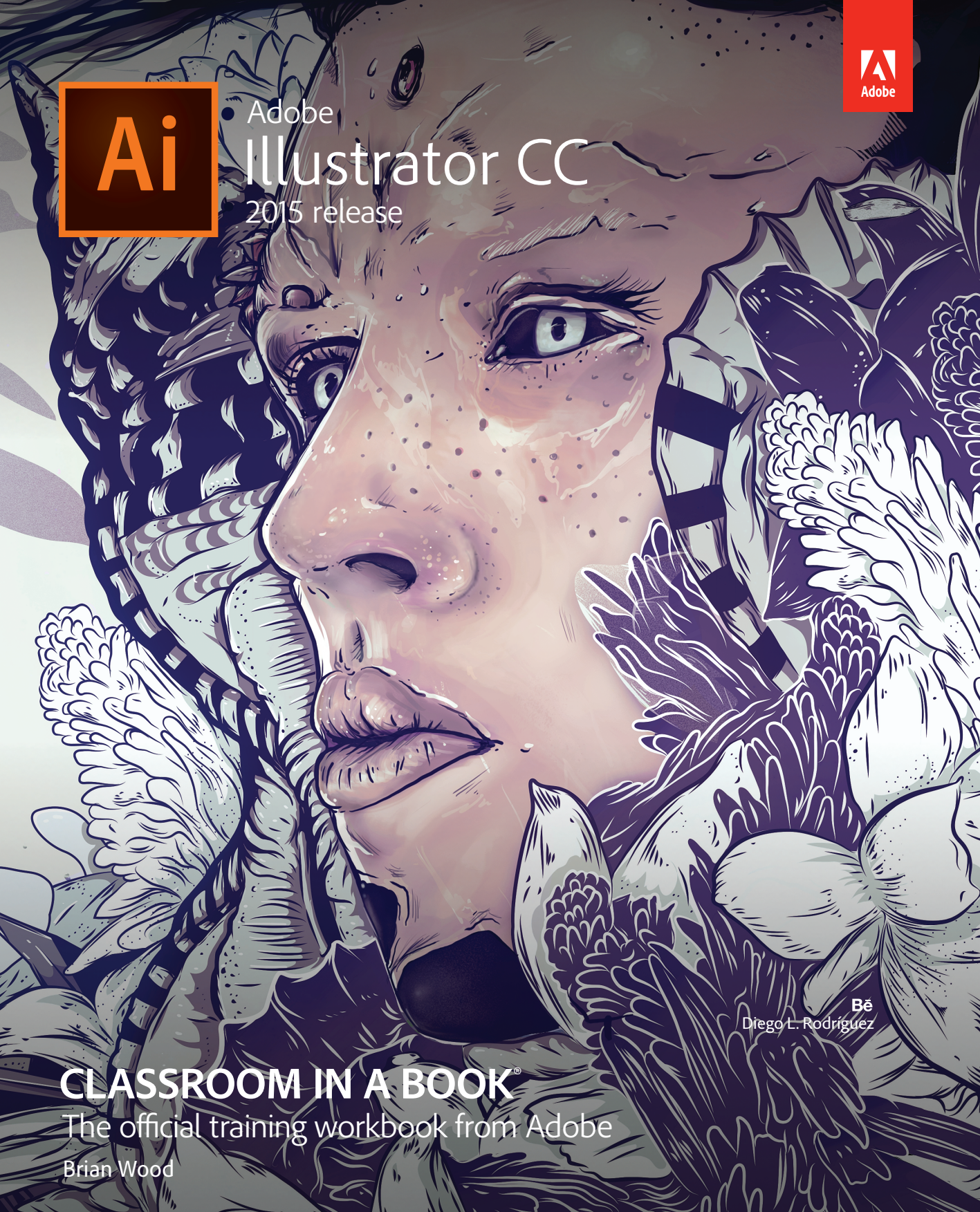
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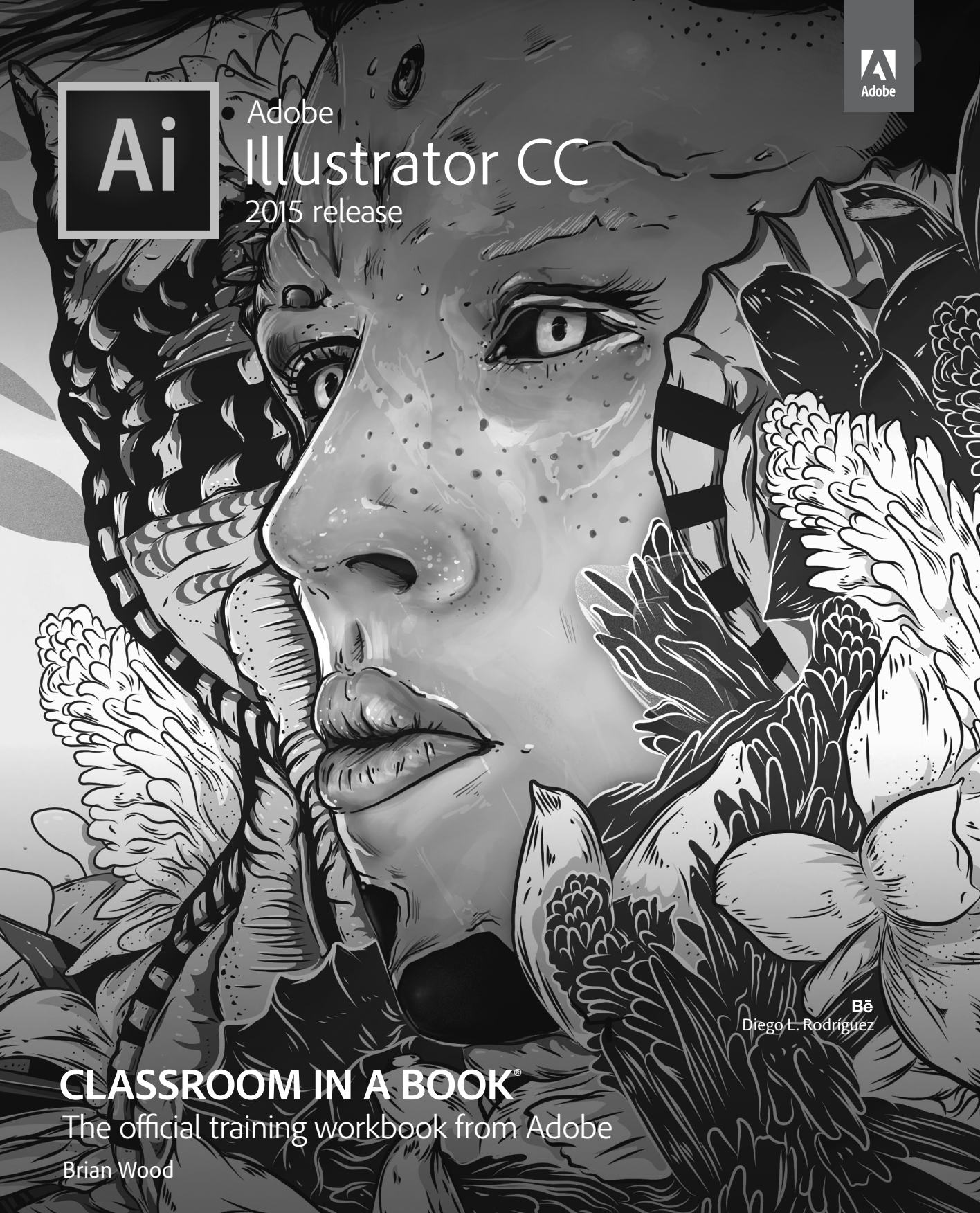
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Adobe® Illustrator® CC Classroom in a Book® (2015 release)

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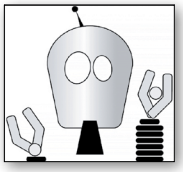

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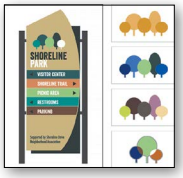

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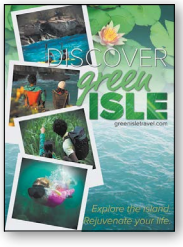

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GETTING STARTED

Adobe® Illustrator® CC is the industry-standard illustration application for print, multimedia, and online graphics. Whether you are a designer or a technical illustrator producing artwork for print publishing, an artist producing multimedia graphics, or a creator of web pages or online content, Adobe Illustrator offers you the tools you need to get professional-quality results.

About Classroom in a Book

Adobe Illustrator CC Classroom in a Book® (2015 release) is part of the official training series for Adobe graphics and publishing software developed with the support of Adobe product experts. The features and exercises in this book are based on Illustrator CC (2015.1 release).

The lessons are designed so that you can learn at your own pace. If you're new to Adobe Illustrator, you'll learn the fundamentals you need to master to put the application to work. If you are an experienced user, you'll find that *Classroom in a Book* teaches many advanced features, including tips and techniques for using the latest version of Adobe Illustrator.

Although each lesson provides step-by-step instructions for creating a specific project, there's room for exploration and experimentation. You can follow the book from start to finish or do only the lessons that correspond to your interests and needs. Each lesson concludes with a review section summarizing what you've covered.

Prerequisites

Before beginning to use *Adobe Illustrator CC Classroom in a Book (2015 release)*, you should have working knowledge of your computer and its operating system. Make sure that you know how to use the mouse and standard menus and commands and also how to open, save, and close files. If you need to review these techniques, see the printed or online documentation for your Windows or Mac OS.

Installing the program

● **Note:** When instructions differ by platform, Mac OS commands appear first and then the Windows commands, with the platform noted in parentheses. For example, "press Option (Mac OS) or Alt (Windows) and click away from the artwork."

Before you begin using *Adobe Illustrator CC Classroom in a Book (2015 release)*, make sure that your system is set up correctly and that you've installed the required software and hardware.

You must purchase the Adobe Illustrator CC software separately. For complete instructions on installing the software, visit http://helpx.adobe.com/illustrator.html. You must install Illustrator from Adobe Creative Cloud onto your hard disk. Follow the onscreen instructions.

Fonts used in this book

The *Classroom in a Book* lesson files use fonts that are part of the Typekit Portfolio plan included with your Creative Cloud subscription, and trial Creative Cloud members have access to a selection of fonts from Typekit for web and desktop use.

For more information about fonts and installation, see the Adobe Illustrator CC Read Me file on the Web at http://helpx.adobe.com/illustrator.html.

Accessing the Classroom in a Book files

In order to work through the projects in this book, you will need to download the lesson files from your Account page at peachpit.com. You can download the files for individual lessons or download them all in a single file. Although each lesson stands alone, some lessons use files from other lessons, so you'll need to keep the entire collection of lesson assets on your computer as you work through the book.

If you purchased an eBook from peachpit.com or adobepress.com, the files will automatically appear on your Account page, under the Lesson & Update Files tab.

If you purchased an eBook from a different vendor or a print book, use the unique code in the back of this book to gain access to the lesson files.

To access the *Classroom in a Book* files, follow these steps:

1. On a Mac or PC, go to www.peachpit.com/redeem and enter the code found at the back of your book. **This code is not the same as the book's ISBN.**
2. Click Redeem Code and sign in or create an account. You will be taken to your Account page.

   You only need to enter the code once. After you redeem the code, you'll be able to access your lesson files on peachpit.com anytime you want without entering the code again.

◆ **Warning:** Once the code has been used, it cannot be used again.

3 Click the Lesson & Update Files tab of your Account page to see a list of downloadable files.

4 Click the lesson file links to download them to your computer.

The files are compressed into ZIP archives to speed up download time and to protect the contents from damage during transfer. You must uncompress (or "unzip") the files to restore them to their original size and format before you use them with the book. Modern Mac and Windows systems are set up to open ZIP archives by simply double-clicking.

5 On your hard drive, create a new folder in a convenient location and give it the name "Lessons," following the standard procedure for your operating system:

- If you're running Windows, right-click and choose New > Folder. Then enter the new name for your folder.
- If you're using Mac OS, in the Finder, choose File > New Folder. Type the new name and drag the folder to the location you want to use.

6 Drag the unzipped Lessons folder (which contains folders named Lesson01, Lesson02, and so on) that you downloaded onto your hard drive to your new Lessons folder. When you begin each lesson, navigate to the folder with that lesson number to access all the assets you need to complete the lesson.

Note: If for any reason you need to download fresh copies of the lesson files, you can download them from your account again at any time.

Web Edition

This book comes with a free Web Edition that provides many benefits and can be accessed from any device with a connection to the Internet.

Your Web Edition contains the complete text of the book, plus hours of instructional video keyed to the text and interactive quizzes. In addition, the Web Edition will be updated when Adobe adds significant feature updates between major Creative Cloud releases.

Note: Registering to access the Web Edition does not automatically provide access to your lesson files, and vice versa. You must follow the instructions for each to claim the full benefits of your purchase.

Accessing the Free Web Edition

You must register your book purchase on peachpit.com in order to access the free Web Edition:

1 Go to www.peachpit.com/register, and then sign in or create a new account.

2 Enter the book's ISBN: 9780134308111.

3 Answer the questions as proof of purchase. The Web Edition will appear under the Digital Purchases tab on your Account page.

4 Click the Launch link to access the product.

Restoring default preferences

Note: If finding the preferences file proves difficult, please contact me at brian@brianwoodtraining.com for assistance.

