



HUNDREDS OF  
TIPS, TRICKS, AND  
TECHNIQUES FROM TOP  
ILLUSTRATOR ARTISTS

# The Adobe Illustrator® CS5

# WOW!

## Book

**Sharon Steuer**  
AND THE ILLUSTRATOR WOW! TEAM

# The Adobe Illustrator CS5 **WOW!** Book

Sharon Steuer

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# Important: Read me first!

## If you're a beginner...

Beginners are of course most welcome to find inspiration in this book. However, be aware that the assumed user level for this book is intermediate through professional. If you're a beginning Illustrator user, please supplement this book with basic, beginning Illustrator instruction and training materials. In addition, don't miss the free Illustrator training videos from the Adobe TV website: <http://tv.adobe.com/#pd+Illustrator>.

## ZenLessons folder on the DVD

Once you understand the concepts of how the tools work, if you still find Illustrator cryptic, see the "ZenLessons" folder on the **WOW! DVD**. These lessons walk you through some of the basics of working with the Pen tool, Bézier curves, layers, and stacking order, helping you to learn to "think in Illustrator." You'll also find the "Zen of the Pen" PDF (by Sharon Steuer and Pattie Belle Hastings); these lessons include QuickTime movies to help you with the Pen tool and Bézier curves. To be notified when **Zen of Illustrator** books and videos become available, please send an email with the subject "Zen" to: [info@zenofillustrator.com](mailto:info@zenofillustrator.com).

First of all, it is important for you to know that this 11th edition in the **Illustrator WOW!** series has become a truly collaborative project. In order to provide you with the most thoroughly updated information in a timely manner (and as close as possible to the shipping of the new version of Adobe Illustrator), this book evolved into a project that involves a large team of international experts working simultaneously. The process begins with Steven Gordon and myself acting as co-curators; Steven surfs web and print sources and collects potential artists and artwork we'd like to feature, then posts samples of these, along with submissions sent by readers and artists we've covered in the past, to a website where we can see the works and take notes about the art. I work with each co-writer to determine which sections they want to concentrate on, based on their expertise in Illustrator. For the artists/writers that often means asking them to focus on integrating new tools and functions into their current projects so they can share that knowledge with you.

Our technical editor, Jean-Claude Tremblay, marks up the last edition in PDF, and then he and I continue to oversee every page of the book as it progresses. In addition to Jean-Claude and myself, the entire team of writers, as well as our stellar team of **WOW!** testers, test and critique each section as it develops. What this all means is that this book is the collaborative result of this amazing group of experts scattered around the globe, coming together by email, iChat, and PDF, and [acrobat.com](http://acrobat.com), to deliver the best book possible to you, the reader.

With the skyrocketing price of printing in full-color, and the fragile state of the economy for most of us, I looked for ways to bring down the cover price of the book. After consultations with the team, colleagues in the field, and Peachpit, we settled on a total rethinking of the focus of this book, which we've nicknamed "the leaner, meaner" **Illustrator WOW! Book**. With a renewed focus

on creating art and design with Adobe Illustrator, we now leave the more basic and most technical aspects of the program, to books such as Mordy Golding's *Real World Adobe Illustrator CS5* (look for two chapters from this book in PDF format on the **WOW! DVD**).

It's always sad to delete favorite artworks from previous editions, but it's also inspiring and exciting to add dozens of new gorgeous examples of art, essential production techniques, and time-saving tips—all generously shared by **Illustrator WOW!** artists worldwide. In addition to the contributing artists and coauthors, our amazing team of **WOW!** testers sets this book apart from all others. This team thoroughly tests every lesson and gallery to make sure everything actually works. We deliberately keep all lessons short to allow you to squeeze in a lesson or two between clients, and to encourage the use of this book within the confines of supervised classrooms.

The user level for this book is “intermediate through professional,” which means that we not only assume that the reader has a reasonable level of competence with Mac and Windows concepts (such as opening and saving files, launching applications, copying objects to the Clipboard, and clicking-and-dragging), but also that you have a familiarity with most of Illustrator's tools and functions. In addition, please see the pull-out card at the back of the book for a thorough summary of the shortcuts and conventions that we'll refer to regularly in the book (please see the “How to use this book...” section, following).

After you've read this book, I encourage you to read it again—you'll undoubtedly learn something you missed the first time. The more experienced you become with Adobe Illustrator, the easier it is to assimilate all the new information and inspiration you'll find in this book. I'm immensely proud of and grateful to everyone who works with me on this project. And I welcome you to the team.



Sharon Steuer

## What's new in CS5 (and CS4)?

New feature highlights for CS5 include the Shape Builder tool, the Perspective tools, Bristle Brushes, variable width strokes and the Width tool, transparency in Gradient Mesh, and the Artboards panel (for help with multiple artboards). New CS4 features (in case you missed them) include the Blob Brush tool, multiple artboards, the Gradient Annotator (for adjusting gradients directly on objects), and transparency in gradients. For a complete summary of Illustrator CS5 features, click the New Features link in the bottom-left corner of the Welcome Screen, which you can open via *Illustrator Help*.

## What's on the WOW! DVD

**WOW!** technical editor Jean-Claude Tremblay collected his favorite Illustrator-related plug-ins and software on the **WOW! DVD**. You'll also find relevant PDF excerpts from a number of great books, a year's worth of *Design Tools Monthly* newsletters, samples of clip art from GoMedia, and of course, lots of artwork from the book for you to pick apart.

## Course outline for teachers...

If you're teaching a class in Illustrator, download the **Illustrator CS5 WOW! Course Outline** (by Lisa Jackmore and Sharon Steuer) from: [www.ssteuer.com/edu](http://www.ssteuer.com/edu)

# How to use this book...




If the Welcome Screen is unwelcome, hide it by enabling “Don’t show again”



Access a hidden Welcome Screen from Help


## Look for the disc icon...

When you see this icon,  find related artwork or files to deconstruct on the **WOW! DVD** (within that chapter’s folder).

## Windows WOW! Glossary

and essential Adobe Illustrator shortcuts

<b>Cut All</b>	Cut always refers to the <b>Cut (Command)</b> key. All always refers to the <b>All</b> key.
<b>Marquee</b>	With any Selection tool, click-drag over object(s) to select.
<b>Toggle</b>	Many selections act as a switch; choose once turns it on, choosing again turns it off.
<b>Contextual menu</b>	Right-click to access contextual menus.
<b>Group</b>	Ctrl-G to group objects together onto one layer.
<b>Copy, Cut, Paste, Undo</b>	Ctrl-C, Ctrl-X, Ctrl-V, Ctrl-Z.
<b>Select All, Deselect</b>	Ctrl-A, Ctrl-Shift-A.
<b>Paint Remembers Layers</b>	With Paint Remembers Layers on (from the Layers panel menu), pasting from the Clipboard places objects on the same layer that they were on originally; if you don't have the layers, Paint Remembers Layers will make the layers for you.
<b>Paste in Front</b>	Use Ctrl-F to paste objects on the Clipboard directly in front of selected objects, and in exact registration from where it was cut (if nothing is selected, it pastes in front of current layer with Paint Remembers Layers off).
<b>Paste in Back</b>	Use Ctrl-B to paste objects on the Clipboard directly in back of selected objects, and in exact registration from where it was cut (if nothing is selected, it pastes in back of current layer with Paint Remembers Layers off).
<b>Toggle rulers on/off</b>	Ctrl-R.
<b>fx menu</b>	From the Appearance panel, click the fx icon to access effects.
<b>Select contiguous</b>	Hold Shift while selecting to select contiguous layers, swatches, etc.
<b>Select non-contiguous</b>	Hold Ctrl while selecting to select contiguous layers, swatches, etc.
<b>Toggle Smart Guides on/off</b>	Ctrl-U.
<b>Turn objects into guides</b>	Ctrl-S.

While everyone is welcome to be inspired by the fabulous work showcased in this book, please keep in mind that this **Adobe Illustrator CS5 WOW! Book** has been designed and tested for intermediate through professional-level users of Adobe Illustrator. That means that you'll need to be familiar enough with the basics of Illustrator to be able to create your own art to follow along with the lessons. Unlike some books that do all the work for you, this book encourages experiential learning; as you follow along with the lessons, you'll not only be mastering the techniques, but you'll be creating your own art along the way. And to help you figure things out and inspire you further, this icon  tells you to look for the featured artwork within that chapter's folder on **The Adobe Illustrator CS5 WOW! DVD** (referred to hereafter as the **WOW! DVD**).

## Shortcuts and keystrokes

Please start by looking at the **WOW! Glossary** on the pull-out quick reference card at the back of the book for a thorough list of power-user shortcuts that you'll want to become familiar with. The **WOW! Glossary** provides definitions for the terms used throughout this book, always starting with Macintosh shortcuts first, then the Windows equivalent (**⌘-Z**/Ctrl-Z). Conventions covered range from simple general things such as the **⌘** symbol for the Mac's Command or Apple key, and the Cut, Copy, Paste, and Undo shortcuts, to important Illustrator-specific conventions, such as **⌘-G**/Ctrl-G for grouping objects, and Paste In Front (**⌘-F**/Ctrl-F)/Paste In Back (**⌘-B**/Ctrl-B) to paste items copied to the Clipboard directly in front/back of the selected object, and in perfect registration. Because you can now customize keyboard shortcuts, we're restricting the keystrokes references in the book to those instances when it's so standard that we assume you'll keep the default, or when there is no other way to achieve that function (such as Lock All Unselected Objects).

## Setting up your panels

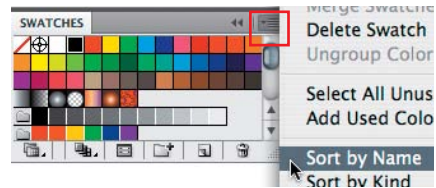
In terms of following along with the lessons in this book, if you want your panels to look like most of our panels, you'll want to sort swatches by name. Choose “Sort by Name” and “List View” from the Swatches pop-up menu. (Hold Option/Alt when you choose a view to set this as the default for all swatch kinds in the Swatches panel.)

In addition, Illustrator initially launches with an application default that could inhibit the way Illustrator experts work. One of the most powerful features of Illustrator is that, when properly set, you can easily style your next object and choose where it will be in the stacking order, by merely selecting a similar object. But in order for your currently selected object to set all the styling attributes for the next object you draw (including brush strokes, live effects, transparency, etc.), you must first disable the New Art Has Basic Appearance setting from the pop-up menu in the Appearance panel (✓ shows if it's enabled). Your new setting sticks even after you've quit, but needs to be reset if you reinstall Illustrator or trash the preferences.

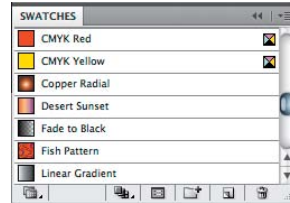
## HOW THIS BOOK IS ORGANIZED...

You'll find a number of different kinds of information woven throughout this book—all of it up-to-date for Illustrator CS5: **Introductions**, **Tips**, **Techniques**, **Galleries**, and **References**. The book progresses in difficulty both within each chapter, and from chapter to chapter.

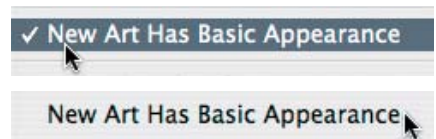
- 1 Introductions.** Every chapter starts with a brief, general introduction. In these intros you'll find a quick overview of the features referred to in the chapter Techniques and Galleries that follow, as well as a robust collection of tips and tricks that should help you get started.
- 2 Tips.** Look to the information in the gray and red boxes for hands-on Tips that can help you work more efficiently. Usually you can find Tips alongside related text, but if you're in an impatient mood, you might just want to flip through, looking for interesting or relevant Tips. The red



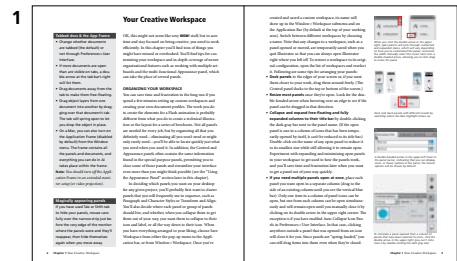
With the All Swatches icon selected, choose “Sort by Name” and then “List View” from the Swatches pop-up menu



The Swatches panel viewed with “Sort by Name” and “List View” selected



If you want your currently selected object to set all styling attributes for the next object, disable New Art Has Basic Appearance by choosing it from the pop-up menu in the Appearance panel



The Introduction sections begin every chapter with overviews of features

- Tip boxes**  
Look for these gray boxes to find Tips about Adobe Illustrator.
- Red Tip boxes**  
Red Tip boxes contain warnings or other essential information.



Access Illustrator Help from the Help menu

## Everything's under Window...

Almost every panel in Illustrator is accessible through the Window menu. If we don't tell you where to find a panel, look for it in the Window menu!

arrows →, red outlines, and red text found in tips (and sometimes with artwork) have been added to emphasize or further explain a concept or technique.

**3 Techniques.** In these lesson-oriented sections, you'll find step-by-step techniques gathered from artists and designers around the world. Most **WOW!** techniques focus on one aspect of how an image was created, though we'll sometimes refer you to different **WOW!** chapters (or to a specific step-by-step Technique, Tip, or Gallery where a technique is introduced) to give you the opportunity to explore a briefly covered feature more thoroughly. Feel free to start with almost any chapter, but be aware that each technique builds on those previously explained, so you should try to follow the techniques within each chapter sequentially. Some chapters include **Advanced Technique** lessons, which assume that you have assimilated all of the techniques found throughout the chapter. The *Mastering Complexity* chapter is packed with lessons dedicated to advanced tips, tricks, and techniques.

