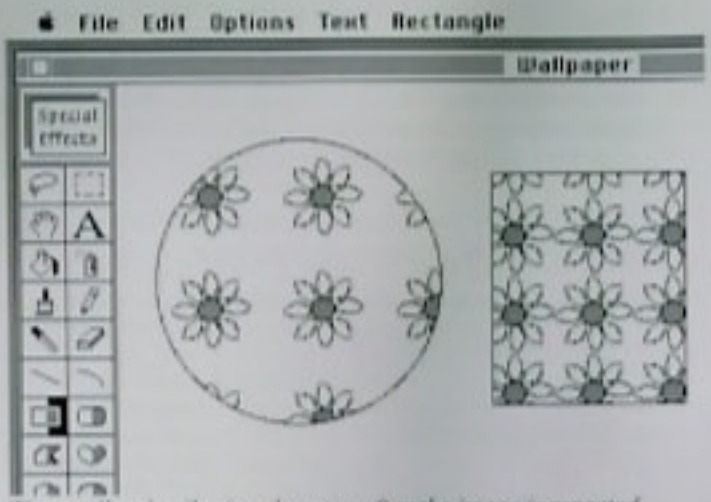
Colors
Makes the shadow the color selected in the Shadow palette. The Pattern Intensities settings have no effect on the shadow when Color is selected as the Using option. If Blend Shadow is used with Color, the shadow color is a blend between the foreground color (shown on the color selector) and the color selected on the shadow palette.

Patterns
Draws the shadow in a dithered pattern, using the color selected on the palette. The density of the dithering is a is set with the Pattern Intensities.

If Patterns is activated when using the Drop Shadow method, the Ending setting of the Pattern Intensity controls the density of the shadow. If the Blend Shadow method is used, Ending will control the density of the shadow furthest from the graphic: Beginning will control the density of the shadow closest to the graphic.

Color Patterns
When Drop Shadow is activated, the Color Patterns option allows you to adjust the density of the shadow. The density is adjusted with the Ending control of the Pattern Intensities.

When Blend Shadow is activated, this option draws a shadow in the range of



The smaller the tile size, the more often the image is repeated.

To change the arrangement of the image in the tile, drag the outline box. As you drag, and different areas of the image fall inside or outside the box, the tile arrangement changes. The subsequent tile consists of only those portions of the image that are in the box.

If you click on the image outside of the tile selection box, the grabber hand will move the image itself, rather than the tile selection box. This enables you to fine-tune the image area used for the tile.

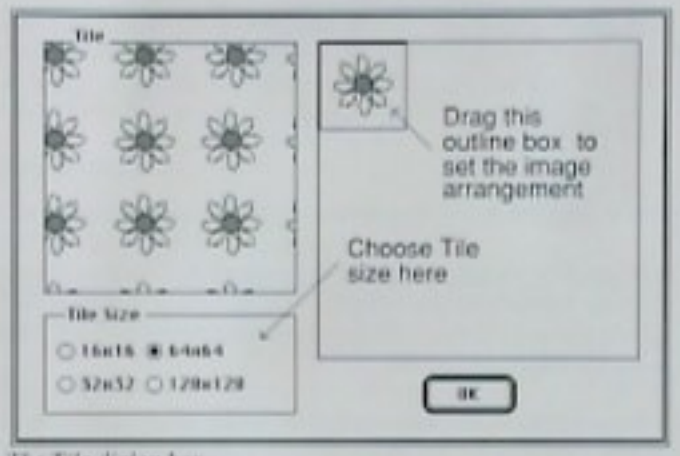
After defining the tile with the **Tiles** dialog box, follow these steps to fill a figure with the tile fill:

1. Click on a drawing tool.
2. Make sure Special Effects is on.
3. Choose Use Fill Effect from the tool's special effects menu.
4. Choose Fill Effects from the **Options** menu.

Tiles...

The Tile is a fill effect. It uses whatever is on the Clipboard as the fill. However, instead of just using a single image, the tile lets you arrange copies of the Clipboard image as the fill. As its name implies, think of this effect as a series of square tiles, each containing the image you define in the Tile dialog box.

Choose Tile from the Options menu to see the Tile dialog box. Use this box to set the tile size and the arrangement of the images in the tile.



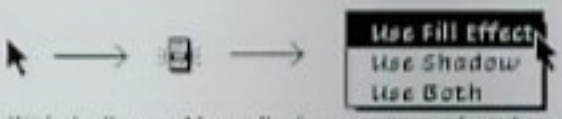
The Tile dialog box

To set the tile size, click on one of the buttons in the Tile Size box. The units of the sizes are pixels on the window. In the box on the right, the outline square indicates the tile's size and its relation to the image. *Only the portion of the image inside the outline box is on the tile.* The box on the left shows what the subsequent fill will look like. The smaller the tile size, the more times the image is repeated on the tile.

Option Key Effect, and the Default Colors, and are explained in the following sections.

Miscellaneous
The Miscellaneous Preferences are used to control a variety of options available for PixelPaint. Click on the check boxes to activate each of the options. The default settings for the Miscellaneous Preferences are to have the True Color and Fatbits Autoscroll options selected.

Pop-up Menus
With the Pop-up Menus Preference selected, pressing the Command key while holding down the mouse button in Special Effects mode will invoke a Special Effects pop-up menu. A pop-up Special Effects menu appears wherever the pointer is in the window. The menu is for whichever tool is currently selected. You can choose from this menu as if it were the Special Effects menu in the menu bar at the top of the screen. As soon as you release the button, this pop-up menu will disappear — but the choice you made will stay in effect, as though you had made the menu selection from the Special Effects menu.

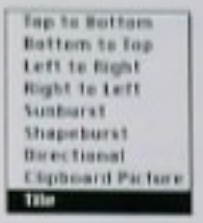


With the Pop-up Menus Preferences item selected, press the Command key while holding down the mouse button in Special Effects mode. The pop-up menu for the highlighted tool will appear, and you can choose from this menu as you would from the regular Special Effects menu.

True Color
With the True Color option selected, Special Effects such as the Wash, Shade, Darker, Lighter, Smooth and Smear operate in the expected manner, creating a true color rendition of the effect. With the True Color option off, using such Special Effects will yield unexpected but colorful results.

Fatbits AutoScroll
Scrolls a Zoom In window when the pointer reaches its edge. With Fatbits Autoscroll off, you scroll a Zoom In window with the normal scroll bar, or with the grabber tool, or by dragging the outline in the Overview window. With Fatbits Autoscroll on, dragging the pointer to the edge of the Zoom In window scrolls the window.

Quick Click Color
Using the Quick Click Color option, you can quickly select a color on the screen to be used as the Foreground color. When you are using any of the tools in the PixelPaint Toolbox except the Lasso, Marquee, Grabber, Text, or Bucket tools, you can quickly click on an color area on the screen and the



5. On the Fill Effects dialog box, choose Tile from the Method pop-up menu.

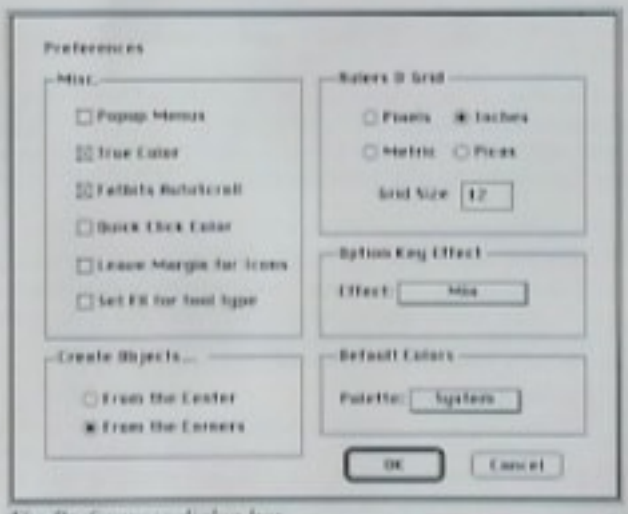
6. Draw the image. It will be filled with the tile you defined.