The preferences file controls how command settings appear on your screen when you open the Adobe Illustrator program. Each time you quit Adobe Illustrator, the position of the panels and certain command settings are recorded in different preference files. If you want to restore the tools and settings to their original default settings, you can delete the current Adobe Illustrator CC preferences file. Adobe Illustrator creates a new preferences file, if one doesn't already exist, the next time you start the program and save a file.

You must restore the default preferences for Illustrator before you begin each lesson. This ensures that the tools and panels function as described in this book. When you have finished the book, you can restore your saved settings, if you like.

To delete or save the current Illustrator preferences file

1 Exit Adobe Illustrator CC.

2 Locate the Adobe Illustrator Prefs file for Mac OS 10.7 and later* as follows:

- The Adobe Illustrator Prefs file is located in the folder [startup drive]/Users/[username]/Library/Preferences/Adobe Illustrator 19 Settings/en_US**.

3 Locate the Adobe Illustrator Prefs file for Windows 7 [Service Pack 1], Windows 8, or Windows 10 as follows:

- The AIPrefs file is located in the folder [startup drive]\Users\[username]\AppData\Roaming\Adobe\Adobe Illustrator 19 Settings\en_US**\x86 or x64.

Note: In Windows 7 or later, the AppData folder is hidden by default. You will most likely need to enable Windows to show hidden files and folders. For instructions, refer to your Windows documentation.

*On Mac OS 10.7 (Lion) and later, the Library folder is hidden by default. To access this folder, in the Finder, hold down the Option key, and choose Library from the Go menu in the Finder.

**Folder name may be different depending on the language version you have installed.

Tip: To quickly locate and delete the Adobe Illustrator preferences file each time you begin a new lesson, create a shortcut (Windows) or an alias (Mac OS) to the Adobe Illustrator 19 Settings folder.

For more information, refer to Illustrator help: https://helpx.adobe.com/illustrator/kb/preference-file-location-illustrator.html

If you can't find the file, either you haven't started Adobe Illustrator CC yet or you have moved the preferences file. The preferences file is created after you quit the program the first time and is updated thereafter.

4 Copy the file and save it to another folder on your hard disk (if you want to restore those preferences) or delete it.

5 Start Adobe Illustrator CC.

To restore saved preferences after completing the lessons

1 Exit Adobe Illustrator CC.

2 Delete the current preferences file. Find the original preferences file that you saved and move it to the Adobe Illustrator 19 Settings folder.

Note: You can move the original preferences file rather than renaming it.

Additional resources

Adobe Illustrator CC Classroom in a Book (2015 release) is not meant to replace documentation that comes with the program or to be a comprehensive reference for every feature. Only the commands and options used in the lessons are explained in this book. For comprehensive information about program features and tutorials, please refer to these resources:

Adobe Illustrator Learn & Support: helpx.adobe.com/illustrator.html (accessible in Illustrator by choosing Help > Illustrator Support Center) is where you can find and browse tutorials, help, and support on Adobe.com.

Adobe Forums: forums.adobe.com lets you tap into peer-to-peer discussions, questions, and answers on Adobe products.

Adobe Create Magazine: create.adobe.com offers thoughtful articles on design and design issues, a gallery showcasing the work of top-notch designers, tutorials, and more.

Resources for educators: www.adobe.com/education and edex.adobe.com offer valuable information for instructors who teach classes on Adobe software. Find solutions for education at all levels, including free curricula that can be used to prepare for the Adobe Certified Associate exams.

Also check out these useful links:

Adobe Illustrator CC product home page: See www.adobe.com/products/illustrator.

Adobe Add-ons: creative.adobe.com/addons is a central resource for finding tools, services, extensions, code samples, and more to supplement and extend your Adobe products.

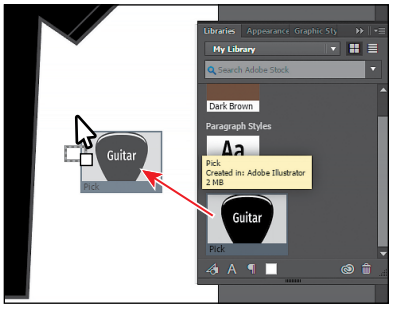
Adobe Authorized Training Centers

Adobe Authorized Training Centers offer instructor-led courses and training on Adobe products. A directory of AATCs is available at training.adobe.com/trainingpartners.

WHAT'S NEW IN ADOBE ILLUSTRATOR CC (2015 RELEASE)

Adobe Illustrator CC (2015 release) is packed with new and innovative features to help you produce artwork more efficiently for print, web, and digital video publication. The features and exercises in this book are based on Illustrator CC (2015.1 release). In this section, you'll learn about many of these new features—how they function and how you can use them in your work.

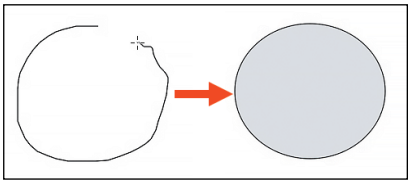
CC Libraries enhancements



In Illustrator CC (2015 release), there have been many improvements and enhancements to Creative Cloud Libraries, including the following:

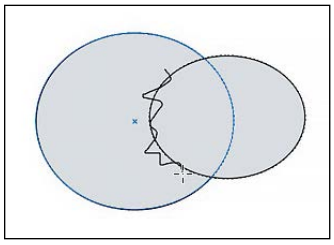
- Graphics are now linked so that when they're changed, you and your team members have the option of updating them across any Illustrator CC, Photoshop® CC, or InDesign® CC projects where they're used.
- Add swatches to libraries with the enhanced New Swatch dialog box.
- Add color groups or color themes to libraries from the Swatches panel.
- Add color themes from color libraries to the Swatches panel.
- Add character styles or paragraph styles to libraries.
- Use character styles or paragraph styles from libraries in a document.
- Add character styles or paragraph styles from libraries to the Character Styles or Paragraph Styles panel.

Shaper tool

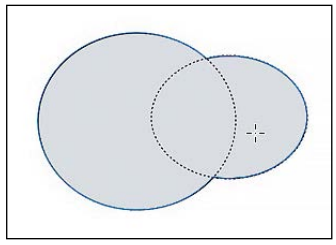


There is a new way to draw and edit shapes in Illustrator. The Shaper tool ( ) recognizes natural gestures and produces Live Shapes from those gestures. After the shapes have been created, you can use the same tool to select, scale, and move the shape.

When shapes overlap, you can scribble within the overlapping area or shape edge to perform functions such as punching or combining. The individual shapes can still be edited after having performed operations such as a punch, or merge, between shapes.



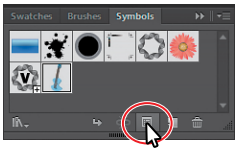
Scribble across an overlapping edge.

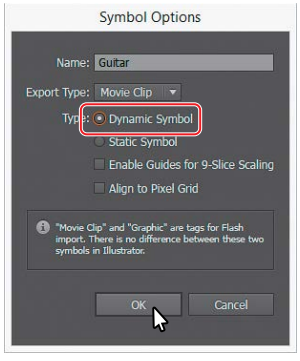


The shapes are now combined.

Dynamic Symbols

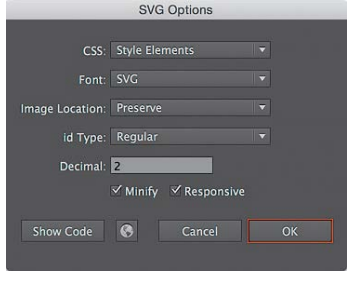
Symbols can now be saved as Dynamic when creating them. After placing an instance of a dynamic symbol in the document, you can select elements within the symbol using the Direct Selection tool and make appearance overrides such as color, gradient, or patterns. The symbol instance is still linked to the original symbol, and any change in the symbol reflects in the instance too, keeping appearance overrides intact.





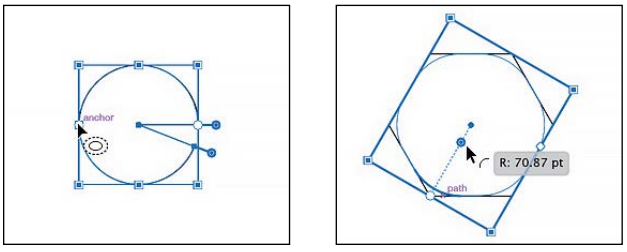
New SVG Export

The new SVG export improves the general quality of SVG exported from Illustrator. By using the new export, the user will be able to output modern, standard SVG code that is minified as well as responsive.



Live Shapes

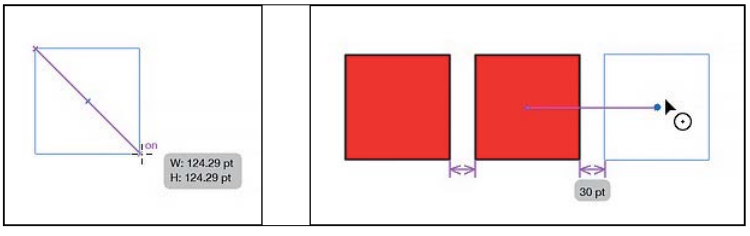
In the latest release of Illustrator, ellipse and polygon shapes are now also Live Shapes. You can change the appearance properties of these Live Shapes through widgets or other methods. And you don't have to change to selection tools to edit the shape (widget); this can done from the shape tools.



Examples of an ellipse (left) and polygon (right)

Smarter Guides and Spacing

The Smart Guides now include functionality such as a preview of the extension of a line in its own angle and feedback when rectangles become squares and/or when ellipses become circles. For adjoining shapes, there are also now gap hints.



Other enhancements

- **10x faster zoom, pan, and scroll**—Zoom, pan, and scroll up to 10 times faster, thanks to Mercury Performance System enhancements that bring GPU acceleration to both Mac and Windows. Zoom is also now animated, so you can quickly zoom in and out of your document by scrubbing left and right.
- **10x greater zoom magnification**—Work with greater precision and make accurate and exact edits with the new 64,000 percent zoom level. Previously, the maximum zoom achievable was 6,400 percent.
- **Recover data in your files**—When an improper shutdown such as Illustrator crashing, an operating system error, or a power outage occurs, simply relaunch Illustrator to restore your work.

- **Safe Mode**—Safe Mode is a new feature that enables Illustrator to launch even if there are fatal, crash-inducing files (for example, corrupt fonts, out-of-date plug-ins, or incorrect drivers) in the system. You can choose to diagnose the cause of the error. When the application starts after isolating and disabling crash-causing files, Illustrator is in Safe Mode.
- **Adobe Stock**—With Adobe Stock, you can purchase, access, and manage high-quality, high-resolution, royalty-free images directly from Illustrator CC, Photoshop CC, InDesign CC, and other Adobe desktop apps. You can save images directly to Creative Cloud Libraries. You can license an image immediately or save a watermarked preview to use in a comp. Thanks to Adobe CreativeSync, you can immediately access your images across your desktop and mobile devices and even share them with your team. When you're ready to use the nonwatermarked version, you can license the image for use directly in Illustrator.

Although this list touches on just a few of the new and enhanced features of Illustrator CC (2015 release), it exemplifies Adobe's commitment to providing the best tools possible for your publishing needs. We hope you enjoy working with Illustrator CC (2015 release) as much as we do.

—**The *Adobe Illustrator CC Classroom in a Book (2015 release)* team**

A QUICK TOUR OF ADOBE ILLUSTRATOR CC (2015 RELEASE)

Lesson overview

In this interactive demonstration of Adobe Illustrator CC (2015 release), you'll get an overview of the main features of the application.

This lesson takes approximately 45 minutes to complete.

Download the project files for this lesson from the Lesson & Update Files tab on your Account page at www.peachpit.com and store them on your computer in a convenient location, as described in the "Getting Started" section of this book.

Your Account page is also where you'll find any updates to the chapters or to the lesson files. Look on the Lesson & Update Files tab to access the most current content.

In this demonstration of Adobe Illustrator CC, you will be introduced to some key fundamentals for working in the application.

Getting started

For the first lesson of this book, you will get a quick tour of the tools and features in Adobe Illustrator CC, offering a sense of the many possibilities. Along the way, you will create artwork for a bakery.

Note: If you have not already downloaded the project files for this lesson to your computer from your Account page, make sure to do so now. See "Getting Started" at the beginning of the book.

1 To ensure that the tools and panels function exactly as described in this lesson, delete or deactivate (by renaming) the Adobe Illustrator CC preferences file. See "Restoring default preferences" in the "Getting Started" section at the beginning of the book.

2 Start Adobe Illustrator CC.

Creating a new document

An Illustrator document can contain up to 100 artboards (*artboards* are similar to *pages* in a program like Adobe InDesign®). Next, you will create a document with only one artboard.

Note: Learn more about creating and editing artboards in Lesson 5, "Transforming Artwork."

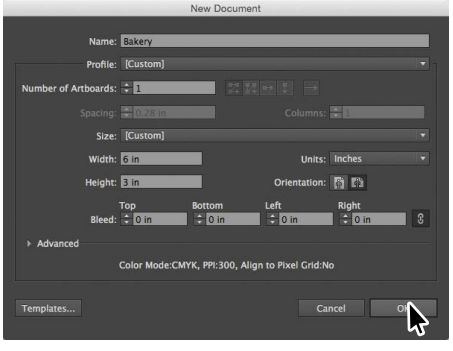
1 Choose Window > Workspace > Reset Essentials.

Note: If you don't see Reset Essentials in the Workspace menu, choose Window > Workspace > Essentials before choosing Window > Workspace > Reset Essentials.

