# Apple® IIGS

_GS Paint_

The ultimate creativity
program. Painting and
animation that will take
your breath away.

# CREDITS

GS Paint was designed and developed by Version Soft, Inc.

Produced by Paul Zuzelo.

Graphics by Sydney Williams.

Special thanks to Jeff Steinwedel.

*Artist's Guide* Jeff Schwamberger. Editorial management by Steven Young.


# *Let's Get to Know Each Other*

We're working hard to design the kind of computer software you want, and we'd love to hear your comments. So drop us a note. If you have any questions about using GS Paint call us *between 9.30 a.m. and 5.00 p.m. Monday through Friday:*

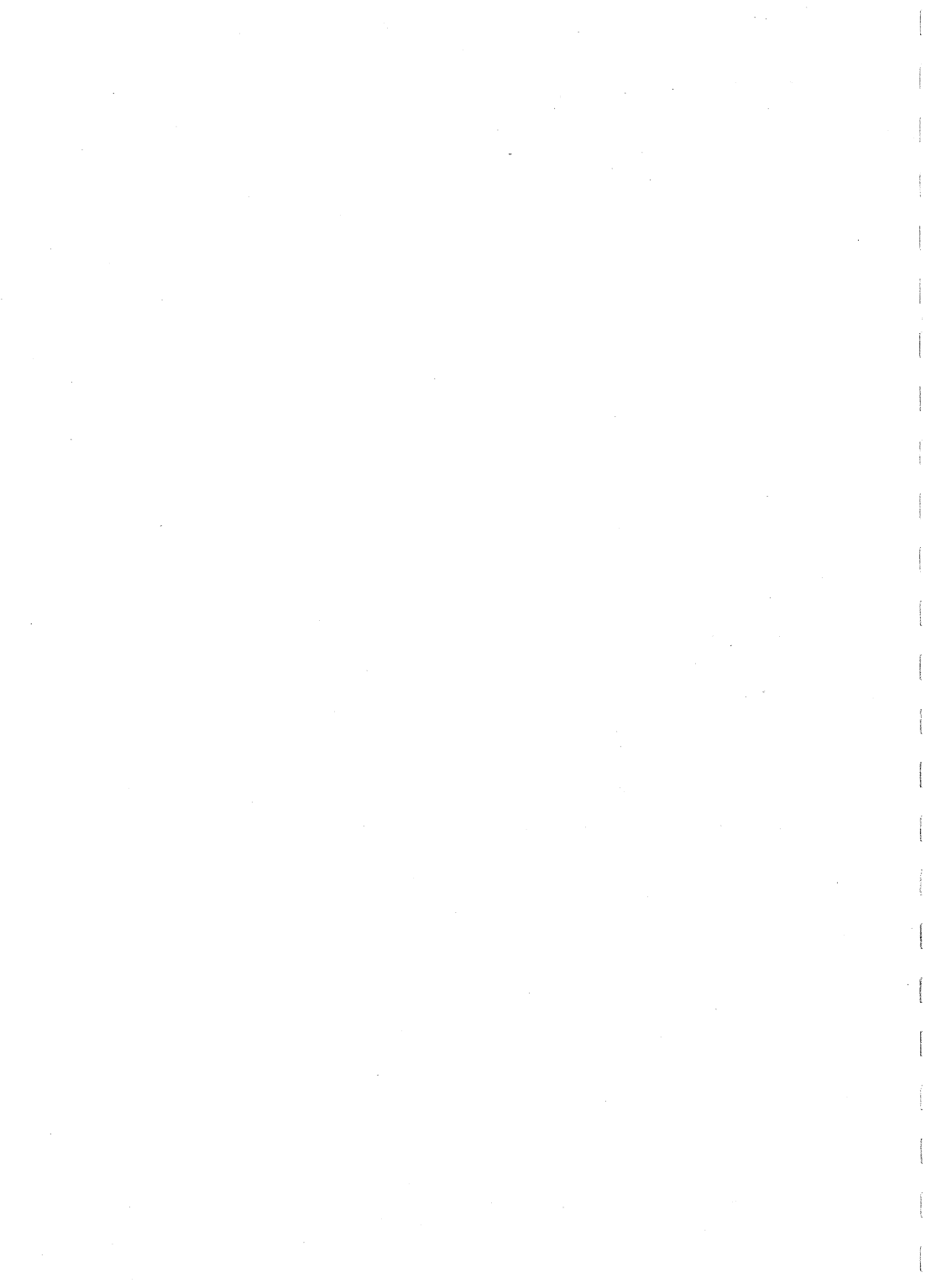<div align="center">

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*Reference* section on page 83.
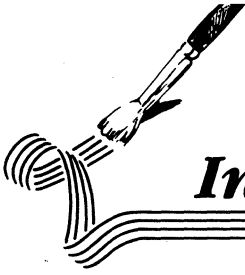
# *Introduction*

*GS Paint* really does have a plus. In fact, it has two of them — color and animation. You can use sixteen colors in a single picture, and you can choose those sixteen from a palette that contains 4096 colors in all. You can also create a series of pictures that show an image changing or moving, and *GS Paint* will animate the series automatically.

You can start using *GS Paint* in no time. The screen represents the easel on which your tools, paints, and canvas are laid out. You use a mouse to paint with, and you need only point to the tools, colors, patterns, and functions you want to use to select them.

*GS Paint* is full of possibilities. There are fifteen tools for you to paint with. You can enlarge sections of a picture to work on the details. You can choose new colors for the palette and save palettes you've created for future use. You can create new patterns any time you want — and there's no limit to the number you can have on the screen. You can mix colors and patterns together. You can add text to a picture in a variety of typefaces, type styles, and type sizes.

You can arrange and rearrange a picture in all sorts of ways. You can reorient images by rotating and flipping them. You can cut and paste images from one part of a picture to another or from one picture to another.

When you finish a *GS Paint* creation, you can of course print it or save it on a disk. You can also use it to illustrate a document created with *GS Write* from Personal Choice Software, or turn it into an animated sequence or slide show.

## *How to Use this Guide*

This guide has four sections.

"A Guided Tour of *Paintworks Plus*" takes you through all the basic features of *Paintworks Plus*. It makes many stops along the way to let you experiment with the program and become familiar with how it works.

"Shortcuts" describes some alternate ways to use many of the functions of *Paintworks Plus*. You'll find that once you're familiar with *Paintworks Plus*, these shortcuts can save you time and effort.

The "Reference" section covers every aspect of *Paintworks Plus*. It's the place to find anything that isn't covered in the guided tour. The "Reference" is organized by the way things appear on the screen: the tool, border, and color/pattern palettes are illustrated and explained, and the menu functions are listed according to the menu they appear on.

The "Glossary" lists and defines special terms used in the guide that you may not be familiar with.

## *What You'll Need*

● A blank disk. It's always best to save the pictures you create on a disk other than the *GS Paint* program disk.

● A printer, if you want to make printed copies of the pictures you create.

● Imagination. What you can create with *GS Paint* is limited only by your invention.

## *Using the Mouse*

This guide uses four terms to designate the different ways you can use the mouse. Here's what the terms mean:

*Click* means position the pointer and then press and quickly release the button on the mouse.

*Double-click* means position the pointer and then press and quickly release the mouse button twice.

*Drag* means position the pointer and hold the mouse button down while you move the mouse. You release the mouse button to choose a menu item or to place an object in a picture.

*Press* means position the pointer and then hold down the mouse button without moving the mouse.

## *The Command Key*

Throughout this guide, keys are referred to by the name printed on them. This key
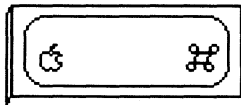


is called the *command* key.

## *A Note on Type Styles*

In this guide, **boldface** type is used for words and messages that appear on the screen. Boldface is also used for words you're supposed to type or keys you're supposed to press. For example,

Press ***delete***

means that you're to press the key that has the word *delete* printed on it.

## *A Note to the Adventuresome*

If you'd prefer to explore *GS Paint* on your own instead of working through the guided tour in the first six chapters, there's no reason not to. *GS Paint* is simple and straightforward and works the way you'd expect it to.

But don't overlook the "Shortcuts" section of this guide (pages 75–82). It describes easy ways to get things done. In the "Reference" section (pages 83–134) you'll find an explanation of every item in every menu—just in case you need help.

# *A Guided Tour*
## *of* GS Paint

### Chapter 1

# A Look Around the Studio

## *Starting* GS Paint

There are two ways to start *GS Paint*. Which one you use depends
on whether your computer is off, or it's on and the launcher is on
the screen. (The launcher shows you a list of the files on the disk in
the disk drive and lets you choose the one you want to start.)

**Note:** Don't use a RAMdisk with *GS Paint*.

### *If the computer is off:*

1.  Turn on the monitor — but *not* the computer.

2.  Put the *GS Paint* disk in the disk drive with the label side up.

3.  Turn on the computer. The launcher starts loading into the
    computer. After a few moments, the launcher appears on the
    screen. It looks like this:

```
┌─────────────────────────────────────┐
│ Select the file you want to open:    │
│                                      │
│ 🖻 / GS Paint /                       │
│                                      │
│ ┌──────────────┐ ⇧  ┌──────────┐    │
│ │ □ Animation   │    │   Disk    │    │
│ │ 🖻 GS Paint    │    ├──────────┤    │
│ │ □ System     │    │   Open    │    │
│ │              │    ├──────────┤    │
│ │              │    │  Close    │    │
│ │              │ ⇩  ├──────────┤    │
│ │              │    │  Cancel   │    │
│ └──────────────┘    └──────────┘    │
└─────────────────────────────────────┘
```
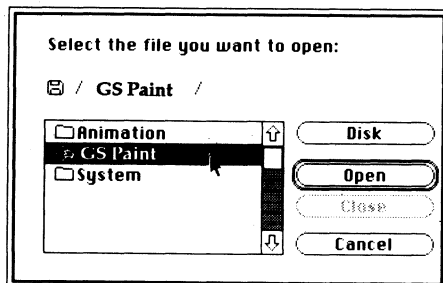
4. Find **GS Paint** on the list. If you don't see it, use the mouse to position the tip of the pointer (the black arrow) on the down arrow (at the bottom of the list). Click the mouse button to scroll the list up until you find **GS Paint.**

5. Position the tip of the pointer on **GS Paint** and click the mouse button. The name is highlighted (it turns from black on white to white on black).

6. Position the pointer on the **Open** button and click the mouse button. *GS Paint* starts loading into the computer automatically.

After a minute or two, the easel appears. It looks like the illustration on page 7.

### *If the launcher is on the screen:*

1. The screen looks something like this:

```
┌─────────────────────────────────────────┐
│  Select the file you want to open:       │
│                                          │
│  🖳 /  GS Paint  /                        │
│  ┌──────────────────┬──┐  ┌───────────┐  │
│  │ ▢Animation       │⇧ │  │   Disk    │  │
│  │ ◈ GS Paint       ├──┤  ├───────────┤  │
│  │ ▢System       🖰 │  │  │   Open    │  │
│  │                  ├──┤  ├───────────┤  │
│  │                  │  │  │   Close   │  │
│  │                  ├──┤  ├───────────┤  │
│  │                  │⇩ │  │  Cancel   │  │
│  └──────────────────┴──┘  └───────────┘  │
└─────────────────────────────────────────┘
```

If the *GS Paint* disk isn't in the drive, eject the disk that's there and replace it with the *GS Paint* disk, label side up. Then position the pointer on the **Disk** button and click the mouse button. In a moment, a new list of names appears on the screen.
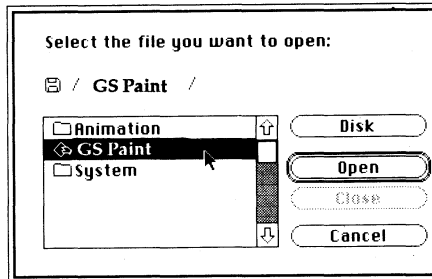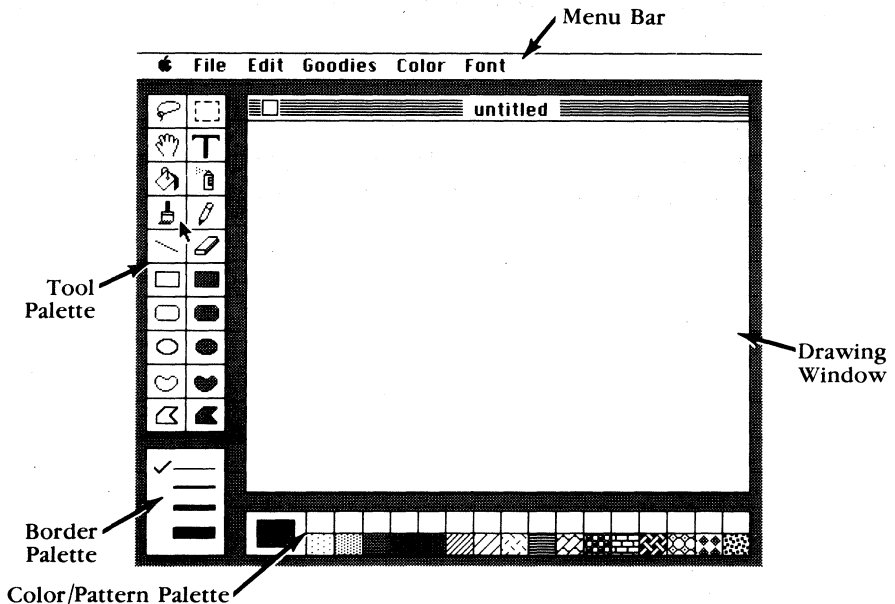
2. Find **GS Paint** on the list. If you don't see it, use the mouse to position the tip of the pointer (the black arrow) on the down arrow (at the bottom of the list). Click the mouse button to scroll the list up until you find **GS Paint.**

3. Position the tip of the pointer on **GS Paint** and click the mouse button. The name is highlighted (it turns from black on white to white on black).

4. Position the pointer on the **Open** button and click the mouse button. *GS Paint* starts loading into the computer automatically.

After a minute or two, the easel appears. It looks like this:

Menu Bar

**⚫ File Edit Goodies Color Font**

untitled

Tool Palette

Drawing Window

Border Palette

Color/Pattern Palette

*GS Paint* is now ready for you to use.

## *The Easel*

The easel has displayed on it everything you'd expect to find in an artist's studio: a blank canvas; a pencil, paintbrush, and other tools; and a palette of colors and patterns. It also has a menu at the top that lets you print and save pictures, make copies of them, mix colors and create patterns, choose fonts, and animate your pictures.

**The Pointer.** Move the mouse around. By moving the mouse, you also move the pointer around the easel. You'll notice that when you move the pointer into the drawing window, it changes to a pencil.

The small picture that's used to represent the pencil — both in the drawing window and in the tool palette — is called an *icon*.

**The Tools.** Whenever the pointer is in the drawing window, it takes a shape that fits the tool you've selected. The illustration on the next page identifies each of the tools and explains its use.

| | |
|---|---|
| Lasso | Marker Box |
| Hand | Text |
| Paint Bucket | Spray Can |
| Paintbrush | Pencil |
| Straight Line | Eraser |
| Hollow Rectangle | Filled Rectangle |
| Hollow Rounded Rectangle | Filled Rounded Rectangle |
| Hollow Oval | Filled Oval |
| Hollow Free-form Shapes | Filled Free-form Shapes |
| Hollow Polygon | Filled Polygon |

**Lasso.** Select an image and lift it off its background to move, copy, or cut it.

**Marker Box.** Select an area along with its background to move, copy, or cut it.

**Hand.** Move a drawing around in the window.

**Text.** Activate the keyboard so you can add text to a picture.

**Paint Bucket.** Fill outlined or solid areas with a color or pattern.

**Spray Can.** Spray a color or pattern.

**Paintbrush.** Paint with a color or pattern in any of 32 brush shapes.

**Pencil.** Draw a thin line in a color or pattern.

**Straight Line.** Draw a straight line; its color (or pattern) and width match the line selected on the border palette.

**Eraser.** Erase whatever you drag it over.

**Hollow Rectangle.** Draw the outline of a rectangle or square.

**Filled Rectangle.** Draw a rectangle or square filled with a color or pattern.

**Hollow Rounded Rectangle.** Draw the outline of a rectangle or square with rounded corners.

**Filled Rounded Rectangle.** Draw a rounded rectangle or square filled with a color or pattern.

**Hollow Oval.** Draw the outline of an oval or circle.

**Filled Oval.** Draw an oval or circle filled with a color or pattern.

**Hollow Free-form Shapes.** Draw a closed outline of any shape.

**Filled Free-form Shapes.** Draw any closed shape filled with a color or pattern.

**Hollow Polygon.** Draw the outline of a polygon.

**Filled Polygon.** Draw a polygon filled with a color or pattern.

All hollow shapes match the color (or pattern) and width of the line selected on the border palette.

All filled shapes are filled with the selected color (or pattern) and have an outline matching the color (or pattern) and the width of the line selected on the border palette.

When you start *GS Paint* the pencil is always selected. The icon of the tool that's selected in highlighted — it's white on black, rather than black on white as all the other tools are.

Here's how you select a tool:

Move the pointer so the tip of the arrow is in the box with the paintbrush.



Click the mouse button.



The icon is highlighted. The paintbrush is now selected.

**The Border Palette.** The border palette has four different line widths you can choose from. The thinnest line is the same width as the line you draw with the pencil. The other lines are two, three, and four times as wide. The line width with the check beside it is the one that's selected. To select a line width, you point to the line you want and click the mouse button.
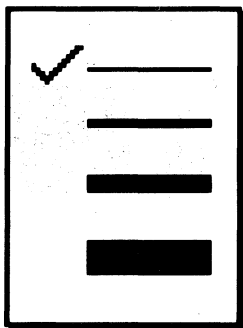


The border palette controls the width of the straight line tool and the width of the outline of all the shapes (hollow and filled rectangles, hollow and filled ovals, hollow and filled free-form shapes, and hollow and filled polygons). It doesn't affect the paintbrush or the pencil in any way.

You can change the border lines to a color or pattern. How to do so is explained under "Border Palette" in the "Shortcuts" section.

**The Color/Pattern Palette.** The color/pattern palette contains the colors and the patterns you have to choose from in creating a picture.



Selected Color or Pattern

Color of the Background
Color or Pattern of Borders
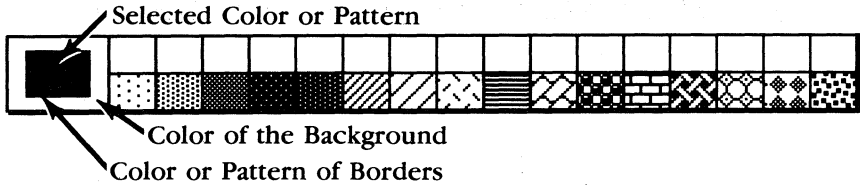
The color in the large box at the left end of the palette contains the color or pattern that's currently selected. You select a color or pattern by pointing to it and clicking the mouse button.

You can choose different colors and create new patterns for the palette. "Changing Patterns" and "Choosing Colors for the Palette" in Chapter 6, "Advanced Techniques," explain how.

# A Look Around the Studio

**The Drawing Window.** The drawing window frames the easel's working area.

Close Box                              Title Bar

```
untitled
```
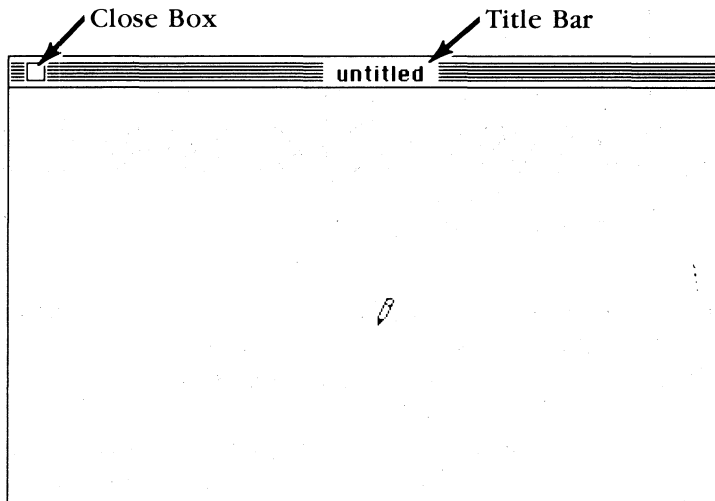
You can draw only on the part of the page that's in the drawing window. But the entire page is more than three times the size of the drawing window, and you can use all of it by moving it behind the drawing window to expose the parts that are hidden. "Moving the Picture in the Drawing Window" in Chapter 5, "Handling a Picture," explains how to go about it.