Images with a tile fill are normally opaque, obscuring other images that they cover. However, if you hold down the Option key while drawing, any white spaces on the tile pattern will become transparent, letting any existing images show through.

Note: If you change the image on the Clipboard, for instance by cutting and pasting from the window, the tile will take on that new image, in the same arrangement that you've already defined. If you have standard figures (such as your business logo) that you want to use with the tile, save them in the Scrapbook or in some other file so they aren't erased permanently when you copy another image to the Clipboard.

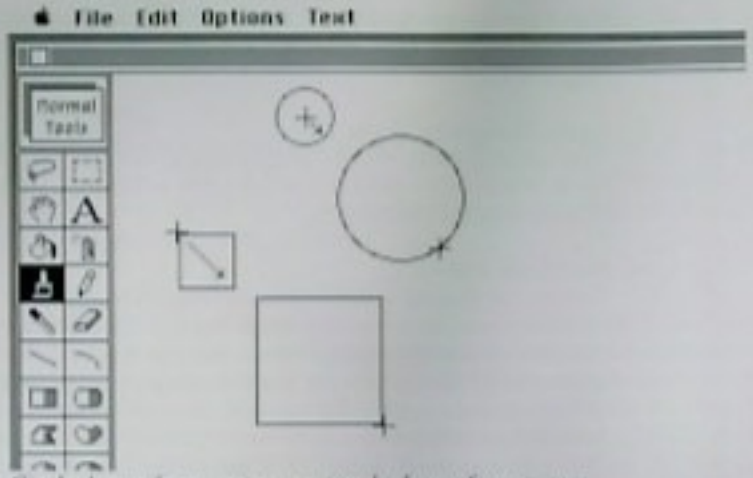
Preferences...

Choosing Preferences from the Options menu brings up the Preferences dialog box, similar to the diagram below:



The Preferences dialog box

The Preferences dialog box is divided into five areas, which are used to specify the way PixelPaint operates when it is first started. The preferences can be changed at any time, and will be saved as a part of PixelPaint when you quit the program. The five Preferences areas are Miscellaneous, Create Objects, Rulers and Grid.



Circle drawn from center; rectangle drawn from corner.

Rulers & Grid
Lets you select the default units of measurement — either Pixels, Inches, Metric (centimeters), or Picas. When you choose Show Rulers from the Options menu, the rulers will appear in the units of measurement selected by this Preferences option.

This option also allows the selection of a Grid *Size*. When the Grid is activated by choosing Turn Grid On from the Options menu, graphics created with the Line tool, the Arc tool, or any of the Shape tools will be in increments specified by the Grid. For example, if you have the Rulers set to display inches, and the Grid set to 1 (one inch), graphics created by these tools will be in one-inch increments. For example, when creating a box with the Rectangle tool, dragging the mouse will cause the box to grow in one-inch steps — it will be impossible to draw the box in any intermediate sizes.

The default setting for this option is to have the rulers display in Pixels, and for the Grid to be set at 14 pixels.

Option Key Effect
This Preference defines how the Option key interacts with the drawing tools. To use an Option Key Effect, hold down the option key while using the tool.

The first eight Option Key Effects interact with graphics routines buried within the Macintosh itself (in technical terms, they're based on transfer modes available within QuickDraw). The modes describe interaction between the image, and the tool being used on the image.

selected color will become the Foreground color. This option is similar to using the Dropper tool. Note that you must quickly click on the area – a lingering click will invoke the normal operation of the selected tool.

Leave Margin for Icons
This option is useful when using PixelPaint with MultiFinder. When this option is active, clicking on the zoom box will leave a margin on the right side of the screen for Finder icons.

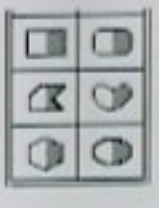
Set FX for tool type
You can set Normal Tools or Special Effects as the default for each tool. Click on a tool, then choose Normal Tools or Special Effects. Now whenever you click on that tool again, Normal Tools or Special Effects changes automatically. Except for the shape drawing tools, the default settings don't all have to be the same. For instance, the paintbrush can have Special Effects as its default, and the eraser can have Normal Tools. For the shape tools, the choice for any one of them will be the setting for all of them.

Create Objects...
These Preferences options are for drawing shapes. You can select to have shapes created from the center of the cursor position, or starting with a corner at the cursor position. The default setting is From the Corners.

From the Center
Draws ovals, rectangles and rounded rectangles starting at their center point and moving outward to their edges. In other words, the point at which you begin to drag to draw the shape will be the midpoint of the figure.

When the From the Center option is activated, the Rectangle, Rounded Rectangle, Regular Polygon, and Oval Shape tools will have a small plus-sign in their center.

Since it's impossible for PixelPaint to anticipate the final shape created by the Polygon or Freehand Shape tools, these tools are unaffected by the From the Center option.



From the Corners
Draws ovals, rectangles and rounded rectangles from a corner outward. The point where you begin to draw is a corner, not the midpoint. (This choice does not affect the regular polygon tool. It always draws from the middle.)

The following Option key effects make value determinations by looking at the color palette in use and will perform predictably.

Paint Over
The foreground color replaces those colors in the image with a value percentage or brightness value greater than that of the foreground color.

Paint Under
The foreground color replaces those colors in the image with a value percentage or a brightness value less than that of the foreground color.

Lighten
The Lighten option will cause the tool to draw with a lighter shade of the color. It is best utilized with the grayscale palette.

Darken
The Darken option will cause the tool to draw with a darker shade of the color. The Darken option works best when used with the grayscale palette, or with a gray selected from a color palette. The effect is cumulative, so that painting back and forth over the same spot will cause the color become successively darker.

Mix
Mixes the colors in the image with the selected color of the tool. Mix is the default setting for the Option Key Effect.

Transparent
Mainly for use with a pattern; changes the solid part of the pattern to the background color and changes the background color to clear. The resulting effect is that you can see through the pattern to any image underneath your new drawing. Have Normal Tools on, and press the Option key while drawing.

Default Colors
Lets you select a default color palette. Each time you double-click on the PixelPaint icon to open the program, the color palette specified by this Preference will be used. Note that if you start PixelPaint by double-clicking on a document, the document will appear with its own color palette — rather than the one specified by the Default Colors Preference.

These modes perform logical, or mathematical, operations on the source pixel value based upon the value of the destination pixel. Unless you have a firm grasp of binary math in relation to computer graphics, the effect of these eight option key functions using a particular palette may appear to be unpredictable. For a detailed discussion of the Copy, Or, Xor, and Bic modes, see *Inside Macintosh Volume V*, published by Addison-Wesley Publishing Company, Inc.

Mix is the default setting for the Option Key Effect Preference.

Copy
The Copy mode paints the foreground color to the black part of the image and the background color to the white part of the image, and replaces the affected image portion with the color tool shape.

Or
The Or mode paints the foreground color to the black part of the image and replaces the affected image portion with the foreground color tool shape. The white part of the image isn't affected.