2 Choose File > New.

3 In the New Document dialog box, change only the following options (leaving the rest at their default settings):

- Name: **Bakery**
- Units: **Inches**
- Width: **6 in**
- Height: **3 in**



4 Click OK. A new, blank document appears.

5 Choose File > Save As. In the Save As dialog box, leave the name as **Bakery.ai**, and navigate to the Lessons > Lesson00 folder. Leave the Format option set to Adobe Illustrator (ai) (Mac OS) or Save As Type option set to Adobe Illustrator (*.AI) (Windows), and click Save. In the Illustrator Options dialog box, leave the Illustrator options at their default settings, and then click OK.

6 Choose View > Rulers > Show Rulers to show rulers in the Document window.

7 Choose View > Fit Artboard In Window.

8 Choose View > Zoom Out.

The white area is the artboard, and it's where your printable artwork will go.

9 Click the Libraries panel tab to collapse the panel on the right.

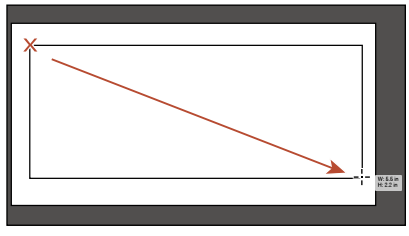
Drawing a shape

Drawing shapes is the cornerstone of Illustrator, and you will create many of them in the coming lessons. Next, you will create a rectangle.

Note: Learn more about creating and editing shapes in Lesson 3, "Using Shapes to Create Artwork for a Postcard."

1 Select the Rectangle tool ( ) in the Tools panel on the left.

2 Position the pointer in the upper-left part of the artboard (see the red X in the figure). Click and drag down and to the right edge of the white artboard. When the gray measurement label shows a width of 5.5 in and a height of 2.2 in, release the mouse button. The shape will remain selected.



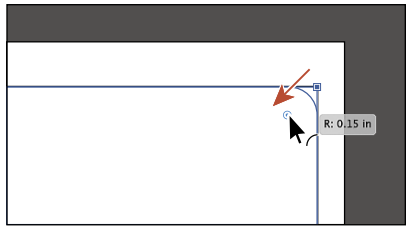
Shapes can be created by drawing them or clicking the artboard with a shape tool and modifying shape properties before it is created.

Rounding the corners of a shape

Shapes such as rectangles, rounded rectangles, ellipses, and polygons are called Live Shapes because properties such as width, height, rounded corners, corner types, and radii (individually or collectively) can continue to be modified. Next, you will round the corners of the rectangle you created.

Note: Learn more about creating and editing Live shapes in Lesson 3, "Using Shapes to Create Artwork for a Postcard."

1 Select the Selection tool ( ) in the Tools panel on the left, and with the rectangle still selected on the artboard, click and drag the upper-right-corner widget toward the center of the rectangle. When the gray measurement label shows a value of approximately 0.15 in, release the mouse button.

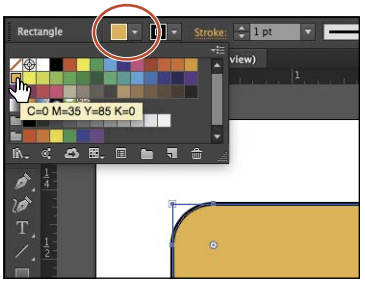


Applying color

Note: Learn more about creating and applying color in Lesson 7, "Using Color to Enhance Signage."

Applying colors to artwork is a common Illustrator task. You can either create your own color using a variety of methods or use colors that come with each document by default called *swatches*.

1 With the Selection tool ( ) selected and the rectangle still selected, click the Fill color in the Control panel (circled in the figure) to reveal the Swatches panel. Position the pointer over an orange swatch (in the second row of colors). When the tooltip appears that shows "C=0, M=35, Y=85, K=0," click to apply the orange swatch to the fill of the shape.



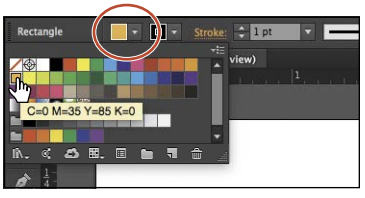
2 Press the Escape key to hide the Swatches panel and leave the shape selected.

Editing color

Note: Learn more about editing color in Lesson 7, "Using Color to Enhance Signage."

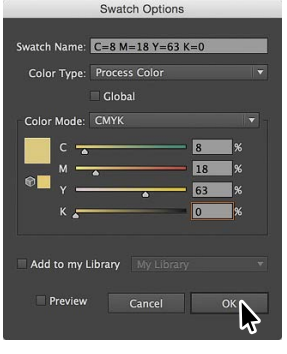
There are many ways in Illustrator to both create your own colors and edit colors that appear in each document by default. In this section, you will edit the color values for the orange swatch you just applied.

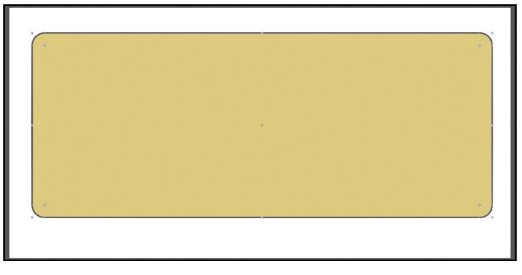
1 With the rectangle still selected, click the Fill color in the Control panel (circled in the figure), and double-click the orange swatch you applied in the previous steps to edit it.



2 In the Swatch Options dialog box, change the values to C=**8**, M=**18**, Y=**63**, K=**0**. Click OK to edit the color for the rectangle and change the swatch color values.

3 Press the Escape key to hide the Swatches panel.





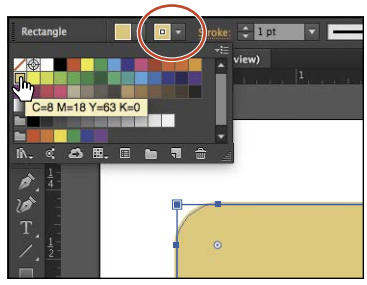
4 Choose File > Save.

Editing strokes

You can also apply a stroke (border) to artwork. A stroke can be the visible outline of artwork like shapes and paths. There are a lot of appearance properties you can change for a stroke including width, color, dashes, and more. In this section, you'll adjust the stroke of the rectangle.

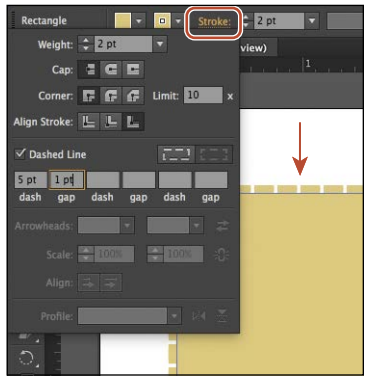
Note: Learn more about working with strokes in Lesson 3, "Using Shapes to Create Artwork for a Postcard."

1 With the rectangle still selected, click the Stroke color in the Control panel (circled in the figure) to reveal the Swatches panel. Click the same orange-colored swatch you used for the fill.



2 With the rectangle shape still selected, click the word "Stroke" in the Control panel above the document to open the Stroke panel. Change the following options:

- Stroke Weight: **2 pt**
- Align Stroke: **Align Stroke to Outside** ( )
- Dashed Line: **Selected**
- Dash: **5 pt**
- Gap: **1 pt**



3 Press the Escape key to hide the Stroke panel.

4 Choose Object > Lock > Selection to lock the rectangle so that it can't be selected until you unlock it later.

Working with layers

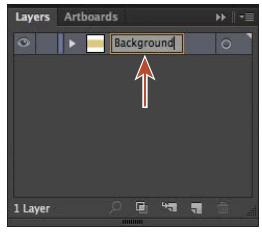
Layers allow you to organize and more easily select artwork. Next, using the Layers panel, you will organize your artwork.

Note: Learn more about working with layers and the Layers panel in Lesson 9, "Organizing Your Artwork with Layers."

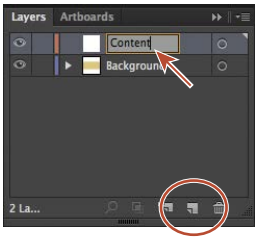
1 Choose Window > Layers to show the Layers panel in the workspace.

2 Double-click the text "Layer 1" (the layer name) in the Layers panel. Type **Background**, and press Enter or Return to change the layer name.

Naming layers can be helpful when organizing content. Currently, the rectangle you created is on this layer.



3 Click the Create New Layer button ( ) at the bottom of the Layers panel. Double-click Layer 2 (the new layer name), and type **Content**. Press Enter or Return.

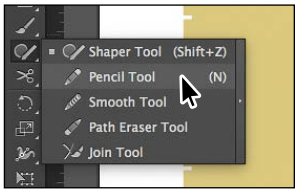


Drawing with the Pencil tool

Note: Learn more about working with the Pencil tool and other drawing tools in Lesson 6, "Creating an Illustration with the Drawing Tools."

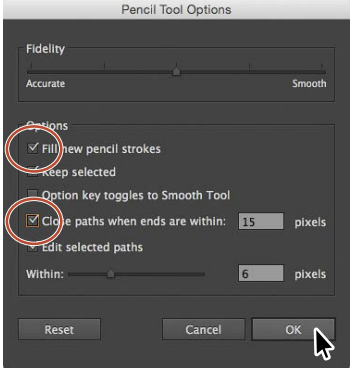
The Pencil tool ( ) lets you draw free-form open and closed paths that contain curves and straight lines. As you draw with the Pencil tool, anchor points are created on the path where necessary and according to the Pencil tool options you set.

1 Click and hold down on the Shaper tool ( ) in the Tools panel on the left. In the tools menu that appears, select the Pencil tool ( ). If a window appears that discusses the Shaper tool, close it.



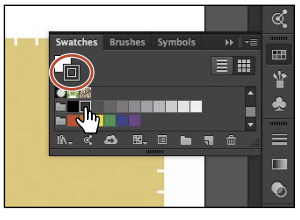
2 Double-click the Pencil tool ( ) in the Tools panel on the left to open the Pencil Tool Options dialog box. Select Fill New Pencil Strokes and Close Paths When Ends Are Within. Click OK.

3 Press the letter D to set the default fill (White) and stroke (Black) for the artwork you are about to create.

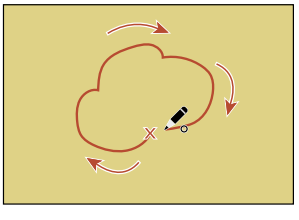


4 Choose Window > Swatches to show the Swatches panel. Click the Stroke box (circled in the figure) and select a Dark Gray swatch to change the stroke.

You'll probably need to scroll down in the Swatches panel.



5 On the artboard, starting where you see the red X in the figure, click and drag to create the top of a chef's hat that's roughly an inch in width (look at the rulers). Come back to where you started drawing. When a circle appears next to the Pencil tool ( ), indicating that the path will be closed, release the mouse button to close the path. Leave the path selected.

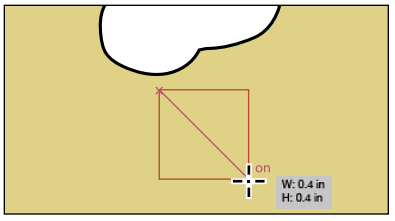


Creating shapes using the Shape Builder tool

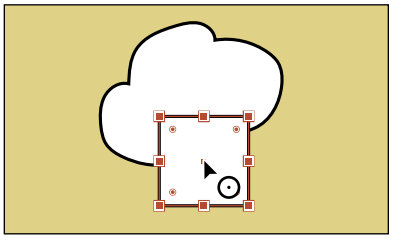
The Shape Builder tool ( ) is an interactive tool for creating complex shapes by merging and erasing simpler shapes. Next, you will finish the chef hat you started drawing in the previous section, using the Shape Builder tool.

Note: Learn more about working with the Shape Builder tool in Lesson 4, "Editing and Combining Shapes and Paths."

1 Select the Rectangle tool ( ) in the Tools panel on the left. Shift-drag below the shape you just drew to draw a square with a height and width of 0.4 in. When the gray measurement label next to the pointer shows the correct size, release the mouse button and then the Shift key.

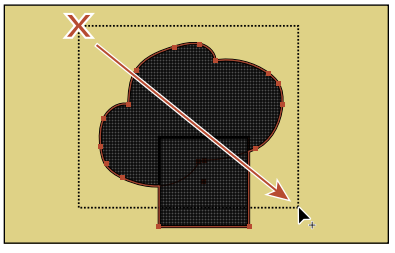


2 Select the Selection tool ( ) in the Tools panel on the left. Position the pointer over the center of the rectangle. When the pointer changes ( ), drag the rectangle from its center roughly into position like you see in the figure.

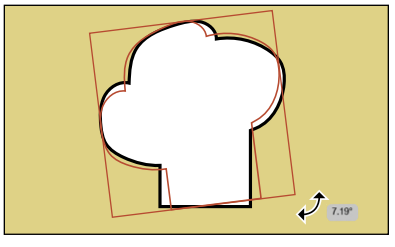


3 Shift-click the shape you drew with the Pencil tool to select both objects.

4 Select the Shape Builder tool ( ) in the Tools panel on the left. Position the pointer to the left and above all of the selected shapes (see the red X in the figure). Press the Shift key and drag to the right and down. Make sure you drag across all the selected shapes. Release the mouse button and then the Shift key to combine the shapes.



5 Select the Selection tool and position the pointer just off one of the corners. When the pointer changes ( ), drag counterclockwise to rotate roughly 7°.



6 Choose Object > Hide > Selection to temporarily hide the hat.

7 Choose File > Save.

Creating a blend

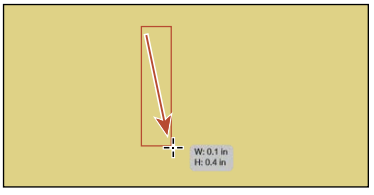
Note: Learn more about working with blends in Lesson 10, "Gradients, Blends, and Patterns."