**Show Page** (listed under the **Goodies** menu in the "Reference" section) explains how to see the entire page all at once. **Full Screen** (listed under the same menu) explains how to remove the drawing window, menu bar, and the palettes from the screen so you can use the entire screen for the picture.
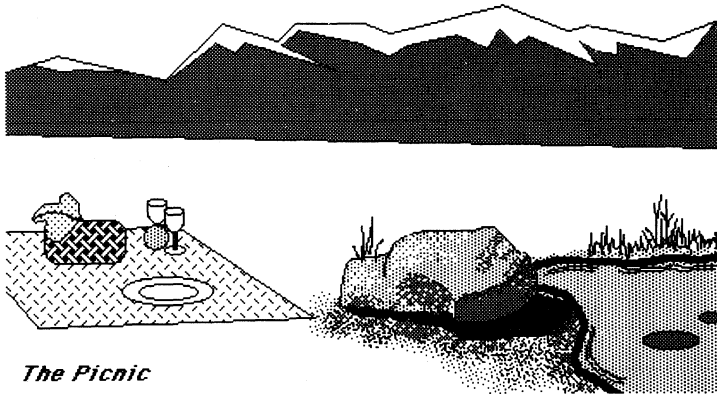
# Chapter 2

# At the Easel

In this chapter you'll have the opportunity to experiment with the basic tools on the easel so that you can discover for yourself how simple they are to use. You'll also find out how to correct a mistake if you happen to make one.

The best way to learn how *GS Paint* works is to paint a picture. The subject is a picnic by a pond.



*The Picnic*

Don't feel you need to follow exactly the pictures used as examples in the next few chapters. Their purpose is only to demonstrte what *GS Paint* can do. Follow them however much or little you like.

**Note:** If you want to stop at any point in this chapter and save the picture you've been working on, the beginning of Chapter 3, "Saving, Getting, and Printing Your Pictures," explains how to save a picture.

## *Freehand Drawing*

**The Pencil.** If the pencil isn't selected, move the pointer to the pencil icon and click the mouse button to select it.

To draw with the pencil, you move the pointer to the drawing window, then hold down the mouse button as you move the mouse. The pencil always draws in the color or pattern selected.
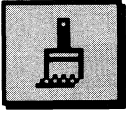
If black isn't selected, select it. Try drawing the rock and the grass along the edge of the pond, as shown below. If your first attempt doesn't satisfy you, read on — using the eraser is explained next.
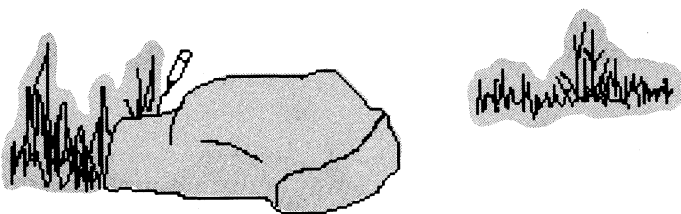
**The Eraser.** Select the eraser.

To erase, you hold the mouse button down as you move the mouse. Whatever the eraser passes over disappears:

 **The Paintbrush.** The paintbrush works much as the pencil does. To use it, you hold down the mouse button while you move the mouse. The paintbrush always paints in the color or pattern selected.

The next step in the example picture is to use the paintbrush to add a shadow by the rock, the outline of a pond, and ripples on the pond.
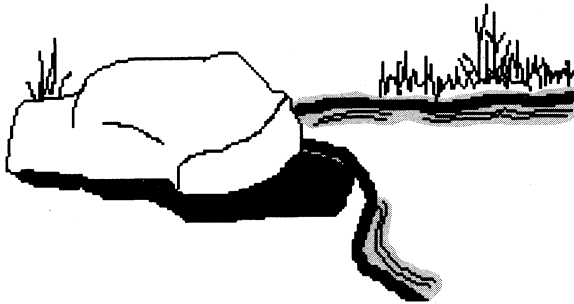


Select the paintbrush.

Unlike the pencil, the paintbrush comes in many different shapes. The shapes you can choose from are displayed in the Brush Shape dialog box.

```
  É   File   Edit   Goodies   Color   Font
                    Grid
   ↻    [⌁]   ▤□▤   FatBits        untitled ▤
                    Show Page
   ♨    T      Full Screen
   ◊    ▯      Brush Shape ...
   ♨    ⌀      Brush Mirrors ...
   ＼    ◸      Edit Pattern ...
   □    ▣      Compress ...
   ◯    ◉      Show ...
   ◯    ◉
   ♡    ♥
```
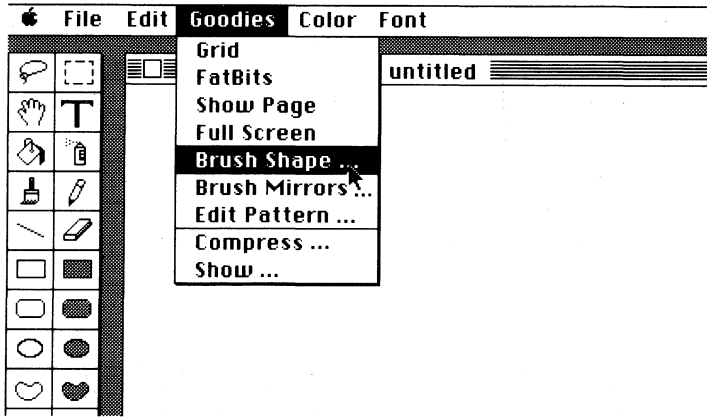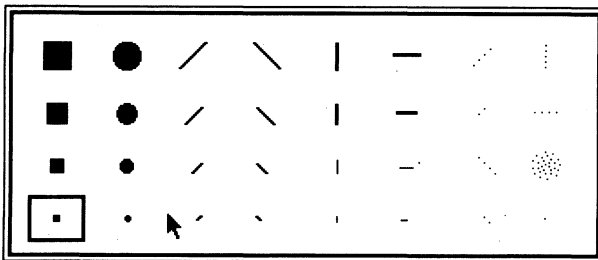
To display the Brush Shape dialog box, choose **Brush Shape** from
the **Goodies** menu. To do that, position the tip of the pointer
anywhere on the word **Goodies** in the menu bar. Hold down the
mouse button, drag the pointer down until **Brush Shape** is
highlighted, then release the mouse button. **Brush Shape** flickers,
then the Brush Shape dialog box opens.



The brush shape with the box around it is the one selected. To
select a brush shape, you point to it and click the mouse button.
The Brush Shape dialog box then disappears automatically.

For the shadow by the rock, select the smallest round shape.
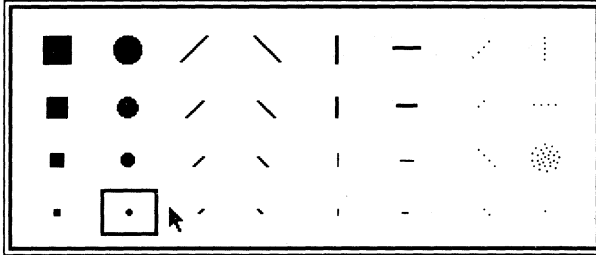


When you've selected it, add the shadow.

Next you're going to use the brush to paint the edge of the pond, but before you do, you need to select a different color. Point to dark blue in the palette at the bottom of the screen, and click the mouse button. The large square at the left end of the palette changes to dark blue to indicate that it's the color you're working with.

Now paint the edge of the pond.

Next, change the brush shape to the two-dot diagonal shape.
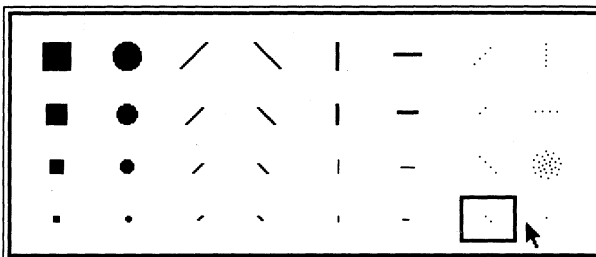


Choose light blue from the palette. Paint the ripples around the edge of the pond.

# At the Easel

**Undo.** Undo cancels the last change you made to a picture.

|   File | **Edit** | Goodies | Color | Font |
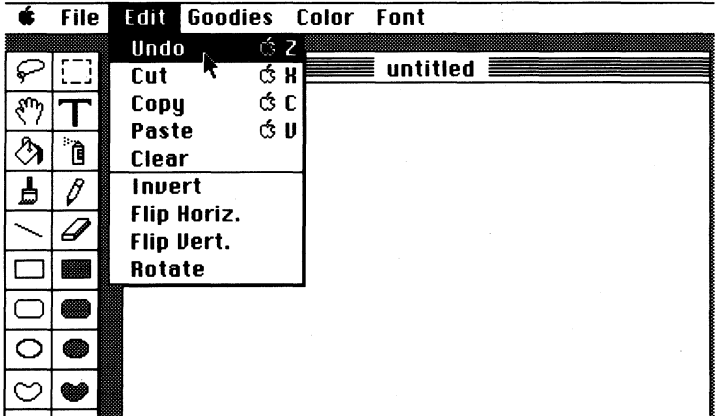


To use Undo, you pull down the **Edit** menu and choose **Undo**.

Choose **Undo** and watch what happens to the picture in the drawing window.
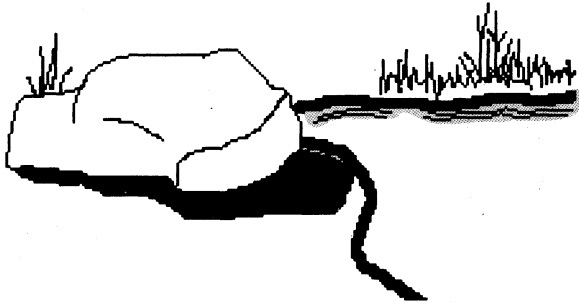


The last ripples you drew have been erased. To put back what Undo has just erased, choose **Undo** from the menu again.

Not everything you do can be undone. In general, Undo affects only changes you've made to a picture—anything you do using a tool or a function on the **Edit** menu.

You can't use Undo to reverse a change you've made to a tool (usually because it's easy enough for you to reverse the change yourself). For example, you can't undo the brush shape you've selected, although you can undo the last change you made to a picture using that brush shape.

You can't undo anything you do using a command on the **File** menu. For example, it's impossible to "unsave" a picture once you've saved it.

**The Spray Can.** You use the spray can the same way you do the paintbrush and the pencil—you hold down the mouse button while you move the mouse.

The best way to understand how the spray can works is to try this experiment:

Select the spray can and draw a line across the top of the drawing window. You'll notice that even though you held the mouse button down continuously, the color appears in a "spray."

# At the Easel

Select the paintbrush and change its shape to the spray pattern.
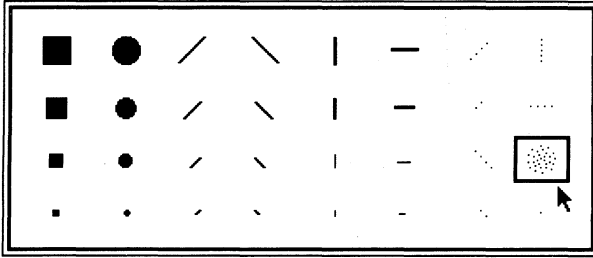
Draw a second line.

You'll notice that this time, even though the shape of the brush looks just like the shape of the spray can, the results are quite different.

Erase both lines.

Select the spray can again to add the shading beside the rock. Use it first with dark gray, then with light gray. The longer you hold the can in one place, the more color it will spray there.

**The Paint Bucket.** You use the paint bucket to fill in an area with a color or a pattern. The area you want to fill has to be completely enclosed by an outline or bordered by areas of other colors (or a combination of the tw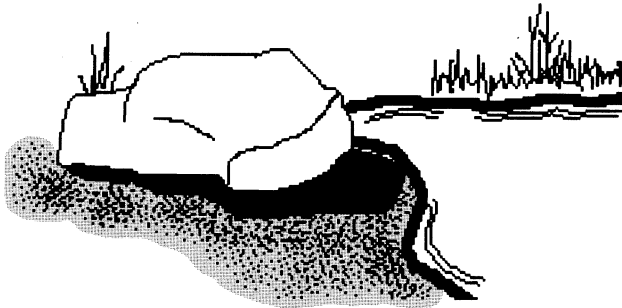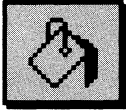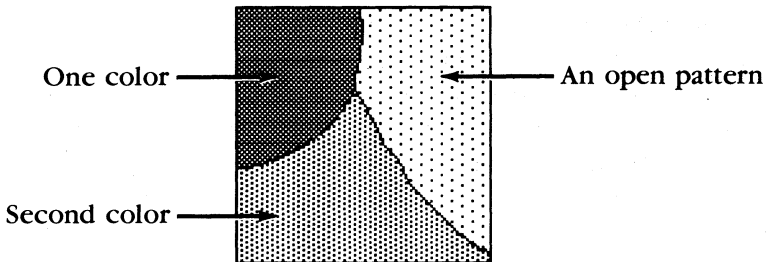o). If there are any gaps around the area, the color or pattern you're filling with will "leak" and could fill the entire background.

If you want to fill an area with two or more colors already in it, you have to fill the area occupied by each color separately.

One color ────── ←────── An open pattern

Second color ──────

Filling a patterned area is different from filling an area that's a solid color. Every continuous line in a pattern is a border. You can fill the patterned area only if the pattern is "open" — that is, only if there are gaps in the lines that will allow the color you're filling with to leak through from one part of the pattern to another.

To fill an area, you choose the color or pattern you want and select the paint bucket. Then you move the paint bucket to the area you want to fill and click the mouse button.

Try filling the rock with light gray. If the color fills the background, it means there's a gap in the outline of the rock. Select **Undo**, find the gap and patch it, and try filling the rock again. If only one part of the rock fills, the rock is divided into more than one area. Fill the other areas as you did the first.
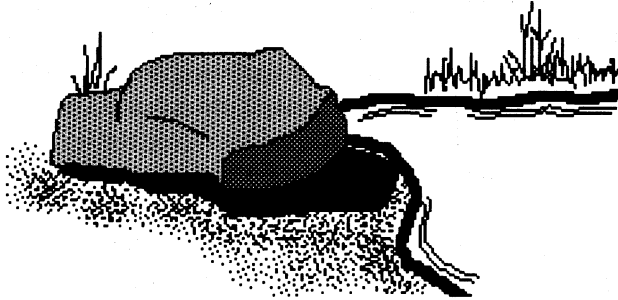
**Colors and Patterns.** Any color or pattern you select is used by the pencil, the paintbrush, the spray can, the paint bucket, and all of the filled shapes. Only the inside of a filled shape displays the color or pattern; the outline of the shape is determined by the line selected on the border palette. The color or pattern selected has no effect on the appearance of the straight line or any of the hollow shapes.

**Note:** You can change the border lines to a color or pattern (see "Border Palette" in the "Shortcuts" section).

The color or pattern you're using paints over all the other colors or patterns you've used on the screen before. You can't paint, draw, or spray a background behind an image. (You can, however, move an image over a background; "The Lasso" in Chapter 5, "Handling a Picture," explains how.)

Try adding brown around the edge of the lake. Experiment with different brush shapes.
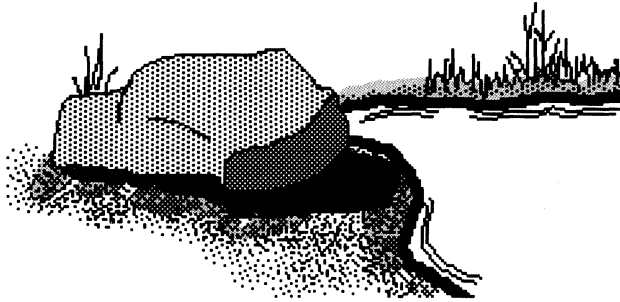
Try spraying the rock with different patterns.
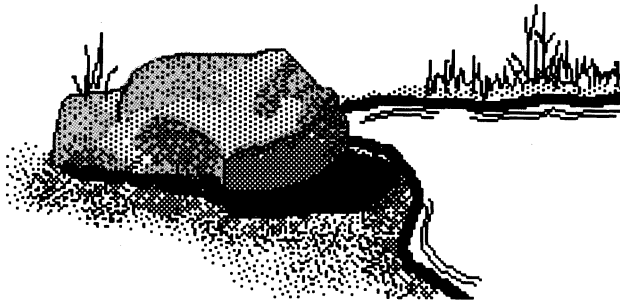
## Adding Words
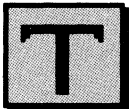
**Text.** You can add text anywhere in a picture.

Add a title to the picture. Start by selecting the text icon. Notice that when you move the pointer to the drawing window, it looks like an **I**.

Move the **I** to the corner of the picture and click. Move the pointer away and you'll see a blinking vertical line. It's called a *cursor*. It shows you where the next letter you type is going to appear.

Type **The Picnic**. If you make a mistake, press the ***delete*** key to erase it. You can also use Undo to erase everything you've typed — but only if you haven't clicked the mouse button.

You might end up with something like this:
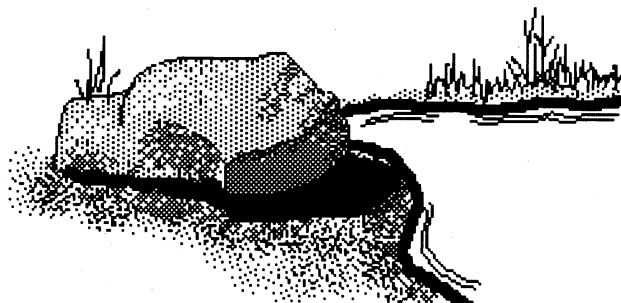


**The Picnic**

You can change the way text looks by changing the font (or typeface), the style of the letters, and their size.

Helvetica

New York

**New York Bold**

New York Outline

Helvetica 9 point

# Helvetica 24 point

You can change text that's already in the picture if you haven't pressed the *enter* key or clicked the mouse button since you typed it. Otherwise, you have to erase the text you want to change and retype it.

To change the font, style, or size of the text, choose **Choose Font** from the **Font** menu.
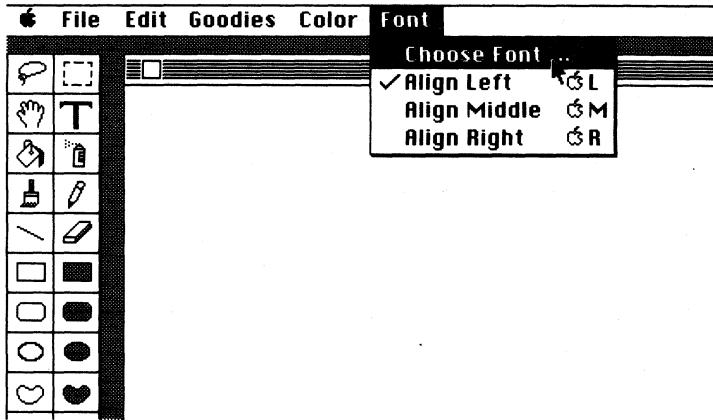
When the Choose Font dialog box appears, you can select the font, style, and size you want.
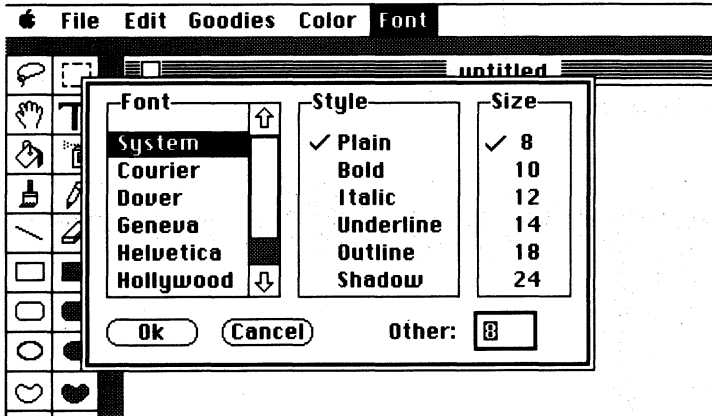


To change the style that **The Picnic** appears in, choose **Italic**, then click the **OK** button.