**4 Galleries.** The Gallery pages consist of images related to techniques demonstrated nearby. Each Gallery piece is accompanied by a description of how the artist created that image, and may include steps showing the progression of a technique detailed elsewhere.

**5 References.** At the back of the book, you'll find one appendix listing the artists featured in this book, and another listing the resources we've referred to, most of whom have included a demo or additional information for you on the **WOW! DVD**. In addition to these sections, you'll also find a *General Index*, and a pull-out quick reference card containing Mac and Windows versions of a **WOW! Glossary** and **Finger Dance** shortcut sequences. Finally, within the text you'll occasionally be directed to *Illustrator Help* to find specific information that's well-documented in the Adobe Help Viewer. To access this, choose Help > Illustrator Help.

# 4

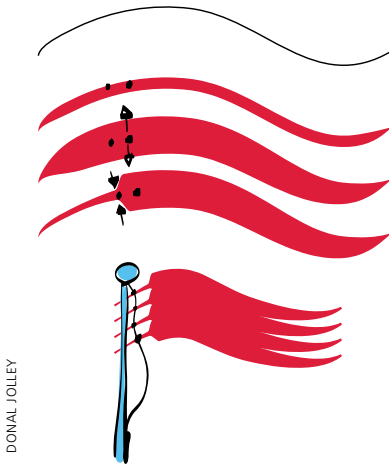
## **Expressive Strokes**



# Expressive Strokes

## Swapping fill and stroke

Press the X key to toggle the focus of the Stroke or Fill box on the Tools and Color panels, and press Shift-X to swap the actual *attributes* or contents of the Stroke and Fill boxes. For example, if you start with a white fill and a black stroke, you will have a black fill and a white stroke after you press Shift-X. **Note:** *Because strokes can't contain gradients, Shift-X will not work when the current fill is a gradient.*



DONAL JOLLEY  
Creating discontinuous curves from continuous curves with the Width tool when creating a flag

## Deleting arrowhead presets

To make custom arrowheads, be sure to only modify the file holding the default presets. If you delete any arrowheads in that file, you'll have to reinstall Illustrator to get them back again.

Almost everything you thought you knew about styling strokes in Illustrator has changed. A path can be manually adjusted with the Width tool to emulate calligraphy, and its form (profile) can be saved in the Stroke panel and applied to another path. Art Brushes can have start and end points protected from alteration, have flexible scale options, and can wrap to fit into tight corners. Tiles for Pattern Brushes offer several scaling options to use with spacing, creating completely different looks when applied to paths. The Bristle Brush emulates traditional brushes, ranging from a round sable to a flat fan, with the texture of multiple “bristles” added at each stroke of the brush. The Symbols we paint with are also discussed here, even though strictly speaking they aren’t “strokes.”

## WIDTH TOOL

The Width tool (Shift-W) varies the width of strokes created with the drawing and geometric shape tools, or Art and Pattern Brushes. The path doesn't have to be selected; hover over it with the Width tool and the path will highlight, along with hollow diamonds indicating existing width points that were either set automatically, such as the end points of a path, or that you have set. As you move your cursor over the path, still hovering, a hollow diamond moves with your cursor, ready to become a width point at whatever location along the path you click on. You can modify paths between two existing width points, and can create either a *continuous*, flowing curve, or a *discontinuous* one with a sharp break between sections of the curve). If the width points are spaced apart, the path gradually gets wider or narrower from one point to the next in a continuous curve. If the width points are placed on top of each other, you create a sharp break between the two widths, causing the curve to abruptly widen or narrow, much like adding an arrowhead to the path. Modify strokes on either side of the path either by



adjusting the stroke weight evenly along the path, or placing more weight on one side of the path than the other. Your custom stroke profile is temporarily stored in the Stroke panel, making it possible to apply the same stroke to as many paths in the document as you wish. An asterisk in the Appearance panel beside the Stroke denotes a width profile. You can also save a custom profile as part of a Graphic Style and/or to the Profiles list using the Save icon at the bottom of the Stroke panel list. The Reset icon restores the default width profiles, replacing any custom profiles you've saved, so be careful about choosing to restore the default width profiles. You can modify width points in a variety of ways with the Width tool:

- **To open the Width Point Edit dialog**, double-click on a path or existing width point. Numerically input the stroke weight for each side of the path, and/or choose to have adjoining width points adjusted at the same time.
- **To interactively adjust the width point**, click-drag on a handle to symmetrically adjust the stroke width.
- **To adjust one side of a stroke**, press Option/Alt while dragging on a handle.
- **To adjust the position or width of just some of the points**, Shift-click to first select them, then Shift-drag to move them in tandem or adjust their width.
- **To adjust all the points at once**, select one width point and Shift-drag to adjust all the rest in tandem.
- **To copy selected points**, hold Option/Alt as you drag.
- **To delete a selected width point**, press the Delete key.
- **To deselect a width point**, press the Esc key, hold down Option/Alt and click on an empty space, or use ⌘-Shift-A/Ctrl-Shift-A to deselect all (holding down ⌘ or Ctrl *does not* temporarily switch you to the Selection tool).

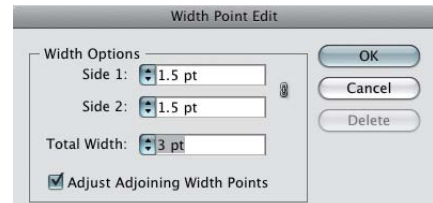
## THE EXPANDED STROKE PANEL

The Stroke panel controls settings for the many different types of strokes, from how they align to the path of an object to how they join at corners. Dashed lines, end caps, and arrowheads all are part of the Stroke panel, as well as stored width profiles, from a normal even width to a fully

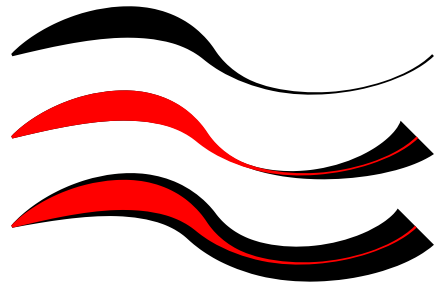
## Save those width profiles

The Reset icon in the Strokes panel deletes all custom width profiles and restores the default profiles.

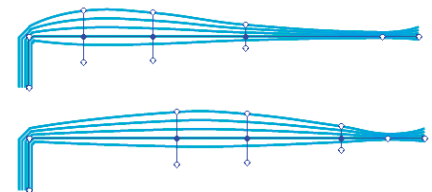
To first save your width profiles, apply them to an object, then save that object's Graphic Style in the Graphic Styles panel.



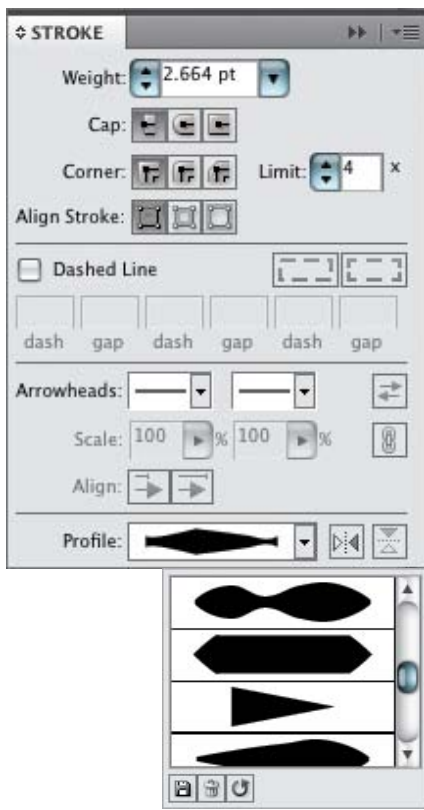
Use the dialog (shown above) to enable *Adjust Adjoining Width Points* (disabled by default), or select a point and hold the Shift key down while adjusting it in order to bypass opening the dialog



(Top) The starting stroke with width points already added and adjusted; (middle) the width point at the right end adjusted again to make the end wider and *Adjust Adjoining Width Points* disabled; (bottom) with *Adjust Adjoining Width Points* enabled when adjusting the same original right-end width point—starting stroke shown for clarity in red on top of both adjusted strokes.



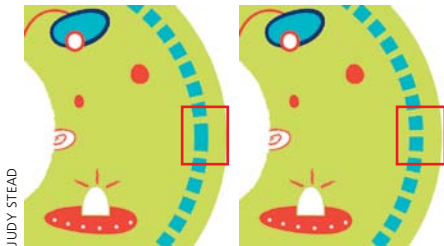
Shift-selecting just some contiguous (shown) or non-contiguous (not shown) width points on a Pattern Brush stroke, releasing Shift, then moving them all at once



Stroke panel with width profiles list; save or delete one custom width profile at a time; re-setting the defaults removes all custom width profiles



A path shown first in Outline, then in Preview with a Miter join, Round join, and Bevel join



JUDY STEAD

(Left) Choosing to align with mathematically precise spacing; (right) with adjusted spacing for visual appearance, aligning dashes to corners and path ends, which adjusts the space between to fit more uniformly

calligraphic profile. Here you can also customize and save your carefully crafted stroke profiles after creating a variable-width stroke, and preview how your path joins to an arrowhead. Adjust the way dashes follow a path, and scale arrowheads to suit.

## Making ends meet

Sometimes stroked lines seem to match up perfectly when viewed in Outline mode but they visibly overlap in Preview mode. You can solve this problem by selecting one of the three end cap styles in the Strokes panel. The default Butt cap causes your path to stop at the end anchor point and is essential for creating exact placement of one path against another. The Round cap is especially good for softening the effect of single line segments. The Projecting cap extends lines and dashes at half the stroke weight beyond the end anchor point. Cap styles also affect the shape of dashed lines.

Corners have joins that serve a similar purpose to end caps. The Join style in the Stroke panel determines the shape of a stroke at its corner points; the inside of the corner is always angled. The default Miter join creates a pointy corner, with the length of the point determined by the width of the stroke, the angle of the corner (narrow angles create longer points), and the Miter limit setting on the Stroke panel. The default Miter join (with a miter limit of 10x) usually looks fine, but can range from 1x (which is always blunt) to 500x. The Round join creates a rounded outside corner with radius of half the stroke width. The Bevel join creates a squared-off outside corner, equivalent to a Miter join with the miter limit set to 1x.

Dashes behave like short lines, and therefore have both end caps and, potentially, corner joins. End caps work with dashes exactly as they do with the ends of paths—each dash is treated as a very short path. However, if a dashed path goes around the corner, it can make that turn in one of two ways: The spacing between the dashes can be precise and constant, so the dash won't necessarily bend around a corner, or even reach to it, or you can click

the “Aligns dashes to corners and path ends, adjusting lengths to fit” icon. Dashes won’t be precisely spaced, but will look tidy at the corners. The command affects dash spacing for other shapes, from circles to stars, as well.

One more “end” to a path is an arrowhead, and the Stroke panel now offers a choice of both the types of arrowheads and how they are affixed to the ends of the paths. Click on the Arrowheads pop-up list to choose to attach an arrow or feather to the start or end of the path. You can then scale it proportionally or disproportionately, reverse the start and end, or align the arrowhead so that either the tip or the end of the arrow meets the end of the path. To remove an arrowhead (or feather), choose None from the list. You can add custom arrowheads to the list without removing any of the default arrowheads (you’d have to reinstall Illustrator to make them available again if you removed them). Both dash alignment options and arrowheads can be modified again at any time.

## BRUSHES

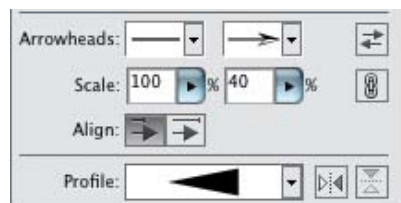
Illustrator’s Calligraphic, Art, Scatter, Bristle, and Pattern brushes can mimic traditional art tools, create photorealistic imagery, or provide pattern and texture to your art. You can either create brush strokes with the Brush tool, or you can apply a brush stroke to a previously drawn path.

Calligraphic Brushes create strokes that mimic real-world calligraphy pens, brushes, or felt pens. You can define a degree of variation for the size, roundness, and angle of each “nib.” You can also set each of these attributes to respond to a graphics tablet and stylus (like the Wacom) with a variety of different pen characteristics (with a mouse, you can only use Fixed or Random).

Art Brushes consist of one or more pieces of artwork that get fitted to the path you create with them. You can use Art Brushes to imitate traditional painting media, such as drippy ink pens, textured charcoal, spatter brushes, dry brushes, watercolors, and more. Or an Art Brush can represent real-world objects, such as a petal, a leaf, or a ribbon, a flower, decorative flourish, or train. You

## Creating custom arrowheads

*Illustrator Help* provides directions for locating the Arrowheads file on your computer. The file contains instructions for customizing and saving arrowheads without overwriting the original file.