You can blend two distinct objects to create and distribute shapes evenly between two objects. For instance, to create a fence, you could blend two rectangles together and Illustrator will create all the copies between the two original rectangles.

Next, you will create the bottom part of a muffin using a blend.

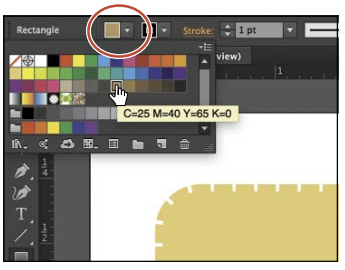
1 Choose View > Zoom In to zoom into the artboard a bit.

2 Select the Rectangle tool ( ) in the Tools panel on the left. Draw a rectangle with a width of 0.1 in and a height of 0.4 in.



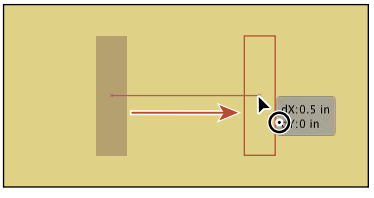
3 With the rectangle still selected, click the Fill color in the Control panel (circled in the figure), and select the brown swatch in the third row of colors with the tooltip "C=25, M=40, Y=65, K=0."

4 Change the Stroke weight to **0** in the Control panel.

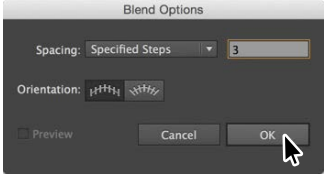


5 With the rectangle selected, choose Edit > Copy and then Edit > Paste In Front to paste a copy directly on top of the original rectangle.

6 Position the pointer over the center of the rectangle. When the pointer changes ( ), drag to the right. Drag straight to the right until the gray measurement label shows a distance (dX) of about .5 in. Release the mouse button.

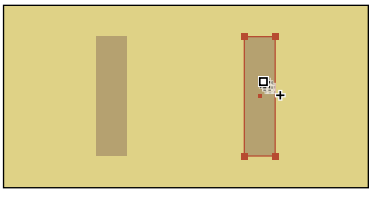


7 Double-click the Blend tool ( ) in the Tools panel to set a few settings for the tool. In the Blend Options dialog box, choose Specified Steps from the Spacing menu, and change the value to the right to **3**. Click OK.

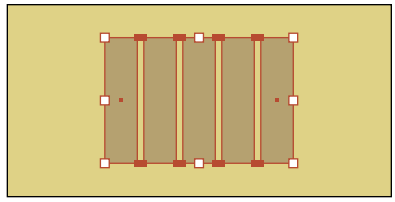


Note: A Blend object acts like a group that consists of the original two objects and a path that the copies follow called a *spine*.

8 Click within the rectangle on the left when you see the cursor look like and then click within the rectangle to the right when the cursor looks like to create a blend of the two objects. You just created a Blend object.



9 Choose Object > Blend > Expand to convert it from a Blend object to a group of shapes. Leave the group selected.



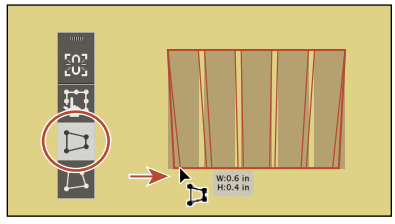
Transforming artwork

In Illustrator, there are a number of ways to move, rotate, skew, scale, distort, and shear (and more) artwork so you can get it just the way you want. This is called *transforming* artwork and something you'll do a bit of next.

Note: Learn more about transforming artwork in Lesson 5, "Transforming Artwork."

1 With the group still selected, select the Free Transform tool ( ) in the Tools panel. After selecting the Free Transform tool, the Free Transform widget appears in the Document window. This widget contains options to change how the Free Transform tool works.

2 In the Free Transform widget, select Perspective Distort (circled in the figure). Click and drag the bottom-left corner of the group to the right a little.



3 Choose Select > Deselect.

Drawing with the Shaper tool

Another way to draw and edit shapes in Illustrator involves the Shaper tool ( ). The Shaper tool recognizes drawn gestures and transforms them into shapes. Next, you will use the Shaper tool to create the top of the muffin.

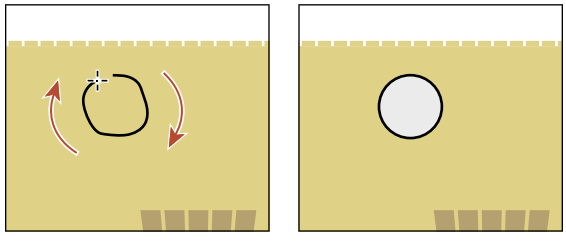
Note: Learn more about working with the Shaper tool in Lesson 3, "Using Shapes to Create Artwork for a Postcard."

1 Click and hold down the Pencil tool ( ) in the Tools panel to reveal a tools menu. Select the Shaper tool ( ).

2 Press the letter D to set the default fill (White) and stroke (Black) for the artwork you are about to create.

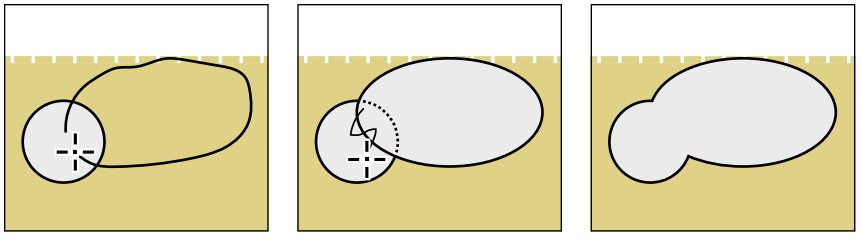
3 Above (or below) the brown group of objects, draw a small circle. You can always choose Edit > Undo if you make a mistake.

Initially the drawing looks rough, but Illustrator takes your gesture and converts it to a shape like a circle or an oval when you release the mouse button.



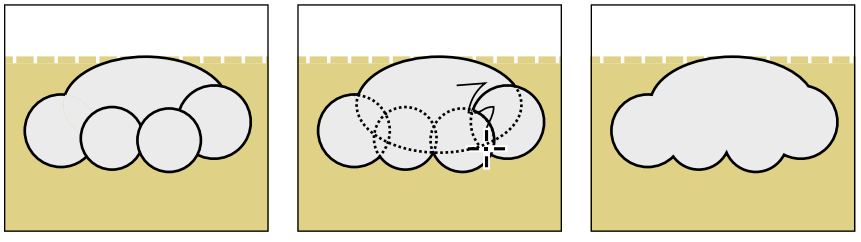
4 Draw another larger circle to the right of the first, making sure they overlap.

5 Position the pointer over the line between the two circles. Draw a scribble over the line between the circles so that they appear to combine.

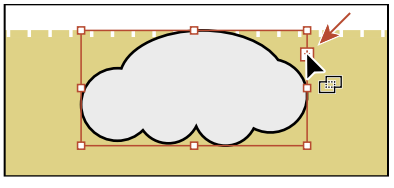


6 Choose Select > Deselect. Draw a few more circles, overlapping the originals. Use the following figure as a guide.

7 Position the pointer over the lines between each of the circles. Draw a scribble over them so that they appear to combine the shapes.

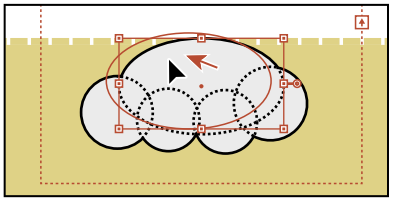


8 With the Shaper tool, click one of the circle shapes once to select the entire object. Click the small down arrow on the right side of the bounding box to temporarily access the individual shapes.

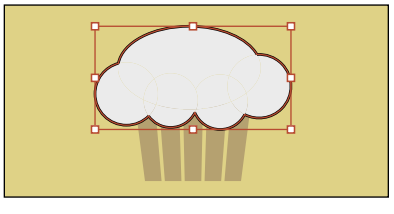


9 Click the larger shape to first select it. Drag it *a little* to move it.

After shapes have been created with the Shaper tool, you can use it to select by tapping over the shape. Selected shapes have control widgets that can be used for scaling, moving, and more.



10 Select the Selection tool ( ) in the Tools panel on the left and drag the shape you just created down on top of the group to create the muffin. Leave the new artwork selected.



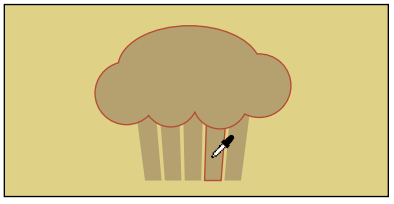
Sampling formatting with the Eyedropper tool

At times you may want to simply copy appearance attributes, like character or paragraph formatting, fill, and stroke, from one object to another. This can be done with the Eyedropper tool (🖉) and can really speed up your creative process.

Note: Learn more about the Eyedropper tool in Lesson 7, "Using Color to Enhance Signage."

1 With the shape still selected, select the Eyedropper tool (🖉) in the Tools panel.

2 Click the group of objects that started as a blend to copy the appearance properties to the selected artwork.



3 Select the Selection tool (▶) in the Tools panel on the left. Shift-click the group of muffin bottom shapes and choose Object > Group to group them together.

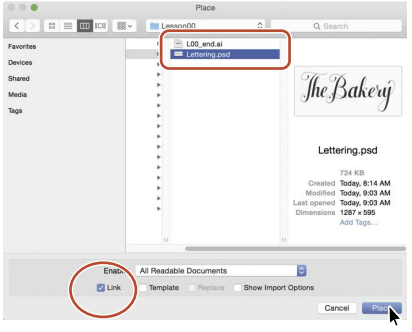
4 Choose Object > Hide > Selection to temporarily hide the muffin.

Placing an image in Illustrator

In Illustrator, you can place raster images, like JPEG (jpg, jpeg, jpe) and Adobe Photoshop® (psd, pdd) files, and either link to them or embed them. Next, you will place an image of hand-drawn text.

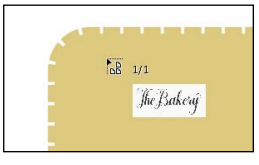
Note: Learn more about placing images in Lesson 14, "Using Illustrator CC with Other Adobe Applications."

1 Choose File > Place. In the Place dialog box, navigate to the Lesson00 folder in the Lessons folder, and select the Lettering.psd file. Make sure that the Link option in the dialog box is selected, and click Place.



2 Choose View > Fit Artboard In Window.

3 With the loaded graphics cursor, click in the upper-left corner of the rectangle to place the image.



4 With the Selection tool (▶) selected, drag the image over the center of the large rectangle in the background so that it's roughly in the center of the artboard.

Note: The hand lettering for this project was created by Danielle Fritz (www.behance.net/danielle_fritz).

Using Image Trace

Note: Learn more about Image Trace in Lesson 3, "Using Shapes to Create Artwork for a Postcard."

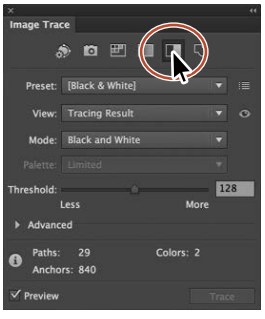
You can use Image Trace to convert photographs (raster images) into vector artwork. Next, you will trace the Photoshop file.

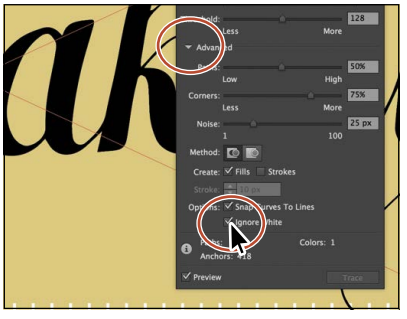
1 With the image selected, click the Image Trace button in the Control panel.

2 Choose Window > Image Trace. In the Image Trace panel, click the Black And White button at the top of the panel. The image is converted to vector paths, but it is not yet editable.

Tip: Another method for converting the hand-drawn lettering is by using the Adobe Capture CC app. To learn more about Adobe Capture, visit www.adobe.com/creativecloud/catalog/mobile.html.

3 In the Image Trace panel, click the toggle arrow to the left of Advanced. Select Ignore White near the bottom of the panel. Close the Image Trace panel by clicking the small X in the corner.





4 With the lettering still selected, click the Expand button in the Control panel to make the object a series of vector shapes that are grouped together.

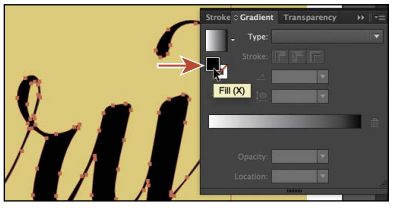
Creating and editing gradients

Note: Learn more about working with gradients in Lesson 10, "Gradients, Blends, and Patterns."

Gradients are color blends of two or more colors that you can apply to the fill or stroke of artwork. Next, you will apply a gradient to the lettering.

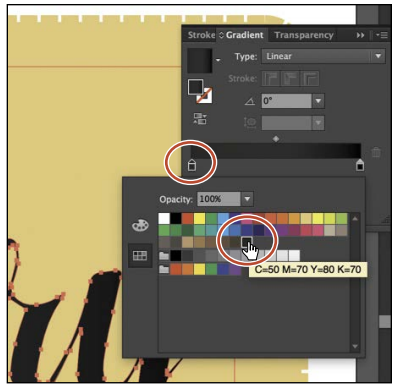
1 With the lettering still selected, choose Window > Gradient to show the Gradient panel on the right side of the workspace. In the Gradient panel, change the following options:

- Click the black Fill box (an arrow is pointing to it in the figure), if it's not already selected, so that you can apply the gradient to the fill of the lettering.