Your picture should look something like this:

# Chapter 3

## Saving, Getting, and Printing Your Pictures

### Saving a Picture

You can save a picture anytime you want. Saving a picture is necessary because the image of the picture on the screen lasts only as long as the computer is on. If you turn the computer off without saving the picture, you'll lose it. When you save a picture, a copy of it is stored on a disk (the original remains on the screen until you open another picture or quit). The copy stays on the disk until you erase or replace it. Later on, you can have the computer get the picture from the disk and redisplay it on the screen.

To save a picture, first eject the *GS Paint* disk from the drive and replace it with another initialized disk. Or if you have a second disk drive, put another initialized disk in it. *GS Paint* takes up most of the space on the program disk, so it's best to save pictures on a different disk. (If you need instructions on how to initialize a disk, see your Apple IIGS owner's guide.)

Next, choose **Save** from the **File** menu.

A dialog box appears.

| ♠ | **File** | Edit | Goodies | Color | Font |

```
☐ / Data Disk /
Free : 40/800Kb                          ⟨  Disk  ⟩
                                         ⟨ New Folder ⟩
                                         ⟨  Open  ⟩
                                         ⟨  Close  ⟩
Save As :                                ⟨  Save  ⟩
Untitled                                 ⟨ Cancel ⟩
● Paint Format      ○ Screen Format
```
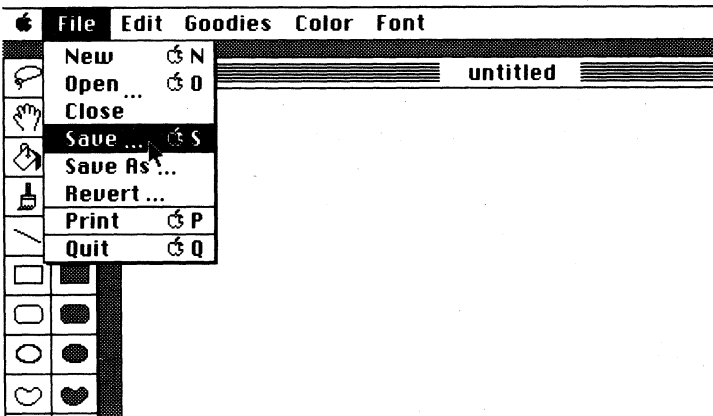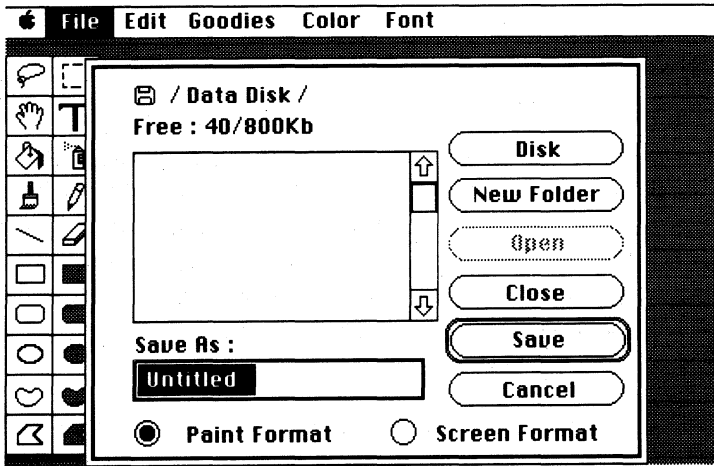
The dialog box gives you the option of saving a picture in either **Paint Format** (which is preselected) or **Screen Format**. The difference between the two is one of size. The paint format saves the entire page a picture is on, while the screen format saves only the part of the picture visible in the drawing window. You can save more pictures on a disk in screen format than you can in paint format.

In the space under **Save As**, you type a name for the picture you're saving. For the picnic scene, type **Picnic**.

You can't undo **Save**. If you decide not to save a picture, you click the **Cancel** button in the Save dialog box to return to the drawing window.

Click the **Save** button.

When the picture has been saved, the name you've given it appears in the title bar at the top of the drawing window.

## *Printing a Picture*

To print a picture you choose **Print** from the **File** menu. You can continue to use *GS Paint* while a picture is being printed.

## *Closing a Picture*

To remove a picture from the easel, you *close* the drawing window. Closing the drawing window doesn't automatically save the picture that's there. If you want to keep the picture you have to save it first.

You close the drawing window simply by choosing **Close** from the **File** menu. If you haven't made changes to the picture since you last saved it, the window closes immediately.

But if you've changed the picture in some way, the process is different.

Make a change to the picture in the drawing window. Choose **Close**. A dialog box appears that asks if you want to save the changes you've made.

```
 🍎  File  Edit  Goodies  Color  Font
 ╭───┬───╮ ┌──────────────────── untitled ════════
 │ ✐ │ ⌐┐│ │▤□
 │ ⌐─┴───┤
 │ ⌐ᵐ│ T │ ┌──────────────────────────────────┐
 ├───┼───┤ │                                  │
 │ ◇ │ ᵇ │ │  Save changes before closing?    │
 ├───┼───┤ │                                  │
 │ 🔨│ ⫽ │ │   ╭─────────╮                    │
 ├───┼───┤ │   │   Yes   │     ▶              │
 │ ╲ │ ⟋ │ │   ╰─────────╯                    │
 ├───┼───┤ │                                  │
 │ □ │ ■ │ │   ╭─────────╮     ╭─────────╮    │
 ├───┼───┤ │   │   No    │     │ Cancel  │    │
 │ ⬭ │ ● │ │   ╰─────────╯     ╰─────────╯    │
 ├───┼───┤ └──────────────────────────────────┘
 │ ○ │ ● │
 ├───┼───┤
 │ ♡ │ ♥ │
 ╰───┴───╯
```
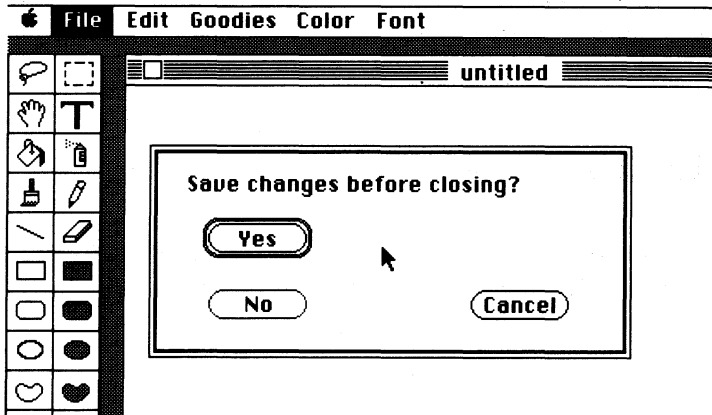
If you click **Yes**, the Save dialog box appears.

If you click **Cancel**, the drawing window reappears just as it was before you chose **Close**.

Click **No**, since you don't want this version of the picture. The drawing window disappears from the easel, and the picture isn't saved.

## *Opening a Picture*

To get back from a disk a picture you've saved, you *open* the picture.

Choose **Open** from the **File** menu. A dialog box appears.

```
  File  Edit  Goodies  Color  Font
```

Load File :

▣ / Data Disk /

⇧      Disk

Open

Close

⇩      Cancel
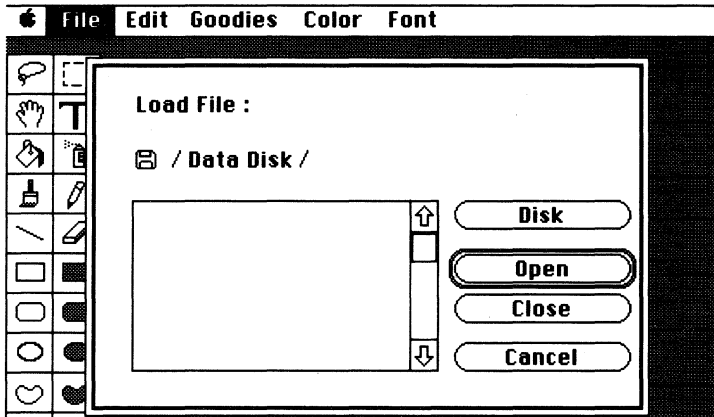
On the left half of the screen is a list of the names of the pictures
and other files on the disk. The list is called a *catalog*. If the catalog
has more names listed on it than can fit in the window, you can
scroll the list up and down to see all the names.

Choose **Picnic** from the list and click **Open**. The picture reappears
on the easel.

# Chapter 4

# Tools for Lines and Shapes

## *Drawing Straight Lines*
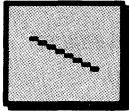
**The Straight Line.** Drawing a straight line with the pencil is a challenge. But you can draw straight lines easily with the straight line tool.

Click the straight line icon. When you move the pointer to the drawing window, it takes the shape of cross hairs.

Use the straight line to draw the horizon and the blanket, as shown below. Position the pointer where the horizon starts, then hold down the mouse button. The straight line works something like a rubber band. It stretches and contracts as you move the pointer away from or toward the starting point. You'll notice the line is unaffected by the color or pattern selected; the color and width of the line is determined by the border palette.
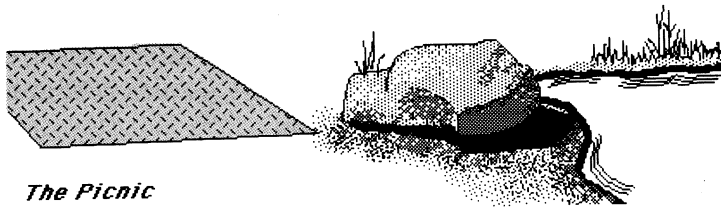


*The Picnic*

When you have the line positioned where you want it, release the mouse button. If you don't like the placement of the line, use Undo to erase it.

# Tools for Lines and Shapes

Use straight lines to draw the blanket, then fill it with the pattern that appears in the illustration. Fill the pattern with any color you want.

## *Drawing Shapes*

*GS Paint* has special tools for drawing rectangles, rounded rectanges, ovals, free-form shapes, and polygons, all either hollow or filled.
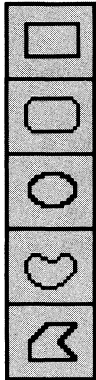
**Hollow Shapes.** A hollow shape is just an outline. Whatever is behind the shape shows through the area inside the outline.
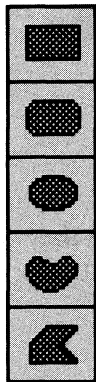
**Filled Shapes.** A filled shape is an outline filled with a color or pattern. The part of the picture behind the shape doesn't show through.

Remember that the color of outlines of both filled and hollow shapes is determined by the border palette, not the color or pattern selected.
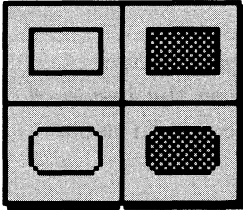


**Rectangles and Rounded Rectangles.**
Rectangles and rounded rectangles (both hollow and filled) work the same way.

Select the hollow rectangle. Position the center of the cross hairs where the upper left corner of the picnic basket is in the picture.
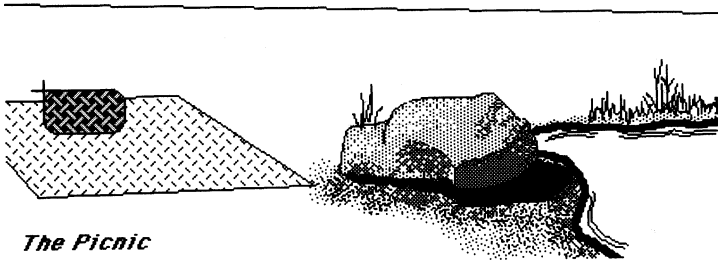


*The Picnic*

When you have the pointer positioned, hold down the mouse button and drag the mouse toward the lower right. A rectangle appears that expands and contracts as you move the pointer. When it looks like it's about the right size, release the mouse button. The rectangle remains on the screen.

Because you've used the hollow rectangle, the blanket shows through the rectangle. You could erase everything on the inside of the rectangle, but an easier way to solve the problem is to use a filled shape.

First select **Undo** to erase the hollow rectangle. Then select the filled rounded rectangle, and pick the wicker pattern from the palette. Once again position the cross hairs where the upper left corner of the picnic basket is. Hold down the mouse button and move the mouse. This time a rectangle with rounded corners appears. When it looks like it's about the right size, release the mouse button. Immediately, the rounded rectangle is filled with the wicker pattern.

You'll notice the wicker pattern isn't transparent — the color of the blanket doesn't show through the white spaces in the pattern. None of the other patterns is transparent either. But you can make a pattern *look* transparent by filling the white spaces with the color of the background (see "Changing Patterns" in Chapter 6, "Advanced Techniques").
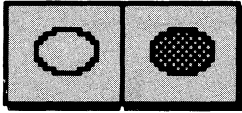
**Ovals.** Drawing an oval is similar to drawing a rectangle. The major difference is that it takes a bit more practice to position an oval accurately.

Try this experiment:

Select the hollow oval. The pointer again becomes a set of cross hairs. Position the cross hairs anywhere in the drawing window. Hold down the mouse button and drag the mouse. The outline of an oval appears, stretching and contracting as you move the mouse.
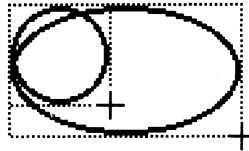
You'll notice that the upper left edge of the oval doesn't stay in one place as the upper left corner of a rectangle does. That's because the position of the oval is determined by an invisible rectangle that would look like the illustration above if you could see it.

The upper left corner of the invisible rectangle does remain in the same place, but as the rectangle gets bigger, the upper left edge of the oval moves away from the upper left corner of the rectangle.

With that in mind, first undo the experimental oval, then try to draw the plate that's on the blanket in the following picture. Select the filled oval, and choose white from the palette. Position the cross hairs for the outside edge of the plate, then drag. If you don't like the result, undo it. When you're satisfied with the outside edge, draw the inner rim.

# Tools for Lines and Shapes
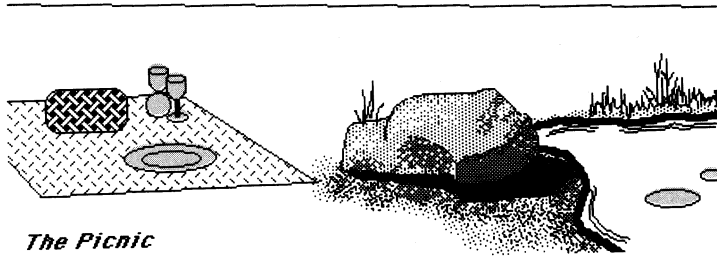


The Picnic

When you've finished the plate, use the oval to draw an orange.
Then use the oval to draw the lily pads using light and dark green.

The wine goblet is made of three ovals. Select white
again, then draw a narrow oval.

Next, draw a second oval even with the top of the first.

Draw a third oval about the same size for the base.

Finally, select the double-width line from the
border palette and join the cup to the base
using the straight line tool.
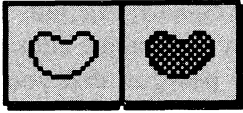
**Free-form Shapes.** With the free-form shape you can draw a figure with any imaginable outline. The only constraint that the free-form shape puts on what you draw is that it must be closed. If you don't close the figure, a straight line is drawn automatically between the two loose ends of the outline.

The free-form shape works like the pencil or paintbrush. After you've selected the free-form shape, you position the pointer where you want to begin drawing. Then you hold down the mouse button and draw the outline you want. When you've completed it, you release the mouse button.

Use the free-form shape to draw the napkin that's draped over the side of the picnic basket, as shown in the drawing below. First select the single-width line from the border palette. Then choose the filled free-form shape and a pattern that appeals to you. Position the cross hairs and start drawing. When you release the mouse button, the shape is filled in with the pattern you've chosen. If you don't like the result, undo it and try again.
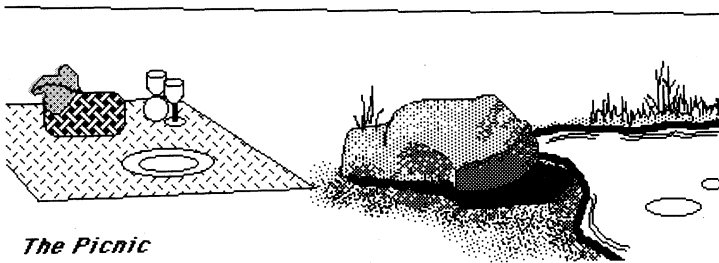
*The Picnic*

# Tools for Lines and Shapes

**Polygons.** A polygon is an irregularly shaped, closed figure made up entirely of straight lines. Like the free-form shapes, any polygon that you draw closes itself automatically if you don't connect the end point with the beginning.

Using the polygon drawing tool is like using an endless supply of straight lines. After you've selected it, you position the cross hairs where you want the figure to start. You then click the mouse button to anchor one end of the first line. The line stretches and contracts as you move the mouse. When you have the line positioned where you want it, you click the mouse button again to anchor the other end of the line; at the same time you anchor one end of the second line. You repeat the process until you've completed the figure you want. Then double-click the mouse button or click anywhere outside the drawing window. If the beginning of the first line and the end of the last one don't meet, a line is drawn automatically to connect the two.

To see how versatile the polygon is, use it to draw the snowcaps on the mountains. Select the hollow polygon and position the cross hairs where you'd like to begin. Continue drawing lines until you've arrived back where you started. Then double-click the mouse button.

The Picnic

Finish the picture by filling in the areas that are blank with colors or patterns that appeal to you. Before you add something you're not sure about, you might want to save the picture first in case you don't like the results. You can also save different versions of the picture under different names. See "Save As" in the "Reference" section for instructions.

**Chapter 5**

# Handling a Picture

It's much easier to compose a picture if you can move parts of it around, make copies of images that you want to use more than once, change the shape or orientation of an image, and so on. You can do all those things with *GS Paint,* but only if you've first selected the part of the picture you want to work with. There are two tools you can use to select images already in the drawing window — the marker box and the lasso.

## Selecting an Area
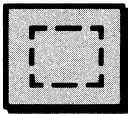
**The Marker Box** lets you select a rectangular area of a picture and then cut it, copy it, move it, change its orientation, save it, move it from one picture to another, or stretch or shrink it.

You position a marker box the same way you position a rectangle: you move the cross hairs to the upper left corner of the area you want to mark. You then hold down the mouse button and drag the box down and to the right until it outlines the entire area you want to select. When you release the mouse button, the dotted outline of the box appears to "race" around the selected area to let you know it's the active part of the screen. The area will remain selected until you click the mouse button somewhere outside the selected area.

In the next experiment, you'll first select an image with the marker box, then use the marker box to move the image around the picture.

# Handling a Picture

Open the picture named **Teacup** (the **Open** command is on the
**File** menu). If the name doesn't appear on the part of the catalog in
the window, scroll the catalog up until **Teacup** appears.