Xor
The Xor mode inverts the bits in the image which are black.

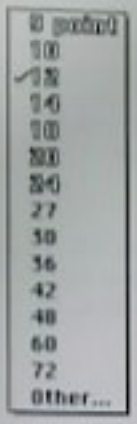
Bic
The Bic mode paints the background color to the black part of the image, and replaces the image with the foreground color tool shape. The white part of image isn't affected.

Inverse Copy
The Inverse Copy mode paints the foreground color to the white part of the image and the background color to the black part of the image, and replaces the affected image portion with the color tool shape. Inverse Copy reverses the foreground and background colors.

Inverse Or
The Inverse Or mode paints the foreground color to the white part of the image and replaces the affected image portion with the foreground color tool shape. The black part of the image isn't affected.

Inverse Xor
The Inverse Xor mode inverts the bits in the image which are black.

Inverse Bic
The Inverse Bic mode paints the background color to the white part of the image and replaces the image with the foreground color tool shape.



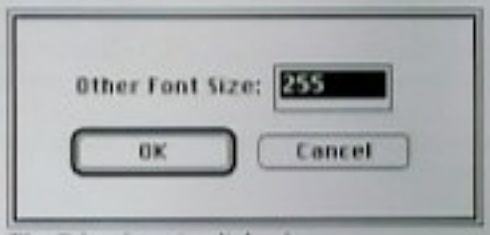
Size

This menu lets you choose the size of the text created by the Text tool. The numbers listed refer to the font size, measured in points (one inch = 72 points).

For any particular font, the exact font sizes which are installed in your System file will appear as outlined numbers in the Size menu. For the sample Size menu to the left, font sizes 9-24 were installed in the System file, and are outlined in the Size menu.

The default size selection is 12-point.

All of these sizes are fixed, except the last one. You can change this variable font size to put any number of different sizes in an image.



The Other font size dialog box

If you change the variable font size, text created previously with a different variable size will not be affected.

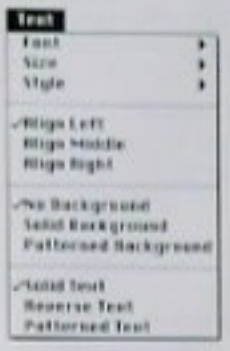
See Part II, Chapter 2: *Shortcuts and Modifier Keys* for command-key equivalents which apply to this menu.

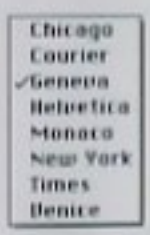
Style

The Style menu shows the different text styles which can be used for the text. You can choose any combination of Bold, Italic, Underline, Outline, and Shadow. The effect of these style choices is similar to how the fonts actually appear in the Style menu. Choosing Plain cancels all other style choices.

The default setting for the font Style is **Plain**.

See Part II, Chapter 2: *Shortcuts and Modifier Keys* for command-key equivalents which apply to this menu.





The Text Menu

This menu is for specifying the attributes for text which is entered with the text tool. See the description of the text tool in Part I, Chapter 2: *The PixelPaint Toolbox* for details about entering text.

You can make choices from this menu before, during, or after entering text. For example, if you type the text in the Geneva font, and then choose Times from the Font menu, all the text will change to Times. Similarly, if you type text with Align Left chosen, but then choose Align Middle, the text will be re-aligned automatically.

Note: As soon as you click in the window or choose another tool, choices from this menu will *not* apply to the text you just entered. When you click in the window or choose another tool, the text instantly becomes a graphic image, and will not respond to Text menu choices, or further editing from the keyboard.

In other words, always type and edit an entire block of text *before* moving on to the next step in your artwork.

The first three choices on the Text menu — Font, Size, and Style — are all hierarchical menus.

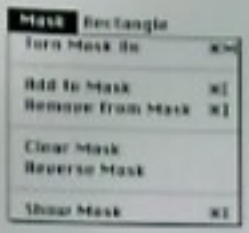
Font

This menu lists the fonts available for your text. The font which is currently selected to be used by the Text tool will have a check-mark beside it.

The default font selection for the Text tool is the Geneva font.

The list of fonts available will be those fonts currently installed in your System file. Installing fonts, and working with font files is described in the *Macintosh System Utilities User's Guide*, which is supplied with your Macintosh computer.

See Part II, Chapter 2: *Shortcuts and Modifier Keys* for command-key equivalents for commands in this menu.



The Mask Menu

The Mask menu is for selecting areas of the image that will be masked and unaffected when using tools and effects. For a detailed discussion of the uses of the Mask menu, see Part I, Chapter 5: *Advanced PixelPaint Techniques*.

With traditional graphic arts tools, such as an airbrush, it's common to use an overlay material to act as a frisket, or mask. The idea is to have the overlay cover a portion of the image to protect it from the effects of the airbrush. PixelPaint's Mask works exactly the same way: it allows you to work with tools on selected portions of the image, while protecting other areas of the artwork.

Note that the Mask is *not* saved along with the document: when you close the document or quit PixelPaint, all traces of the Mask are erased.

Turn Mask On

Turns the Mask on. Before turning the Mask on, you must select an area or paint object and add it to the mask. If no areas of your artwork have been included in the Mask, this menu item will be unavailable. When the Mask is turned on, this menu item becomes Turn Mask Off.

Add to Mask

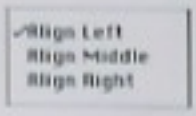
To add an area or paint object to the Mask, you can use the Lasso or Marquee tools. Any area, or graphic shape can be used as a Mask provided that it can be selected with one of these tools. Select the area that you want to mask, and then choose Add to Mask from the Mask menu. You can select as many areas as you wish to add to the mask.

Remove from Mask

To remove an area or graphic shape from the mask, select it using the Lasso or Marquee tools and then choose Remove from Mask from the Mask menu. You can choose to remove as many areas or graphic shapes from the mask as you wish.

Clear Mask

Choosing Clear Mask clears *all* the areas and graphic shapes from the mask. This selection cannot be undone, so make certain that you are through using the selected areas as a mask before you choose to clear the mask.



Align Left

Aligns the text flush left at the point where you first click to start typing.

Align Middle

Aligns the text centered about the point where you start typing.

Align Right

Aligns the text flush right where you start typing.

No Background, Solid Background, Patterned Background, Solid Text, Reverse Text, Patterned Text

These choices let you define the combinations of color, pattern, and background for your text. Text can be in the foreground color or the current pattern; the background under the text can be in the background color, or in the current pattern, or clear. The following examples show the various combinations.

No Bkgd/Solid Text

Solid Bkgd/Solid Text

Solid Bkgd/Reverse Text

Solid Bkgd/Patterned Text

Patterned Bkgd/Solid Text

Reverse Mask

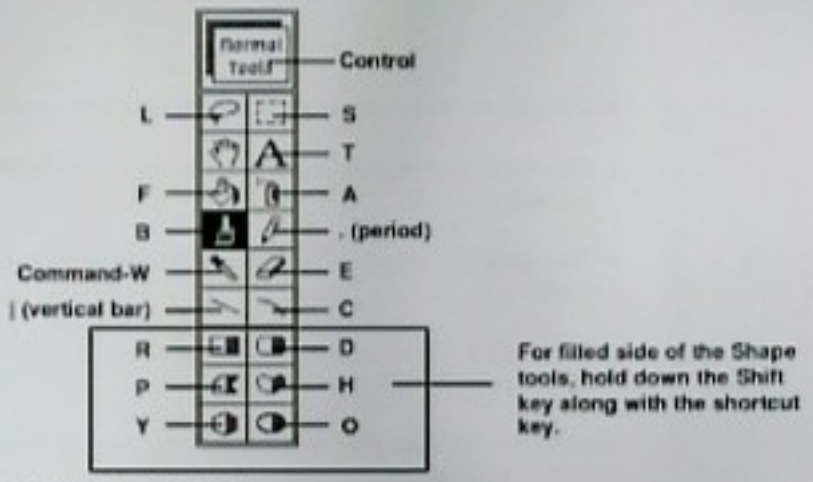
Typically, areas selected for use as a mask are unaffected by the use of any tool or effect. Choosing Reverse Mask allows you to use tools and effects on the masked areas only, with all other areas of the image remaining unaffected.