- Click the Gradient menu button (—the little arrow) to the left of the word "Type," and choose White, Black from the menu.

2 Double-click the white color stop on the left side of the gradient slider in the Gradient panel (circled in the figure). In the panel that appears, click the Swatches button ( ) (if it's not already selected), and select the brown swatch with the tooltip "C=50, M=70, Y=80, K=70."



3 Press the Escape key to hide the Swatches panel.

4 Select the Gradient tool ( ) in the Tools panel on the left. While pressing the Shift key, click and drag down, across the lettering on the artboard, starting at the red X in the figure, to reposition and resize the gradient. Release the mouse button and then the key.

Working with type

Next, you will add some text to the project and apply formatting. You will choose a Typekit font that requires an Internet connection. If you don't have an Internet connection, you can choose another font.

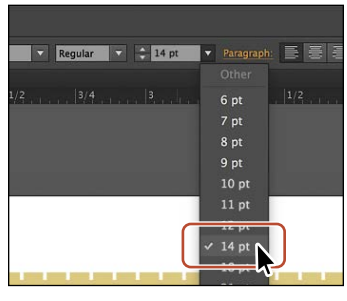
Note: Learn more about working with type in Lesson 8, "Adding Type to a Poster."

1 Select the Type tool ( ) in the Tools panel on the left, and click in a blank area of the artboard, below the "The Bakery" lettering. Type **San Francisco**.

2 With the cursor still in the text, choose Select > All to select it.

3 In the Control panel above the artwork, choose **14 pt** from the Font Size menu (to the right of the Font Family).

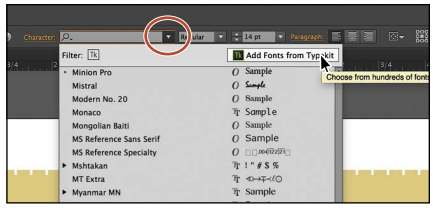
Next, you will apply a Typekit font. You will need an Internet connection. If you don't have an Internet connection or access to the Typekit fonts, you can choose any other font from the font menu.



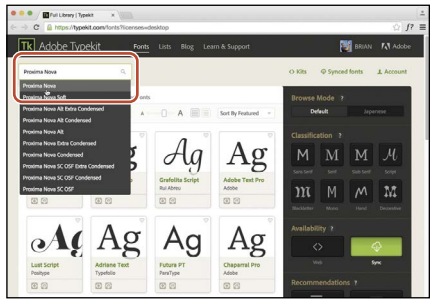
Note: If you don't see the character options like Font Size in the Control panel, click the word "Character" to see the Character panel.

4 Click the arrow to the right of the Font field. Click the Add Fonts From Typekit button to sync a font from Typekit.

This opens a browser, launches the Typekit.com website, and signs you in to the site.

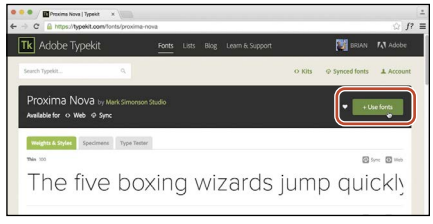


5 Type **Proxima Nova** in the Search Typekit field (or another font, if you can't find that one). Choose Proxima Nova from the menu that appears.

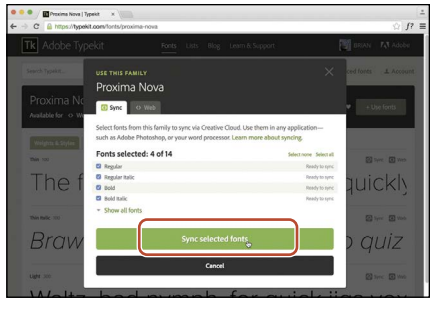


Note: If you are taken to the Typekit.com home page, you can simply click the Browse Fonts button. It may also ask you to log in with your Creative Cloud (Adobe) ID.

6 Click Use Fonts on the next page.

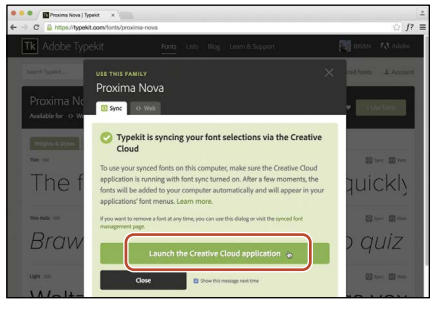


7 Click Sync Selected Fonts in the window that appears.



8 After it is synced, click the Launch The Creative Cloud Application button to open the Creative Cloud Desktop application.

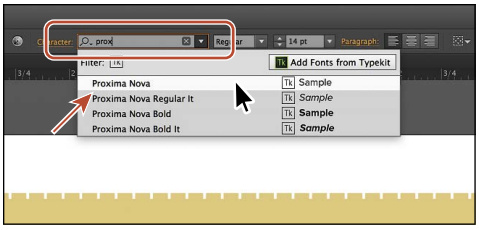
In the Creative Cloud desktop application, you will be able to see any messages indicating that font syncing is turned off (turn it on in that case) or any other issues.



9 Return to Illustrator. With the text still selected, begin typing **Prox** in the Font field in the Control panel.

10 Click Proxima Nova in the menu that appears to apply the font.

● **Note:** It may take a few minutes for the font to sync with your computer.



11 Choose File > Save.

Aligning artwork

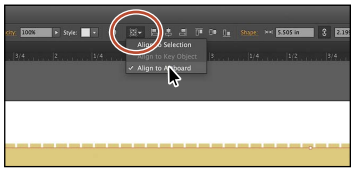
Illustrator makes it easy to align or distribute multiple objects relative to each other, the artboard, or a key object. In this section, you'll align several objects to the center of the artboard.

● **Note:** Learn more about aligning artwork in Lesson 2, "Techniques for Selecting Artwork."

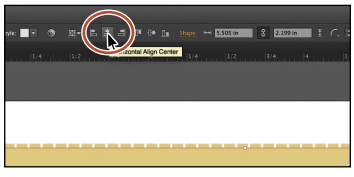
1 Choose Object > Unlock All to unlock the rectangle in the background and select it.

2 Select the Selection tool (▶) in the Tools panel and choose Select > All.

3 Click the Align To Selection button (▣) in the Control panel above the document, and choose Align To Artboard in the menu that appears, if it isn't already. The selected content will now align to the artboard.



4 Click the Horizontal Align Center button (▣) to align the selected artwork to the horizontal center of the artboard.



5 Choose Object > Show All, and then choose Select > Deselect.

● **Note:** The Align options may not appear in the Control panel. If you don't see the Align To Selection button (▣), click the word "Align" in the Control panel to open the Align panel. The number of options displayed in the Control panel depends on your screen resolution.

6 Click the chef hat and drag it into position like you see in the figure. You may need to move the muffin group out of the way as well.

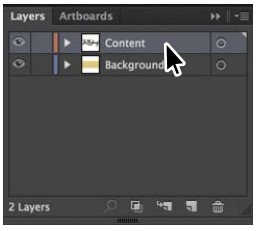
7 Choose Select > Deselect.

Working with brushes

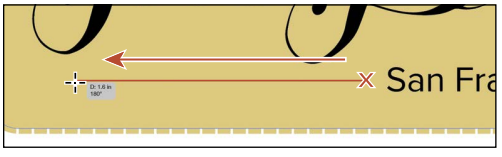
Note: Learn more about working with brushes in Lesson 11, "Using Brushes to Create a Poster."

Brushes let you stylize the appearance of paths. You can apply brush strokes to existing paths, or you can use the Paintbrush tool () to draw a path and apply a brush stroke simultaneously.

1 Open the Layers panel by choosing Window > Layers. Click the Content layer to make sure that it is selected. You want to make sure that the rest of the artwork goes on this layer.



2 Select the Line Segment tool () in the Tools panel on the left. Pressing the Shift key, click and drag from the left side of the text to the left (see the red X in the figure for where to start). When the gray measurement label shows a width of *roughly* 1.6 in, release the mouse button and then the key.

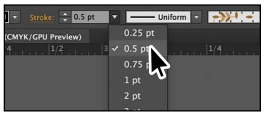


3 Choose Window > Brush Libraries > Borders > Borders_Novelty to open the Borders_Novelty collection of brushes as a panel.

4 Select the Selection tool () and click the Laurel brush in the panel to apply it to the path you just drew. Click the X in the corner of the Borders_Novelty panel to close it.

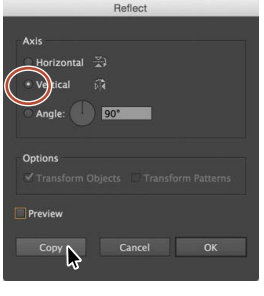
Note: The brush is a pattern brush, which means that it repeats artwork (in this case) along the path. The brush artwork is scaled on the path based on the stroke weight.

5 Change the Stroke weight to **0.5 pt** in the Control panel above the artwork.



6 With the path still selected, choose Object > Transform > Reflect. In the Reflect dialog box, select Vertical, and click **Copy**.

A reflected copy of the line is placed directly on top of the original.



7 With the Selection tool (▶) selected, drag both into position like you see in the following figure. As you drag the lines, alignment guides will appear, showing you when artwork is aligned with the text.

8 Choose Select > Deselect.

▶ **Tip:** You can also press the Arrow keys to move selected artwork.

Working with symbols

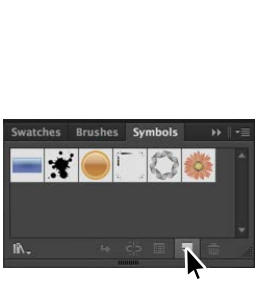
A *symbol* is a reusable art object stored in the Symbols panel. They're useful because they can help you save time and can save on file size as well. You will now create a symbol from artwork.

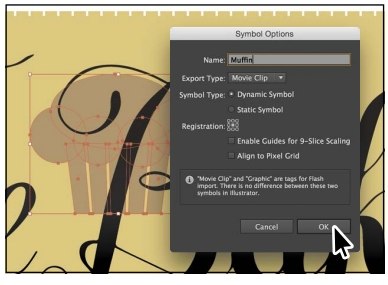
● **Note:** Learn more about working with symbols in Lesson 13, "Creating Artwork for a T-Shirt."

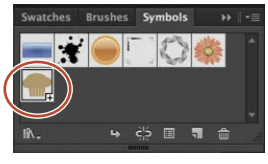
1 With the Selection tool (▶) selected, click the brown muffin group to select it.

2 Choose Window > Symbols to open the Symbols panel. Click the New Symbol button (⊞) at the bottom of the Symbols panel.

3 In the Symbol Options dialog box that appears, name the symbol **Muffin**, and click OK. If a warning dialog box appears, click OK as well.







The artwork now appears as a saved symbol in the Symbols panel, and the muffin artwork on the artboard you used to create the symbol is now a symbol *instance*.

4 With the Selection tool (▶) selected, drag the muffin that's already on the artboard to the approximate center of the artboard.

5 Choose Object > Arrange > Send To Back to send the muffin behind all of the artwork on the Content layer.

● **Note:** Your Muffin symbol instances may be in different locations than those in the figure. That's okay.

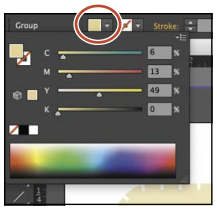
6 From the Symbols panel, drag the Muffin symbol thumbnail onto the artboard *twice* and arrange them on either side of the "San Francisco" text, like you see in the figure. Make sure that the muffin instances to the left and right of the original muffin instance hang off the larger rectangle in the background.

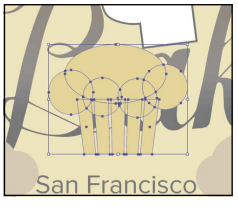
7 Select the muffin instance in the center of the artboard. Option+Shift-drag (Mac OS) or Alt+Shift-drag (Windows) any corner of the artwork away from its center to make it larger. After you resize it, drag it into position. Use the figure as a guide. Leave it selected.

8 Click the Edit Symbol button in the Control panel above the artwork to edit the symbol artwork in Isolation mode without affecting the other artwork. In the dialog box that appears, click OK.

9 Choose Select > All.

10 *Shift-click* the Fill color in the Control panel (circled in the following figure) and change the CMYK color values to C=**6**, M=**13**, Y=**49**, K=**0** to change the fill color of the muffin. Press the Escape key to close the panel.





▶ **Tip:** You can also double-click away from the selected artwork to exit Isolation mode.

11 Press the Escape key to exit the editing (Isolation) mode and notice that the other muffins have changed.

12 Shift-click all three of the muffin instances and choose Object > Group.

13 Choose Object > Arrange > Send To Back.

Creating a clipping mask

A *clipping mask* is an object that masks other artwork so that only areas that lie within its shape are visible—in effect, clipping the artwork to the shape of the mask. Next, you will copy the background rectangle and use the copy to mask the artwork.

Note: Learn more about working with clipping masks in Lesson 14, "Using Illustrator CC with Other Adobe Applications."

1 With the Selection tool (▶) selected, click the large rectangle in the background.

2 Choose Edit > Copy.

3 Click the muffin group to select the layer that the muffins are on. Choose Edit > Paste In Front to paste a copy of the rectangle in the same position as the original but on top of the muffins.