When the picture appears, select the marker box from the tool
palette. Position the cross hairs a little above and a little to the left
of the top teacup, as shown below.
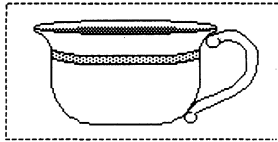


Drag the mouse until the box surrounds the teacup. Release the
mouse button. The teacup is now selected.

## *Moving a Selected Area*

You can move the area you've selected by positioning the pointer
inside the selected area, then dragging it.

Move the pointer inside the selected area. It changes from the cross
hairs to the arrow. Hold down the mouse button and move the
pointer slowly. The box and everything in it moves with the pointer.

Move the teacup to a new position and release the mouse button.
The teacup remains selected, and you can adjust its position until
you've placed it exactly where you want it. When you're satisfied,
click the mouse button. The marker box disappears.

## Using the Lasso

**The Lasso** has two features that distinguish it from the marker box. First, the lasso can take any shape you want it to — you're not limited to selecting a rectangular area with it. You can use the lasso to select a part of an image, like the one shown in the picture below, that would be impossible to select with the marker box.
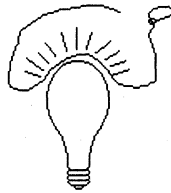
The lasso works in much the same way as the free-form shapes do: you draw a line with it by holding down the mouse button while you move the pointer, and when you release the mouse button, the beginning and end of the line are automatically connected.

This experiment will help you understand how the lasso is different from the marker box:

First use the marker box to select the handle of the cup in the lower half of the picture. When you've selected it, move it with the pointer and try to attach it to the teacup. You'll notice it doesn't work. The marker box moves not only the handle, but the background around it, too. Choose **Undo** to return the handle to where it was.

Select the lasso and use it to draw a line around the handle, as shown in the following illustration. When you release the mouse button, the dotted outline that appears follows not the outline that you drew, but the outline of the handle.
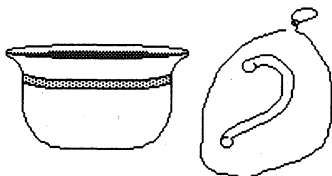
Move the tip of the lasso inside the outline. When the lasso changes to the arrow, hold down the mouse button and drag the handle to the teacup. Because the lasso has selected only the handle itself, you can position the handle so it touches the teacup without erasing any part of it. Release the button. The handle remains selected if you need to adjust its position. When you have the handle positioned as you want it, click anywhere outside the outline and the handle is permanently attached to the teacup.

The second difference between the lasso and the marker box is that you can use the lasso to lift an image off the background.

"Background" has a special meaning. It means only the true background color — not just any color that happens to be in the background behind an image. The true background color is the color surrounding the box on the palette where the selected color or pattern appears.
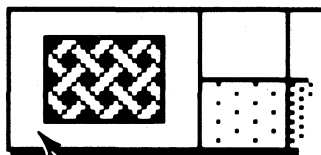


True background color

This experiment will help you understand:

Open the picture named **Shapes**.

When it appears, use the marker box to select the circle. Then move the circle to the left half of the screen. You'll notice that the selected area contains the background color as well as the circle.

Use **Undo**, then use the lasso to select the circle. Move the circle to the left half of the screen again. This time you can move the circle without the background. Use **Undo** again to move the circle back to its original position.

Use the lasso to draw an outline around the triangle. This time the outline that appears marks the exact area the lasso traced — not just the triangle itself.

Now move the triangle. The color behind the triangle moves along with it, revealing the true background color. Use **Undo** again.

For the next part of the experiment, you need to change the background color. To do so, point to dark green on the color palette, hold down the *option* key, and click. The background behind the selected color square changes to dark green to indicate that it's now the true background color.

Use the lasso to select the triangle. Because dark green is now the true background color, this time the dotted outline matches the outline of the triangle exactly. Move the triangle to the right half of the screen. You can do so without moving the background color along with it. Use **Undo** to return the triangle to its original position.

Next, use the lasso to select the circle. White is no longer the true background color, so the outline that appears marks the exact area the lasso traced — not just the circle.

Now move the circle. The color behind the circle moves along with it, revealing the true background color.

Try the same experiment using a free-form shape and other background colors. See what happens when an image straddles the boundary between the background color and a large area filled with color.

When you're finished, change the true background color back to white.

## Copying an Image

You can make a copy of anything you select with either the lasso or the marker box.

Open the picture named **Pumpkin**. When the picture appears, use either the lasso or the marker box to select the pumpkin.

To make a copy of the pumpkin, choose **Copy** from the **Edit** menu. **Copy** flickers and then the **Edit** menu closes. A copy of the pumpkin has been made on the *Clipboard*. The Clipboard is a separate page that's always available to hold images you cut out or copy. The copy of the pumpkin stays there until you copy or cut out something else.

To add a copy of the pumpkin to your picture, choose **Paste** from the **Edit** menu. **Paste** flickers, and then a copy of the pumpkin appears in the center of the screen. The copy is automatically selected; you can move it by positioning the pointer inside the selected area, holding down the mouse button, and dragging the pumpkin to wherever you want to place it. When you have it positioned, click the mouse button anywhere outside the selected area to paste the copy in its new location.

For another copy repeat the same process.

You can also make a copy of a selected object by holding down the *command* key while you move the object. Paste the copy in a new location by positioning it, then clicking the mouse button anywhere outside the selected area.

## *Inverting a Selected Area*

You can select an area of a picture with the marker box and then invert it, which changes every color to its palette complement. A color's palette complement is different from its true complementary color because it's determined entirely by the color's position in the palette and the other colors in the palette. The complement of, say, the fourth color from the left end of the palette is the fourth color from the right end of the palette:
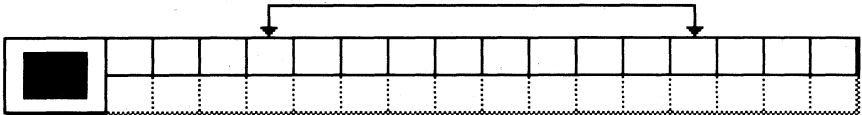
The complement of the third color from the left end is the third color from the right end, and so on.

To invert an image, first select it with the marker box (you can't use the lasso for this procedure). Choose **Invert** from the **Edit** menu. Try this with the pumpkin and watch what happens.

## *Flipping a Selected Area Horizontally*

You can change a part of a picture to its mirror image by selecting it, then flipping it horizontally.

Open the picture named **Hand.**

When the picture appears, select the hand with the marker box (you can't use the lasso for this procedure). Try to make the marker box fit the object as closely as possible. Choose **Flip Horiz.** from the **Edit** menu. After a moment, the hand's mirror image appears. If you fitted the marker box to the object carefully, the hand will not be repositioned in the picture, just reoriented.

## *Flipping a Selected Area Vertically*

You can also flip a selected area from top to bottom.

Select the hand with the marker box if it isn't still selected (again, you can't use the lasso for this procedure). Try to make the marker box fit as snugly as possible. Choose **Flip Vert.** from the **Edit** menu.

After the selected area has been flipped, everything that was on the right side of the marker box is still on the right, and everything that was on the left is still on the left. But everything that was on top is now on the bottom, and vice versa. And once again, if the fit was snug, the hand has been reoriented without being repositioned.

## *Rotating a Selected Area*

In addition to flipping images horizontally and vertically, you can select an area and rotate it a quarter turn counterclockwise.

Select the hand with the marker box again, if necessary (you can't use the lasso with **Rotate**). Since the entire area inside the marker box will be rotated, if the hand is off-center in the marker box, it will be off-center after it's rotated. Choose **Rotate** from the **Edit** menu.

Any object, after it's been rotated, will appear to be distorted. That's because the *pixels* — the tiny dots of color that make up an image on the screen — aren't square, but rectangular; they're taller than they are wide.

## *Stretching a Selected Area*

It's possible to change the shape of an object by stretching or compressing it. You can make an object narrower or wider, or taller or shorter. You cannot, however, stretch or compress an object along a diagonal.

Select the hand with the marker box, if necessary (the lasso doesn't work for this procedure). To stretch the hand, position the pointer on the bottom edge of the marker box, hold down the ***command*** key, and drag the bottom edge of the marker box down. The bottom edge of the marker box moves down with the pointer, but the upper edge stays anchored in place.

You can also stretch the hand by dragging the right edge right, the left edge left, or the top edge up. To shrink the hand, drag the bottom edge up, the right edge left, the left edge right, or the top edge down. You can also stretch or shrink the hand in two directions at once by dragging one of the corners of the marker box.

## *Moving the Picture in the Drawing Window*

The drawing window shows less than a third of the space that's available on the page. You can move the page around in the window with the hand icon.
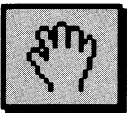
Select the hand icon. When you move the pointer to the drawing window, it takes the shape of a hand. Position the hand near the bottom of the window. Hold down the mouse button and move the pointer up, and the page moves with it.

Keep moving the page up until a picture of another hand appears at the bottom of the drawing window. Notice that this is a different hand (the sleeve is blue, not gray)—you haven't looped back to the top of the page. Rather, you've exposed a part of the page that wasn't visible before.

## *Moving to Another Part of the Page*

There are two ways to move to another part of the page. One is to keep moving the page with the hand until a part of the page that was completely hidden before appears in the window. The other way is to use the **Show Page** command.

Choose **Show Page** from the **Goodies** menu. The screen changes to show a reduced representation of the entire page.
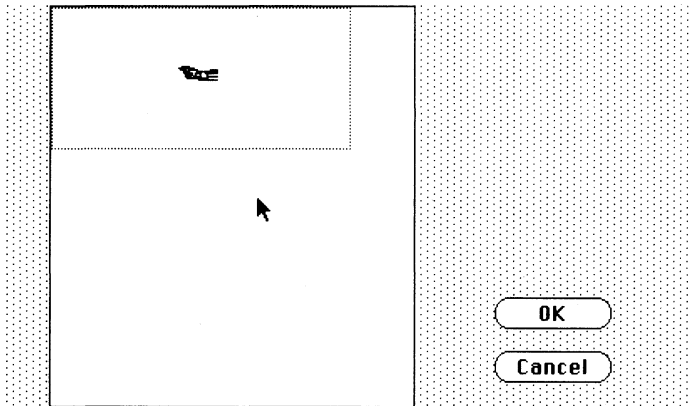


The dotted rectangle represents the drawing window, indicating which part of the page is now visible in the drawing window.

To move to another part of the page, drag the dotted rectangle there. Click **OK**, and when the drawing window reappears, the new part of the page is visible in it.

## *Moving an Image to Another Part of the Page*

You can also move an image to another part of the page using the **Show Page** command.

Once again, choose **Show Page** from the **Goodies** menu. The reduced representation of the entire page appears. When you place the pointer outside the dotted rectangle, it works like the hand. Hold down the mouse button and push the page around until the image is where you want it. But be careful — if you push any part of the picture off the page it will be erased. When the image is positioned where you want it, click **OK**, and the drawing window reappears with the page repositioned in it.

## *Cutting and Pasting a Selected Area*

You can also move an image from one part of the page to another by cutting and pasting it.

Use either the marker box or the lasso to select an image in the drawing window. Then choose **Cut** from the **Edit** menu. **Cut** flickers and then the selected image disappears. A copy of it has been placed on the Clipboard.

Move to another part of the page using either the hand or the **Show Page** command. Then choose **Paste** from the **Edit** menu. The image you cut before reappears. It's automatically selected, so you can position it before you paste it to the page. A copy of the image remains on the Clipboard until you cut or copy something else. You can paste as many copies of the image in the picture as you want.

## *Moving an Image to Another Picture*

You can move an image not only from one part of a picture to another but also from one picture to an entirely different picture.

You start by cutting or copying the image you want to move: you select it with either the marker box or the lasso, and then choose either **Cut** or **Copy** from the **Edit** menu. Then you close the picture you've cut or copied the image from and open the picture you want to move it to. Finally, you move to the part of the new picture where you want to paste the image and choose **Paste** from the **Edit** menu. The image appears in the new picture.

Try it yourself:

First, use the marker box to select the image of the hand. Select **Copy** from the **Edit** menu. **Copy** flickers and then the **Edit** menu closes. A copy of the hand has been made on the Clipboard.

Next, choose **New** from the **File** menu. When the dialog box appears, asking if you want to save the changes you've made, click **No**. A clean page appears.

Choose **Paste** from the **Edit** menu. The image of the hand appears. It's automatically selected, so you can place it wherever you want on the page. When you have it positioned, move the pointer outside the selected area and click the mouse button. The hand is pasted to the page.

## *Moving an Image to a* GS Write *Document*

You can use *GS Paint* to create illustrations for documents you've written using *GS Write.* You can paste such illustrations right into the document itself.

The process works like this:

First, you create and save an illustration. Next, you use the marker box or lasso to select the illustration and **Copy** to make a copy of it on the Clipboard. There must be a copy of the illustration on the Clipboard for you to paste it into a text document.

The next step is especially important. You use **Quit** to leave *GS Paint. Don't* reset the computer or turn it off. If you do, the copy of your illustration on the Clipboard will be lost. A moment after you use **Quit,** the launcher appears on the screen.

Next, you eject the *GS Paint* program disk from the drive and replace it with the *GS Write* disk. Then you click the **Disk** button.

When the list of the files on the *GS Write* disk appears in the window on the launcher, you select **Writer.** When the document window appears, you choose **Open** from the *GS Write* **File** menu and open the document you want the illustration to appear in.

You then go to the place in the document where you want the illustration to appear and move the cursor to the exact line where you want the illustration to be inserted. Finally, you select **Paste** from the **Edit** menu. The text at the spot where you positioned the cursor moves down, and the illustration appears in the document at that point.

# Chapter 6

# Advanced Techniques

## Tools for Modeling

In the graphic arts, modeling is the process of giving a two-dimensional object the appearance of depth through the use of light and shadow. In the illustration below, the only thing that tells your eye that one of the figures is a circle and the other is a sphere is the shadowing in the figure on the right.

The tools you'll find easiest to use for modeling are the paint bucket and the spray can.

### Modeling with the Paint Bucket

When you want to model a rectilinear figure — one with straight edges and flat surfaces — you can use the paint bucket to fill the surfaces with different colors or different patterns.

To try this, first open the picture named **Cubes**. When the picture appears, make several copies of the cubes so you'll have plenty of examples to work with.

**Using Patterns.** Next, decide on three patterns, one mostly white, one mostly black, and the third somewhere in the middle. Fill the front surface of one of the cubes with the lightest pattern, the side with the darkest pattern, and the top with the in-between pattern.
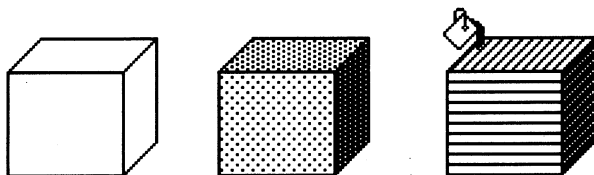
Here are some other experiments you can try:

Move the patterns to different sides of the cube to see if you can make it look like the light is coming from a different direction.

Add a shadow on the side of the cube opposite the direction the light is coming from.

Try different types of patterns and different combinations of patterns to see which give the most convincing effects.

**Using Color.** Decide on three related colors (for example, light blue, blue-gray, and dark blue; or white, gray, and black). Fill the front surface of a cube with one, the top with another, and the side with the third. Try different combinations. Try filling a pattern with a color.

### Modeling with the Spray Can

The spray can works best for modeling non-rectilinear figures —
those that don't have straight edges and flat surfaces. The spray can
lets you blend light and shadow much more subtly than the paint
bucket does.
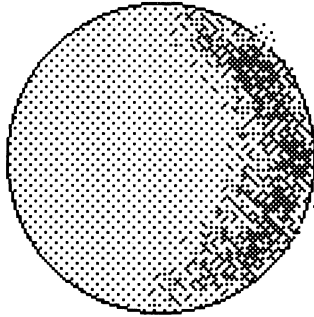


Draw a circle and model it with the spray can. Experiment with
colors and patterns to see which give the best results. You'll notice
as you use the spray can near the edge of a circle that flecks of color
often appear on the background outside the circle. The next section,
"Drawing in Detail," explains an easy way to erase them.

## Drawing in Detail

The small dots of color distributed by the spray can are called
*pixels*. A pixel is the smallest amount of color you can put on the
page — and ultimately, everything you draw or paint can be broken
down into pixels. Any line you draw with the pencil is made up of
pixels lined up end to end. When you use the paint bucket to fill an
area, you're filling the area full of pixels. As small as pixels are, you'll
sometimes want to draw or erase them one at a time.

You can use **FatBits** from the **Goodies** menu to enlarge the pixels (or "bits" of color) in the picture you're working on so they're easier to work with.

Say, for example, you were modeling a sphere, and your picture now looked like this.
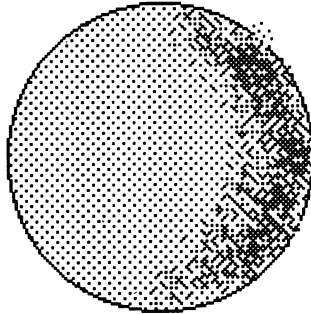


Choose **FatBits** from the **Goodies** menu, and the upper right edge of the drawing would look like this:

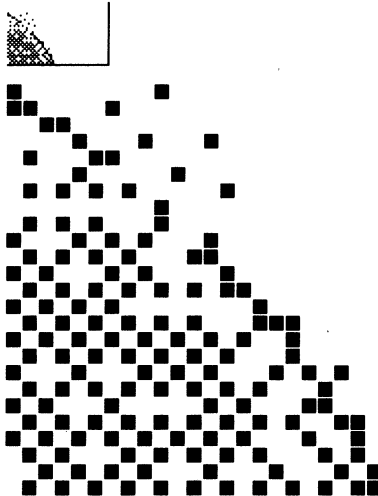You can use either the eraser or the pencil to remove pixels. The
pencil is a little more precise than the eraser. If you decide to use
the pencil, make sure you haven't changed the color you've been
using. Select the pencil, move the pencil to a pixel, click, and the
pixel disappears.
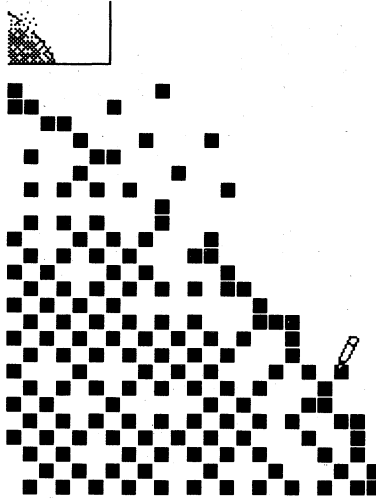


You can use any of the tools in the palette when you're working in
fat bits. Experiment with them to see how they work. To return to
the normal view of your picture, choose **FatBits** again.

## Changing Patterns

You can change any of the patterns in the palette, and you can also
add color to any of them.

# Advanced Techniques

Start by selecting the pattern you want to change. Then choose **Edit Pattern** from the **Goodies** menu. This dialog box appears:



Working Window

The window on the left is the working window—where you make changes to the pattern; the window to the right of it shows you what th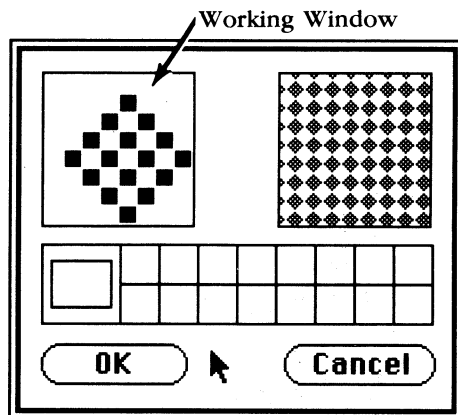e pattern will look like in the picture. Below the windows is a color palette. You choose a color from it just like you do from the main palette.

Use the pointer just as you use the pencil when you're working in fat bits: if you position the pointer on a pixel and click, the pixel disappears; if you move the pointer to an empty spot or to a place where there's a pixel of a different color and click, a pixel of the selected color appears. You can also draw with the pointer by dragging it.