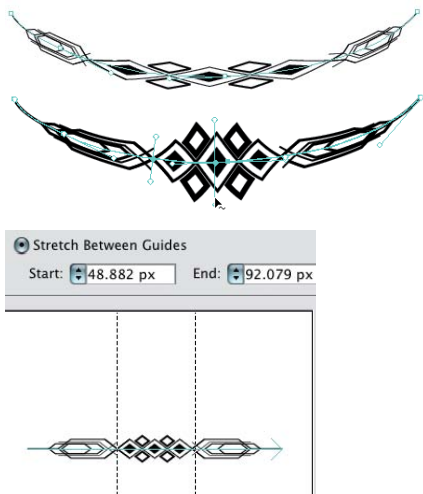
Using the Arrowheads section of the Stroke panel to align the arrowhead so the tail of the arrowhead joins the end of the path with the head extending beyond (left and as shown in the dialog), or to align the arrowhead so the tip of the arrowhead joins the end of the path (right)

## Where’s the Blob Brush?

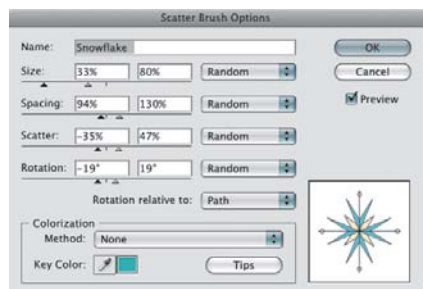
Find information on the Blob Brush in the *Rethinking Construction* chapter; even though it’s first applied like a brush, it’s really more of a modern, fluid method for constructing objects.

## Graphics tablets & brushes

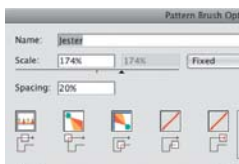
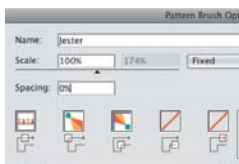
Bristle Brushes, which mimic painter’s brushes, respond to every hand gesture when using a tablet and pen, such as the Wacom. The Wacom 6D Art or Art Pens also easily retain the appearance of the individual bristles, while allowing full rotation to create unique strokes that imitate real brushes. A mouse is much more limited.



Using the Width tool to alter an Art brush stroke modified by Stretch Between Guides option



The Scatter Brush dialog varies how the artwork is scattered along a path



Altering Pattern Scale and Spacing to create a very different look to the brush

can modify Art Brushes and their strokes using a number of different parameters, including variables affected by pressure (if you're using a Wacom tablet and pen). Art Brush marks can be made to scale proportionately to fit the length of your path, or stretched to fit. You can also scale your brush non-proportionally by restricting the area of the Art Brush that can stretch, using two guides to create a segmented brush (choose Stretch Between Guides for the Scale option). Either or both ends of the brush are then protected from being stretched, and the middle portion is stretched to fill in the remaining length. This allows you to stretch the stem of a rose, for instance, without stretching the blossom itself. You can further modify an Art Brush with colorization methods, such as choosing to vary a key color by tint or hue. Modify the way the Art Brush follows a path by flipping its direction, and use the Overlap option to determine whether or not to allow it to overlap itself when turning a corner. You can also use the Width tool to modify an Art Brush.

Use Scatter Brushes to scatter copies of artwork along the path you create with them: flowers in a field, bees in the air, stars in the sky. The size of the objects, their spacing, how far they scatter from the path, and their rotation can be set to a Fixed or Random amount or, with a graphics tablet, can vary according to characteristics such as pressure or tilt. You can also align the rotation of the scattered objects to the direction of the path, or to the edges of the page. Change the method of colorization as you would with a Calligraphic or Pattern Brush.

Use Pattern Brushes to paint patterns along a path. To use a Pattern Brush, first define the tiles that will make up your pattern. For example, a train has an engine, rail cars, links, and a caboose. Each of these constitutes a tile where you have the start of the path, the middle (the side tile), the tiles that turn either an inside or outside corner, and the end of the path. The tiles must be made as individual art and stored in the Swatches panel before you can make your Pattern Brush. Afterwards, however, you can delete them from Swatches. In the Pattern Brush Options dialog,

select a tile, then click on the swatch name below the tiles that you want assigned to that tile. You can customize settings for how the tiles fit to, or flip along, the path, and to alter their color. You can also vary the appearance of the Pattern Brush, how it fills sharp angles (by altering the Scale in both Fixed parameters and those affected by tablet features), and the spacing between tiles.

Bristle Brushes emulate traditional paint brushes, showing both the texture of the bristles and the tip shape, which can be round, flat, fan-shaped, etc. To create a Bristle Brush, select it as the New brush type and, in the Bristle Brush Options dialog, choose a tip shape. From there, modify the brush's bristle length, density, and thickness; whether or not the bristles are stiff or soft; and how opaquely it applies the paint. Bristle Brushes use paint opacity for their effect, but even a 100% Opacity isn't completely opaque. Change Opacity on the fly with the numbers on the keyboard. Because calculating transparency for printing often takes a long time, a dialog warns that if you have more than 30 Bristle Brush strokes, you may want to select some or all of the Bristle Brush strokes and choose **Object > Rasterize** to set raster settings for them before you attempt to print.

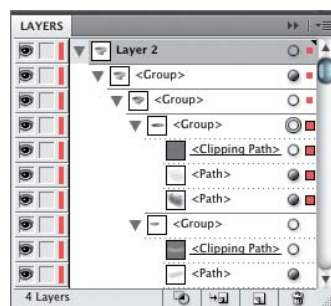
## Working with brushes

The following describes functional features that apply to most or all brushes:

- **To create Art, Scatter, and Pattern Brushes**, create the artwork for them from fairly basic artwork, including compound shapes, blends, groups, and some live effects such as Distort & Transform or Warp. You *can't* create brushes from art that uses gradients, mesh objects, raster art, and advanced live effects such as Drop Shadow or 3D.
- **To modify the art that makes up a brush**, drag it out of the Brushes panel, edit the object, then drag it back into the Brushes panel. Use the Option/Alt key as you drag to replace the original art with the new art.
- **To set application-level preferences for all brushes**, double-click the Paintbrush tool. (The new preferences

## Draw Inside and Bristle Brushes

Bristle Brushes are a good candidate for the Draw Inside mode (see the *Rethinking Construction* chapter). You can add the bristle texture to a vector shape while retaining some or all of the original color; Draw Inside also constrains the strokes inside the object, ensuring stray bristle marks are automatically masked.

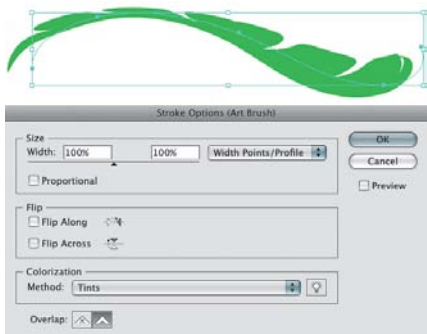


Using a Bristle Brush (the Footprint brush showing) to draw inside a selected path, and the Layers panel showing the Clipping Paths created by Draw Inside

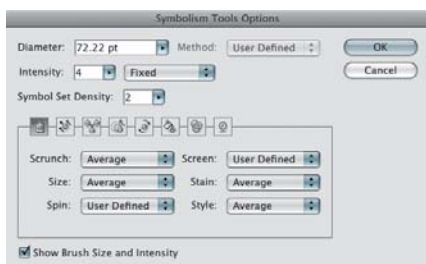
## Symbols vs. Scatter Brushes

Because it's easy to edit symbols, using symbols can be preferable to using Scatter Brushes, whose attributes will be applied to the whole set. The ability to delete individual symbols within a set is another potential advantage over scattering objects with a brush stroke, which must be expanded before individual objects can be deleted from it.

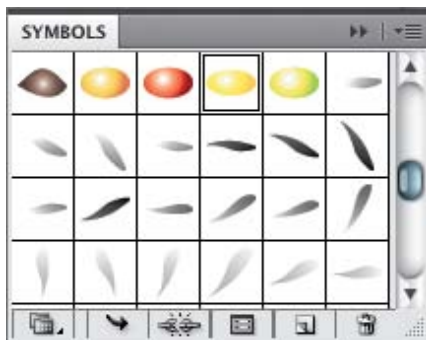




Modifying based on Width Points using Options of Selected Object for an Art Brush that has already been modified with the Width tool



Symbolism Tools Options dialog



Storing symbols in the Symbols panel, with access to other symbol libraries, editing commands, and the Symbol Options dialog



Quick access to Symbol features on the Control panel with a symbol in the artwork selected; the Reset button not grayed out indicates the symbol has been transformed and the Replace pop-up gives immediate access to the loaded Symbols library

will apply to work you do with the brushes going forward, but won't change existing work.)

- **To modify the properties of a single brush stroke,** select it, then choose Options of Selected Object in the Brush panel's menu. If you've used the Width tool to modify the stroke, your options include using the width points to calculate the profile for your next strokes.
- **To choose how to apply modifications** to existing brush strokes, in the brush's Options dialog choose Leave Strokes to create a duplicate brush, or Apply to Strokes to modify every use of the brush in the document.
- **When Keep Selected and Edit Selected Paths are both enabled,** the last drawn path stays selected; drawing a new path close to the selected path will redraw that path. Disabling either of these options will allow you to draw multiple brush strokes near each other, instead of redrawing the last drawn path.

## SYMBOLS

Working with symbols in Illustrator saves file size (since objects converted to symbols aren't duplicated in the file), provides consistency whenever the same artwork needs to be used more than once, and makes it easy to update objects in your artwork simply by editing the symbol to change it wherever it has been used. Symbols can be made from almost any art you create in Illustrator. The only exceptions are a few kinds of complex groups, such as groups of graphs, and placed art (which must be *embedded*, not linked). Symbols are edited and stored using the Symbols and Control panels, and are manipulated in your artwork with the Symbolism tools:

- **To store selected artwork as a symbol,** drag it into the Symbols panel (or click on the New Symbol icon in the panel). Use the Libraries Menu icon to save the current symbols to a new library, or to load other libraries.
- **To add a single instance of a symbol to your document,** drag it into your document or, with it selected, click on the Place Symbol Instance icon. Drag a symbol instance into your document as often as you like, but you

can only use the Place Symbol Instance icon once. It's most useful for modifying the symbol (see below).

- **To modify a symbol without modifying the original symbol** in the Symbols panel, click either the Break Link button in the Control panel or the “Break Link to Symbol” icon in the Symbols panel.
- **To modify a symbol and all instances of it** already in the document, place or drag it into your document, then click on the Edit Symbol button in the Control panel. Your symbol will be placed in isolation mode. After you modify it and exit isolation mode, all instances of the symbol, including the symbol in the Symbols panel, are updated.
- **To modify a symbol in the Symbols panel when you have already broken the link**, Option/Alt-drag the modified symbol on top of the symbol in the Symbols panel. This will replace the original symbol with the modified artwork and update all instances of the original symbol.
- **To restore a symbol to its original size and orientation** after transforming it, click the Reset button in the Control panel.
- **To quickly find all instances of a symbol** in your artwork, target the symbol either in the Symbols panel or in your artwork and choose Select All Instances from the Symbol panel's menu.
- **To replace one symbol with another without opening the Symbols panel**, select the symbol in the artwork and click on the Replace list arrow in the Control panel. A miniature Symbols panel opens, which allows you to swap out symbols.
- **To add a sublayer to a symbol's artwork**, in isolation mode click on the topmost layer with the symbol's name, and then click on the New Sublayer icon. You can't add sublayers to a <Group> or <path>.
- **To add a new layer above a group or path sublayer at the same hierarchy level**, target the layer, then Option-click/Alt-click on the New Layer icon. If the layer remains a normal layer (not a group or a path),



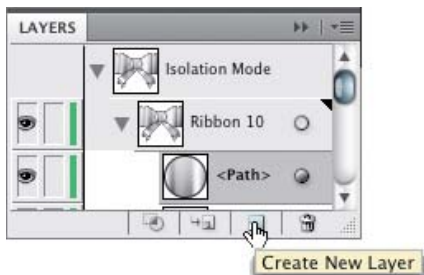
*Some Control panel options for modifying symbols, including providing a Flash instance name and a Reset button for restoring a symbol to its original size*

## Symbols for Flash

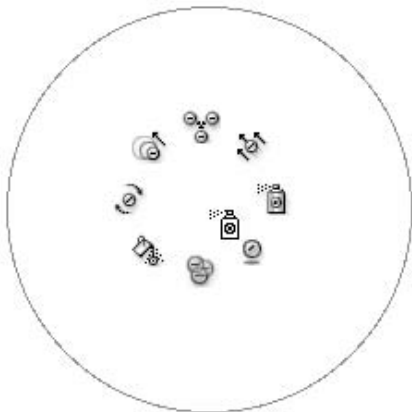
When creating symbols for use in Flash, take advantage of Illustrator's built-in features for making them ready for use:

- Enable 9-slice scaling, often used for buttons and other interface elements when creating a Flash-based website, from within Illustrator. Doing so reduces distortion when scaling objects, especially noticeable with elements such as buttons that have custom corners.
- Assign a Registration point to the symbol in Illustrator. The Registration point affects any transformations applied inside Illustrator, and Flash also uses the Registration point as the origin point (0,0) for Motion Presets and other commands used to animate or modify the symbol.
- Give a symbol a unique Instance name in the Control Panel so Flash can identify it when using Action Script commands. This is important when creating interface elements, such as buttons, that are otherwise identical.





Adding a new layer at the same level as a path sublayer by Option-clicking/Alt-clicking on the Create New Layer icon



Control-Option-click/Ctrl-Alt-click on an empty spot in the document to reveal this heads-up display of all the Symbolism tools; drag to the desired tool and release the mouse.