4 With the rectangle still selected, press the Shift key, and click the muffin group just showing at the bottom of the artboard to select it as well.

5 Choose Object > Clipping Mask > Make.

Working with effects

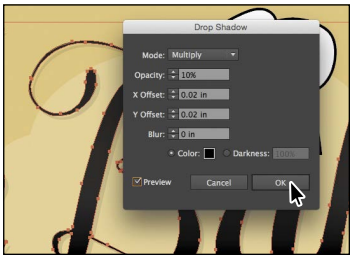
Effects alter the appearance of an object without changing the base object. Next, you will apply a subtle Drop Shadow effect to the lettering you traced earlier.

Note: Learn more about effects in Lesson 12, "Exploring Creative Uses of Effects and Graphic Styles."

1 With the Selection tool (▶), click the "The Bakery" lettering.

2 Choose Effect > Stylize > Drop Shadow. In the Drop Shadow dialog box, set the following options (if necessary):

- Mode: **Multiply** (the default setting)
- Opacity: **10%**
- X Offset and Y Offset: **0.02 in**
- Blur: **0**



3 Select Preview to see it applied to the artwork, and then click OK.

4 Choose Select > Deselect, and then choose File > Save.

5 Choose File > Close.

4 EDITING AND COMBINING SHAPES AND PATHS

Lesson overview

In this lesson, you'll learn how to do the following:

- Cut with the Scissors tool.
- Join paths.
- Work with the Knife tool.
- Work with the Eraser tool.
- Work with the Shape Builder tool.
- Work with Pathfinder commands to create shapes.
- Create a compound path.
- Edit strokes with the Width tool.
- Outline strokes.

This lesson takes approximately 45 minutes to complete.

Download the project files for this lesson from the Lesson & Update Files tab on your Account page at www.peachpit.com and store them on your computer in a convenient location, as described in the "Getting Started" section of this book.

Your Account page is also where you'll find any updates to the chapters or to the lesson files. Look on the Lesson & Update Files tab to access the most current content.

Soon after you begin creating simple paths and shapes, you will most likely want to take them further in order to create more complex artwork. In this lesson, you'll explore how to both edit and combine shapes and paths.

Getting started

Note: The artwork for this project was created by Dan Stiles (www.danstiles.com).

In Lesson 3, "Using Shapes to Create Artwork for a Postcard," you learned about creating and making edits to basic shapes. In this lesson, you'll take basic shapes and paths and learn how to both edit and combine them to create new artwork.

1 To ensure that the tools and panels function exactly as described in this lesson, delete or deactivate (by renaming) the Adobe Illustrator CC preferences file. See "Restoring default preferences" in the "Getting Started" section at the beginning of the book.

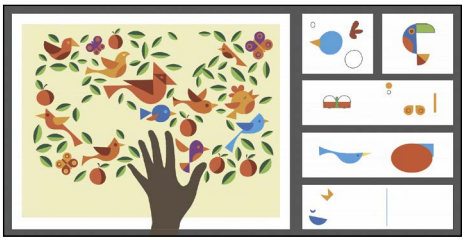
2 Start Adobe Illustrator CC.

Note: If you have not already downloaded the project files for this lesson to your computer from your Account page, make sure to do so now. See the "Getting Started" section at the beginning of the book.

3 Choose File > Open. Locate the file named L4_end.ai, which is in the Lessons > Lesson04 folder that you copied onto your hard disk. This file contains the finished artwork.

4 Choose View > Fit All In Window and leave the file open for reference, or choose File > Close (I closed it).

5 Choose File > Open. If a panel appears, click Open in the panel. You could also choose File > Open again. In the Open dialog box, navigate to the Lessons > Lesson04 folder and select the L4_start.ai file on your hard disk. Click Open to open the file.



Tip: By default, the ".ai" extension shows on Mac OS, but you could add the extension on either platform in the Save As dialog box.

6 Choose File > Save As. In the Save As dialog box, change the name to **BirdInTheHand.ai** (Mac OS) or **BirdInTheHand** (Windows), and choose the Lesson04 folder. Leave the Format option set to Adobe Illustrator (ai) (Mac OS) or the Save As Type option set to Adobe Illustrator (*.AI) (Windows), and click Save.

7 In the Illustrator Options dialog box, leave the Illustrator options at their default settings, and click OK.

8 Choose View > Fit All In Window.

Editing paths and shapes

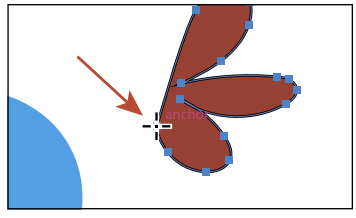
In Illustrator, you can edit and combine paths and shapes in a variety of ways to achieve the artwork you want. Sometimes, to get the artwork you desire, you start simpler and utilize different methods for achieving more complex paths. This includes working with the Scissors tool (), the Knife tool (), the Width tool (), the Shape Builder tool (), Pathfinder effects, the Eraser tool (), outlining strokes, joining paths, and more.

Note: You'll also explore other methods for transforming artwork in Lesson 5, "Transforming Artwork."

Cutting with the Scissors tool

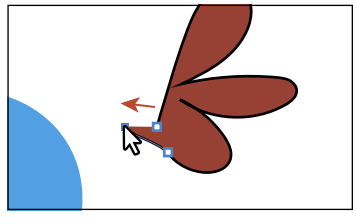
There are several tools that allow you to cut and divide shapes. You'll start with the Scissors tool (), which splits a path at an anchor point or on a line segment and makes an open path. Next, you'll cut a shape with the Scissors tool to reshape it.

1. Choose View > Smart Guides to ensure that they are on.
2. Choose "2 Bird 1" from the Artboard Navigation menu in the lower-left corner of the Document window.
3. Choose View > Fit Artboard In Window.
4. Select the Zoom tool () in the Tools panel, and click twice on the red shape in the upper-right corner of the artboard to zoom in.
5. Select the Selection tool () in the Tools panel, and click the red shape to select it.
6. With the shape selected, in the Tools panel, click and hold down the Eraser tool (), and select the Scissors tool (). Position the pointer over the blue anchor point on the path on the left side (see the figure), and when you see the word "anchor," click to cut the path at that point.

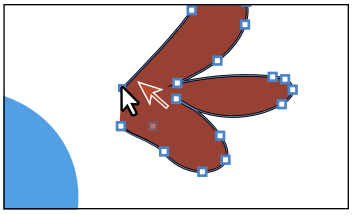


Note: If you click the stroke of a closed shape (a circle, for example) with the Scissors tool, it simply cuts the path so that it becomes open (a path with two end points).

   If you don't click directly on a point or path, you will see a warning dialog box. You can simply click OK and try again. Cuts made with the Scissors tool must be on a line or a curve rather than on an end point of an open path. When you click with the Scissors tool, a new anchor point is created and is selected.
7. Choose View > Smart Guides to turn them off.
8. Select the Direct Selection tool (), and drag the anchor point you just clicked to the left.



9 Drag the other anchor point, from where you originally cut the path with the scissors, up and to the left (see the figure).



Notice how the stroke (the black border) doesn't go all the way around the red shape. That's because cutting with the Scissors tool makes an open path. A circle or rectangle are examples of closed paths, and a line or "S" shape are examples of open paths (the end points are not connected). If you only want to fill the shape with a color, it is not necessary to join the path to make a closed path. An open path can have a color fill. It is, however, necessary to join a path if you want a stroke to appear around the entire fill area.

Joining paths

Suppose you draw a "U" shape and later decide you want to close the shape, essentially joining the ends of the "U" with a straight path. If you select the path, you can use the Join command to create a line segment between the end points, closing the path. When more than one open path is selected, you can join them together to create a closed path. You can also join the end points of two separate paths.

Next, you will join the ends of the red path to create a single closed shape.

1 Select the Selection tool ( ) in the Tools panel. Click away from the red path to deselect it, and then click in the red fill to reselect it.

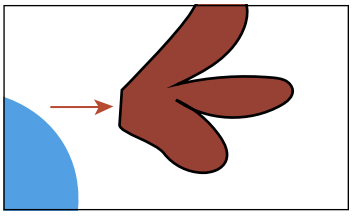
This step is important because only one anchor point was left selected from the previous section. If you were to choose the join command, an error message would appear. By selecting the whole path, when you apply the join command, Illustrator simply finds the two ends of the path and connects them with a straight line.

Tip: If you wanted to join specific anchor points from separate paths, select the anchor points and choose Object > Join > Path or press Command+J (Mac OS) or Ctrl+J (Windows).

2 Choose Object > Path > Join.

Notice that the two anchor points on the left side of the paths are now joined with a straight path and the stroke (black border) goes all the way around now.

3 Choose Select > Deselect to see the closed path.



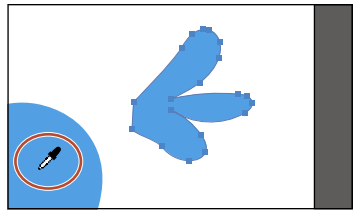
When you apply the Join command to two or more open paths, Illustrator first looks for and joins the paths that have end points stationed closest to each other. This process is repeated every time you apply the Join command until all paths are joined.

Tip: In Lesson 6, "Creating an Illustration with the Drawing Tools," you'll learn about the Join tool ( ), which allows you to join two paths at a corner, keeping the original curve intact.

4 Click the red path to select it again.

5 Select the Eyedropper tool (🖉) in the Tools panel, and click the blue circle in the center of the artboard.

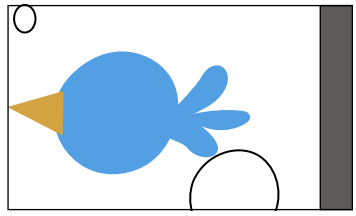
The Eyedropper tool samples the appearance attributes like stroke and fill from what you click and applies those same appearance attributes to the selected artwork, if it can.



▶ **Tip:** You'll learn more about the Eyedropper tool in Lesson 7, "Using Color to Enhance Signage."

6 Select the Selection tool, and drag the formerly red shape into position like you see in the figure.

7 Choose Select > Deselect.



Cutting with the Knife tool

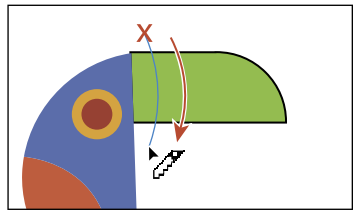
Another way to cut a shape is by using the Knife tool (🔪). To cut with the Knife tool, you drag across a shape, and the result is two closed paths.

1 Choose "3 Bird 2" from the Artboard Navigation menu in the lower-left corner of the Document window.

2 Click and hold down the mouse on the Scissors tool (✂), and select the Knife tool (🔪).

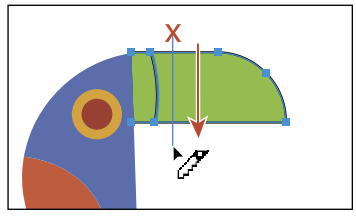
3 Position the Knife pointer (🔪) above the green shape toward the top of the artboard. Starting above the shape (see the red X in the figure), drag down all the way across the shape to cut the shape into two.

Dragging across a shape with the Knife tool makes a very free-form cut that is not straight at all.



▶ **Tip:** Pressing the Caps Lock key will turn the Knife tool pointer into a more precise cursor (⁻¦⁻). This can make it easier to see where the cut will happen.

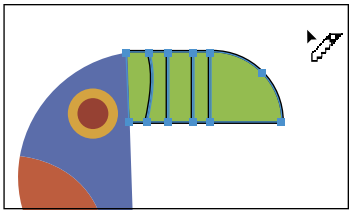
4 Position the pointer above the green shape, to the right of where you just cut. Press and hold Option+Shift (Mac OS) or Alt+Shift (Windows) and drag down all the way across the shape to cut it into two, in a completely straight line. Release the mouse button and then the keys.



Pressing the Option key (Mac OS) or Alt key (Windows) allows you to cut in a straight line. Pressing the Shift key as well constrains the cut to 45 degrees.

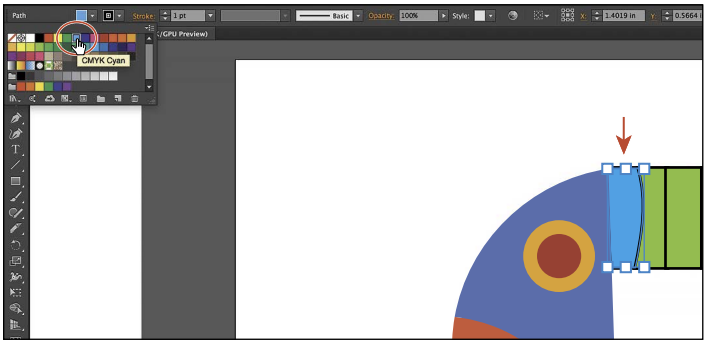
5 While pressing the keys in the previous step, try making two more cuts to the right of the cut you just made.

Don't worry about making the resulting shapes *exactly* the same width. See the figure for roughly where to cut.



6 Choose Select > Deselect.

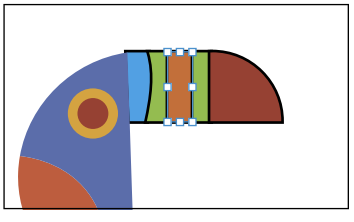
7 Select the Selection tool (), and click the first green shape from the left to select it. Choose the CMYK Cyan color from the Fill color in the Control panel.