Show Mask

At times, you may add many areas or paint objects to the mask area and you may forget which areas are masked. To see the masked areas choose Show Mask from the Mask menu. All masked items will remain vivid while the unmasked areas will be lightened. To stop showing the masked items, click the mouse button.

Tool Shortcuts

Each of the PixelPaint tools, can be accessed from the keyboard. The diagram below shows the shortcut keys for each of the tools:



Shortcut keys for the Toolbox

For the Shape tools, the filled side of the shapes can be selected by holding down the shift key while typing the shortcut key for that shape.

Note that once the Text tool is selected, and text is entered on the screen, the Tool shortcuts are disabled. The mouse must be used to select a different tool.

The Grabber tool can be activated by holding down the "G" key while clicking and dragging with the mouse. However, this shortcut will not select the Grabber tool in the Toolbox: as soon as the "G" key is released, the tool which is selected will resume its normal operation. This shortcut enables you to work with a tool, quickly reposition the artwork, and continue working with the tool.

Chapter 2

Shortcuts and Modifier Keys

PixelPaint's shortcuts and modifier key combinations serve three main functions:

- They duplicate menu choices so that you can use the keyboard instead of the mouse if you wish.
- They allow you to switch between any of the drawing and editing tools in the Toolbox.
- They control effects that are *not* available from the menus, such as constraining lines to be angled at 15° increments.

This chapter describes the shortcut and modifier key combinations which are available in PixelPaint.

Note: When using these key combinations, make sure that the Caps Lock key is up — unless the shortcut specifically requires that it be depressed.

the document that are not displayed will be unaffected by double-clicking on the Eraser tool.

Line
Activates the Fractality dialog box. This is the same as choosing Set Fractality from the Line special effects menu.

Rectangle, Round Rectangle, Arbitrary Polygon, Freehand Shape, Oval
Activates the Fill Effects dialog box. This is the same as choosing Fill Effects from the Options menu.

Polygon
Activates the Polygons dialog box. This is the same as choosing Polygons from the Options menu.

Color
Activates the Colors dialog box. This is the same as choosing Colors from the Options menu.

Pattern
Activates the Patterns dialog box. This is the same as choosing Patterns from the Options menu.

Double-Click Shortcuts

Double-clicking on the various tools provides shortcuts for choosing items from menus — as well as allowing access to other functions. For example, double-clicking on the paint bucket is the same as choosing Fill Effects from the Options menu. Similarly, double-clicking on the marquee selects the entire screen; you can make the same selection by clicking on the marquee and dragging over the whole screen.

As you become proficient with PixelPaint, you'll find it faster and easier to use the double-click shortcuts than to choose items from the menus.

Marquee
Selects the entire window.

Grabber
Activates the Overview window. This is the same as choosing Overview from the Options menu.

Bucket
Activates the Fill Effects dialog box. This is the same as choosing Fill Effects from the Options menu.

SprayCan
Activates the Airbrush Properties dialog box. This is the same as choosing Airbrush Properties from the SprayCan special effects menu.

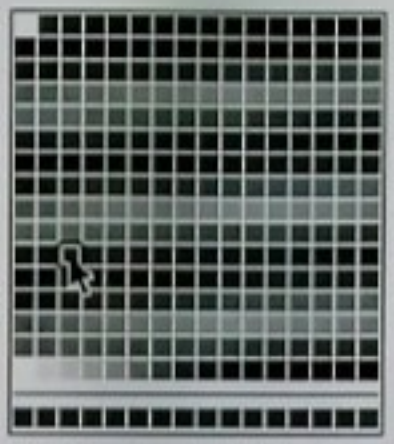
Paintbrush
Activates the Brushes dialog box. This is the same as choosing Brushes from the Options menu.

Pencil
Splits the window for an 800% enlargement. This is the same as choosing Zoom In from the Options menu three times in a row. Double-click again on the Pencil tool to zoom out to a normal 100% view.

Eraser
Erases the entire window. If you accidently erase the window, immediately choose Undo from the Edit menu to get the image back.

Note that only the area of the document which is displayed in the window will be erased. If the document is larger than what's displayed in the window, the areas of

A second pop-up feature is the color selector that appears when you press the Command and Option keys while holding down the mouse button. You can then choose a color from the selections for the foreground color.



Pressing the Command and Option keys while holding down the mouse button makes this pop-up color selector appear. Drag the pointer on the selections to choose a new foreground color.

An important note: Many of the modifier key combinations use the Option key. However, you can change the effects controlled by the Option key by making different choices on the Preferences dialog box. To see that dialog box, choose Preferences from the Options menu. See Part II, Chapter 1: *The PixelPaint Menus* for details about working with the Preferences dialog box.

Terminology

The following terms are used to describe the Modifier Key Combinations:

SHIFT-Drag means hold down the Shift key while you drag the mouse.

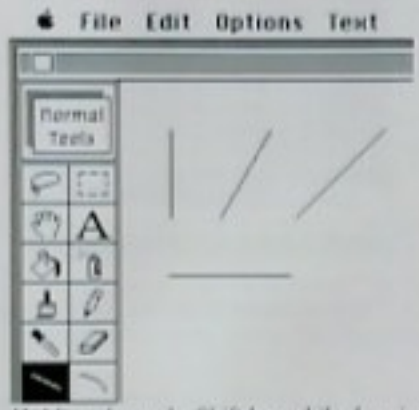
COMMAND-Click means hold down the Command key while clicking the mouse button on some item on the window.

COMMAND-OPTION-Drag means hold down both the Command and Option keys while dragging the mouse.

(Cycle) SHIFT-Drag means that this key combination applies when you choose Cycle from a tool's menu before you hold down the Shift key and drag.

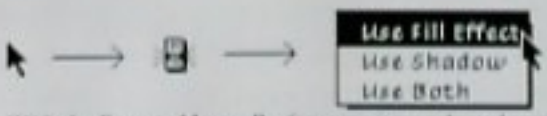
Modifier Key Combinations

PixelPaint uses modifier key combinations together with the tools and menus to provide additional features. For instance, pressing the Shift key while drawing with a drawing tool constrains the drawing to move in only a horizontal or vertical direction, or at angles in 15° increments. This technique is particularly useful for drawing regular figures with precision.



Holding down the Shift key while drawing constrains the tool to draw in the horizontal and vertical direction, or at angles in increments of 15°.

Another modifier key combination, available with Special Effects on and Pop-up Menus selected in the Preferences dialog box, is pressing the Command key while holding down the mouse button. A pop-up Special Effects menu appears wherever the pointer is in the window. The menu is for whichever tool is selected. You can choose from this menu as if it were at the top of the window—you don't have to move the pointer to the top. As soon as you release the button the menu disappears, but the choice you made stays in effect, just like any menu choice.