Using the Symbolism tools to modify the original set (top) for greater variety (bottom)

you can continue to add new layers at that level merely by clicking on the New Layer icon.

## Working with the Symbolism tools

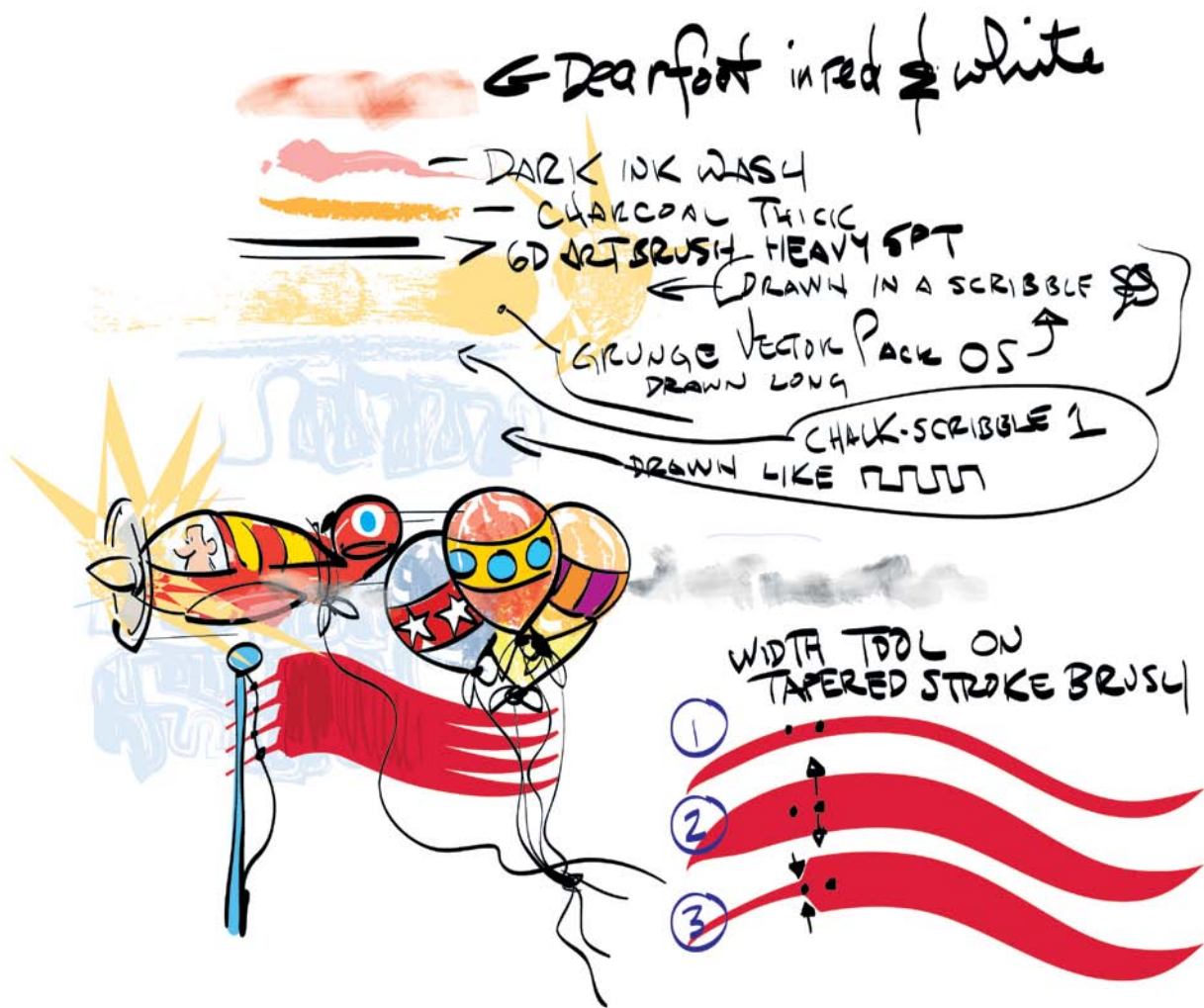
There are eight different Symbolism tools. Use the Symbol Sprayer tool to spray selected symbols onto your document, creating a symbol set. You can't select individual instances inside a set with any of the selection tools.

Instead, modify them with any of the other Symbol tools.

To display a ring of tools in your document in order to select a new one, press Control-Option/Ctrl-Alt while clicking and holding in an empty spot in your document then drag to a new icon before releasing your mouse. Add symbols to a selected set by selecting a symbol in the Symbols panel—the symbol can be the same as or different from the symbols already present in the instance set—and spray. To add or modify symbols in a set make sure you've selected *both* the set and the corresponding symbol(s) in the Symbols panel that you want to affect. The Symbolism tools will only affect those symbols in a selected set that are also selected in the Symbols panel, thus making it easy to modify just one of the symbols in a mixed set.

To adjust the properties of the Symbolism tools, double-click on one to open Symbolism Tools Options. Vary the diameter (the range over which the tool operates), the rate at which it applies a change, and the density with which it operates on a set. If you're using the default Average mode, your new symbol instances can inherit attributes (size, rotation, transparency, style) from nearby symbols in the same instance set. For example, if nearby symbols are 50% opaque, symbols added to the set will also be 50% opaque. You can also change the default Average mode to User Defined or Random. (See *Illustrator Help* for more information about choosing User Defined.)

To remove symbols from an existing instance set, use the Symbol Sprayer tool with the Option/Alt key, and click on an instance to delete it (or click-drag your cursor over multiple instances—they're deleted when you lift your cursor).



JOLLEY

### Don Jolley

This sampler by Don Jolley, using his 6D Art Pen, demonstrates the tremendous variety you get from brushes that ship with Illustrator. When you add a Wacom pressure-sensitive pen and tablet to these out-of-the-box brushes, you can introduce even more variety into your strokes; the standard Grip Pen registers pressure, tilt, and bearing, and the optional, more sensitive 6D Art (Intuos3) or Art (Intuos4) Pens add the

ability to vary each stroke with rotation. The Bristle Brush responds particularly well to the Art Pens, adding a new dimension to painting. You can manually transform your stroke (except those made with the Calligraphic, Scatter, or Bristle Brushes), by modifying its profile with the Width tool, and then saving that profile to apply to other strokes.

# Brushes & Washes

Drawing with Naturalistic Pen, Ink, & Wash



**Overview:** Start with a placed image as a template; create a custom Calligraphic brush; create variations on the brush to apply to strokes; add a wash layer below the ink layer.

## Transparent brushstrokes

By default, brushstrokes are opaque. You can also draw with semi-transparent brushstrokes, which you can use to simulate some types of inks or watercolors; where marks overlap, they become richer or darker. Click **Opacity** in the Control panel to reduce opacity or choose a blending mode.

1



(Top) The original photo; (bottom) brush strokes drawn over the dimmed template photo



STEUER

It's easy to create spontaneous painterly and calligraphic marks in Illustrator—and perhaps with more flexibility than in many pixel-based programs. Sharon Steuer drew this sketch of Honfleur, France, using a Wacom tablet, her Art Pen for the Intuos4, and two different Illustrator brushes. She customized a brush for the thin, dark strokes and used a built-in brush for the underlying gray washes.

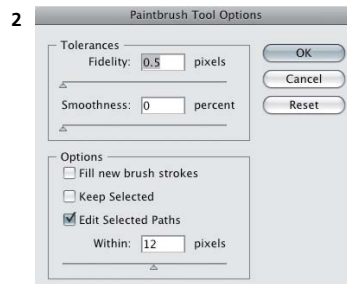
**1 Importing artwork and using template layers.** If you want to use a sketch or photo as a reference, set it up as a non-printing template layer. For her template image, Steuer scanned a small photo of Honfleur. To place an image as a template layer so it can be easily resized, choose **File > Place**, enable the **Link** checkbox, and click the **Place** button. If the image imports at too large a size, hold down the **Option-Shift/Alt-Shift** keys (to resize proportionally from the center) and drag on a corner of the bounding box until the image is the size you want. Then double-click on the layer to open the **Layers Options** dialog and enable the **Template** option. Illustrator automatically dims the image to make your drawing easier to see. Toggle between hiding and showing the template layer using **⌘-Shift-W/ Ctrl-Shift-W**, or toggle the visibility icon in the **Layers** panel. If you need to unlock the layer, do so in the **Layers** panel, not the **Layer Options** dialog.

**2 Customizing a Calligraphic brush.** In order to sketch freely and with accurate detail, you'll need to adjust the default Paintbrush tool settings. Double-click the Paintbrush tool to open Paintbrush Tool Options. Drag the Fidelity and Smoothness sliders all the way to the left so that Illustrator records your strokes precisely. Disable "Fill new brush strokes," and if you want to be able to quickly draw strokes that overlap, disable Keep Selected.

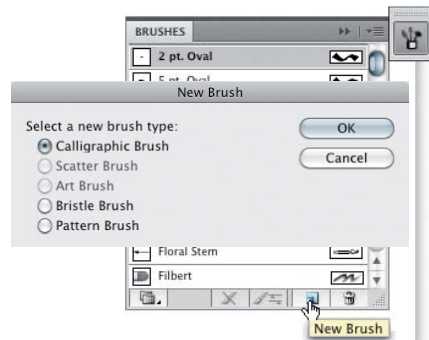
Disable "Edit Selected Paths" and set the Within slider to 12 pixels. To create a custom Calligraphic brush, click the New Brush icon and select Calligraphic Brush. For this piece, Steuer chose the following settings: Angle=90°/Fixed; Roundness=10%/Fixed; Diameter=4 pt/Pressure/Variation=4 pt. If you have one of the newer Wacom Art Pens, try varying the Diameter with Rotation instead of Pressure, then let the pen barrel rotate between your fingers naturally as you draw. (If you don't have a pressure-sensitive tablet, only Random will have any effect on varying your stroke.) To create a variation of a brush, duplicate it by dragging it to the New Brush icon, then double-click the copy to edit it. By creating and saving a variety of brushes—adding minor variances in Angle, Roundness, and Diameter—you can enhance the hand-drawn appearance of your ink drawing by selecting a brushed path and choosing a new brush for it.

**3 Adding a wash.** For this piece, Steuer added depth by introducing gray washes underneath the dark brush strokes. To easily edit the wash strokes without affecting the dark ink strokes, create a new layer, and draw your wash strokes into this layer between the ink and template layers. To avoid altering other layers while you brush in the washes, you may want to lock all the other layers. To toggle between locking all layers except the wash layer, and unlocking all layers at once, including the wash layer, Option-click/Alt-click the wash layer's Lock icon.

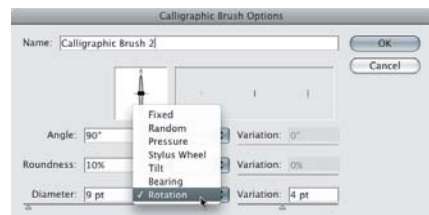
For the wash, select a light color. Steuer used the Dry Ink 2 brush from the Artistic\_Ink brush library (Swatch Libraries menu). In the Layers panel, click the wash layer to make it the current drawing layer, and paint away.



Customizing the Paintbrush Tool Options



Creating a new Calligraphic brush



Angle, Roundness, and Diameter can be set to a variety of Pen characteristics, including Rotation if the Pen is one of the newer Art Pens; for mice, Random is the only variation from Fixed.



The final ink drawing after adding a couple of people not in the original photo, and before adding the wash





JACKMORE



## Lisa Jackmore

To make interesting brushstrokes, Lisa Jackmore used variations of Calligraphic and Bristle brushes. With a Wacom Intuos4 tablet and Art Pen, Lisa Jackmore created variation in some of her Calligraphic and Bristle brushstrokes, changing the parameters of Pressure, Rotation, and Tilt. When she wanted to customize a brush, she double-clicked the brush, and made changes to the options. For the tree outline, she used a 3-pt Flat Calligraphic brush, set the Diameter to Pressure (with a 2-pt variation), Roundness to Tilt (34°, with a variation of 15°), and set the Angle to Rotation (with a 125° variation). For the long sweeping lines of the tree, she found the combination of using Rotation and a chisel tip of the Art Pen worked the best to vary the brushstroke. As she drew, she slightly rotated and tilted the pen and created variations in her

stroke. To create an irregular ink-like appearance in the words, she used a 1-pt Round Calligraphic brush, and set the Angle to 30° (fixed), Roundness to Tilt (60°, with a 29% variation). Jackmore used several other variations of Calligraphic brushes to draw the suitcases and background pattern. To make the pattern, she drew several paths with a customized Calligraphic brush, grouped the brushstrokes, and dragged the pattern tile to the swatches panel. After she drew all of the black brushstrokes, she colored the illustration with a gradient mesh object for the background, and used variations of the Fan, Round Blunt, and Round Point Bristle brushes for other areas, such as the bird, suitcases, and shadows. Finally, Jackmore used the rectangle tool to make a frame, then applied a Charcoal brush to the stroke.