When you hover the pointer over a color in the panel that appears, you can see a yellow tooltip with the color name appear.

8 Click the green shape farthest to the right to select it. Choose a red color from the Fill color in the Control panel. I chose a color with the name "C=15 M=100 Y=90 K=10." See the following figure.

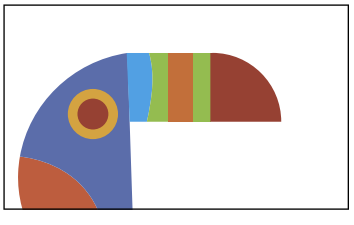
9 With three green shapes left, click the middle green shape to select it. Choose an orange color with the name "C=0 M=80 Y=95 K=0" from the Fill color in the Control panel.



10 Drag across all of the shapes you cut to select them. Change the Stroke weight to **0** in the Control panel.

11 Choose Select > All On Active Artboard, and then choose Object > Group.

12 Choose Select > Deselect, and then choose File > Save.



Using the Eraser tool

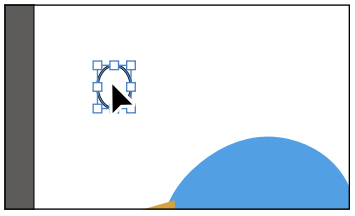
The Eraser tool ( ) lets you erase any area of your vector artwork, regardless of the structure. You can use the Eraser tool on paths, compound paths, paths inside Live Paint groups, and clipping content.

Note: You cannot erase raster images, text, symbols, graphs, or gradient mesh objects.

Next, you'll use the Eraser tool to modify several shapes.

1 Choose 2 Bird 1 from the Artboard Navigation menu in the lower-left corner of the Document window.

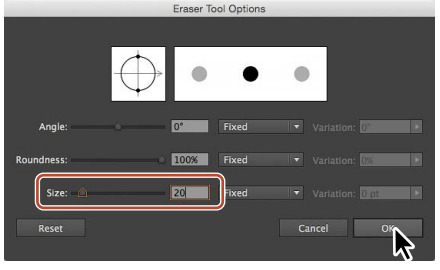
2 With the Selection tool ( ), select the smaller white circle toward the upper-left corner of the artboard.



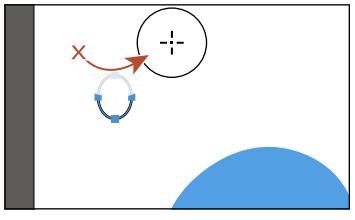
By selecting the white shape, you'll erase only that shape and nothing else. If you leave all objects deselected, you can erase any object that the tool touches, across all layers.

3 Click and hold down the mouse on the Knife tool ( ), and select the Eraser tool ( ) in the Tools panel.

4 Double-click the Eraser tool ( ) to edit the tool properties. In the Eraser Tool Options dialog box, change the Size to **20 pt**. Click OK.

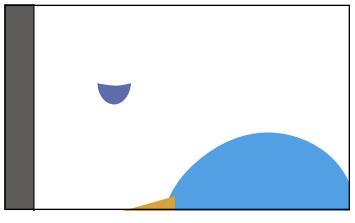


5 Position the pointer off the upper-left corner of the white circle (where you see the red X in the figure). Click and drag across the circle in a "U" shape to erase the top half of the circle.



When you release the mouse button, the top half of the circle is erased, and the circle is still a closed path.

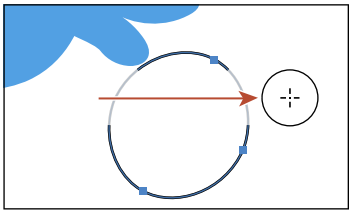
6 Change the Stroke weight to **0** in the Control panel, and choose a blue from the Fill color. I chose a blue with the color name of "C=85 M=50 Y=0 K=0" that appears in the yellow tooltip when you hover over each color swatch.



You can also erase in a straight line, which is what you'll do next.

7 Select the Selection tool, and click the white circle in the lower-right corner of the artboard.

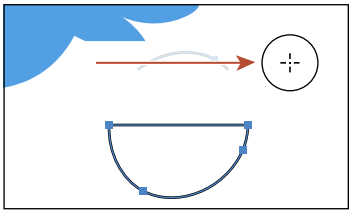
8 Select the Eraser tool ( ) in the Tools panel. Press the Shift key and starting off the left side of the white circle, drag across the top half of the circle. Release the mouse button and then the Shift key.



The white circle is now two separate shapes, both closed paths.

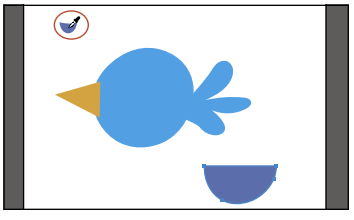
▶ **Tip:** If you need to erase a large part of a shape, you can always adjust the eraser size by using the Eraser Tool Options dialog box or by pressing either of the bracket keys ([or]).

9 Drag across the remaining shape at the top to erase it completely. You may need to drag across is a few times to erase it all.



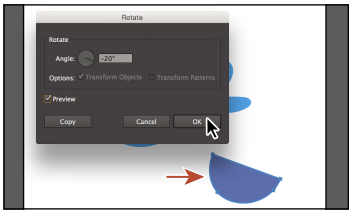
It may look like you erase part of the blue shape, but since it isn't selected, it isn't erased.

10 With the last part of the circle still selected, select the Eyedropper tool ( ) in the Tools panel, and click the small blue circle you erased part of earlier (in the upper-left corner of the artboard).

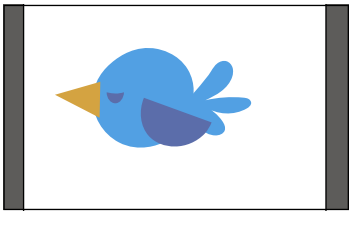


This copies the appearance attributes like fill and stroke from the small shape to the larger shape.

11 With the larger blue shape selected, choose Object > Transform > Rotate. In the Rotate dialog box, change the Angle to **-20**, and select Preview to see the change. Click OK.



12 Select the Selection tool in the Tools panel. Drag each shape from its center onto the large blue circle in the center to create a bird (see the figure for guidance).



13 Choose Select > All On Active Artboard, and then choose Object > Group.

14 Choose File > Save.

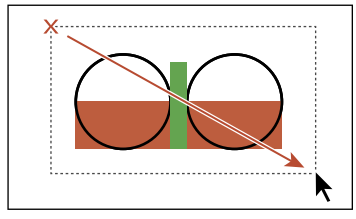
Combining shapes

In Illustrator, you can combine vector objects in a variety of ways. A lot of the time, creating more complex shapes from simpler shapes can be easier than trying to create them with drawing tools like the Pen tool. The resulting paths or shapes differ depending on the method you use to combine the paths. In this section, you'll explore a few of the more widely used methods for combining shapes.

Working with the Shape Builder tool

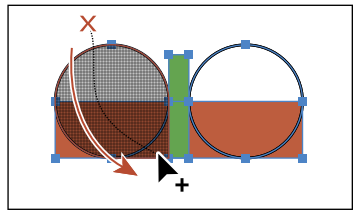
The first method you will learn for combining shapes involves working with the Shape Builder tool ( ). This tool allows you to visually and intuitively merge, delete, fill, and edit overlapping shapes and paths directly in the artwork. Using the Shape Builder tool, you'll start out by creating a more complex bird shape from a series of simpler shapes like circles and squares.

1. Choose 4 Butterfly from the Artboard Navigation menu in the lower-left corner of the Document window.
2. Choose View > Fit Artboard In Window to ensure it fits in the Document window.
3. Select the Zoom tool ( ) in the Tools panel, and click a few times on the red and green shape on the left side of the artboard to zoom in.
4. Select the Selection tool ( ), and drag a marquee selection across the red/orange rectangle, white circles, and green rectangle to select the shapes on the artboard.



In order to edit shapes with the Shape Builder tool ( ), they need to be selected. Using the Shape Builder tool, you will now combine, delete, and paint these simple shapes to create the rest of a butterfly's wings.

5. Select the Shape Builder tool ( ) in the Tools panel. Position the pointer off the upper-left corner of the shapes, and drag from the red X in the figure down and to the right into the red/orange rectangle. Release the mouse button to combine the shapes.

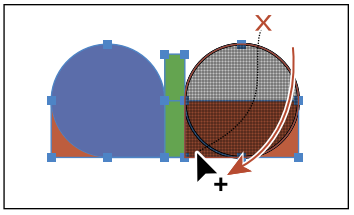


When you select the Shape Builder tool, the overlapping shapes are divided into separate objects temporarily. As you drag from one part to another, a red outline appears, showing you what the final shape outline will look like when it merges the shapes together after releasing the mouse button. Notice that the new combined shape is now the same blue as the bird shape you created previously.

Tip: You can also press the Shift key and drag a marquee across a series of shapes to combine them. Pressing Shift+Option (Mac OS) or Shift+Alt (Windows) and dragging a marquee across selected shapes with the Shape Builder tool ( ) selected allows you to delete a series of shapes within the marquee.

Note: Your final combined shapes may have a different stroke and/or fill and that's okay. You'll change them shortly.

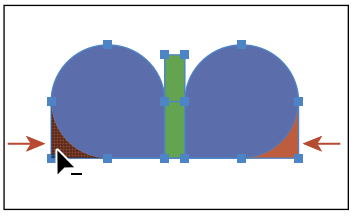
6 Position the pointer off the upper-right corner of the shapes, and drag from the red X in the figure down and to the left into the red/orange rectangle. Release the mouse button to combine the shapes.



Next, you'll delete a few shapes.

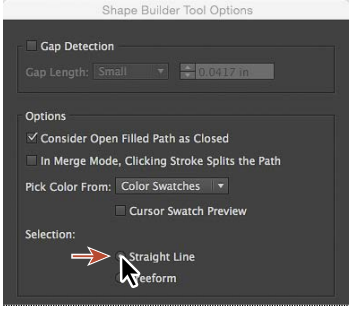
Note: When you position the pointer over the shapes, make sure you see the mesh within those shapes, before clicking to delete.

7 With the shapes still selected, hold down the Option (Mac OS) or Alt (Windows) key. Notice that, with the modifier key held down, the pointer shows a minus sign ( ). Click each red shape to delete them.



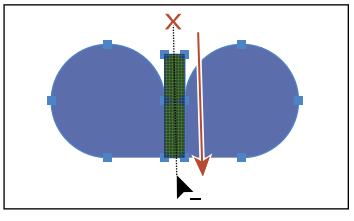
8 Double-click the Shape Builder tool in the Tools panel. In the Shape Builder Tool Options dialog box, select Straight Line from the Selection options. Click OK to close the dialog box.

By default, the Shape Builder tool lets you drag across shapes in a freeform way.



Note: Pressing the Option (Mac OS) or Alt (Windows) modifier key enables what's referred to as Erase mode for the Shape Builder tool.

9 With the shapes still selected, hold down the Option (Mac OS) or Alt (Windows) key and drag through the green shape in the center from top to bottom to remove it.



10 Select the Selection tool. With the blue shapes still selected, change the Fill color to an orange/red color with the tooltip name that shows as "C=0 M=90 Y=85 K=0."

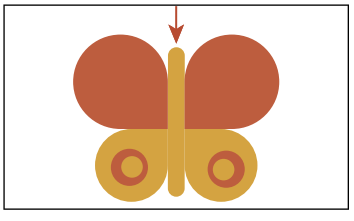
11 Choose Object > Group to group the now orange shapes together.

12 Choose View > Fit Artboard In Window.

13 Select the Selection tool and drag one of the orange shapes in the group to the right side of the artboard, above the yellow shapes. See the following figure for how to position them.

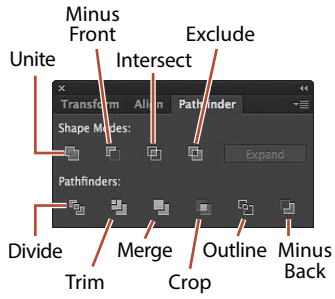
14 Drag the orange/yellow shape (an arrow is pointing to it in the figure) into the center of the wing shapes.

15 Choose Select > Deselect, and then choose File > Save.



Working with the Pathfinder panel

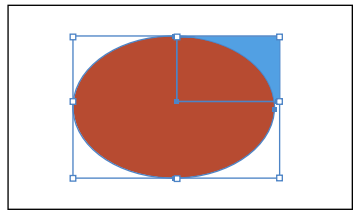
The Pathfinder panel is another place to combine shapes in different ways. When a shape mode such as Unite is applied, the original objects selected are *permanently* transformed, but you can hold down a modifier key, and the original underlying objects are preserved.



When a Pathfinder effect such as Merge is applied, the original objects selected are *permanently* transformed. If the effect results in more than one shape, they are grouped automatically.

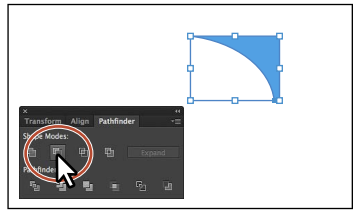
1. Choose 5 Bird 3 from the Artboard Navigation menu in the lower-left corner of the Document window.
2. Choose Window > Pathfinder to open the Pathfinder panel group.
3. With the Selection tool (), hold down the Shift key, and click the red oval and blue rectangle beneath it to select both objects.

   You need to create a shape that looks like a bird wing. You will use the Pathfinder panel and those shapes to create the final artwork.



4. With the shapes selected, in the Pathfinder panel, click the Minus Front button () in the Shape Modes section of the Pathfinder panel to *permanently* subtract the top shape from the bottom shape.