With the Pop-up Menus Preferences item selected, press the Command key while holding down the mouse button in Special Effects mode. The pop-up menu for the highlighted tool appears and you can choose from this menu as you do from the one at the top of the window.

tool's Special Effects menu. As you draw with the tool, the image will be filled with the tile pattern.

Tool-Specific Modifiers

The following Modifier Key Combinations refer to a specific tool.

With the Lasso tool selected.

COMMAND-Click
Selects all the points having the same color as and connected to the point you clicked on. Particularly useful for selecting and adding color to text characters. If you just hold down the Command key, previously selected areas will be de-selected.

COMMAND-SHIFT-Click
Adds to previous selection(s). The new selection will be all the points having the same color as and connected to the new point you clicked on.

COMMAND-OPTION-Drag
Dragging the selection will leave a trail of copies of the selection.

OPTION-Drag
Drags a copy of the selected area. This is the same as choosing Duplicate from the Edit menu.

OPTION-Select
Selects everything in the lasso, including blank background. This prevents the Lasso from shrinking to fit the graphics in the selected area.

OPTION-SHIFT-Select
Adds a new selection to earlier selection(s). The new selection includes everything in the lasso, including blank background.

SHIFT-Drag
Drags the selection only horizontally or vertically. This is particularly useful for aligning text and graphics.

SHIFT-Select
Adds a new selection to an earlier selection. Overlapping areas in selections will be deselected.

TAB-Select
Activates a special Fatbits box which shows the point of the lasso. Useful for selecting small, detailed areas.

Global Modifiers

The following Modifier Key Combinations are "global" — that is, these combinations are always available, regardless of the tool or effect which is currently selected.

COMMAND-Click
With Special Effects on and Pop-up Menus selected in the Preferences dialog box, shows a pop-up menu for the tool which is highlighted. Drag the pointer to choose from the pop-up menu. Choosing from this pop-up menu is the same as choosing from the corresponding menu at the top of the window, and choices made in the pop-up menu are reflected in the other menu. The Grabber tool and Text tool do not have Special Effects menus — therefore, this modifier has no affect with those tools.

COMMAND-OPTION-Click
Shows a pop-up color palette. Drag the pointer to change the foreground color.

COMMAND . (Period) or ESC
Halts the current action PixelPaint is performing.

CONTROL
Toggles between Special Effects and Normal Tools.

ESCAPE
Undoes the last action. This is the same as choosing Undo from the Edit menu.

OPTION-Scroll
Decreases the scrolling speed.

SPACE BAR
Hides the toolbox on the window so you can show your artwork without distractions. The Space bar acts as a toggle. Press it again to return the tool column to the window. If a part of the image is selected with the Lasso or Marquee tools, the Space bar has no affect.

(Tile or Use Fill Effect)-OPTION
Makes white sections of the tile pattern transparent letting the image "underneath" a drawing show through. To draw in the tile pattern, first choose Fill Effects from the Options menu to see the Fill Effects dialog box, and choose Tile from the Method menu on the dialog box. Then choose a drawing tool, turn Special Effects on, and choose Use Fill Effect from the

A

With the Text tool selected . . .

Note: All of the following are shortcuts for items available under the Text menu.

COMMAND >
Changes font to the next larger size.

COMMAND <
Changes font to the next smaller size.

COMMAND-SHIFT >
Switches to the next font in the list of fonts in the Font menu.

COMMAND-SHIFT <
Switches to the previous font in the list of fonts in the Font menu.

COMMAND-P
Causes the text to revert to a plain typeface.

COMMAND-B
Makes text boldface.

COMMAND-I
Italicizes text.

COMMAND-U
Underlines text.

COMMAND-O
Makes text outlined typeface.

COMMAND-S
Makes text shadowed typeface.

COMMAND-L
Aligns text to the left of the insertion point.

COMMAND-M
Centers the text on the insertion point.

COMMAND-R
Aligns text to the right of the insertion point.

With the Marquee tool selected . . .

COMMAND-Select
Automatically sizes the selection box to the smallest one which can hold the selected image.

COMMAND-Drag
Selection is enlarged or reduced in the direction of dragging. The selection can be stretched or compressed both horizontally and vertically.

COMMAND-SHIFT-Drag
Selection is is enlarged, or reduced, while maintaining its original proportions.

COMMAND-OPTION-Drag
Drags the selection, leaving a trail of copies of the selected area.

COMMAND-OPTION-SHIFT-Drag
Dragging leaves a trail of copies of the selected area in the vertical or horizontal direction only.

OPTION-Drag
Drags a copy of the selected area. This is the same as choosing Duplicate from the Edit menu.

OPTION-Select
Temporarily turns the Marquee tool into the Lasso tool.

OPTION-SHIFT-Drag
Drags a copy of the selected area vertically or horizontally only.

OPTION-SHIFT-Select
Temporarily turns the Marquee tool into the Lasso tool, and adds new selections to previously selected areas.

SHIFT-Drag
Drags the selection only horizontally or vertically. This is particularly useful for aligning text and graphics.

SHIFT-Select
Adds a new selection to an earlier selection. Overlapping areas in selections will be deselected.

***(Fine Airbrush)* SHIFT-Drag**
With Fine Airbrush chosen from the Pencil menu, draws as the fine airbrush, but only in a vertical or horizontal direction.

TAB-Drag
Shows the detailer box while you draw.

TAB-OPTION-Drag
Shows the detailer box, but pencil doesn't draw as you drag it.

With the Dropper tool selected . . .

OPTION-Click
Changes the blend color to the one you click on.

SHIFT-Click
Changes the background color to the one you click on.

TAB-Click
Activates the detailer box for the Dropper tool, to let you select the color of a particular pixel.

With the Eraser tool selected . . .

SHIFT-Drag
Constrains the eraser to move only vertically or horizontally.

OPTION
Always erases to clear (white).

With the Line tool selected . . .

OPTION-Drag
Draws the line in the pattern from the pattern selector.

OPTION-SHIFT-Drag
Draws a patterned line constrained to directions in 15-degree increments (0, 15, 30, 45, 60, 75, 90, 105, and so on). Does not apply to radial lines.

SHIFT-Drag
Draws a line in the foreground color, constrained to directions in 15-degree increments. Does not apply to radial lines.

With the SprayCan tool selected . . .

COMMAND-Drag
If the pattern is a solid color, paints in background color instead of foreground color. If the pattern is not a solid color, paints in the pattern with its two colors reversed.

OPTION-Drag
Paints in the pattern with the foreground color and with white as the background color.

SHIFT-Drag
Constrains the SprayCan to move only vertically or horizontally.

***(Speckle or Cycle Speckle)*-OPTION**
Adds only small dots of the speckle when you use the SprayCan.

With the Brush tool selected . . .

COMMAND-Drag
With Normal Tools on, paints in the background color.

SHIFT-Drag
Constrains paintbrush to move only vertically or horizontally.

Note: Option key choices in the Preferences dialog box affect the color and pattern of the brushes. See Part II, Chapter 1: *The PixelPaint Menus* for a description of Preferences.

With the Pencil tool selected . . .

COMMAND-Click
With Normal Tools on, zooms in to the point the pencil is on. When Special Effects is on, Command-Click shows the "pop-up" menu for the pencil.

***(Detailer)* OPTION-Drag**
With Detailer chosen from the Pencil menu, shows the detailer box, but the pencil doesn't draw as you drag it.