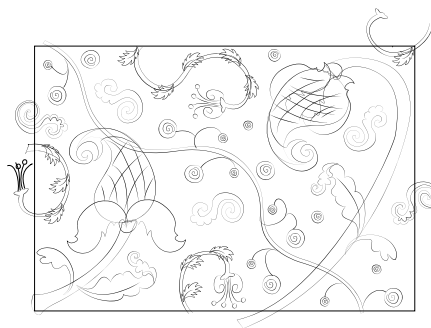


JACKMORE



### Lisa Jackmore

For designs as fluid as this floral pattern, Lisa Jackmore finds that initially drawing with the Calligraphic Brush tool is the most natural and intuitive way to begin. However, when she wants to create specific variations to the strokes, she then converts the brushstrokes to Basic stroked paths, so she can use the Width tool (you can't use the Width tool on brushstrokes with a Calligraphic brush). To do this, she clicked on the Basic Brush in the Brushes panel (the basic stroke version is shown directly above). Jackmore then selected the Width tool (Shift-W) and clicked on the stroke itself, dragging the handle outwards to evenly widen the path. To make adjustments to one side, she held the Option/Alt key while dragging the handle. To make even further variations to the strokes,



Jackmore clicked on the stroke, added new width points, and adjusted them. She saved several Width profiles by selecting each modified stroke, clicking on the Add to Profile button in the Variable Width Profile menu in the Control panel, then naming it and clicking OK. To finish the design, she selected each of the remaining paths, applied one of her saved width profiles from the Control panel, and then increased the stroke weight on all of the paths.

# Stroke Variance

*Creating Dynamic Variable-Width Strokes*



**Overview:** Place sketch and trace with Pen tool; modify strokes with Width tool; save width profile and apply to other strokes.

1



*The original sketch*



*Traced sketch*

2



*Width tool (Shift-W) adjusting middle of stroke*



PUTNAM

Ryan Putnam creates many character illustrations for websites, branding projects, and more. Putnam now uses the Width tool to add depth and variance in the strokes of the illustrations. Moreover, he can save the stroke adjustments to new Width profiles to easily apply to other strokes in current and future projects.

## 1 Placing a sketch template and tracing with Pen tool.

Putnam first created a character sketch in Photoshop, chose File > Place in Illustrator, enabled Template, and clicked OK. Putnam then traced basic paths of the sketch with the Pen tool in the layer above.

## 2 Adjusting strokes with the Width tool.

Putnam wanted his strokes to have some variance compared to the uniform strokes created by the Pen tool. He created two distinct stroke widths to use on the majority of the paths in the illustration. For the first stroke adjustment, Putnam created a stroke with a thicker middle and tapered ends. To do this, he used the Width tool to click in the middle of the desired path and drag a width point to the



desired width. For the second custom width, Putnam created a stroke with a thicker end and a tapered end. Again, he used the Width tool, but this time clicked on the far right side of the desired path and dragged a width point to the desired width.

If you like to be precise with your adjustments, you can double-click a width point to open the Width Point Edit dialog, allowing you to numerically adjust the width of the stroke in the Side 1, Side 2, and Total Width fields.

### 3 Saving stroke profiles and applying to other paths.

Instead of adjusting every path in the illustration to match the two custom widths he created with the Width tool, Putnam saved time and ensured consistency by saving his two custom stroke profiles. To save each profile, he selected the modified stroke and clicked the Add to Profiles icon in the Stroke panel. With both of his strokes saved as custom profiles, Putnam could select a uniform stroke, click the saved Variable Width Profile at the bottom of the Stroke panel, and select the saved profile from the drop-down list. These custom profiles will then be available in other new Illustrator files.

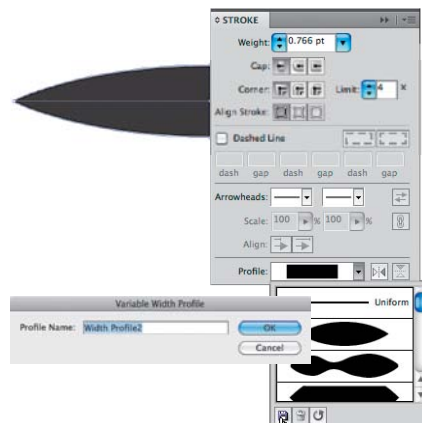
After Putnam applied the custom profile to all the desired paths, he utilized specific keyboard commands with the Width tool to further adjust individual paths. For example, holding down the Option/Alt key when dragging width points creates non-uniform widths, the Delete key deletes selected width points, and holding the Shift key while dragging adjusts multiple width points. Other Keyboard modifiers with the Width tool include holding down Option/Alt while dragging a width point to copy the width point, holding down Option-Shift/Alt-Shift while dragging to copy and move all the points along a path, Shift-clicking to select multiple width points, and using the Esc key to deselect a width point.

**4 Applying finishing touches.** Putnam added additional elements as needed. For instance, he create simple shapes with the Pen tool and filled them with grayscale colors.

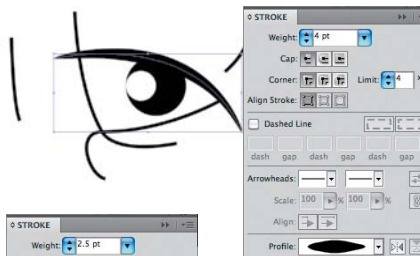


Width tool (Shift-W) adjusting end of stroke

3



Saving new width profile

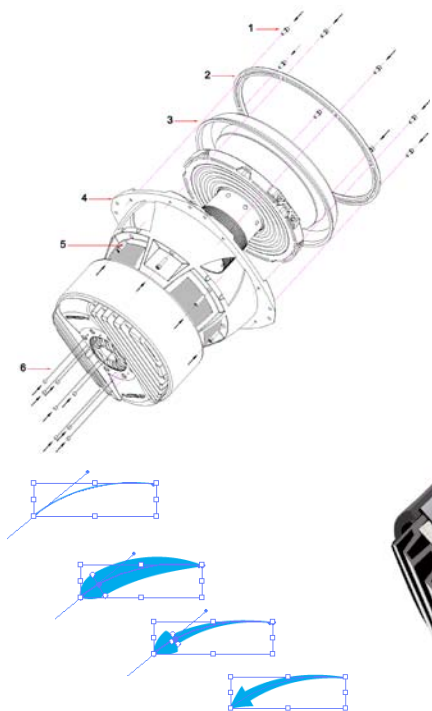


Applying a saved width profile

4

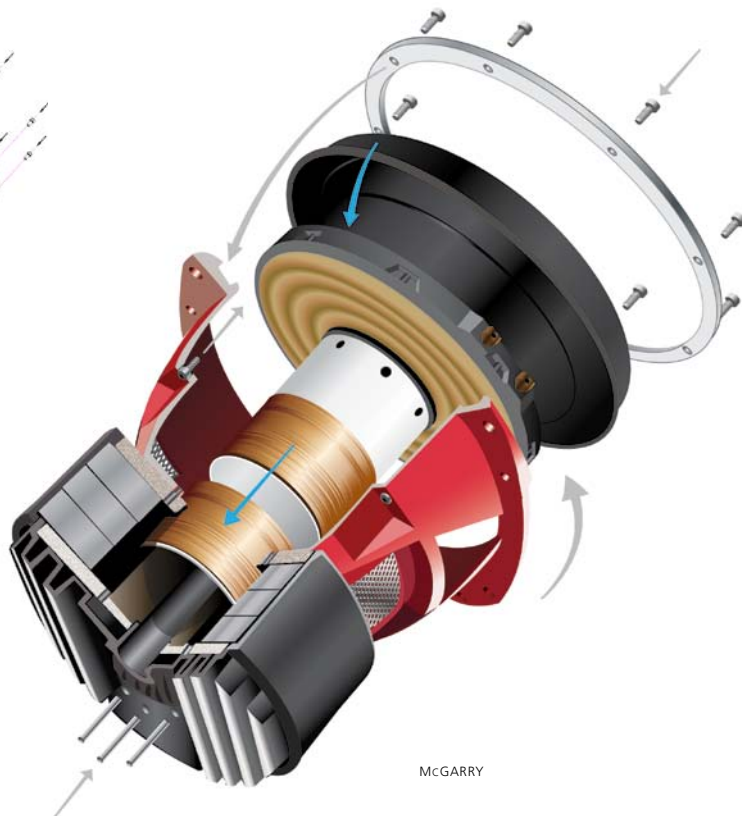


Adjusting a path with Width tool and keyboard commands



## Aaron McGarry

As an illustrator working in the technology industry, McGarry created this exploded view of a subwoofer from a CAD drawing for use as an assembly overview in a re-cone kit. McGarry first placed the drawing as a template layer then created an oval using the Ellipse tool and rotated it to match the angle of the drawing. To preserve this angle and shape throughout the illustration, he used this first object to create all the other ellipses within the illustration by holding Option/Alt to make a copy as he dragged, and resized using the bounding box. McGarry began with the uppermost clamping ring and built each component on a separate layer; this naturally organized each component so that it obstructed the previous components. He used an extensive variety of gradients



from the gradients library (Window > Swatch Library > Gradients) to emphasize the cylindrical structure of the speaker. He made a single screw, dragged it into the Symbols panel, and then used instances of it to create the others. To make his customized arrows, he used the Pen tool to draw a path, stroked it with a color, and then used the Width tool to shape the arrow (see process above left). Ellipse strokes such as the rim of the black cone also employed the Width tool, thinning the stroke as it circled away from view. He used the Pen tool to draw the red surfaces on the main basket and paths forming the cutaway portion of the speaker. He then used the Eyedropper tool to sample various shades of red from a photo of a similar speaker to indicate the red basket shades.



### Nobuko Miyamoto/Yukio Miyamoto

Making this intricate beaded necklace at first glance would seem impossibly difficult, but with the use of a Pattern brush, the necklace virtually draws itself. Nobuko Miyamoto designed the necklace and created the bead element (detail above) with a mixture of blended and solid filled objects. Careful attention was paid to the ends of the bead to ensure that when each bead lined up with the next one there would be a seamless connection between them. To make the chained ends, she selected the chain object and dragged a copy (Shift-Option/Shift-Alt) to the other side of the bead. With the chain selected, she chose the Reflect tool and clicked above and below

the chain to reflect the chain vertically. Yukio Miyamoto then created the Pattern brush with the bead element. He selected and grouped the bead. Yukio clicked the New Brush icon at the bottom of the Brushes panel, selected New Pattern Brush, and clicked OK. In the Pattern Brush Options dialog, he kept the Colorization method as None, and then under Fit he chose Stretch to Fit. To make the necklace, Nobuko drew a path with the Brush tool and selected the bead Pattern brush in the Brushes panel to apply the brush. Now with the bead as a Pattern brush, the necklace can be easily adjusted to any length or path.

# Pattern Brushes

*Creating Details with the Pattern Brush*

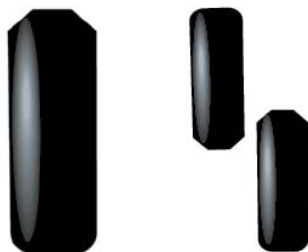


**Overview:** Create the parts that will make up a Pattern Brush separately; place the parts in the Swatches panel and give them distinctive names; use the Pattern Brush Options dialog to create the brushes.

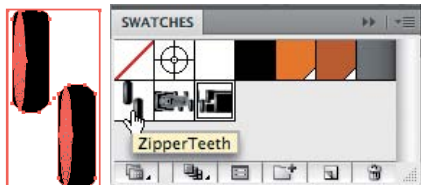
## Adjusting Pattern Brush fit

After you've applied a Pattern Brush to a path, you can still scale, flip, and modify its fit along the path. Modify all these settings in the Pattern Brush Options dialog, or, manually reshape and scale the pattern by changing the stroke weight, applying a stroke profile, or using the Width tool.

1



*Creating one zipper tooth, using the Blend tool for the highlight, then positioning a duplicate to mimic the teeth*



*Selecting bounding rectangle and objects, dragging objects for Pattern brushes into the Swatches panel, and naming them*



While many Illustrator Brushes mimic traditional art strokes, Greg Maxson often concentrates his efforts on creating Pattern brushes that eliminate the tedious creation of the practical objects he often illustrates. For this product illustration, Maxson saved many hours by creating two zipper brushes, one for just the basic teeth of a zipper, and one that included the zipper pull and stop. Because he would be able to use these brushes over and over again, Maxson knew a little time creating a Pattern brush would save him a lot of time in the future.

## 1 Creating the parts of the zipper separately.

Maxson first created the zipper teeth. He drew a simple rounded rectangle for the base, and then drew a small, light oval on top of a larger black oval that would become the highlight. Maxson selected both objects and double-clicked on the Blend tool to choose Specified Steps, thus controlling the brush's complexity. He used the keyboard shortcut  $\text{⌘-Option-B/Ctrl-Alt-B}$  to blend the highlight, which he placed on the base (you can also blend via the menu by choosing **Object > Blend > Make**). (See the chapter *Mastering Complexity* for more about working

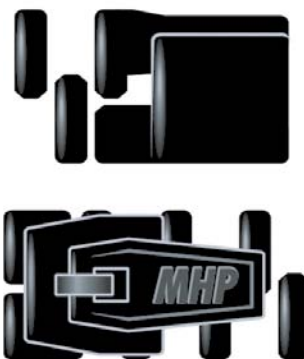
with blends.) Maxson duplicated the zipper “tooth” and positioned the copy as it would be in a real zipper. He then drew a no-stroke, no-fill bounding rectangle behind the teeth to add space around each pair of teeth equal to the space between each tooth, thus keeping the teeth spaced evenly. He selected all the objects and chose Edit > Define Pattern. He gave the swatch a name he would recognize when he built the Pattern brush. Pattern swatches are the “tiles” that make up a Pattern brush.