When you finish making changes, click the **OK** button. If you decide you don't want to keep the changes you've made, click **Cancel** instead.

## *Choosing Colors for the Palette*

The color palette contains 16 colors for you to use. If you want to use colors different from the ones currently in the palette, you can choose others from the 4096 colors that *GS Paint* can produce.
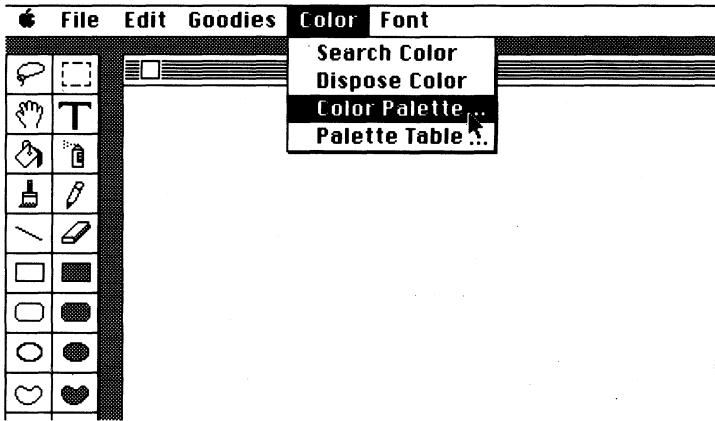


To choose a new color, choose **Color Palette** from the **Color** menu.

# Advanced Techniques

## *The Color Palette Dialog Box*

The dialog box shown below appears.
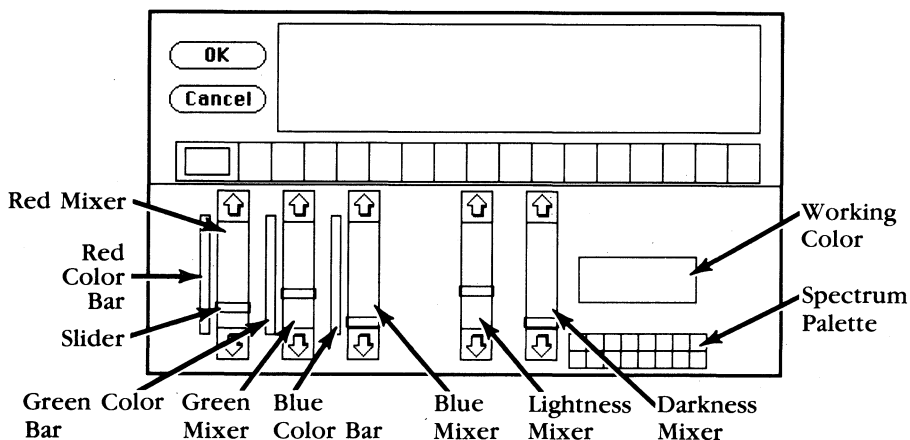


The five vertical bars of color in the lower half of the screen are the color mixers.

In the group of three on the left, each controls one of the primary colors. The one on the left is for red, the one in the middle for green, and the one on the right for blue. Notice that next to each of them is a color bar that shows the range of the intensities available, from brightest to black.

The two mixers on the right side of the dialog box control the shade — the lightness or darkness — of a color. The mixer on the left makes the color lighter, the one on the right makes it darker.

The working color reflects the positions of the sliders on the mixers. Every change in the position of the sliders produces a different color.

You can move the sliders up and down to change the amount of red, green, and blue in the working color or to lighten or darken it.

The spectrum palette in the lower right corner displays the basic spectrum of colors: the primary, secondary, and neutral colors (brown, gray, white, and black).

The palette that divides the screen in half is a copy of the one on the easel.

### Finding a Color

The easiest way to scan the colors available to find the one you want is to do this:

First, position the pointer on the color in the spectrum palette that's closest to the color you want (for example, if you want khaki, position the pointer on brown). Hold down the mouse button. A dotted outline appears around the color. Drag the dotted outline to the working-color box and release the mouse button. The color in the box changes to the color you've selected from the spectrum palette, and the sliders on the mixers move automatically to their positions for that color.

Each of the mixers shows 16 different variations on the color you've selected. For example, the green mixer shows 16 variations with more or less green mixed in. The lightness and darkness mixers show variations with more or less white mixed in.

If you don't see the color you want, position the pointer on the variation closest to it and drag the variation to the working-color box. When you release the mouse button, a different set of variations appears.

If you want to see what a color looks like on your picture, move the pointer to the window in the upper half of the screen. The pointer turns into a paintbrush, and you can draw on the picture there with perfect safety — whatever you draw will be automatically undone when you return to the drawing window.

### Adding a New Color to the Palette

When you've found the color you want, position the pointer on it and hold down the mouse button. Drag the dotted outline to the palette in the middle of the screen and replace one of the colors there with the new color. Everywhere you used the old color in the picture, it will be replaced by the new color. If you don't want any of the colors you used in the picture to be replaced, replace a color you haven't used in the picture.

There are two changes to be wary of: changing the colors at the two ends of the palette — the colors preset to black and white. If you replace white with another color, that color instantly replaces white as the background color of the easel. Don't replace white with black or the screen will become unreadable. Something similar will happen if you replace black with another color: that color instantly replaces black as the text and outline color of the easel. Don't replace black with white. If you happen to replace either color with a color that makes the screen unreadable, press the *esc* key to undo the change.

When you've made all the changes to the palette you want to make, click **OK** to go back to the drawing window. If you want to return to the drawing window without keeping any of the changes you've made, click **Cancel.**

The new palette is saved when you save the picture you're working on. You can also save the palette separately in the Palette Table (see "Palette Table" under the **Color** menu in the "Reference" section).

### *Mixing a Color*

If you'd like to mix a new color yourself, you can do that, too. Mixing colors is mostly a matter of experimenting until you get the mix you want, but it may help you to understand how the process works.

When you mix colors using *GS Paint,* you're actually mixing light of different colors. Mixing light is different from mixing paint. The major difference is that if you mix all the colors of paint together, the result is black; when you mix all the colors of light together, the result is white.

As the color chart below shows, the three primary colors of light are red, green, and blue. Mixing red and blue produces magenta, mixing blue and green produces cyan, and mixing green and red produces yellow. Mixing all three together produces white.
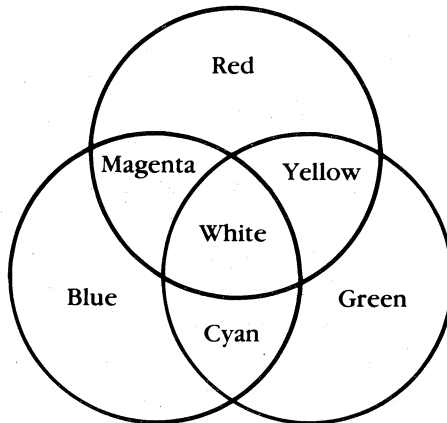
To mix a color, move the sliders on the three color mixers up and down. You can move a slider either by clicking the arrows or by dragging the slider with the pointer.

The mixers work like dimmers: if you move the slider to the bottom, you turn the color up as far as it can go; if you move the slider to the top, you turn the color off.

## *Experiments*

Try these experiments:

Turn up all the color mixers to their highest levels. The result is white. White light is made up of all the colors of the spectrum — all of which can be derived from the three primary colors, red, green, and blue.

Turn up the red and green mixers all the way, and turn the blue mixer off. The result is yellow.

Turn the red, green, and blue mixers off. The result is black. Black is the absence of any light.

Don't confuse the brightness of a color with lightness. The brightest red is the reddest, most intense red. The lightest red is a little red mixed with a lot of white — in other words, a pale pink.

Turn the red mixer up all the way, and turn both the green and the blue mixers off. The result is the most intense red. The slider on the lightness mixer is at the very top, and the slider on the darkness mixer at the very bottom. That's always the position they have when a color is most intense. Now move the sliders on the green and blue mixers up one notch each. The result is still red, but it's a slightly lighter red. You'll also notice that the slider on the lightness mixer moved down a notch. Keep moving the green and blue mixers up a notch at a time to see what happens.

You can, of course, make a color lighter by moving the slider on the lightness mixer or darker by moving the one on the darkness mixer. And when you do, the sliders on the color mixers move in response. Of all the aspects of *GS Paint,* the color palette offers the most possibilities for experimentation. Remember, too, that you can mix color with black and white patterns and create new patterns using any (or all) of the 16 colors in the palette.

## *Animation*

Animation involves two types of changes: moving an object around the screen and changing the color of an object. For example, you could create a sunrise by first changing the sky from black to dark blue to purple to rose to red-orange and then having the sun rise above the horizon.
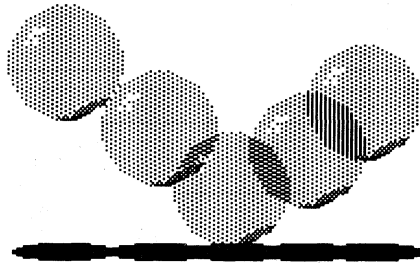
The first step in developing an animation sequence is to draw the individual pictures that make up the sequence. Each of the pictures is saved separately. Your *GS Paint* disk contains a series of pictures that shows stages in the bouncing of a ball.

Open **Ball010** to see the first picture in the series. The other pictures are numbered **Ball020**, **Ball030**, and so on. Whenever you create a series of pictures you intend to animate, give each of the pictures the same name followed by a number that shows the picture's place in the animation sequence. It's best to use a series of numbers like 010, 020, 030, and so on, so if you decide you want to add more pictures in the middle of the series you don't have to renumber all of them.

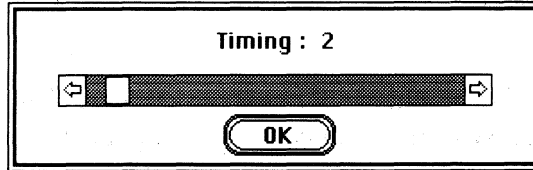When you've finished drawing and saving each of the pictures in a series, you close the drawing window.

Close the picture that's now on the easel. Choose **Compress** from the **Goodies** menu. A dialog box appears.
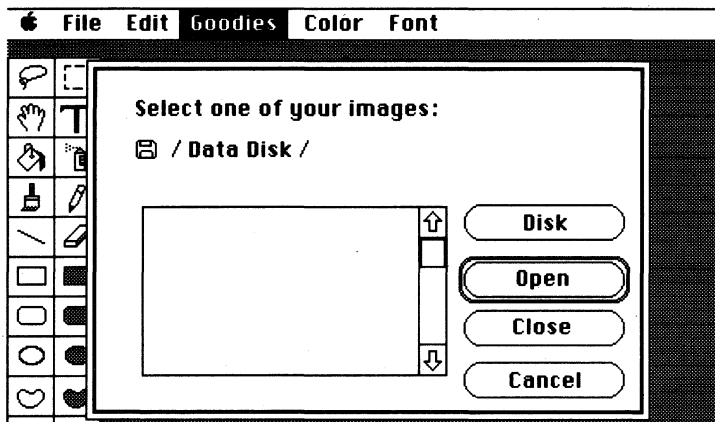


You choose from the Compress dialog box any of the pictures in the series you want to animate. To compress the bouncing ball sequence, choose **Ball010** and click the **Open** button.

*GS Paint* animates the series. Then a second dialog box opens to let you adjust the timing of the animation.

```
┌─────────────────────────────────┐
│          Timing : 2             │
│  ┌──┐ ░░░░░░░░░░░░░░░░░░  ┌──┐   │
│  │⇦ │█░░░░░░░░░░░░░░░░░░  │⇨ │   │
│  └──┘                    └──┘   │
│          ( OK )                 │
└─────────────────────────────────┘
```

Move the box to the right to slow the animation down. You can move the box either by dragging it or by clicking the arrows at either end of the speed bar. The number above the speed bar shows how many thirtieths of a second separate each picture from the next. For example,

2 = 2/30ths (or 1/15th) of a second = 15 pictures/second

6 = 6/30ths (or 1/5th) of a second  = 5 pictures/second

30 = 30/30ths or 1 second          = 1 picture/second

Another dialog box, like the one that accompanies the **Save** command, appears. *GS Paint* has named the animated sequence **Ball.show**. To save the sequence click **Save**. *GS Paint* saves the compressed sequence of pictures along with the speed setting.

To run the sequence, choose **Show** from the **Goodies** menu. Choose **Ball.show** from the dialog box that appears, and click **Open**. The animated sequence runs; when it reaches the end, it starts over again. The sequence continues to repeat until you click the mouse button.

If you want to change the timing of the animation, choose **Compress** and repeat the process.

# *Shortcuts*

The shortcuts introduced in this section are especially helpful once you've become familiar with *GS Paint* and feel comfortable with it. They're explained as briefly as possible without illustrations or examples.

The shortcuts fall into two groups: *alternatives* and *guides*.

Alternatives give you a second, quicker way to do something you already know how to do. For example, you can erase the entire drawing window by double-clicking the eraser icon.

Guides as *GS Paint's* version of drawing tools like the T-square, compass, protractor, and straight edge. They help you to draw figures like straight lines and perfect circles that are almost impossible to do freehand. They also help you to move and align images with precision. For example, if you want to draw a straight line at a 45-degree angle, you can hold down the *shift* key to guide the straight line tool along one of three paths: horizontal, vertical, and 45-degree diagonal. Or if you're moving a selected image with the pointer, you can hold down the *shift* key to guide the movement along an exact horizontal or vertical line.
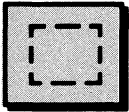
The shortcuts are presented first for the tools, then for the palettes, and finally for the menus.

## Tools

### Lasso

- To keep a selected image on a straight horizontal or vertical line while you move it, hold down the *shift* key.

### Marker Box

- To select the entire window, double-click the marker box.

- To keep a selected image on a straight horizontal orvertical line while you move it, hold down the *shift* key.

- To stretch or shrink an image, select the image with the marker box, position the pointer along an edge or corner of the box, hold down the *command* key, and drag. Drag toward the the center of the image to shrink it, away from the image to stretch it.
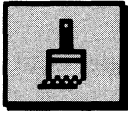
### Hand

- To change the pencil to the hand, hold down the *option* key.

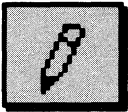- To keep the hand on a straight horizontal or vertical line while you move it, hold down the *shift* key.
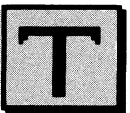
### Text

- To display the Font, Style, and Size dialog box, double-click the text icon.

### Paintbrush

- To display the Brush Sizes dialog box, double-click the paintbrush icon.

- To draw a straight horizontal or vertical line with the paintbrush, hold down the *shift* key while you draw.

### Pencil

- To switch to fat bits, double-click the pencil icon.

- To draw a straight horizontal or vertical line, hold down the *shift* key while you draw.

- To change the pencil to the hand, hold down the *option* key.

- To keep the pencil at the same point on the page when you switch between fat bits and the normal view of the screen, hold down the *command* key and click.
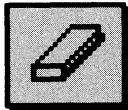
### Eraser

- To erase the entire drawing window, double-click the eraser icon.

- To erase in a straight horizontal or vertical line, hold down the *shift* key while you erase.
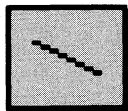
### Straight Line

- To draw a horizontal, vertical, or 45-degree line, hold down the *shift* key.
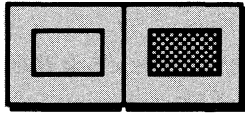
### Rectangles (Hollow or Filled)

- To draw a square rather than a rectangle, hold down the **shift** key.
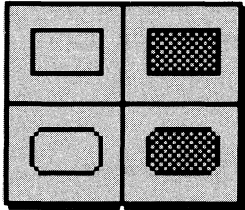
### Rounded Rectangles (Hollow or Filled)

- To draw a rounded square rather than a rounded rectangle, hold down the **shift** key.
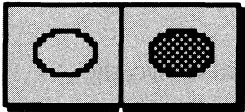
### Ovals (Hollow or Filled)

- To draw a circle rather than an oval, hold down the **shift** key.
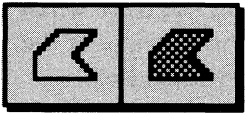
### Polygons (Hollow or Filled)

- To draw a polygon with lines that are horizontal, vertical, or 45-degree diagonal only, hold down the **shift** key.

## *Border Palette*

- To change the border to a color or pattern, hold down the **command** key while you select the color or pattern you want.

## *Color/Pattern Palette*

- To change the background color, hold down the *option* key and select the color you want.

- To display the Color Palette dialog box, double-click any color in the palette.

- To transfer any color in the Color Palette dialog box (any color in the mixers, any color in the color bars, or any color in the spectrum palette in the lower right corner of the screen) to the palette, click and drag it there.

- To display the Edit Pattern dialog box, double-click the pattern you want to change.

## *Menus*

### *File*

**Dialog Boxes**

- Press the *return* key or *enter* key to carry out the function you've selected.

- Press the *esc* key to cancel the function you've selected.

**New**

- Hold down the *command* key and type *N*.

**Open**

- Hold down the *command* key and type *O*.

# Shortcuts

### Close

- Click the close box, which is at the left end of the title bar above the drawing window.

### Save

- Hold down the *command* key and type *S*.

### Print

- Hold down the *command* key and type *P*.

### Quit

- Hold down the *command* key and type *Q*.

## *Edit*

### Undo

- Hold down the *command* key and type *Z*.

- Press the *esc* key.

### Cut

- Select part of the picture, hold down the *command* key, and type *X*.

### Copy

Select part of the picture, then:

- Hold down the *command* key and type *C*.

- Hold down the *command* key, move the pointer to the area selected, and click.

**Paste**

• Hold down the ***command*** key and type *V.*

**Clear**

• Select part of the picture, then press the ***delete*** key.

## *Goodies*

**FatBits**

• To change to fat bits, double-click the pencil icon.

• To keep the pencil at the same point in the picture when you switch between fat bits and the normal view of the picture, hold down the ***command*** key and click.

**Show Page**

• To display the entire page, double-click the hand icon.

• To keep the dotted rectangle on a horizontal or vertical line when you move it, hold down the ***shift*** key.

**Brush Shape**

• To display the Brush Shape dialog box, double-click the paintbrush icon.

**Edit Pattern**

• To display the Edit Pattern dialog box, double-click the pattern you want to edit.

# Shortcuts

## *Color*

### Color Palette

- To display the Color Palette dialog box, double-click the color you want to edit.

## *Font*

### Choose Font

- To display the Choose Font dialog box, double-click the text icon.

### Align Left

- To align text left, hold down the **command** key and type **L**.

### Align Middle

- To center text, hold down the **command** key and type **M**.

### Align Right

- To align text right, hold down the **command** key and type **R**.

# *Reference*

This section covers in a concise and detailed form every aspect of *GS Paint*. It's the place to find anything that isn't covered in the guided tour. The "Reference" is organized by the way things appear on the screen: the tool, border, and color/pattern palettes are illustrated and explained and the menu functions are listed according to the menu they appear on.