SHIFT-Drag
Constrains the pencil to move only vertically or horizontally.

***(Cycle)* SHIFT-Drag**
With Cycle chosen from the Pencil menu, draws in Cycle colors, but only in a vertical or horizontal direction.

With the Freehand Shape tool selected . . .

OPTION-Drag
Draws a patterned border.

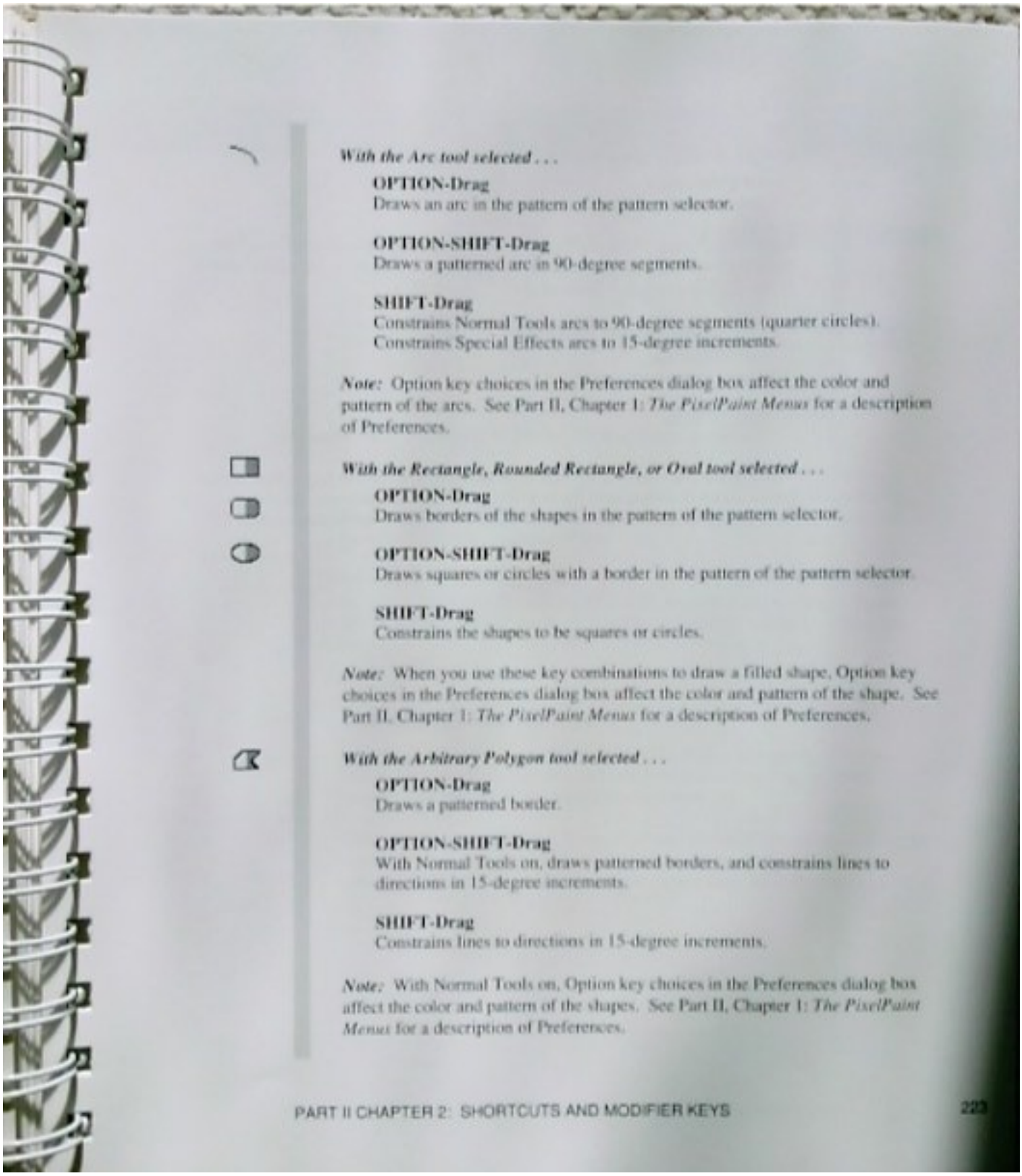
Note: With Normal Tools on, Option key choices in the Preferences dialog box affect the color and pattern of the curves. See Part II, Chapter 1: *The PixelPaint Menus* for a description of Preferences.

With the Regular Polygon selected...

OPTION-Drag
Draws a patterned border.

SHIFT-Drag
Constrains rotations of the polygon as you draw it to 15° increments.

Note: When you use these key combinations to draw a filled polygon, Option key choices in the Preferences dialog box affect the color and pattern of the shapes. See Part II, Chapter 1: *The PixelPaint Menus* for a description of Preferences.



With the Arc tool selected . . .

OPTION-Drag
Draws an arc in the pattern of the pattern selector.

OPTION-SHIFT-Drag
Draws a patterned arc in 90-degree segments.

SHIFT-Drag
Constrains Normal Tools arcs to 90-degree segments (quarter circles). Constrains Special Effects arcs to 15-degree increments.

Note: Option key choices in the Preferences dialog box affect the color and pattern of the arcs. See Part II, Chapter 1: *The PixelPaint Menus* for a description of Preferences.

With the Rectangle, Rounded Rectangle, or Oval tool selected . . .

OPTION-Drag
Draws borders of the shapes in the pattern of the pattern selector.

OPTION-SHIFT-Drag
Draws squares or circles with a border in the pattern of the pattern selector.

SHIFT-Drag
Constrains the shapes to be squares or circles.

Note: When you use these key combinations to draw a filled shape, Option key choices in the Preferences dialog box affect the color and pattern of the shape. See Part II, Chapter 1: *The PixelPaint Menus* for a description of Preferences.

With the Arbitrary Polygon tool selected . . .

OPTION-Drag
Draws a patterned border.

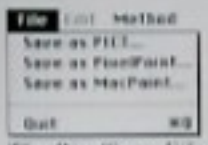
OPTION-SHIFT-Drag
With Normal Tools on, draws patterned borders, and constrains lines to directions in 15-degree increments.

SHIFT-Drag
Constrains lines to directions in 15-degree increments.

Note: With Normal Tools on, Option key choices in the Preferences dialog box affect the color and pattern of the shapes. See Part II, Chapter 1: *The PixelPaint Menus* for a description of Preferences.

The PixelScan File Menu

The PixelScan File Menu is used for saving a scanned image, or for quitting PixelScan.



The PixelScan File menu.

The PixelScan File Menu contains the following menu items:

- **Save as PICT**
  If you'd like to save a scanned image in PICT2 format, choose Save as PICT.

- **Save as PixelPaint**
  To save the scanned image in PixelPaint format, select Save as PixelPaint.

- **Save as MacPaint**
  Saves the scanned image as a black and white MacPaint document.

PixelPaint can work with images saved in any of the three formats. If you're going to be editing and enhancing the image using PixelPaint, you should save the scanned image as a PixelPaint file.

- **Quit**
  Choose Quit, or use the shortcut keys Command-Q, to quit PixelScan.

The PixelScan Edit Menu

The PixelScan Edit menu is dimmed during all PixelScan operations. There is no editing provided within PixelScan. The Edit menu will only be activated if you open a desk accessory that uses the standard Macintosh Edit menu.