Maxson then created the pull and stop for the zipper. To create the illusion of the pull and stop overlapping the teeth, he layered them on top of copies of the teeth he had already made. He made sure that the stop and pull were facing in the correct direction relative to the zipper pattern tiles (which run perpendicular to the path), and individually placed them in the Swatches panel.

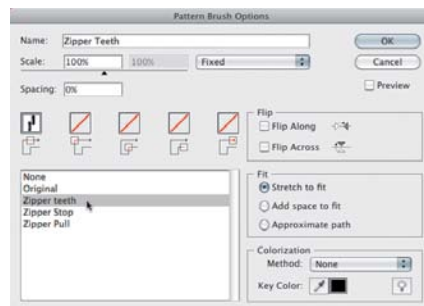
**2 Making and using the Pattern brushes.** To make the first Pattern brush for the zipper teeth, Maxson opened the Brushes panel’s pop-up menu and selected New Brush. He then chose New Pattern Brush, which opened the Pattern Brush Options dialog. He gave his Pattern brush a descriptive name, chose the first box in the diagram (the Side Tile), and then selected the Pattern swatch that represented the teeth alone. When a thumbnail of the Pattern brush he had chosen (the teeth) showed in the first box, and the other boxes were left empty, he clicked OK to place the brush in the Brushes panel.

To create the version with the stop and pull, he again selected New Brush from the Brushes panel, and chose the same teeth pattern for the Side Tile. Skipping over the corner tiles, he chose the Zipper Pull swatch as the Start Tile, and the End Tile for the Zipper Stop swatch. He named his new Pattern brush so he would know it was built from all three swatches and clicked OK.

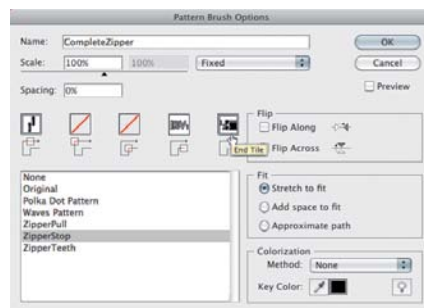
To use his new brushes, Maxson drew a path for each zipper. The long, vertical zipper used the brush with the pull and stop, while the short zipper used the brush with only teeth, since the pull required a unique illustration.



*Creating zipper pull and stop, oriented in the outward-facing position Pattern brushes use for their tiles*



*Creating a new Pattern brush with only a Side Tile repeated along the length of the path to make the zipper with just teeth*



*Creating a Pattern brush with Start and End tiles for the zipper with the pull and stop*



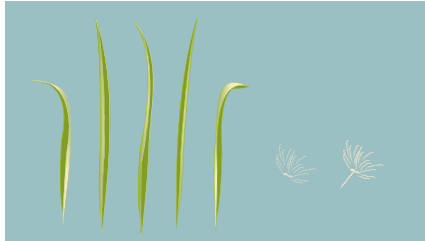
# Symbolism Basics

Creating and Working with Symbols

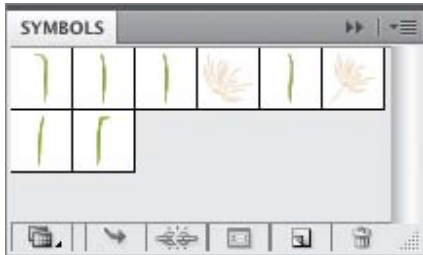


**Overview:** Create a basic background; define symbols; use Symbolism tools to place and customize symbols; add finishing details.

1



The artwork for the symbols that were used to complete the piece



The Symbols panel containing the library of symbols

2



The Symbolism tools tear off panel (to tear it off, click and hold a tool, then drag to the right edge)



One of several symbol sets of the raw grass after being sprayed with the Symbol Sprayer tool



JACKMORE

Lisa Jackmore created this illustration using a variety of effects possible with the Symbolism tools. Jackmore defined a library of symbols and then used the Symbolism tools to place and customize the symbols. Symbols can provide a “brush-like” painting experience, with easier (and more fun!) adjustments and editing.

**1 Creating a background and symbols.** Because she would be drawing many light-colored objects, Jackmore began by using the Rectangle tool to draw a blue background. Locking the layer with the background, Jackmore created a new layer on top, into which she drew the artwork for each of the symbols she would use to create the illustration. (See the chapter *Your Creative Workspace* for more on layers.) To turn selected artwork into a symbol, either drag it onto the Symbols panel, or press F8; Illustrator automatically takes your artwork on the artboard and swaps it for an instance of the symbol.

**2 Applying symbols.** Jackmore next selected the grass symbol in the Symbols panel and created the first row of



grass with a single stroke of the Symbol Sprayer tool. You can experiment with the Symbol Sprayer by adjusting the Density and Intensity settings (double-click on any Symbolism tool to access the Symbolism Tools Options), and the speed of your spray strokes. Don't worry about getting an exact number or precise placement for each symbol as you spray; you'll fine-tune those and other symbol attributes next by applying Symbolism tools to a selected set.

**3 Resizing symbols.** To imply depth, Jackmore applied the Symbol Sizer tool to resize blades of grass in a selected set. By default, the Symbol Sizer tool increases the size of symbols within the tool's brush radius; to reduce the size of symbols within the radius, hold down Option/Alt.

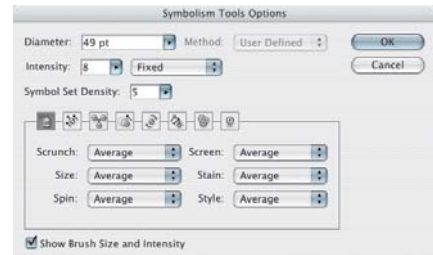
To make the diameter of a Symbolism tool visible, double-click on any Symbolism tool and enable the Show Brush Size and Intensity checkbox. To enlarge and reduce the diameter of a Symbolism tool, use the same shortcuts as you do with brushes: the ] key enlarges the diameter, and the [ key reduces it.

**4 Modifying symbol transparency and color.** To modify the appearance of a symbol set, use the Symbol Screener, Stainer, and Styler tools. The Screener tool adjusts the transparency of symbols. The Stainer tool shifts the color of the symbol to be more similar to the current fill color, while preserving its luminosity. The Styler tool allows you to apply (in variable amounts) styles from the Graphic Styles panel. (For more details about the Styler and Screener tools, see *Illustrator Help*.) Jackmore used the Symbol Stainer tool, set to Random, to tint the dandelion symbols a lighter shade with just one stroke.

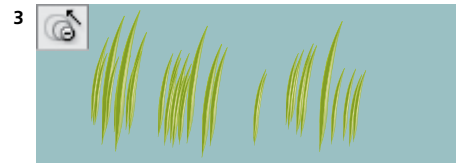
**5 Rotating symbols.** To make adjustments to the orientation of the dandelion symbol set, Jackmore used the Symbol Spinner tool set to User Defined, which set the spin based on the direction that the mouse was moved. (Search *Illustrator Help* for "Symbolism tool options" for an explanation of the User Defined and Average modes.)

## Quick symbol switching

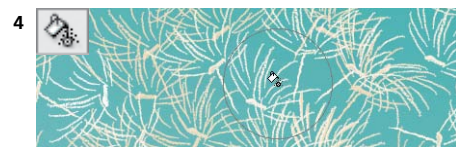
To switch Symbolism tools, hold Control-Option (Mac) or Alt-right-mouse button (Win), and click-drag toward the tool you want until the icon changes. —Mordy Golding



*Symbolism Tools Options*



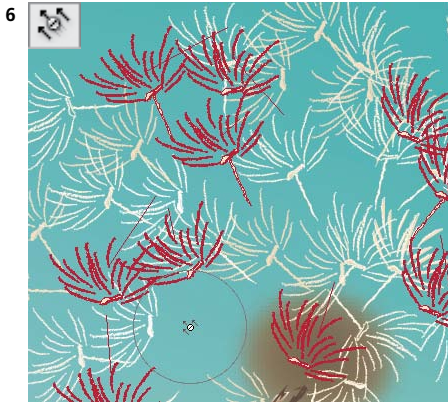
*Jackmore used the Symbol Sizer tool to make some of the blades of grass larger*



*Jackmore used the Symbol Stainer tool to make some of the dandelion symbols a brighter white*



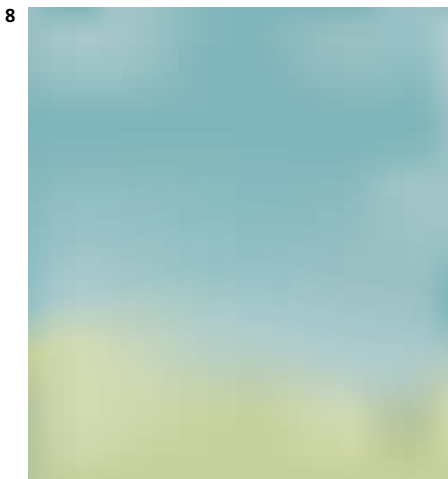
*Jackmore used the Symbol Spinner tool to rotate the dandelion symbols*



After using the Symbol Shifter tool with a smaller brush size to adjust dandelion symbol positions



Thinning the grass by removing unwanted grass using the Symbol Sprayer tool while holding down the Option/Alt key



The background

**6 Moving symbols.** Jackmore used the Symbol Shifter tool with a smaller brush size to adjust the position of the dandelion symbol set.

The Symbol Shifter tool doesn't easily move symbols across large distances. To maximize symbol movement with the Symbol Shifter tool, first make the brush size as large as you can—at least as large as the symbol you wish to move. Then drag across the symbol, as though you were trying to push the symbol with a broom.

**7 Deleting and adding symbols.** At this point, Jackmore felt there were too many blades of grass. To remove unwanted grass, Jackmore used the Symbol Sprayer tool with the Option/Alt key held down. She chose a narrow brush size and clicked on the blade to be removed. She worked on the grass symbol set until she was satisfied with the amount of grass. When she needed to add more of that symbol (or even a different symbol) to a selected symbol set, she just applied the Symbol Sprayer tool without any modifier keys.

**8 Adding finishing touches.** To finish her illustration, Jackmore converted her blue rectangle to a gradient mesh. To create the luminous background, Jackmore applied different colors to individual mesh points. For more about gradient mesh, see the *Color Transitions* chapter.

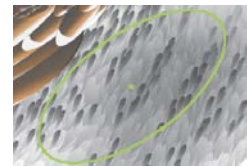
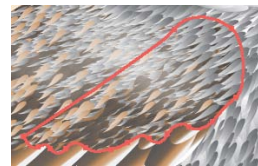
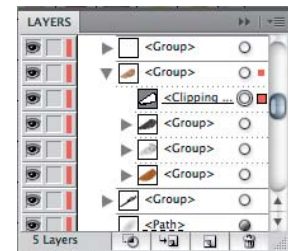
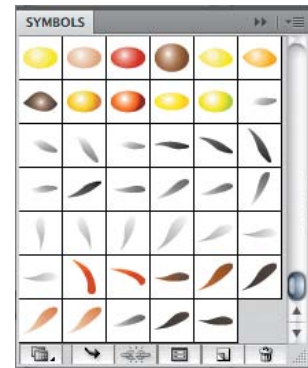
### Making symbols and keeping the art too

To keep your original artwork on the artboard *and* use it to define a new symbol, hold down the Shift key as you drag the artwork onto the Symbols panel.

### Symbol stacking order within a layer

You can change the symbol stacking order within a symbol set by adding these modifier keys to the Symbol Shifter tool:

- Shift-click the symbol instance to bring it forward.
- Option-Shift-click/Alt-Shift-click to push the symbol instance backward.



### Rick Simonson

When Rick Simonson wanted to create a high level of verisimilitude in his Chipping Sparrow illustration, he turned to Illustrator's symbols as the obvious way to create the hundreds of feathers and seeds he would need. He drew closed paths for single feathers in the different colors and positions necessary to fill the bird's body. He added dimension to the feathers with gradient fills, and he duplicated and rotated some feathers to follow the growth pattern of real feathers. He then Option-clicked/Alt-clicked on the New Symbol icon in the Symbols panel to add the selected object without opening

the Symbol Options dialog. Simonson drew the main body of the bird and began filling small areas with layers of feathers, using the Symbol Sprayer with short strokes to manage their placement. To get the look he wanted, he often added feathers one by one instead of in looser symbol sets. He also applied clipping masks to further shape areas of feather symbols. To create the glare and the shading, he used the Transparency panel to reduce opacity and add transparency masks (see the *Mastering Complexity* chapter for more on masks). He used similar methods for adding the seeds.

# Painterly Portraits

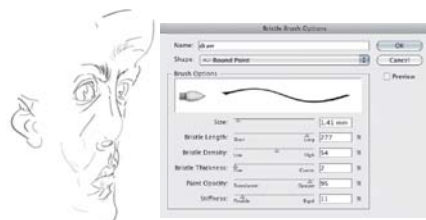
*Painting in Layers with Bristle Brushes*



**Overview:** *Place a sketch as a template; draw with customized Bristle Brushes; continue to paint with custom brushes into separate layers; create frame.*



*The template; a distorted Photoshop sketch*



*The initial Bristle Brush sketch made with three variations of a Round Point Bristle Brush; the Bristle Brush Options*



*Adding shadows with a wide, fairly opaque Bristle Brush*



The myriad Bristle Brushes presented Greg Geisler with an infinite variety of brushes to create his expressive painterly portrait, “Blue Mirror.” Commissioned by Adobe Systems, you can find this file, and a PDF ReadMe file explaining more about how he made it, on the **WOW! DVD** and in the Sample Art folder installed with Illustrator.