# Reference Contents

# Reference

# *The Easel*

Menu Bar

**File   Edit   Goodies   Color   Font**

untitled

Tool
Palette

Drawing
Window

Border
Palette

Color/Pattern Palette

# Reference

## *The Tool Palette*

The following illustration identifies each of the tools and explains its use.

| | |
|---|---|
| Lasso | Marker Box |
| Hand | Text |
| Paint Bucket | Spray Can |
| Paintbrush | Pencil |
| Straight Line | Eraser |
| Hollow Rectangle | Filled Rectangle |
| Hollow Rounded Rectangle | Filled Rounded Rectangle |
| Hollow Oval | Filled Oval |
| Hollow Free-form Shapes | Filled Free-form Shapes |
| Hollow Polygon | Filled Polygon |

**Lasso.** Select an image and lift it off its background to move, copy, or cut it.

**Marker Box.** Select an area along with its background to move, copy, or cut it.

**Hand.** Move a drawing around in the window.

**Text.** Activate the keyboard so you can add text to a picture.

**Paint Bucket.** Fill outlined or solid areas with a color or pattern.

**Spray Can.** Spray a color or pattern.

**Paintbrush.** Paint with a color or pattern in any of 32 brush shapes.

**Pencil.** Draw a thin line in a color or pattern.

**Straight Line.** Draw a straight line; its color (or pattern) and width match the line selected on the Border Palette.

**Eraser.** Erase whatever you drag it over.

**Hollow Rectangle.** Draw the outline of a rectangle or square.

**Filled Rectangle.** Draw a rectangle or square filled with a color or pattern.

**Hollow Rounded Rectangle.** Draw the outline of a rectangle or square with rounded corners.

**Filled Rounded Rectangle.** Draw a rounded rectangle or square filled with a color or pattern.

**Hollow Oval.** Draw the outline of an oval or circle.

**Filled Oval.** Draw an oval or circle filled with a color or pattern.

**Hollow Free-form Shapes.** Draw a closed outline of any shape.

**Filled Free-form Shapes.** Draw any closed shape filled with a color or pattern.

**Hollow Polygon.** Draw the outline of a polygon.

**Filled Polygon.** Draw a polygon filled with a color or pattern.

All hollow shapes match the color (or pattern) and width of the line selected on the border palette.

# Reference

All filled shapes are filled with the selected color (or pattern) and have an outline matching the color (or pattern) and the width of the line selected on the border palette.

## *The Color/Pattern Palette*

The color/pattern palette contains the colors and patterns you have to choose from in creating a picture.
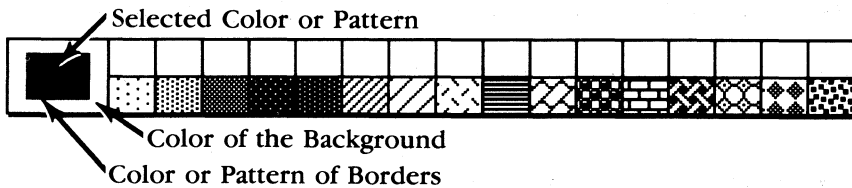
Selected Color or Pattern

Color of the Background
Color or Pattern of Borders

## *The Drawing Window*

The drawing window frames the easel's working area.

Close Box                          Title Bar

untitled

## *Apple*

| File Edit Goodies Color Font |
| --- |

About ...
Help ...
Clock

untitled
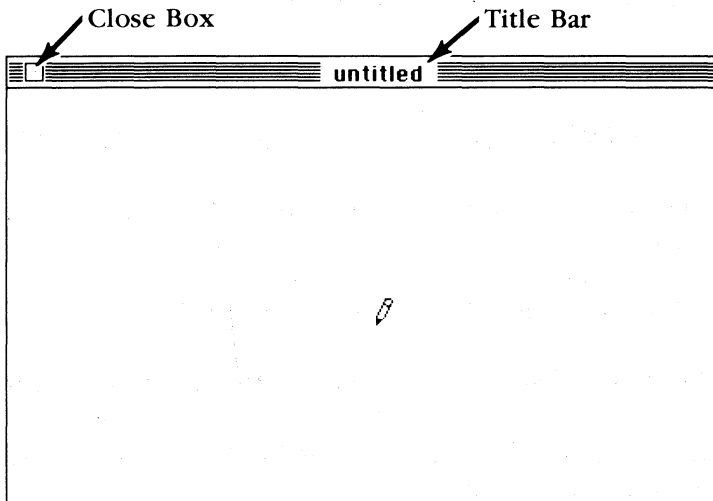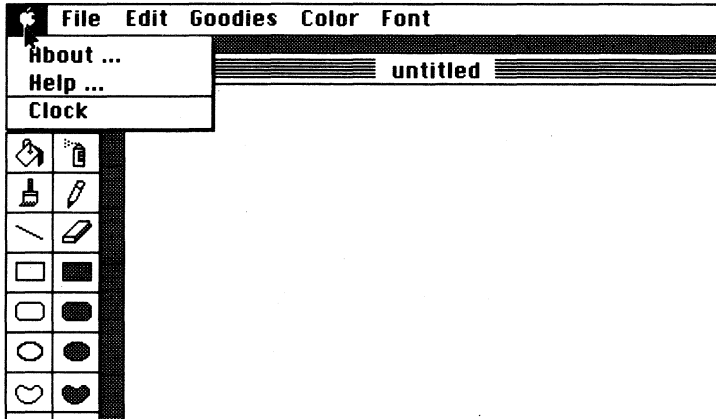
### *About*

**About** gives you the version number of your copy of *GS Paint* and other similar information.

To use **About:**

• Choose **About** from the **Apple** menu.

A dialog box appears.

• To go back to the easel, click the mouse button.

### *Help*

Use **Help** for a brief summary of what tools the tool icons stand for and of the border and color/pattern palettes.

# Reference

To use **Help:**

• Choose **Help** from the **Apple** menu.

The help information appears.

• To go back to the easel, click the mouse button.

## *Clock*

Use **Clock** to display the current date and current time. Click the close box in the clock display to return to using *GS Paint*.

## *File*
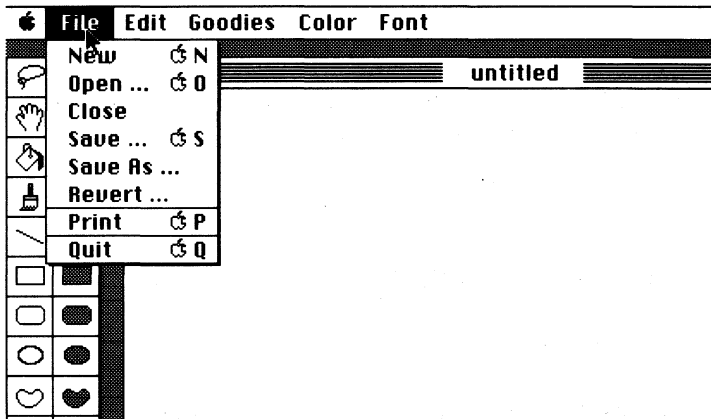
Occasionally, when you make a selection from the **File** menu, this dialog box may appear:
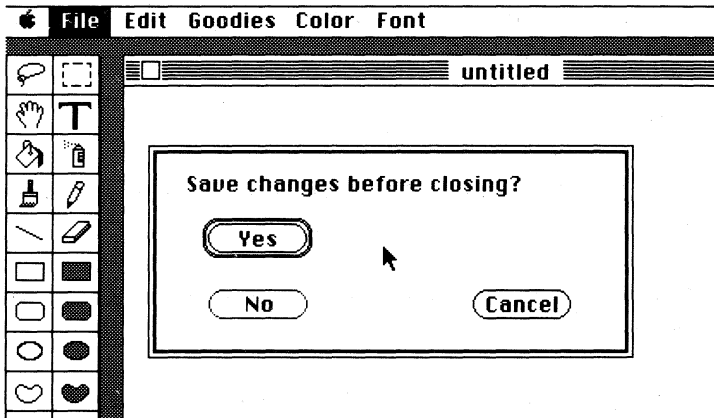


It means you've made changes to the picture on the screen since you last saved it. The dialog box gives you a chance to save those changes.

The three buttons in the box give you these choices:

**Yes**. Click **Yes**, and a dialog box appears that lets you save the picture. Type a name for the picture if you need to, then click **Save**. Once you've saved the picture, the command you've selected is carried out.

**No**. Click **No**, and the command you've selected is carried out immediately. The picture on the screen isn't saved, and you won't be able to get it back.

**Cancel**. Click **Cancel** if you decide you don't want the command you've selected to be carried out.

# Reference

## *New*

Use **New** to start a new picture on a new page. The color (or pattern), the border, and the currently selected tool are left unchanged. The Clipboard is also left as it is. You can't undo **New** once it has been carried out.

To use **New**:

- If there's a picture on the screen you want to keep, first save it, then close it.

- Choose **New** from the **File** menu, or hold down the ***command*** key and type *N*.

A clean page appears so you can start a new picture. (If a dialog box appears that asks **Save changes before closing?**, see the instructions at the beginning of the **File** section.)

## *Open*

Use **Open** to redisplay a picture you've saved on a disk. You can't undo **Open** once it has been carried out.

To use **Open**:

- If there's a picture on the screen you want to keep, first save it, then close it.

- Choose **Open** from the **File** menu, or hold down the ***command*** key and type *O*.

A dialog box appears. (If a dialog box appears that asks **Save changes before closing?**, see the instructions at the beginning of the **File** section.)

● Click the name of the picture you want to open.

The buttons in the box give you these choices:

**Open**. Click **Open** to have the picture you've selected displayed in the drawing window.

The picture appears in the drawing window.

**Close**. You can't use **Close**.

**Disk**. If the picture you want to open is on a disk other than the one in the drive, put the new disk in the drive and then use **Disk** to display the names of the pictures on the new disk.

**Cancel**. Click **Cancel** if you decide not to open a picture.

## *Close*

Use **Close** to remove a picture from the screen. It doesn't save the picture, nor does a clean page appear. You can't undo **Close** once it has been carried out.

To use **Close**:

● If you want to keep the picture you're about to close, save it first.

● Choose **Close** from the **File** menu, or click the close box (at the left end of the title bar).

The picture disappears from the screen. (If a dialog box appears that asks **Save changes before closing?**, see the instructions at the beginning of the **File** section.)

## *Save*

Use **Save** to make a copy of a picture on a disk. The patterns and colors in the palette are saved with the picture. If there's already a picture (or any other file) on the disk that has the same name as the picture, the picture erases it and replaces it. If you don't want to replace the old picture, use **Save As** to give the new picture a different name. (**Save As** is explained below.)

You can also use **Save** to create a *folder* to save pictures in. Saving pictures in a folder is a convenient way to keep together pictures that are related (like those that make up an animated sequence).

You can't undo **Save** once it has been carried out.

To use **Save**:

• Choose **Save** from the **File** menu, or hold down the ***command*** key and type *S*.

A dialog box appears.
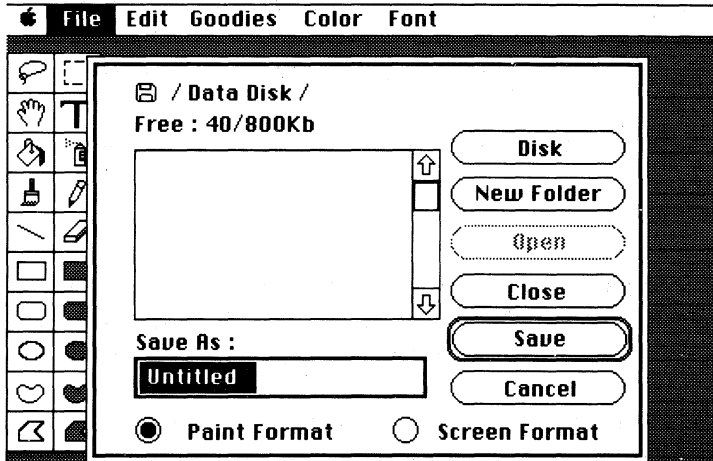
• Type a name for the picture in the space under **Save As**.

The buttons in the box give you these choices:

**Disk.** If you want to save the picture on a disk other than the one in the drive, replace the disk in the drive with the new disk. Use **Disk** to display the names of the pictures on the new disk.

**New Folder.** To create a new folder, type a name for it in the space under **Save As**, then click **New Folder**. Use **Open** to open the new folder whenever you want to save a picture in it.

**Open.** If you want to save a picture in a folder, select the folder from the catalog and click **Open**.

**Close.** You can use **Close** on a folder that is open. Use **Close** to close the folder.

**Save.** Click **Save** when you're ready to save the picture.

If a dialog box appears that says **Volume full**, there isn't enough room on the disk to save the picture. Click **OK**, then eject the disk from the drive and replace it with a disk that has space on it.

**Cancel.** Click **Cancel** if you decide not to save the picture.

You can save a picture in either of these formats:

**Paint Format.** If you create a full-page picture you intend to print a copy of, use **Paint Format.** The entire page is then saved. (An entire page is 320 pixels wide by 396 pixels high.)

**Screen Format.** If you create a picture you intend to display only on the screen, use **Screen Format.** Only part of the picture is saved: the part that's visible when you choose **Full Screen** from the **Goodies** menu. (The screen is 320 pixels wide by 200 pixels high.)

## Save As

Use **Save As** to save different versions of the same picture. It allows you to give a new name to a picture you've already saved and then save the picture under the new name. As long as you give the new version a different name, **Save As**, unlike the **Save** command, doesn't replace the old picture with the new one. You can't undo **Save As** once it has been carried out.

To use **Save As**:

● Choose **Save As** from the **File** menu.

A dialog box appears that's just like the one that accompanies the **Save** command. The functions of the buttons and the formats that are available are explained above.

## *Revert*

Use **Revert** to replace the picture on the screen with the last
version you saved. **Revert** will undo *all* the changes you've made
to a picture since the last time you saved it. You can't undo **Revert**
once it has been carried out.

To use **Revert**:

• Choose **Revert** from the **File** menu.

A dialog box appears, asking if you want to revert to the last version
saved.

```
Revert to the last version
saved?
   OK              Cancel
```
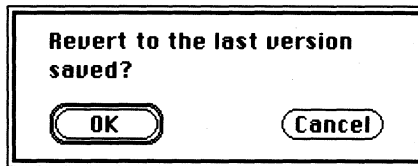
The buttons in the box give you these choices:

**OK.** Click **OK** to replace the picture on the screen with the
version that's on the disk. The drawing window goes blank, and
after a moment the last version saved appears.

**Cancel.** Click **Cancel** if you decide you don't want to revert to
previous version.

# Reference

## *Print*

Use **Print** to make a printed copy of a picture. You can't undo **Print** once printing starts.

There are three other print commands not listed on the **File** menu. You use one to print the version of a picture as it appears in the drawing window and another to print the full screen image. The third you use to print whatever is on the screen (including the palettes and the menu bar) to a disk rather than on your printer. You can then open the disk file and make changes to it just like any other picture.

To use **Print**:

- Choose **Print** from the **File** menu, or hold down the ***command*** key and type ***P***.

The other commands work like this:

- To print the full screen image of a picture rather than the whole page, hold down both the ***command*** key and the ***shift*** key and type ***4***.

- To print the part of a picture in the drawing window image instead of the whole page, hold down the ***command*** key and type ***4***.

- To print the screen to a disk, hold down the **command** key
  and type *3.* When you print the screen to a disk, you don't
  name the picture that's being saved yourself as you do with
  the **Save** command. Instead *GS Paint* names the picture for
  you. It names the first one *Screen 0*, the next one *Screen 1*,
  and so on through *Screen 9*. If you print more than nine
  screens to a disk, *GS Paint* starts over after *Screen 9* and
  names the tenth picture *Screen 0*. Make sure you save
  pictures given the same name on different disks. Otherwise,
  the second *Screen 0* will replace the first *Screen 0*, the
  second *Screen 1* the first *Screen 1*, and so on.

- To print the window that's active, hold down both the **command**
  key and the **shift** key and type **4**.

## Quit

Use **Quit** to leave *GS Paint.* You can't undo **Quit** once it has
been carried out.

To use **Quit**:

- If you want to keep the picture that's currently on the screen, save
  it.

- Choose **Quit** from the **File** menu, or hold down the **command**
  key and type **Q**. (If a dialog box appears that asks **Save changes
  before closing?**, see the instructions at the beginning of the
  **File** section.)

The entire screen is erased, and you can start using another software
program if you like.

# Reference

## Deleting a Picture from a Disk

You can erase a picture from a disk if you don't want to keep the picture any longer. See your system disk guide for instructions.

## Edit
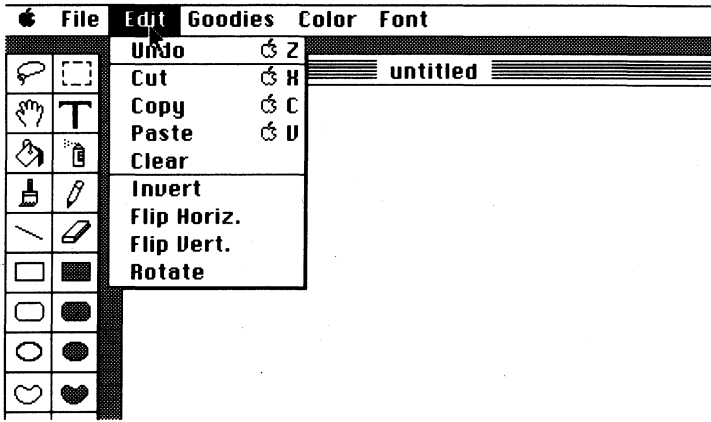


## Undo

Use **Undo** to cancel the last change you made to a picture.

**Note:**  You can't use **Undo** to cancel any of the commands on the **File** menu.

To use **Undo**:

- Pull down the **Edit** menu and click **Undo**; you can also hold down the *command* key and type *Z*; or press *esc*.

**Examples:**

If you've been using the pencil, **Undo** removes everything you drew between last pressing and releasing the mouse button.

If you've been using the eraser, **Undo** puts back on the screen everything you erased between last pressing and releasing the mouse button.

If you've just used **Undo**, using it again returns the picture to the way it was before you used **Undo** the first time.

## *Cut*

Use **Cut** together with **Paste** to move a picture (or a part of one) from one place on a page to another place, from one picture file to another, or from a picture file to a document created with some other application.

To use **Cut**:

● Use either the marker box or the lasso to select the image you want to cut.

● Choose **Cut** from the **Edit** menu, or hold down the *command* key and type *X*.

The picture you've selected disappears from the screen and is placed on the Clipboard. You can now go to the other location or file and use the **Paste** command to place the picture there.

**Note:** The largest area you can cut at one time is the area of the drawing window. If you want to move an image larger than that, you have to move it in pieces.
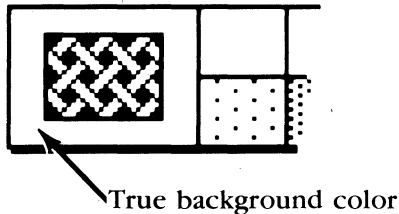
## Copy

Use **Copy** to make as many copies of an image as you want.

To use **Copy**:

• Use either the marker box or the lasso to select the image you want to copy.

  If you want to copy an image, but not the background it's on, use the lasso to lift it off the background before you copy it. "Background" has a special meaning. It means only the true background color — not any color that happens to be in the background behind an image. The true background color is the color surrounding the box on the palette where the selected color or pattern appears.



True background color

• Choose **Copy** from the **Edit** menu; you can also hold down the ***command*** key and type ***C***, or hold down the ***command*** key and click the selected area.

  A copy of the picture you've selected is placed on the Clipboard.

• To insert a copy of the picture, use the **Paste** command.

**Note:** For other ways to make copies, see "Copy" in the "Shortcuts" section.

**Paste**

Use **Cut** together with **Paste** to move an image from one place on a page to another place, from one picture file to another, or from a picture file to a document created with some other application. If you want to move a *copy* of an image instead of the original image itself, use **Copy** instead of **Cut**.

If you paste an image you've cut or copied from one picture to another, the colors in the pasted image will change to the colors in the palette of the new picture if they're different from the colors in the palette of the original picture.

● First select the image you want to move, and then use **Cut** or **Copy**.

● Go to the place you want to move the picture to. You can go to another part of the same picture, another picture, or to a *GS Write* document.

● Choose **Paste** from the **Edit** menu, or hold down the ***command*** key and type *V*.

Repeat the last two steps if you want to insert the image in more than one place. The image stays on the Clipboard until you cut or copy another image.

## *Clear*

Use **Clear** to erase from the drawing window an area or image you've selected.

To use **Clear**:

• Use the marker box or lasso to mark the area you want to erase.

• Choose **Clear** from the **Edit** menu, or press *delete*.

The area you've selected is erased.