Chapter 3

Using PixelScan

This chapter explains how to use PixelScan, a utility program provided with PixelPaint for scanning color or grayscale images using the Howtek Scanmaster or the Sharp JX-450 scanner.

With PixelScan, you can scan color or grayscale artwork into your Macintosh II using a variety of color palettes and options.

The Howtek Scanmaster and the Sharp JX-450 scanners are 24-bit scanners capable of reproducing images in "true" color. However, PixelPaint, and most Macintosh II's are only able to display 8 bits of color or grayscale information, for a total of 256 colors or shades of gray.

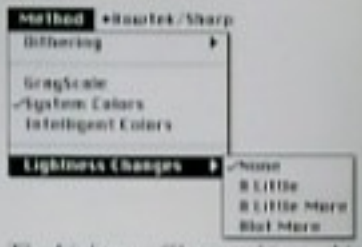
To produce the best image possible, PixelScan uses a dithering method to translate the 24 bit image from the scanner to an 8 bit image that can be used by PixelPaint. After scanning, you can use all of PixelPaint's tools and effects to enhance the image.

The PixelScan Menus

Before using PixelScan, you should be familiar with your scanning hardware. Follow the instructions supplied with your scanner for installing the interface board in your Macintosh and setting up the scanner.

Note: PixelScan requires that the interface card is installed correctly, and that the scanner is connected and turned on. If these conditions are not met, the only command which will operate in PixelScan is Quit, under the File menu.

- **Lightness Changes**
  You can choose to lighten an image using the Lightness Changes menu items. This is particularly useful for scanning a color photograph as a grayscale image.



The Lightness Changes hierarchical menu.

The PixelScan •Howtek/Sharp Menu

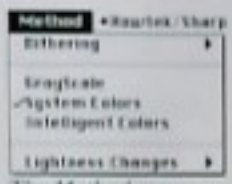
The PixelScan Howtek/Sharp Menu allows you to customize the scanner settings, scan the image, and preview the image to select a portion to be scanned.

The Howtek/Sharp menu.

- **Scan**
  Select Scan, or use the shortcut keys Command-K, to scan an image after you have determined the method of the scan and selected the scanner setting.

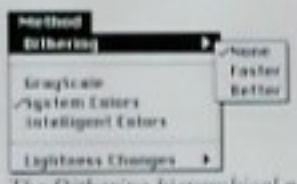
The PixelScan Method Menu

The PixelScan Method Menu lets you select the palette for the final image, and the way in which the image will be scanned.



The Method menu.

- **Dithering**
  The PixelScan Dithering menu item allows you to select Dithering settings. You can elect to use no dithering, Faster dithering, or Better dithering. You might choose not to use dithering if the artwork to be scanned contains primarily solid colors, with no blended areas. Choose Faster dithering for images that contain some continuous tones, but when scanning time is at a premium. For the best representation of a continuous tone image, use the Better method of dithering.



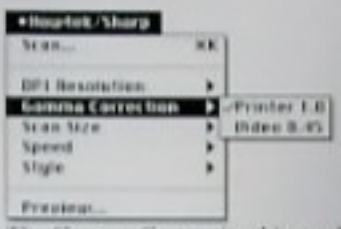
The Dithering hierarchical menu.

- **Grayscale**
  Selecting Grayscale will invoke the standard Grayscale palette found in PixelPaint. If you need to print the scanned image on a black-and-white printer, such as the LaserWriter or the Linotronic 100, 200, or 300, or if you want to use a grayscale screen image, it's best to use the Grayscale palette.

- **System Colors**
  The standard Apple System palette will be used to scan the original artwork. If you need to share a scanned file with another application that may not support the range of palettes within PixelPaint, use the System Colors palette Method.

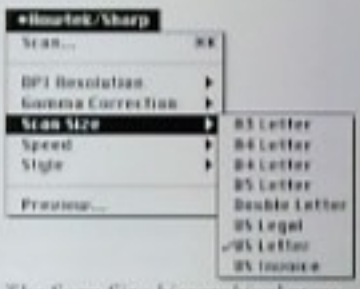
- **Intelligent Colors**
  When selecting Intelligent Colors, PixelScan will pre-scan the image, and pick the best 254 colors to use in the scanning palette. The Intelligent Colors method, when used with Better dithering, will produce the finest quality image from a continuous tone photograph or slide.

- **Gamma Correction**
  Using Gamma Correction, you can set the contrast of the scanned image to match a particular output device. The default Gamma Correction is set at the Printer level of 1.0. This is also the best selection for high-resolution RGB monitors typically used on the Macintosh II.



The Gamma Correction hierarchical menu.

- **Scan Size**
  The Scan Sizes supported by PixelScan are shown in the Scan Size hierarchical menu. The default setting is for a US Letter image area.



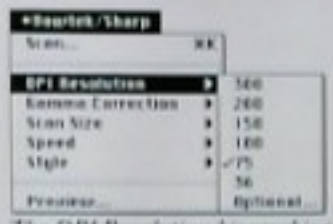
The Scan Size hierarchical menu.

Select the image area that you want to scan. Both the Howtek Scanmaster and the Sharp JX-450 have a minimum scan area of a B5 Letter (approximately 7" x 9 7/8") and a maximum scan area of a Double US Letter (11" x 17"). The sizes on the Scan Size menu correspond to the size markings on the Sharp and Howtek scanners.

You can select a custom scanning size by using the Preview option to select the scan area. Refer to the Preview section near the end of this chapter.

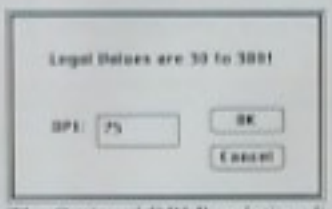
- **Speed**
  The scanner speed sets the time, in milliseconds, that it takes to scan a single line. Unless you specify otherwise, PixelScan will use a speed of 30 milliseconds per line.

- **DPI Resolution**
  The default DPI Resolution is set to 75 dpi (dots per inch). You can make a selection from the hierarchical menu to change the dpi settings or you can select Optional and select your own preferred resolution.



The DPI Resolution hierarchical menu.

Note: You cannot select a resolution setting that is out of the range of the scanner. Resolution settings must be between 30 and 300 dpi.



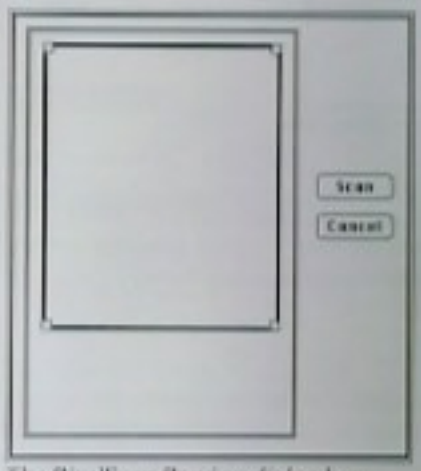
The Optional DPI Resolution dialog box

The selected DPI Resolution will affect the final screen image. It is useful as a means of reducing or enlarging the scanned size of the original image. Selecting 75 dpi will result in an image that is virtually the same size as the original. A 36 dpi image will be approximately one-half the size of the original. The higher the resolution above 75 dpi, the larger the image. Images scanned at 300 dpi also require a large amount of memory and the necessary disk space to save the image.

continuous tone images. If you find that you want a sharper image, choose Sharp to double the sharpness of the image. For an even greater increase in sharpness, choose Exaggerated, which quadruples the sharpness of the image. For a softer, more diffused image select the Soften Style.