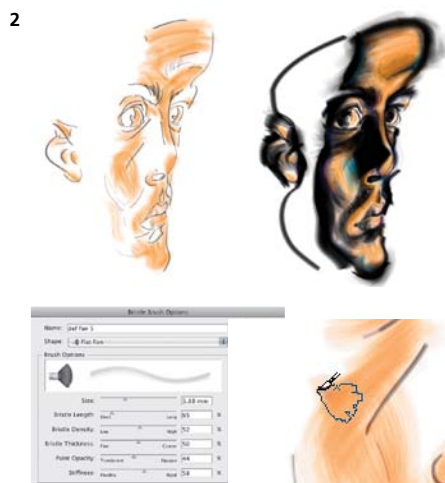
**1 Placing the initial sketch, and customizing Bristle Brush Options.** Geisler placed his distorted Photoshop sketch (PSD) as a Template layer. He opened the Bristle Brush Library (Window > Brushes Libraries > Bristle Brush Library) and clicked on the 1-pt Round Bristle Brush, which automatically loaded the brush into the Brushes panel. Geisler next duplicated that brush in the Brushes panel (by dragging its icon to the New Brush icon) and then double-clicked on the brush in the Brushes panel so he could change several settings in Bristle Brush Options. He made changes to Bristle Thickness, adjusted Paint Opacity and increased the Stiffness, and then named it and clicked OK. On a layer above the template, he used this new brush to create the base sketch for the entire illustration. Geisler kept the Brushes panel and the Bristle Brush Library open throughout the drawing session, so he could continue to duplicate and customize brushes as his drawing progressed. For this layer, he created three different variations of the 1-pt Liner brush.



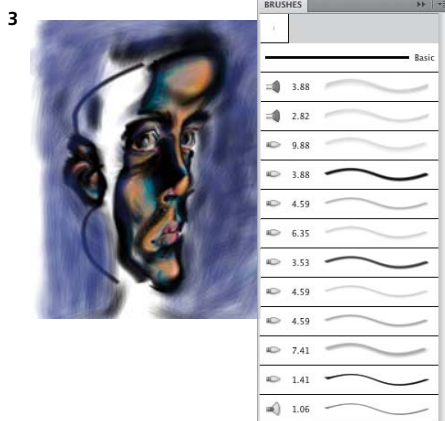
**2 Adding highlights, midtones, and shadows.** To make one of the many layers of highlights, such as the strokes in orange, Geisler customized copies of the 3-mm Flat Fan Brush in the Bristle Brushes Library, adjusting Bristle Thickness, Bristle Length, and Paint Opacity. He also drew highlights with a Round Bristle Brush customized with Pointy variations. Geisler continued to draw in separate layers, focusing in particular on midtones, shadows, highlights, or color for each layer, using variations of the Flat Fan and Round Bristle Brushes.

**3 Working efficiently and further modifying brush characteristics.** Geisler's process is very organic in that he continually defines new brushes, and creates new layers, as he draws. He rarely deletes a stroke, preferring to layer new Bristle Brush strokes upon others, choosing a more opaque brush to cover the underlying strokes. As he's drawing, he presses the [ key to decrease the brush size, and the ] key, to increase the bristle size. To vary the opacity, he presses the keys from 1, which is completely transparent, through 0, which is completely opaque. To add texture, as in the blue background shown at right, Geisler modifies the settings to increase the brush stiffness toward Rigid, increase the brush density toward Thick, and then decrease the bristle length.

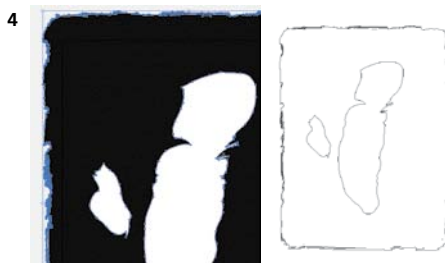
**4 Finishing touches.** Geisler created an irregular edged black frame that surrounded the portrait, on a layer between the blue texture and the face. He customized a wide Flat Fan brush to 100% Opacity (100% opaque Bristle Brushes lose their character within the stroke, but maintain a ragged edge), and then expanded the brushstrokes (Object > Expand) and clicked Unite in the Pathfinder panel, melding the brushstrokes into one frame object. He then used the Pencil tool to draw a few closed paths, delineating the area between the rectangular frame and the head. Marquee-selecting these paths and the frame, he filled them with black, and again clicked Unite in the Pathfinder panel.



Adding highlights with a Wide Fan Brush, adding shadows; the Bristle Brush icon that appears when using a pressure sensitive pen



Part of the Brushes panel (right), and a later stage of the illustration with blue texture



Black frame made with expanded Bristle Brush strokes and filled paths shown in Preview mode (detail at left), and Outline mode (right)

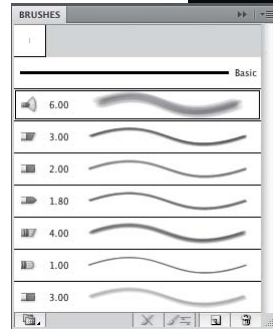


CESAR de OLIVEIRA BALDACCI



### Janaína Cesar de Oliveira Baldacci

Based on a photograph taken by Tatiana Bicalho, Baldacci captured the natural undulations of the fur and folds of her pet bulldog with Bristle Brushes. Baldacci first drew a white outline of the dog (against the black background) with the Pen tool and applied a Gaussian Blur effect. Baldacci selected Brush Libraries Menu > Bristle Brush > Bristle Brush Library then selected several brushes to add to the Brushes panel. She chose Bristle Brushes that had varying characteristics in Paint Opacity, Bristle Stiffness, and Bristle Density, such as Round Fan, Flat Blunt, Flat Point, and Round Curve (part of



her Brushes panel shown above). Baldacci then selected the Paintbrush tool (B), chose a Bristle Brush and a stroke color, and drew into the first of many layers (the image on the first layer is shown above in Preview and Outline modes). In layers above, she added greater definition and built the fur in stages based on color, such as white, gray, and highlights. On the uppermost layers she added the snout, eye details, and additional layers of fur until the portrait was complete.





## Lisa Jackmore

Lisa Jackmore created this pastel-like drawing using Bristle Brushes with a Wacom Intuos4 tablet and a pressure-sensitive pen. After placing a photograph as a Template layer, Jackmore used the Pencil tool to make the line drawing of the flowers and leaves. To add variation to the stroke, she clicked the Variable Width Profile 1 from the Variable Width Profile drop-down menu in the Control panel. Next, she set up her work environment by opening the Brushes panel, the Bristle Brush Library (from the Brush Libraries menu), a TRUMATCH Swatch Library, and the Layers panel. She also set the Wacom tablet's Touch Ring to auto scroll/zoom, so when she needed to magnify an area as she worked, she simply turned the Touch Ring clockwise to zoom in, and counter-clockwise to zoom out. In order to color the inside of the flower using the Draw Inside mode, Jackmore needed to create a simple closed-path outline of each flower, leaf, and stem (without details). She created the outline on a separate layer and then moved that layer below the locked outlines layer (left detail). To draw into each path, she selected it, pressed Shift-D to choose the Draw Inside mode (right detail), then deselected the path (so the Bristle Brush wouldn't be applied to the outline, instead it would be constrained within the path). She selected the Brush tool (B), then chose a Bristle Brush, and a TRUMATCH stroke



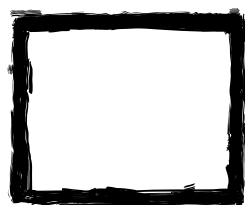
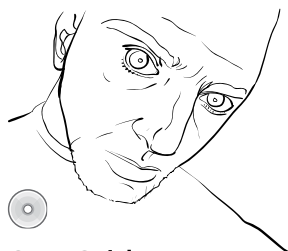
JACKMORE



color. When she finished drawing inside a path, Jackmore pressed Shift-D to switch back to Normal drawing mode, then scrolled to the next closed path by dragging the Wacom pen to a new area while holding the bottom Express key on the tablet. She switched between the Brush tool and the Direct Selection tool (pressing the ⌘/Ctrl key), and alternated between Draw Inside and Normal mode. Jackmore used many variations of the Round Point, Fan, and Round Blunt Bristle Brushes. Occasionally she opened Options (by pressing the upper switch on the Intuos4 pen, or by double-clicking the Brush tool) to customize parameters for opacity, Bristle Length, Stiffness, and Bristle thickness. To frame the drawing, she drew two concentric rectangles with the Rectangle tool and applied a Charcoal Art brush to the strokes.



GEISLER



## Greg Geisler

Greg Geisler created this graphic self-portrait using a customized Calligraphic Brush. In the Brushes panel, Geisler double-clicked the default 3-pt round Calligraphic Brush, and for the Diameter settings, he changed Fixed to Pressure, and set the Variation to 3 pt. Using a Wacom tablet and pressure-sensitive pen, he drew the facial outline, varying the stroke width as he changed his touch (directly above left). To block out planes of color within the face (such as the chin, beard, and cheek),

he used the Pencil tool to draw color-filled irregular paths on separate layers. Each layer contained one of the many defining areas of color (Layers panel shown above right) for highlights, shadows, or texture. To create the frame, Geisler used the same Bristle Brush, and a technique similar to the one developed in the previous lesson (shown below the artwork). For finishing touches, Geisler drew the bright blue squiggly lines with the Pencil tool.

## Cheryl Graham

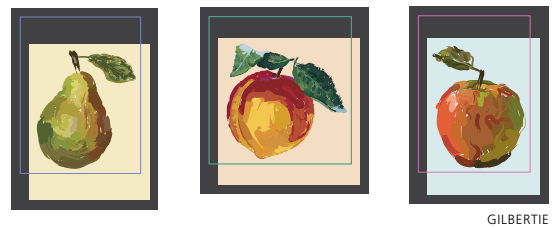
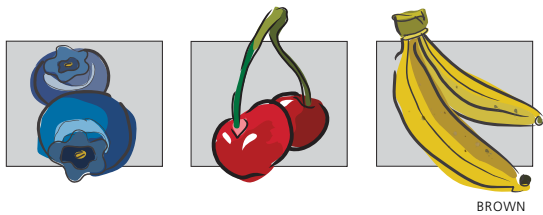
Cheryl Graham created this vibrant painterly portrait with a custom Art Brush designed to mimic a smudged stroke made with a charcoal stick. To make the “Dreadlock” Art Brush, Graham drew ellipses in different sizes with the Ellipse tool (left detail). She selected the ellipses and applied Pathfinder > Add (middle detail). She then selected the Warp tool and smudged the edges of the ellipse grouping (right detail). She often resized the Warp tool by holding down the Option/Alt key while dragging on the artboard with the tool to change its diameter. Graham selected the artwork and dragged it to the Brushes panel to make an Art Brush and chose Hue Shift to enable quick color changes. She first drew the individual strands of hair with the Dreadlock brush. To make a basic face shape, she drew additional paths with the Pen and Pencil tools. She further defined the face using the Dreadlock and default Calligraphy 1 brushes modified in a variety of ways. Graham could easily, and dramatically, vary the shape and size of the brushes as she painted by merely increasing or decreasing the stroke width. Occasionally she would click *fx* in the Appearance panel and apply an effect to a brushstroke (such as Distort & Transform > Tweak). To create transparency effects, Graham selected brushstrokes or objects, then clicked O in the Appearance panel to reduce opacity



GRAHAM



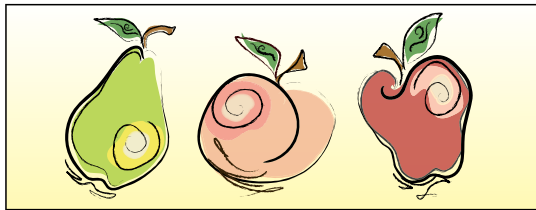
or change blending modes to Overlay, Multiply, or Screen. She alternated between all of these methods, as well as using the Rotate, Shear, and Scale tools, as she built this dynamic portrait.



**Stephen Klema's Students:**  
**Dan Brown, Susan E. Alderman,**  
**Matthew Triompo, Laura McCloskey,**  
**Shana Popyk, Nicole Gilbertie**

As a class assignment, Professor Stephen Klema challenged his students to create expressive graphic illustrations of organic forms. The students of Tunxis Community College used a variety of default brushes from the Brushes panel. They included both Calligraphy and Art Brushes. Before drawing, the students double-clicked the Paintbrush tool and adjusted the Paintbrush tool preferences. They dragged the Fidelity and Smoothness sliders to the desired positions. The sliders moved farther to the left had more

accurate brush strokes, while those moved to the right were smoother. The "Fill New Brush Strokes" and "Keep Selected" options were disabled to allow multiple brush strokes to be drawn near each other without redrawing the last path. Using a pressure-sensitive tablet, the students drew varying widths and angles of brush strokes, many either on top of or close to one another, for a spontaneous, expressive look. Extra points within the brush strokes were deleted using the Smooth tool or the Delete Anchor Point tool.