## *Invert*

Use **Invert** to change the colors in an area you've selected to their palette complements. A color's palette complement is different from its true complementary color because it's determined entirely by the color's position in the palette. The complement of, say, the fourth color from the left end of the palette is the fourth color from the right end.
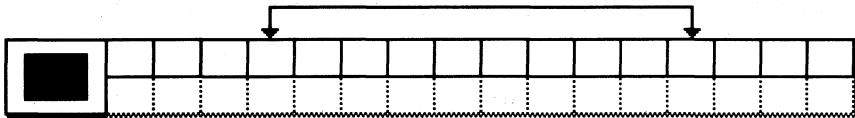


**Note:** A color has an inverse, but a pattern doesn't. If you use the **Inverse** command on a pattern, the colors in the pattern change, not the pattern itself. The pattern will look different only because the colors are different. For example, the inverse of a black and white pattern looks like the original pattern's negative.

To use **Invert**:

• Use the marker box (not the lasso) to select an area.

• Choose **Invert** from the **Edit** menu.

## *Flip Horiz.*

Use **Flip Horiz.** to change a selected area to its mirror image. After the area has been flipped, it's reoriented, but not repositioned, in relation to the rest of the picture.
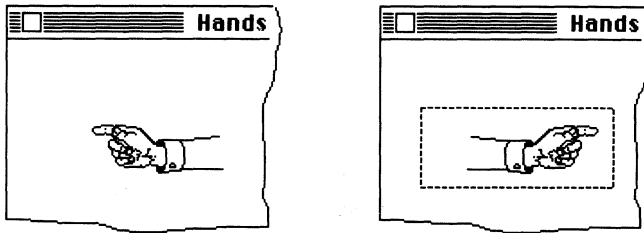


To use **Flip Horiz.**:

• Use the marker box (not the lasso) to mark the area you want to flip.

• Choose **Flip Horiz.** from the **Edit** menu.

## *Flip Vert.*

Use **Flip Vert.** to flip an image over from top to bottom.

Everything that's on the right stays on the right; everything that's on the left stays on the left. The image is reoriented, but not repositioned, in relation to the rest of the picture.
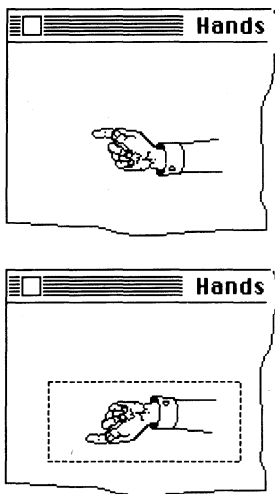
To use **Flip Vert.**:

● Use the marker box (not the lasso) to mark the area you want to flip.

● Choose **Flip Vert.** from the **Edit** menu.

**Note:** Flipping an image vertically isn't the same as rotating it twice. See "Rotate," following.

## *Rotate*
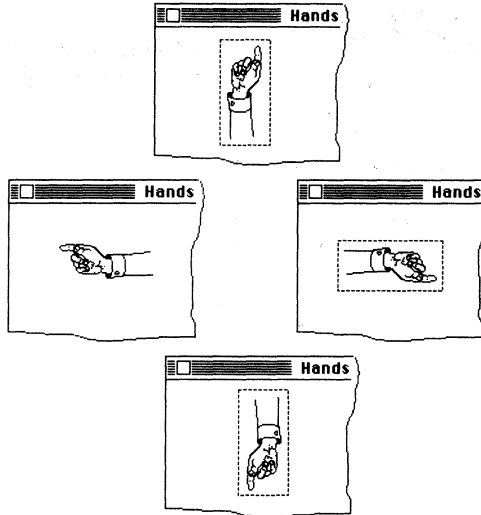
Use **Rotate** to change the orientation (not the position) of an image by rotating it a quarter turn counterclockwise.

To use **Rotate**:

- Use the marker box (not the lasso) to select the image you want to rotate.

If the image is off center in the marker box, it will be off center after it's rotated.

- Choose **Rotate** from the **Edit** menu.

The area within the marker box is rotated a quarter turn counterclockwise.

# Reference

## *Goodies*

**File  Edit  Goodies  Color  Font**

Grid
Fat Bits
Show Page
Full Screen
Brush Shape
Brush Mirrors
Edit Pattern
Compress
Show

untitled
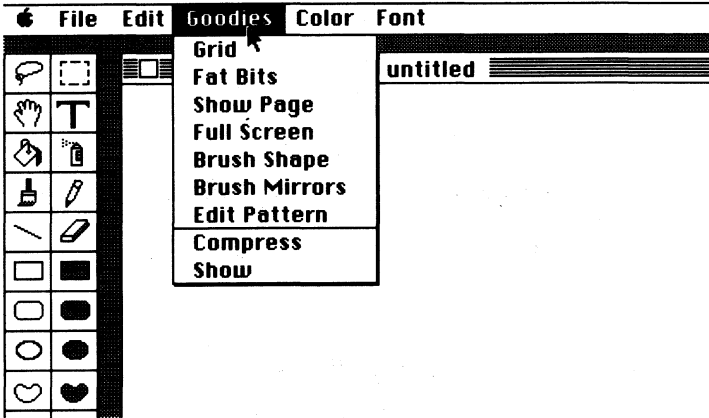
### *Grid*

Use **Grid** to activate an invisible grid over the page. The grid is made up of a series of horizontal and vertical lines that intersect every eight pixels.
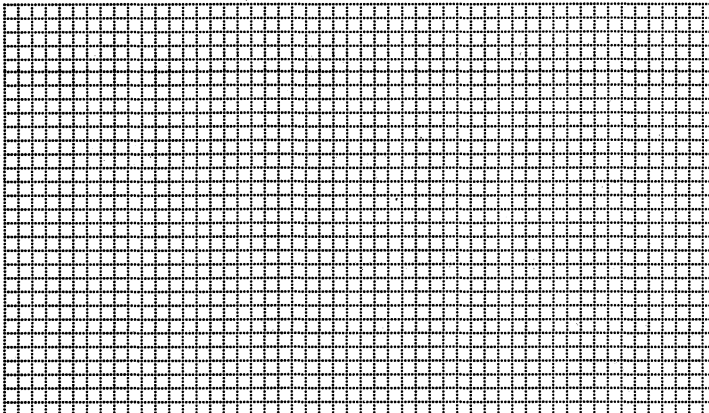
The grid helps you draw and align certain objects. When you draw with the grid on, you'll notice that lines and figures snap into position along the grid. The grid acts as a guide that lets you position points only where the lines of the grid intersect, and it lets you align the marker box and the shapes only with the lines of the grid. The grid affects the positioning and movement of the marker box, text, the line, hollow or filled rectangles, hollow or filled ovals, and hollow or filled polygons. It doesn't affect the lasso, the paint bucket, the spray can, the brush, the pencil, or the hollow and filled free-form shapes.

**Examples:**
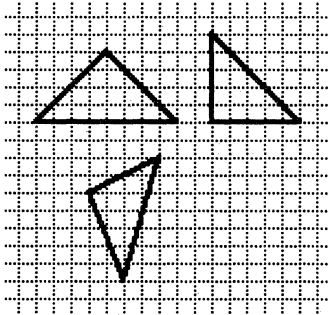


The sides of a triangle don't have to follow the lines of the grid, but the triangle's points can only be at points where the lines of the grid intersect.
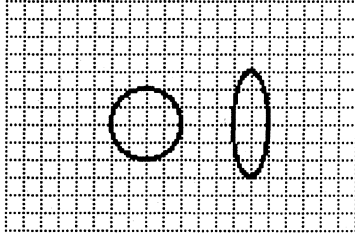
Neither the circumference of a circle nor the perimeter of an oval will follow the grid, but the sides of a rectangle touching the top, bottom, left, and right edges of a circle or oval can lie only along the lines of the grid.
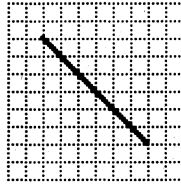


A line drawn with the line tool does not have to lie along the lines of the grid, but its beginning and end points can be only at intersections of the lines of the grid.

To use **Grid**:

• Choose **Grid** from the **Goodies** menu.

A checkmark appears next to **Grid** on the menu.

The appearance of the drawing window doesn't change, but the grid is now active.

• To remove the grid, choose **Grid** from the menu again.

### *FatBits*

Use **FatBits** to display a small part of a picture in detail so you can work on it pixel by pixel.

To use **FatBits**:

- Use the marker box or lasso to mark the part of the picture you want to see in detail. Or position the pencil on the part of the picture you want to enlarge, hold down the *command* key, and click.

- Choose **FatBits** from the **Goodies** menu, or double-click the pencil icon.

- Use the pencil to draw a single pixel at a time.

Click the pencil, and it draws a dot in the color that's selected. If the pencil is on a pixel in the selected color, a click removes the color.

You can use any of the other tools when you're working on a picture in detail.

- To go back to the normal view of the picture, choose **FatBits** from the menu again, or double-click the pencil icon again.

### *Show Page*

Use **Show Page** to see the entire 8-by-10-inch page your picture is on instead of just the part in the drawing window.

To use **Show Page**:

- Choose **Show Page** from the **Goodies** menu, or double-click the hand icon.
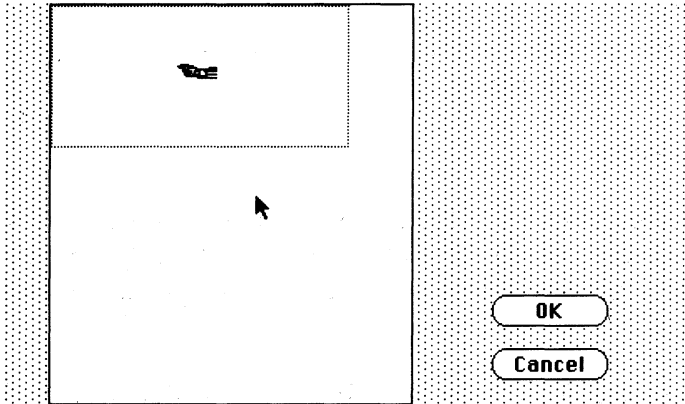
The rectangle on the page shows the part of the picture that's in the drawing window. You can move the rectangle to any part of the picture, and that part appears in the drawing window.

- Click **OK** when you've positioned the rectangle over the part of the picture you want in the drawing window.

The drawing window reappears.

- Click **Cancel** instead of **OK** if you change your mind about repositioning the drawing window.

## *Full Screen*

Use **Full Screen** to remove the drawing window, the menus, and the tool, border, and color/pattern palettes from the screen so you can use the entire screen to display a picture. You can't make any changes to the picture when you're using the entire screen to display it.

To use **Full Screen**:

- Choose **Full Screen** from the **Goodies** menu. Everything but the picture itself is removed from the screen.

- To go back to the drawing window, press the spacebar.

## *Brush Shape*

Use **Brush Shape** to select a different shape for the paintbrush.

To use **Brush Shape**:

- Choose **Brush Shape** from the **Goodies** menu, or double-click the paintbrush icon.
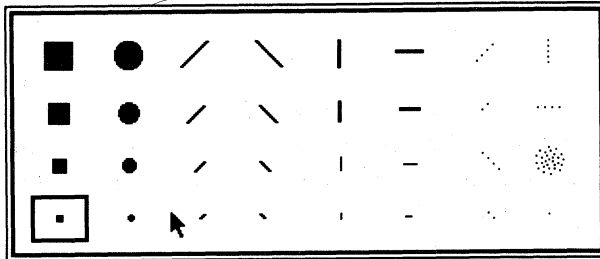
The Brush Shape dialog box appears. A box marks the current shape of the brush.

- Click the shape you want to use. The Brush Shape dialog box closes automatically.

**Note:** If you want to leave the Brush Shape dialog box without changing the shape of the brush, click the current shape.

## *Brush Mirrors*

Use **Brush Mirrors** to paint two, four, or eight symmetrical brush strokes with a single movement of the paintbrush. Each of the brush strokes is a mirror image of the one you make with the paintbrush. You can set up a brush mirror in any or all of four places:

**Down the middle of the window (from top to bottom).**
Whatever you draw on the left side of the window is mirrored on the right side, and vice versa.

**Across the middle of the window (from left to right).**
Whatever you draw in the lower half of the drawing window is mirrored in the upper half; whatever you draw in the upper half is mirrored in the lower half.
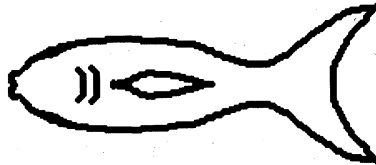
### Through the window from upper left to lower right.
Whatever you draw in the lower left half of the window is mirrored in the upper right half, and vice versa.
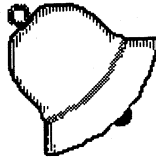
### Through the window from lower left to upper right.
Whatever you draw in the upper left half of the window is mirrored in the lower right half, and vice versa.
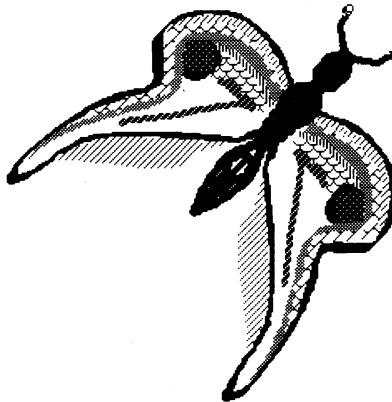
When you use diagonal mirrors, sometimes the mirror image of what you're drawing will fall outside the drawing window. If that happens, the mirror image won't be drawn.

A mirror is part of the drawing window, not part of the picture. If you move the picture in the drawing window, the mirror doesn't move with it.

# Reference

To use **Brush Mirrors**:

• Choose **Brush Mirrors** from the **Goodies** menu.
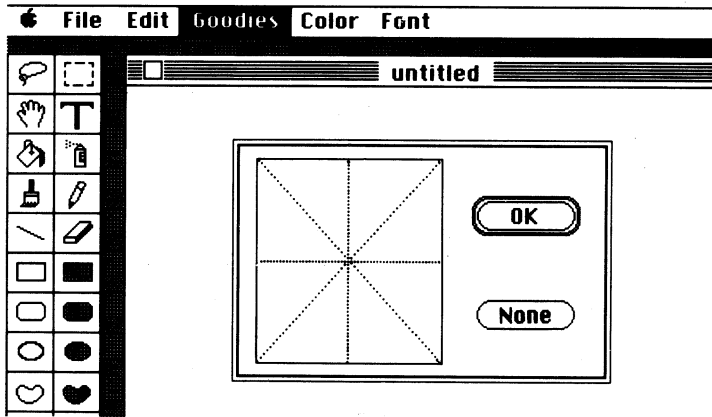


• Click the lines that match the places where you want mirrors set. If you want to set all the mirrors, click the center, where all the lines cross.

• Click **OK**.

• Select the paintbrush and start drawing.

• To remove a mirror, choose **Brush Mirrors** from the menu again and click the line that matches it. To remove all the mirrors, click **None**.

**Note:** You'll find that the more mirrors you've selected, the slower you have to draw to get good results.

## *Edit Pattern*

Use **Edit Pattern** to change the patterns in the palette at the bottom of the screen. In most cases, the only way to create a pattern with color in it is by using the **Edit Pattern** function.

To use **Edit Pattern**:

- Select the pattern you want to edit from the palette.

- Choose **Edit Pattern** from the **Goodies** menu, or double-click the pattern you want to edit (if you double-click the pattern, you don't have to select it first).
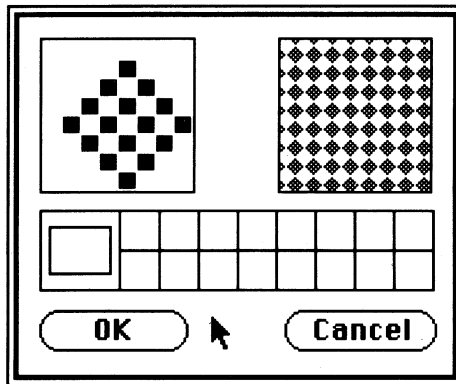


The Edit Pattern dialog box appears.

The pointer works like this:

If you want to erase a pixel, select white from the palette in the Edit Pattern dialog box, then position the pointer on the pixel and click.

If you want to add color to a pattern, select the color from the palette in the Edit Pattern dialog box, then position the pointer and click. You can remove a pixel you've just added by clicking a second time.

You can also use the pointer to draw a line just as you do with the pencil in the drawing window.

• Click **OK** to replace the old pattern with the new one.

• Click **Cancel** to keep the original pattern.

Any pattern you create will be saved with any picture you use it on.

## *Compress*

Use **Compress** to compress a series of pictures into a single file so they can be animated.

To use **Compress**:

• Create a series of pictures for your animated sequence; when you save them, give each of them the same name followed by a number that shows the picture's place in the series (for example, BALL10, BALL20, and so on).

• Close the drawing window.

• Choose **Compress** from the **Goodies** menu.

A dialog box appears, similar to the one that accompanies the **Open** command, asking you to select an image.

• Choose the picture that is first in the series.

• Click **Open**.

*GS Paint* animates the series.

A dialog box then appears that lets you set the timing.
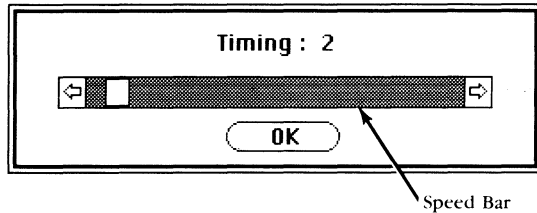


Speed Bar

- Move the box to the right to slow down the animation (you can move the box either by dragging it or by clicking the arrows at either end of the speed bar). The number above the speed bar shows how many thirtieths of a second separate each picture from the next. For example,

2 = 2/30ths (or 1/15th) of a second = 15 pictures/second

6 = 6/30ths (or 1/5th) of a second = 5 pictures/second

30 = 30/30ths or 1 second = 1 picture/second

- After you've adjusted the speed, click **OK**.

A dialog box appears, like the one that accompanies the **Save** command, letting you save the animated sequence.

● Click **Save**.

## *Show*

Use **Show** to show the animation sequence you've created using the **Compress** command.

To use **Show**:

● Create an animation sequence using **Compress**.

● If there's a picture on the screen, close it.

● Choose **Show** from the **Goodies** menu.

● From the dialog box that appears, choose the sequence you want.

● Click **Open**.

The animated sequence runs. When it gets to the end, it automatically repeats.

● To stop the animation, click the mouse button.

# *Color*

```
 File   Edit   Goodies   Color   Font
                          Search Color
                          Dispose Color
                          Color Palette ...
                          Palette Table ...
```

## *Search Color*

Use **Search Color** to identify which parts of a picture match which colors in the palette.

To use **Search Color**:

• Choose **Search Color** from the **Color** menu.

As soon as you move the cursor to the drawing window, it changes shape.

• If you want to identify the color in the palette that a specific part of the picture matches, move the cursor to that part of the picture.

A rectangle appears over the color in the palette that matches the color in the picture.·

- If you want to identify all the parts of the picture that match a specific color in the palette, move the cursor to the color in the palette. (This approach works for all the colors in the palette except for the ones farthest left and farthest right.)

All the parts of the picture that match the color flash off and on.

To return the cursor to its normal function, click anywhere on the screen.

### Dispose Color

Use **Dispose Color** to erase a color and replace it with another color everywhere it appears in a picture.

To use **Dispose Color**:

- Hold down the *option* key while you select the color you want to use to replace the color (doing so changes the background to the color you select).

- Select the color you want to replace from the palette.

- Choose **Dispose Color** from the **Color** menu.

A dialog box appears to warn you that you can't undo the change.

GS /Paint will not undo !
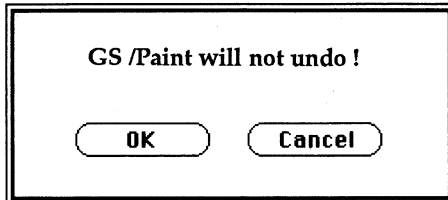
( OK )    ( Cancel )

The buttons give you these choices:

**OK.** Click **OK** to replace the color.

**Cancel.** Click **Cancel** if you've changed your mind.

### *Color Palette*

Use **Color Palette** to change the colours in the palette. The color palette contains 16 colors. If you want to use colors different from the ones currently in the palette, you can choose others from the 4096 colors that *GS Paint* can produce.