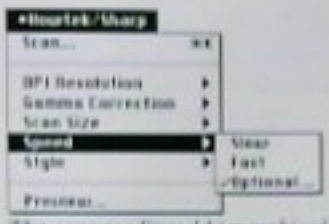
- **Preview**
  The Preview dialog box allows you to select a portion of an image area to be scanned. Once Preview has been selected, the scanner will begin to scan every fourth line of the image and the Preview image will be displayed in the Preview dialog box.

  The rectangular area defined by a black border with four white handles on each corner is the Selection area. The selection area shows the precise area which will be scanned. The Selection area can be moved, and the four handles can be used to adjust the size of the area both horizontally and vertically.



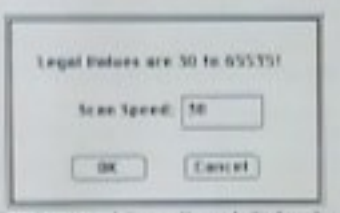
The PixelScan Preview dialog box.

Only use the Preview feature after you have determined the method and scanner settings. After selecting the portion of the image that you wish to scan, you can choose to scan the image or cancel the preview.



The scanner Speed hierarchical menu.

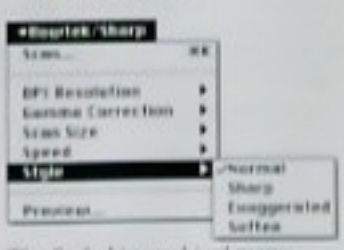
You can increase or decrease the scanning speed by selecting Slow, Fast, or by entering your own values in the Optional dialog box. When you select Optional, the Speed dialog box will appear.



The Optional Scan Speed dialog box.

Using the Optional Scan Speed dialog, you can specify scan times between 30 and 65535 milliseconds per line. You will generally achieve the best image by selecting a slower speed (longer scanning time).

- **Style**
  You can enhance the scanned image by selecting the Style of the scan. The default setting for Style is the Normal style used by the Howtek Scanmaster and the Sharp JX-450.



The Style hierarchical menu.

Style defines the edge emphasis in the scanner. You can generally use Normal for line art and text, and use Sharp, Exaggerated, and Soften when scanning

Using PixelScan

Before scanning your image, you should make some choices about the method of scanning, and the configuration of the scanner.

1. Decide which type of color palette should be used for your image. If a color image will be ultimately be used in applications other than PixelPaint, you should choose the System Colors palette.

2. Make a selection for the dithering method to be used.

3. Make the selection for the scanner settings.

4. If you only wish to scan a portion of the image, choose Preview from the Howtek/Sharp menu and define the Selection area.

After making these selections, choose Scan from the Howtek/Sharp menu. You can also initiate the scan by clicking on the Scan button in the Preview dialog box.

If you have selected Grayscale or System Colors from the Method menu, boxes will appear on the screen describing the progress of the scan.

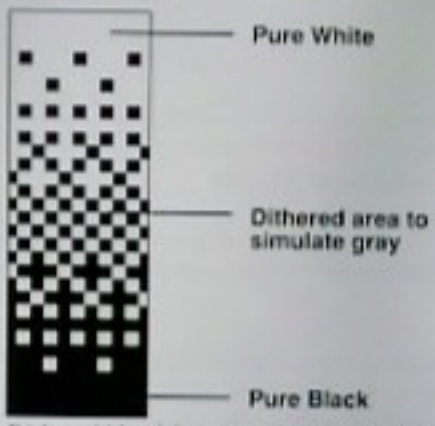
If you have selected the Intelligent Colors Method,
the scanning process will actually involve two scans of the image. The first scan is used to determine the colors which will be used for the color palette; once the colors are set, the second scan records the image.

After your scan is complete, you can save the image in the PixelPaint format, the PICT format, or the MacPaint format.

You may want to experiment with the PixelScan settings, altering the Dithering and Lightness under the Method menu, and manipulating the Gamma Correction, Speed, and Style under the Howtek/Sharp menu. Note that these settings will not affect an image which has already been scanned.

Note: You will get better results scanning original artwork, rather than artwork that has been halftoned or separated and printed using the four-color process printing method.

Dither: A technique of using two colors to create the appearance of a third color. A dithered blend will start with a solid color at one end, and gradually intermix pixels of the second color as the blend moves to become the second color. The diagram below illustrates a dithered blend from black to white, using only black and white pixels. The dithering simulates gray at the center of the blend.



Dithered blend from pure black to pure white.

EPSF: Encapsulated PostScript Format. A file format which can be used and manipulated by other applications, such as Aldus' PageMaker. This file format actually contains two sections of information: the actual PostScript code which describes the image, and a PICT-format representation so the image can be displayed on the Macintosh screen.

Hue: A number which describes the position of a color on the color wheel. Using the HSV color picker, the Hue of a color can be selected from 0° to 360°.

Palette: A selection of 256 colors which can be used in a document. The Macintosh II can generate 16.8 million colors, and any 256 of those colors can be selected for the document.

PICT: A file format which can be used by most Macintosh graphics applications. PixelPaint actually saves files in PICT2 format: PICT2 stores color information for the image, where as the standard PICT format does not. If a PICT2 file is opened by a strictly black-and-white graphics application, the color information is ignored.

Glossary

8-bit: A system of color display for the Macintosh II. An 8-bit video system is capable of displaying up to 256 different colors, selected from the 16.8 million colors which the Macintosh II can generate.

Additive Primaries: The three colors red, green and blue. When the three additive colors are added together in equal amounts, the result is a shade of gray (or white).

Brightness: The measure of the amount of black in a color. Maximum brightness is the purest color, with no black content. Minimum (zero) brightness means none of the pure hue is left, and the color is pure black. In PixelPaint, Brightness and Value mean the same thing.

Color Separation: Four separate color components of an image, which are used to print a full-color image with an offset press. The four separate images are the cyan, yellow, magenta and black components of the original image.

Deselected: An area of the image which is not currently selected by the Lasso or Marquee tools. If the shift key is used to select multiple areas of the image, any selected areas which overlap will be deselected.

Pixel: A single dot on the screen. A pixel is the smallest element which can be manipulated by PixelPaint. Each pixel can be assigned any of the 256 colors available on the document's color palette.

Saturation: A measure of the amount of white in the color. Maximum saturation is the purest color, with no white content. Minimum saturation means none of the pure hue is left, and the color is some shade of gray (depending on the brightness). More intuitively, saturation is a measure of the "vividness" of a color. A color with high saturation is "hot"; a color with low saturation looks washed-out.

Selected: An area of the image which has been defined for modification. Selected areas can be cut, copied, pasted or cleared, as well as manipulated with the Standard Effects, Visual Effects or Dynamic Effects available under the Edit menu. When an area is selected, the border of the area will appear as a moving dashed line.

Spot Color: A particular color which appears in an image. Choosing Spot Color when printing allows you to select any color on the color palette, and print just the parts of the image which are exactly that color.

Subtractive Primaries: The three colors cyan, yellow, and magenta. When the three subtractive colors are added together in equal amounts, the result is a shade of gray (or black).

TIFF: Tagged Image File Format. A type of file format which stores images, along with their grayscales. No color information is stored in a TIFF file. If you save a PixelPaint document as a TIFF file, it will be automatically be saved under the Grayscale palette.

Value: The measure of the amount of black in a color. Maximum value is the purest color, with no black content. Minimum (zero) value means none of the pure hue is left, and the color is pure black. In PixelPaint, Value and Brightness mean the same thing.

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