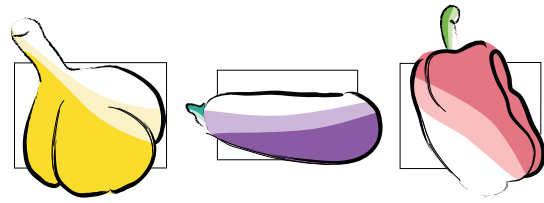
MOTTAI



BURNETT



ROSARIO



LOOPER



PALMER



CICHOWLAZ



### Stephen Klema's Students:

**Laura Mottai, Cinthia A. Burnett,**

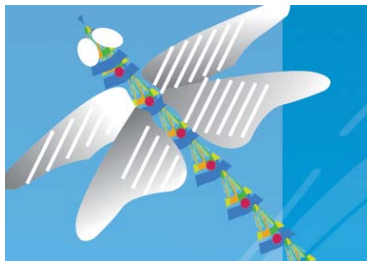
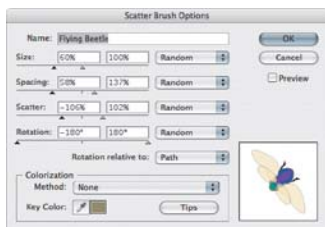
**Jessica Rosario, Emily Looper,**

**Theresa Palmer, Kazimiera Cichowlaz**

Using the same techniques described on the previous page, additional student creations are shown above. In some of these illustrations, an Art Brush was applied to paths drawn with the Pencil and Pen tools. The Pen or Pencil path was selected with the Selection tool, then a brush was chosen from the Brushes panel. The Pen or Pencil path then changed to that

chosen Brush style. Many types of brushes can be found in the Brushes library. To open the Brushes library, click on the Brush Library Menu icon found in the upper right corner of the Brushes panel. Select Open Brush Library > Artistic, then select the brushes you want to add to the Brushes panel. Find more artwork from Professor Klema's students on his website at: [www.StephenKlema.com/wow](http://www.StephenKlema.com/wow).





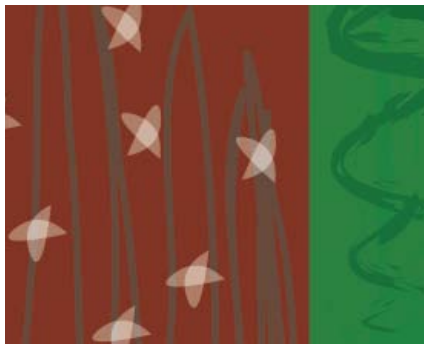
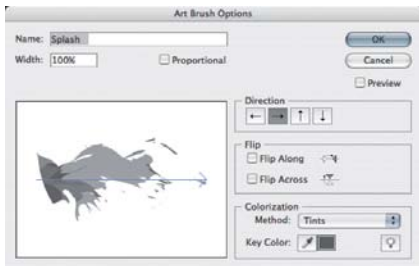
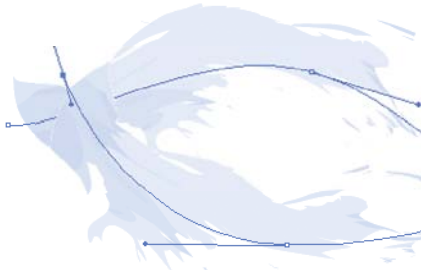
### Michael Cronan

Continuing with his series of posters for San Francisco parks, Michael Cronan created Marina Green with his collection of Art Brushes, Scatter Brushes, and Pattern Brushes. He made extensive use of brushes that mimic traditional media. Adobe Illustrator has provided many of these with the program over the years, such as Dry Ink, Charcoal, and Pencil. With Scroll Pen 5 he could draw a variety of elements, from dragon hair to the Golden Gate Bridge and the grassy texture of the Marina Green. He renamed "Scroll Pen 5" to a more descriptive



"Scroll Pen Variable Length" in order to find it easily in his Brushes panel. He created a Scatter Brush for the background stars on the Marina Green strip, and modified a Scatter Brush made from a flying beetle image that he used for one of the kites. A Polynesian design made a Pattern Brush that Cronan used to construct the dragonfly kite's tail, which he drew with the Pencil tool. He also drew vector objects and basic shapes for some of the elements, and colored them with solid or gradient fills.



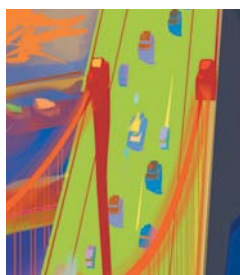
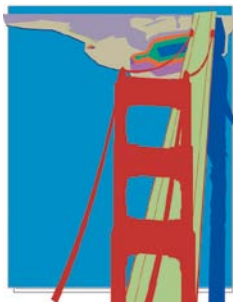


### Michael Cronan

To capture the color, ethnic influence, and spirit of San Francisco's popular landmarks, Michael Cronan not only relies on Art Brushes collected over the years, but creates his own. To represent the Japanese Tea Garden, Cronan focused attention on the koi pond, creating the grasses with the Pencil brush and the multi-tones of the shrubbery with the Charcoal brush (both from: Open Brush Library > Artistic > Artistic\_ChalkCharcoalPencil). He created



a custom Splash brush that included transparency to represent the koi breaking the surface of the pond. Dry Ink and Chalk brushes added to the strong texture in this poster. Cronan also drew individual filled objects that he duplicated repeatedly in order to create pattern texture. By drawing loosely with the Pencil tool and using Pathfinder commands to break objects into abstract patterns, Cronan created informality and freshness in traditional vector strokes drawing that enhanced the Art Brushes' strokes.



JACKSON

### Lance Jackson

To create the cover illustration for the *Adobe Illustrator CS5 **WOW!** Book*, Lance Jackson generated atmosphere and depth with the Bristle Brush and constructed many of the details using the Blob Brush. He used various tools to block in the main components of his composition. He used the Pen tool to draw the basic cables and roadway for the Golden Gate Bridge, then modified the strokes with the Width tool. Next Jackson began brushing over the water and bridge with various brushes from the Bristle Brush library, especially Deerfoot, Cat's Tongue, Dome,

and Fan. To constrain the brushes to each main element, he often selected a base object and chose the Draw Inside mode. For added texture, he also used brushes from the Artistic and Grunge Brush Vector Pack libraries. Jackson drew a few cars and pedestrians using the Blob Brush, then duplicated and recolored several of them. Jackson toned down his palette, adding fog and more depth, by reducing the opacity of his brushstrokes, layering the strokes, and sometimes even changing the blending mode (by clicking Opacity in the Control panel).

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# Windows WOW! Glossary

and essential Adobe Illustrator shortcuts

<b>Ctrl Alt</b>	Ctrl always refers to the Ctrl (Control) key Alt always refers to the Alt key
<b>Marquee</b>	With any Selection tool, click-drag over object(s) to select
<b>Toggle</b>	Menu selection acts as a switch; choose once turns it on, choosing again turns it off
<b>Contextual menu</b>	Right-click to access contextual menus
<b>Group</b>	Ctrl-G to group objects together onto one layer
<b>Copy, Cut, Paste, Undo</b>	Ctrl-C, Ctrl-X, Ctrl-V, Ctrl-Z
<b>Select All, Deselect</b>	Ctrl-A, Ctrl-Shift-A
<b>Paste Remembers Layers</b>	With Paste Remembers Layers on (from the Layers panel menu), pasting from the Clipboard places objects on the same layers that they were on originally; if you don't have the layers, Paste Remembers Layers will make the layers for you
<b>Paste in Front</b>	Use Ctrl-F to paste objects on the Clipboard directly in front of selected objects, and in exact registration from where it was cut (if nothing is selected, it pastes in front of current layer with Paste Remembers Layers off)
<b>Paste in Back</b>	Use Ctrl-B to paste objects on the Clipboard directly in back of selected objects, and in exact registration from where it was cut (if nothing is selected, it pastes in back of current layer with Paste Remembers Layers off)
<b>Toggle rulers on/off</b>	Ctrl-R
<b><i>fx</i> menu</b>	From the Appearance panel, click the <i>fx</i> icon to access effects
<b>Select contiguous</b>	Hold Shift while selecting to select contiguous layers, swatches, etc.
<b>Select non-contiguous</b>	Hold Ctrl while selecting to select contiguous layers, swatches, etc.
<b>Toggle Smart Guides on/off</b>	Ctrl-U
<b>Turn objects into guides</b>	Ctrl-5
<b>Turn guides back into objects</b>	Ctrl-Alt-5 (you must select the guide first; if guides are locked, you must unlock them first from the contextual menu or from the View > Guides submenu)
	Find related files or artwork in that chapter's folder on the <b>WOW! DVD</b>
<b>Illustrator Help</b>	Access <i>Illustrator Help</i> from the Help menu

# Windows Finger Dance

from *The Zen of Illustrator*, to help you learn, to “think in Illustrator”\*

## Object Creation

*Hold down keys until AFTER mouse button is released.*



Constrains objects horizontally, vertically, or proportionally.

Alt

Objects will be drawn from centers.

Alt

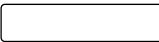
click

Opens dialog boxes with transformation tools.



Spacebar turns cursor into the grabber Hand

Ctrl



Turns cursor into the Zoom-in tool. Click or marquee around an area to Zoom in.

Ctrl

Alt



Turns cursor into the Zoom-out tool. Click to Zoom out.



Turns your cursor into a cross-hair.

## Object Selection

*Watch your cursor to see that you’ve pressed the correct keys.*

Ctrl

The current tool becomes the last chosen Selection tool.

Ctrl

Alt

The current tool becomes the Group Selection tool to select entire object. Click again to select next level of grouping. To move selection release Option key, then Grab.

Ctrl

Tab

Toggles whether Direct Selection or regular Selection tool is accessed by the Ctrl key.



click

Toggles whether an object, path, or point is selected or deselected.



click



With Direct Selection tool, click on or marquee around an object, path, or point to toggle selection/deselection. **Note:** Clicking inside a filled object may select the entire object.



click



Clicking on, or marqueeing over objects with Selection tool or Group Selection tool, toggles selection/deselection (Group Selection tool chooses objects within a group).

## Object Transformation

*Hold down keys until AFTER mouse button is released.*



Constrains transformation proportionally, vertically, and horizontally.

Alt

Leaves the original object and transforms a copy.

Ctrl

Z

Undo. Use Shift-Ctrl-Z for Redo.

# Mac Finger Dance

from *The Zen of Illustrator*, to help you learn, to “think in Illustrator”\*

## Object Creation

*Hold down keys until AFTER mouse button is released.*



Constrains objects horizontally, vertically, or proportionally.

Option

Objects will be drawn from centers.

Option

click

Opens dialog boxes with transformation tools.



Spacebar turns cursor into the grabber Hand.



Turns cursor into the Zoom-in tool; click or marquee around an area to Zoom in.

Option



Turns cursor into the Zoom-out tool; click to Zoom out.

Caps  
lock

Turns your cursor into a cross-hair.

## Object Selection

*Watch your cursor to see that you’ve pressed the correct keys.*



The current tool becomes the last chosen Selection tool.

Option



The current tool becomes the Group Selection tool to select entire object. Click again to select next level of grouping. To move selection release Option key, then Grab.



Tab

Toggles whether Direct Selection or regular Selection tool is accessed by the ⌘ key.



click

Toggles whether an object, path, or point is selected or deselected.



click



With Direct Selection tool, click on or marquee around an object, path, or point to toggle selection/deselection. **Note:** Clicking inside a filled object may select the entire object.



click



Clicking on, or marqueeing over objects with Selection tool or Group Selection tool, toggles selection/deselection (Group Selection tool chooses objects within a group).

## Object Transformation

*Hold down keys until AFTER mouse button is released.*



Constrains transformation proportionally, vertically, and horizontally.

Option

Leaves the original object and transforms a copy.





















Undo. Use Shift-⌘-Z for Redo.



# Mac WOW! Glossary

and essential Adobe Illustrator shortcuts

 <b>Option</b>	The Command key (this key may have a  or a  on it) The Option key
<b>Marquee</b>	With any Selection tool, click-drag over object(s) to select
<b>Toggle</b>	Menu selection acts as a switch; choose once turns it on, choosing again turns it off
<b>Contextual menu</b>	Right-click to access contextual menus
<b>Group</b>	 -G to group objects together onto one layer
<b>Copy, Cut, Paste, Undo</b>	 -C,  -X,  -V,  -Z
<b>Select All, Deselect</b>	 -A,  -Shift-A
<b>Paste Remembers Layers</b>	With Paste Remembers Layers on (from the Layers panel menu), pasting from the Clipboard places objects on the same layers that they were on originally; if you don't have the layers, Paste Remembers Layers will make the layers for you
<b>Paste in Front</b>	Use  -F to paste objects on the Clipboard directly in front of selected objects, and in exact registration from where it was cut (if nothing is selected, it pastes in front of current layer with Paste Remembers Layers off)
<b>Paste in Back</b>	Use  -B to paste objects on the Clipboard directly in back of selected objects, and in exact registration from where it was cut (if nothing is selected, it pastes in back of current layer with Paste Remembers Layers off)
<b>Toggle rulers on/off</b>	 -R
<b><i>fx</i> menu</b>	From the Appearance panel, click the <i>fx</i> icon to access effects
<b>Select contiguous</b>	Hold Shift while selecting to select contiguous layers, swatches, etc.
<b>Select non-contiguous</b>	Hold  while selecting to select contiguous layers, swatches, etc.
<b>Toggle Smart Guides on/off</b>	 -U
<b>Turn objects into guides</b>	 -5
<b>Turn guides back into objects</b>	 -Option-5 (you must select the guide first; if guides are locked, you must unlock them first from the contextual menu or from the View>Guides submenu)
	Find related files or artwork in that chapter's folder on the <b>WOW! DVD</b>
<b>Illustrator Help</b>	Access <i>Illustrator Help</i> from the Help menu