To use **Color Palette**:

• Select the color you want to change from the palette.

• Choose **Color Palette** from the **Color** menu, or double-click the color you want to change (you don't have to select the color first if you double-click it).

The Color Palette dialog box appears.
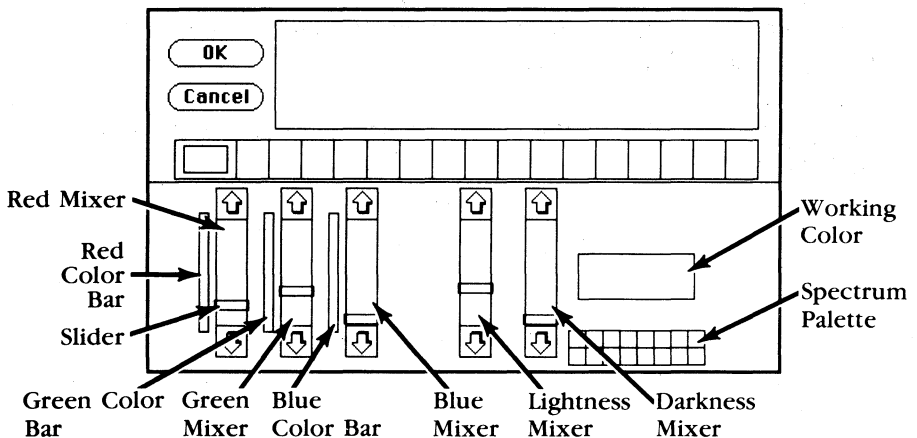


Red Mixer

Red Color Bar

Slider

Working Color

Spectrum Palette

Green Color Bar    Green Mixer    Blue Color Bar    Blue Mixer    Lightness Mixer    Darkness Mixer

The five vertical bars of color in the lower half of the screen are the color mixers.

The three on the left each control one of the primary colors. The one on the left is for red, the one in the middle for green, and the one on the right for blue. Next to each of them is a color bar that shows the range of the intensities available, from brightest to black. Don't confuse the brightness of a color with lightness. The brightest red is the reddest, most intense red. The lightest red is a little red mixed with a lot of white — in other words, a pale pink.

The two mixers on the right side of the dialog box control the shade — the lightness or darkness — of a color. The mixer on the left makes the color lighter, the one on the right makes it darker.

The working color reflects the positions of the sliders on the mixers. Every change in the position of the sliders produces a different working color.

You can move the sliders up and down to change the amount of red, green, and blue in the working color or to lighten or darken it.

The spectrum palette in the lower right corner displays the basic spectrum of colors: the primary, secondary, and neutral colors (brown, gray, white, and black).

The palette that divides the screen in half is a copy of the one on the easel.

## Choosing a Color

To scan the colors available, first position the pointer on the color in the spectrum palette that's closest to the color you want (for example, if you want khaki, position the pointer on brown). Hold down the mouse button. A dotted outline appears around the color. Drag the dotted outline to the working color box and release the mouse button. The color in the box changes to the color you've selected from the spectrum palette, and the sliders on the mixers take their positions for that color.

Each of the mixers shows 16 variations on the color you've selected. For example, the green mixer shows 16 variations with more or less green mixed in. The lightness and darkness mixers show variations with more or less white mixed in.

If you don't see the color you want, position the pointer on the variation closest to it, and drag the variation to the working-color box. When you release the mouse button, a different set of variations appears.

To see what a color looks like on your picture, move the pointer to the window in the upper half of the screen. The pointer turns into a paintbrush, and you can draw on the picture there with perfect safety—whatever you draw will be automatically undone when you return to the drawing window.

When you've found the color you want, position the pointer on it and hold down the mouse button. Drag the dotted outline to the palette across the middle of the screen and replace one of the colors there with the new color. Everywhere you used the old color in the picture, it will be replaced by the new color. If you don't want any of the colors you used in the picture to be replaced, replace a color you haven't used in the picture.

There are two changes to be wary of: changing the colors at the two ends of the palette—the colors preset to black and white. If you replace white with another color, that color instantly replaces white as the background color of the easel. Don't replace white with black or the screen will become unreadable. Something similar will happen if you replace black with another color: that color will instantly replace black as the text and outline color of the easel. Don't replace black with white. If you happen to replace either color with a color that makes the screen unreadable, press the *esc* key to undo the change.

When you've made all the changes to the palette you want to make, click **OK** to go back to the drawing window.

The new palette will be saved when you save the picture you're working on. You can also save the palette separately in the **Palette Table** (see "Palette Table", below, for instructions).

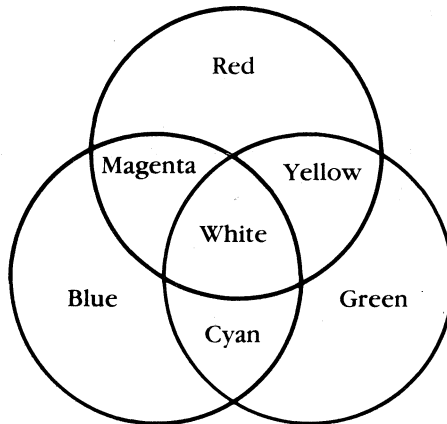To return to the drawing window without keeping any of the changes you've made, click **Cancel.**

**Mixing a Color**

To mix a color, move the sliders on the red, green, and blue mixers up and down.

Mixing colors is mostly a matter of experimenting until you get the mix you want, but it may help you to understand how the process works.

When you mix colors using *GS Paint,* you're actually mixing light of different colors. Mixing light is different from mixing paint. The major difference is that of you mix all the colors of paint together, the result is black; when you mix all the colors of light together, the result is white.

As the color chart below shows, the three primary colors of light are red, green, and blue. Mixing red and blue produces magenta, mixing blue and green produces cyan, and mixing green and red produces yellow. Mixing all three together produces white.



To mix a color, move the sliders on the three color mixers up and down. You can move the sliders either by clicking the arrows or by dragging the slider with the pointer.

# Reference

The mixers work like dimmers: if you move the slider to the bottom, you turn the color up as far as it can go; if you move the slider to the top, you turn the color off.

**Examples:**

To get white, turn up all of the hue mixers to their highest level. "White" light is made up of all the colors of the spectrum — all of which can be derived from the three primary colors, red, green, and blue.

To get yellow, turn up the red and green mixers all the way, and turn the blue mixer off.

To get green, turn the green mixer all the way up, and turn the red and blue mixers off.

To get black, turn all the mixers off. Black means there's no light.

You can also mix color with black and white patterns and create new patterns using any (or all) of the 16 colors in the palette.

## *Palette Table*

Use **Palette Table** to save up to 128 palettes.

To save a palette:

● Make any changes to the screen palette using the **Color Palette** command.

● Choose **Palette Table** from the **Color** menu.
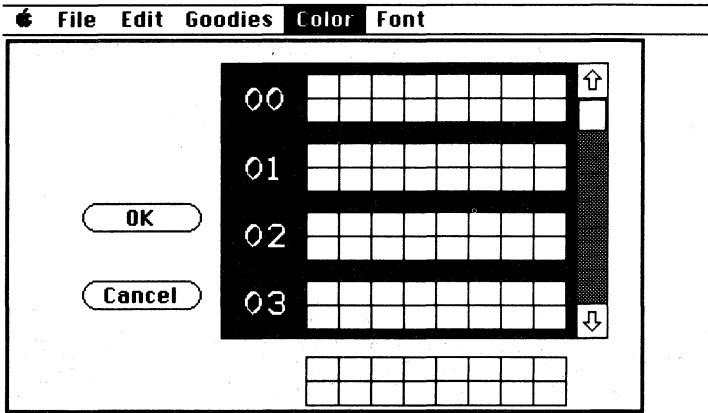
When the Palette Table dialog box appears, the palette you've been using is displayed at the bottom of the screen.

- Scroll through the palette bank to find either a blank space of a palette you don't want anymore. Use palette number **00** if you want the palette you're saving to be the one that appears on the easel whenever you start *GS Paint.*

- Drag the palette at the bottom of the screen to the space where you want to store it.

- Click **OK** to save the palette and return to the drawing window.

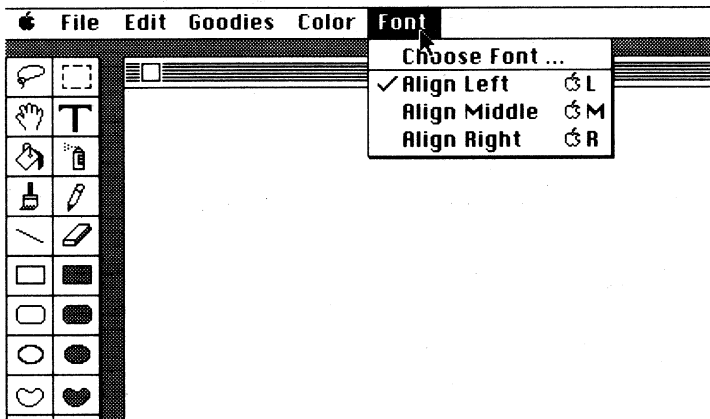- Click **Cancel** if you decide not to save the palette.

To get a palette from the palette table:

- Choose **Palette Table** from the **Color** menu.

- Scroll through the palette table until you find the palette you want.

• Drag it to the palette at the bottom of the screen.

• Click **OK** to return to the drawing window with the new palette.

• Click **Cancel** if you decide not to get a palette.
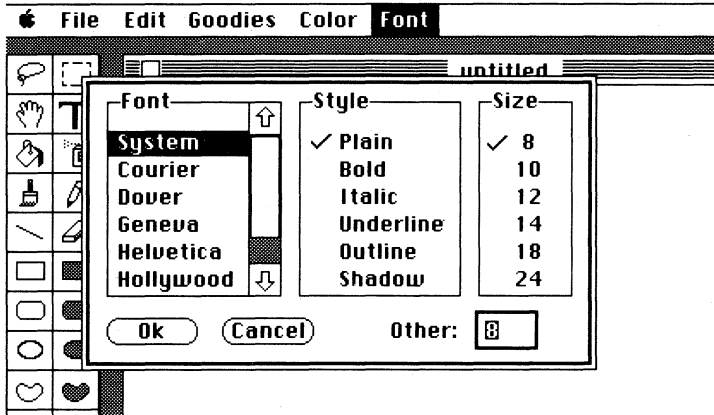
## *Font*



### *Choose Font*

Use **Choose Font** to change the font (or typeface), the font style, and the font size you're using. The preset font is **System**, the font style is **Plain**, and the font size is **8**.

To change the font, font style, or font size:

• Select **Choose Font** from the **Font** menu, or double-click the text icon.

```
  File   Edit   Goodies   Color   Font
```

┌─Font─────┐  ┌─Style──────┐  ┌─Size─┐
│ **System** │  │ ✓ Plain    │  │ ✓ 8  │
│ Courier   │  │ Bold      │  │ 10   │
│ Dover     │  │ Italic    │  │ 12   │
│ Geneva    │  │ Underline │  │ 14   │
│ Helvetica │  │ Outline   │  │ 18   │
│ Hollywood │  │ Shadow    │  │ 24   │

( Ok )  ( Cancel )    Other: [8]

To change the font, select the one you want from the list. You can scroll to see more choices. The font that's currently selected for use is highlighted. To change the font style, select the one you want to use. A check appears next to the one you've chosen. To choose a font size, either select a size from the list or type a number in the space to the right of **Other**. Not all the fonts look good in all sizes. The sizes that are recommended appear in **boldface** on the screen. If you enter a font size next to **Other**, it has to be between 8 and 39.

- Click **OK** to return to the drawing window to add text in the new font, font style, or font size you've chosen.

- Click **Cancel** if you decide not to change the font, font style, or font size.

To add text to a picture:

- Select the text icon from the tool palette.

- Move the **I** to the place where you want the text to appear. Click the mouse button to place the cursor there. Start typing.

- If you've come to the end of a line and you want to continue typing on the next line, press *return*.

- If you want to change the font, style, or size but continue typing on the same line, press *enter*.

The text appears in the new font, style, and size.

To change text that's already on the screen:

- If you *haven't* pressed the mouse button or *enter* since you typed the text you want to change, select the font, style, or size you want to change to. The text you've typed will immediately change.

- If you *have* pressed the mouse button or *enter* since you typed the text you want to change, erase the text, select the font, style, or size you want to change to, and retype the text.

**Note:** If you're using an Apple II that has been upgraded to an Apple IIGS, there's no *enter* key on the keyboard.

## Align Left

Use **Align Left** to put text on the screen in the standard way: when you type a character, it appears at the cursor's position, and the cursor moves one space to the right. If you change the alignment to middle or right, the text is re-aligned with the cursor's first position.

To use **Align Left**:

- Choose **Align Left** from the **Font** menu, or hold down the *command* key and type *L*.

- Select the text icon.

- Move the **I** to the place on the picture where you want to add text. Click the mouse button to place the cursor there.

- Type the text you're adding.

### *Align Middle*

Use Align Middle to center text as you type it. If you change the alignment left or right, the text is re-aligned with the cursor's first position.

To use **Align Middle**:

- Choose **Align Middle** from the **Font** menu, or hold down the *command* key and type *M*.

- Select the text icon.

- Move the **I** to the place on the screen where you want to add text. Make sure the cursor is in the *middle* of the space where you want the text to appear. Click the mouse button to place the cursor there.

- Type the text you want to add.

### *Align Right*

Use **Align Right** to add text to a picture, starting at the point where you want the text to end. If you change the alignment to middle or left, the text is re-aligned with the cursor's first position.

To use **Align Right**:

- Choose **Align Right** from the **Font** menu, or hold down the *command* key and type *R*.

- Select the text icon.

- Move the **I** to the place on the screen where you want to add text. Make sure the cursor is at the spot where you want the *last* letter of the text to appear. Click the mouse button to place the cursor there.

- Type the text you're adding.

# Glossary

**active window**

The window that's in front of all the others; it's the window where · you're currently working.

**Apple menu**

The menu at the far left end of the menu bar, which appears when you select the Apple. From it you can choose **Help.**

**border**

The lines that form the hollow shapes, the outlines of the solid shapes, and the lines drawn with the straight line tool are borders. The line with the checkmark beside it in the border palette (in the lower left corner of the easel) determines the width and color or pattern of borders.

**button**

A symbol in a dialog box that you click to make something happen. To find out what a specific button does, see the name of the button.

**Cancel button**

The button in a dialog box that lets you leave the dialog box without carrying out a command.

*caps lock*

After you press the *caps lock* key, any letter that you type appears in uppercase without your having to hold down the *shift* key. Press the *caps lock* key again, and the keyboard returns to normal. The *caps lock* key doesn't affect numbers or symbols.

# Glossary

## catalog

The list of documents that are on a disk. Catalogs appear in the **Open** and **Save As . . .** dialog boxes and in the launcher window.

## check box

The small box or circle next to an option in a dialog box that you click to select or cancel an option: for example, the circle next to **Paint Format** in the **Save** dialog box.

## choose

To pick a command from a menu.

## click

To position the pointer on something and then press and quickly release the button on the mouse.

## Clipboard

The place where an image you've cut or copied is placed. The image stays on the Clipboard even after you've pasted it elsewhere in the document until you cut or copy another image.

## close

To remove a window from the screen.

## close box

The small square at the left end of the drawing window's title bar. Click it to close the drawing window.

## command

A command is a choice you make from a menu (or a combination of the *command* key and a letter or number on the keyboard) that causes some action to take place.

## *command* key

The key you hold to make a tool work in a special way or that, when you hold it down while pressing another key, causes a command to take effect.

## cut

To remove something from a picture by selecting it and then choosing **Cut** from the **Edit** menu. The image you cut is placed on the Clipboard. See also **Clipboard**.

## *delete*

The key that moves the cursor backwards, erasing the character that's to the left of it.

## dialog box

A box with a message that asks you for a decision or for more information. Sometimes the message informs you that you can't do what you're trying to do or warns you that what you're about to do will destroy some part of a picture.

## dimmed

A dimmed command, menu selection, or option is one that appears gray rather than black. It means you can't use the item.

# Glossary

### disk

A disk is a small magnetic disc about three inches across housed in a plastic shell. You save the pictures you want to keep on it.

### disk drive

The piece of equipment you put a disk in so that you can save pictures there and get them back.

### drawing window

The window that displays a picture.

### double-click

To position the pointer on something and then to twice press and quickly release the button on the mouse.

### drag

To position the pointer on something and hold the mouse button down while you move the mouse. You release the mouse button to choose a menu item, when you're drawing a figure or line, or reached the location where you want to move an object.

### easel

The working environment—the menu bar, the tool, border, and color/pattern palettes, and the drawing window—that appear on the screen.

### *enter*

A key that confirms or terminates an entry or sometimes a command. **Note:** If you're using an Apple II that has been upgraded to an Apple IIGS, there's no *enter* key on the keyboard.

## folder

A file you create in which you can keep together pictures that are related (for example, pictures that make up an animated sequence).

## font

A typeface—that is, a complete collection of letters, numbers, punctuation marks, and other symbols with a characteristic appearance. An example of a font is *Geneva*.

## font size

The overall size of characters in text. Font sizes are given in *points* (for example, 12 point and 18 point).

## highlight

To change the color of the background to make something stand out from the rest of a document. Highlighting usually shows that something has been selected or chosen.

## I

The pointer you use to position the cursor when you add text to a picture.

## icon

A simple, small picture that represents an object (such as a tool).

## launcher

The program that gives you access to the entire Apple IIGS system. The launcher shows you a list of the files on the disk in the disk drive and lets you choose the one you want to start.

# Glossary

**memory**

The place your computer stores information while you're working on the information.

**menu**

A list of commands that appears when you point to and press a menu title in the menu bar. You drag a menu to open it, then release the mouse button while a command is highlighted to choose that command.

**menu bar**

The horizontal strip at the top of the screen that contains menu titles.

**menu title**

The name of a menu, which appears in the title bar. Pressing on the menu title causes the title to be highlighted and its menu to appear below it.

*option*

A key you use like the ***command*** key to make a tool act in a special way.

**paste**

To place the contents of the Clipboard—whatever was last cut or copied—in the drawing window.

**pointer**

A small shape on the screen that follows the movement of the mouse. The pointer can be an arrow, an **I**, or a set of cross hairs.

## press

To position the pointer on something and then hold down the mouse button without moving the mouse.

## *return*

A key you use to carry out a command. You can also use it when you're adding text to a picture to move the cursor to the beginning of the next line.

## rounded rectangle

A rectangle with rounded corners.

## save

To store information on a disk.

## scroll

To move a picture, a catalog, or a list in a window so that a different part of it is visible.

## scroll arrow

An arrow on either end of the scroll bar. Clicking a scroll arrow moves the document or directory one line. Pressing a scroll arrow scrolls the document continuously.

## scroll bar

The rectangular bar along the right of the active window. Clicking or dragging in the scroll bar causes the view of the catalog or list to change.

# Glossary

### scroll box

The white box in the scroll bar. The position in the scroll bar indicates the position of what's in the window relative to the entire list.

### select

To designate where the next action will take place. You use the mouse techniques of clicking, double-clicking, and dragging to select something. You can also use the marker box and lasso to select a part of a picture.

### *shift*

A key you use to make the tool you're using act in a special way. It also causes letters you type while you're holding it down to appear in uppercase and the upper symbol to appear when you type a numeric or symbol key.

### spacebar

The long, unlabeled bar on the keyboard that you press to type a space.

### style

A variation of a font: plain text, bold, italic, underline, outline, and shadow.

### title bar

The horizontal bar at the top of the drawing window that shows the name of the picture in the window.

### window

An area that displays a picture or information on the easel.

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