   With the new shape selected, notice the word "Path" on the left side of the Control panel.



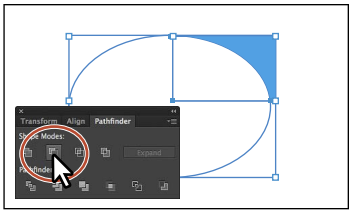
Note: The Unite button in the Pathfinder panel produces a similar result as the Shape Builder tool, by combining the shapes into one.

5. Choose Edit > Undo Subtract to bring both shapes back. Leave them selected.

Shape modes in the Pathfinder panel

The buttons in the top row of the Pathfinder panel, called *shape modes*, create paths just like the Pathfinder effects, but they can also be used to create compound shapes. When several shapes are selected, clicking a shape mode while pressing the Option (Mac OS) or Alt (Windows) key creates a compound shape rather than a path. The original underlying objects of compound shapes are preserved. As a result, you can still select each original object within a compound shape. Using a shape mode to create a compound shape can be useful if you think that you may want to retrieve the original shapes at a later time.

1 With the shapes still selected, hold down the Option (Mac OS) or Alt (Windows) key, and click the Minus Front button ( ) in the Shape Modes section of the Pathfinder panel.



This creates a compound shape that traces the outline of what's left after the top red shape is subtracted from the bottom blue shape. You will still be able to edit both shapes separately.

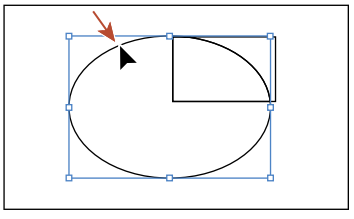
2 Choose Select > Deselect to see the final shape.

3 With the Selection tool, double-click the blue shape to enter Isolation mode.

You could also double-click the (now) white oval, but that one is harder to see.

Tip: To edit the original shapes in a compound shape like this one, you can also select them individually with the Direct Selection tool ( ).

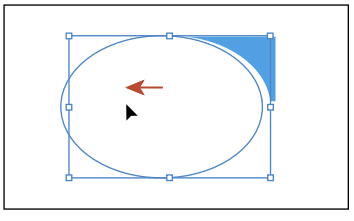
4 Choose View > Outline so that you can see the outlines of the two shapes, and click the edge of the oval shape or drag across the path to select it.



5 Choose View > GPU Preview or View > Preview On CPU if not available.

Note: You can also press the Arrow keys to move the shape if you find it difficult to select.

6 Drag the white oval from the middle a little to the left.

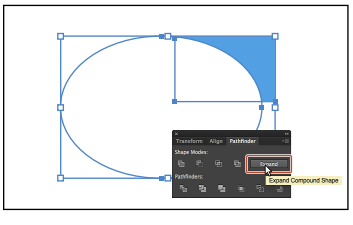


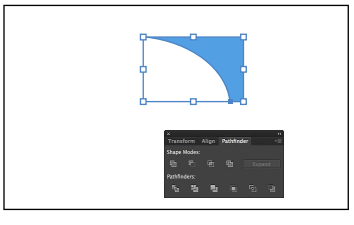
7 Press the Escape key to exit Isolation mode.

You will now expand the wing shape. Expanding a compound shape maintains the shape of the compound object, but you can no longer select or edit the original objects. You will typically expand an object when you want to modify the appearance attributes and other properties of specific elements within it.

8 Click away from the shape to deselect it, and then click to select it again.

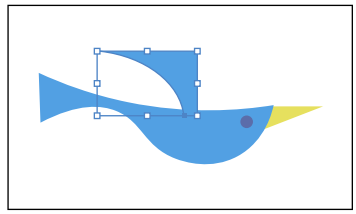
9 Click the Expand button in the Pathfinder panel. Close the Pathfinder panel group.





10 Drag the blue wing shape on top of the bird like you see in the figure.

11 Choose Select > All On Active Artboard, and then choose Object > Group.



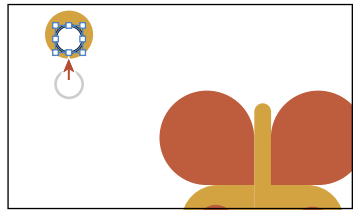
Creating a compound path

Compound paths let you use a vector object to cut a hole in another vector object. Whenever I think of a compound path, I think of a doughnut shape, which can be created from two circles. Holes appear where paths overlap. A compound path is treated like a group, and the individual objects in the compound path can still be edited or released (if you don't want them to be a compound path anymore). Next, you'll create a compound to create some art for the butterfly.

1 Choose 4 Butterfly from the Artboard menu in the lower-left corner of the Document window.

2 Choose View > Fit Artboard In Window.

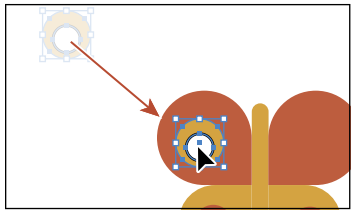
3 With the Selection tool (▸) selected, select the white circle with the black stroke. Drag it onto the larger orange circle above it, a little off-center.

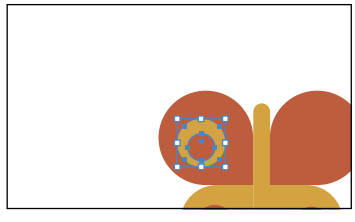


4 Drag across both shapes to select them.

5 Drag the shapes onto the larger orange wing of the butterfly. Notice that the white circle is on top and you can't see through it.

6 Choose Object > Compound Path > Make, and leave the artwork selected.



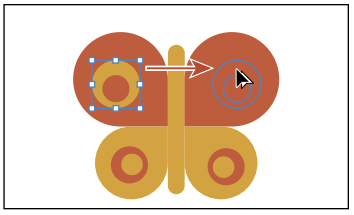


You can now see that the white circle has seemingly disappeared, and you can now see through the shape to the reddish-orange color of the butterfly wing. The white circle was used to "punch" a hole in the orange shape. With the shape still selected, you should see "Compound Path" on the left end of the Control panel above the Document window.

Note: Choose Object > Arrange > Bring To Front if the shapes are not showing.

Tip: You can still edit the original shapes in a compound path like this one. To edit them, select each shape individually with the Direct Selection tool (▹) or double-click the compound path with the Selection tool to enter Isolation mode and select the individual shapes.

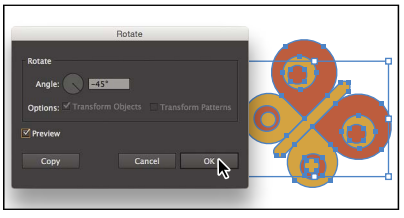
7 Option-drag (Mac OS) or Alt-drag (Windows) the new compound path to the right side of the orange wing shape. Release the mouse button and then the key.



8 Select all of the shapes for the butterfly by choosing Select > All On Active Artboard.

9 Choose Object > Group.

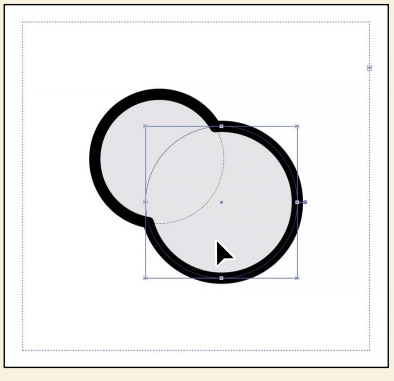
10 Choose Object > Transform > Rotate. In the Rotate dialog box, change Angle to **-45**, select Preview, and then click OK.



11 Choose File > Save.

Combining paths using the Shaper tool

In Lesson 3, "Using Shapes to Create Artwork for a Postcard," you learned about the Shaper tool. The Shaper tool can be used to not only create paths and shapes but also combine paths and shapes.



After combining artwork with the Shaper tool, the result is a "shaper group." The original paths are still accessible and treated like a merged group, but appearance attributes are applied to the shaper group as a whole.

To learn more about combining paths using the Shaper tool, search for "Shaper tool" in Illustrator Help (Help > Illustrator Help).

Using the Width tool

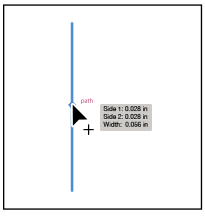
Not only can you adjust the weight of a stroke, like you did in Lesson 3, but you can also alter regular stroke widths either by using the Width tool ( ) or by applying width profiles to the stroke. This allows you to create a variable width along the stroke of a path. Next, you will use the Width tool to create a bird.

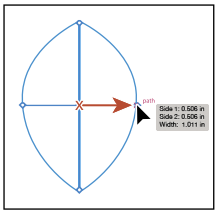
1 Choose 6 Bird 4 from the Artboard menu in the lower-left corner of the Document window.

2 Choose View > Fit Artboard In Window, if necessary.

3 Choose View > Smart Guides to turn them back on.

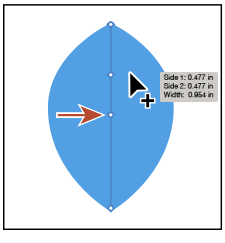
4 Select the Width tool ( ) in the Tools panel. Position the pointer over the middle of the vertical blue line, and notice that the pointer has a plus symbol next to it ( ), indicating that if you click and drag, you will edit the stroke. Click and drag away from the line, to the right. Notice that, as you drag, you are stretching the stroke to the left and right equally. Release the mouse when the measurement label shows Side 1 and Side 2 at approximately 0.5 in.

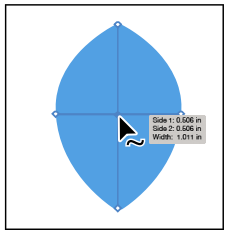


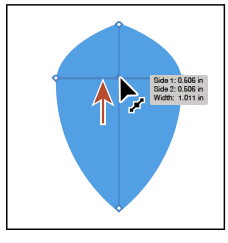


The new point on the original path that's filled with blue is called the *width point*. The lines extending from the width point are the *handles*.

5 Click in a blank area of the artboard to deselect the path. Position the pointer anywhere over the path, and the new width point you just created will appear (an arrow is pointing to it in the first part of the figure below). The width point you see inline with the pointer is where a new point would be created if you were to click. Position the pointer over the original width point, and when you see lines extending from it and the pointer changes ( ), click and drag it up a bit.







Aside from clicking and dragging to add a width point to a path, you can also double-click and enter values in a dialog box. That's what you'll do next.

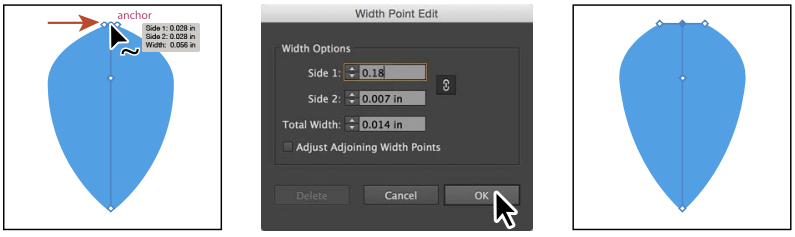
Tip: If you select a width point by clicking it, you can press Delete to remove it. If there was only one width point on a stroke, removing that point would remove the width completely.

Note: You don't have to position the pointer over the center of the line and drag to create another width point. You can drag from anywhere in the stroke area.

6 Position the pointer over the top anchor point of the blue line, and notice that the pointer has a wavy line next to it ( ) and the word "anchor" appears (see the first part of the following figure). Double-click the point to create a new width point and to open the Width Point Edit dialog box.

Tip: You can double-click anywhere along the path to add a new width point.

7 In the Width Point Edit dialog box, click the Adjust Widths Proportionately button ( ) so both Side 1 and Side 2 change together. Change the Side 1 width to **0.18 in**, and click OK.



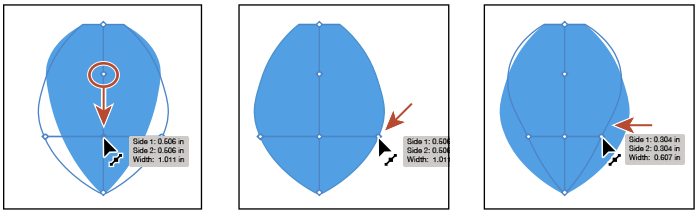
The Width Point Edit dialog box allows you to adjust the sides together or separately, with more precision. Also, if you select the Adjust Adjoining Width Points option, any changes you make to the selected width point affect neighboring width points as well.

You can also duplicate a width point if you like, which is what you'll do next.

Tip: You can drag one width point on top of another width point to create a discontinuous width point. If you double-click a discontinuous width point, the Width Point Edit dialog box allows you to edit both width points.

8 Position the pointer over the original anchor you created. Press the Option (Mac OS) or Alt (Windows) key, and drag down to duplicate the width point. Use the first part of the figure below to see roughly how far to drag. Release the mouse button, and then release the key.

9 Position the pointer over the right end of the width point handle and drag to the left until you see a Side 1 and Side 2 of roughly 0.3 in. You may want to select the width point you just made to see the handles.

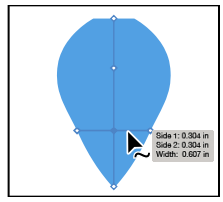


10 Click in a blank area of the artboard to deselect the path.

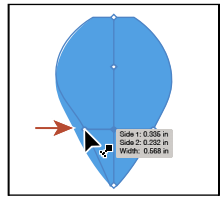
I'm asking you to deselect only because it's helpful to get some practice trying to select the width points. You won't need to deselect in a real-world situation.

11 Position the Width tool pointer over the blue path. The width points will appear on the path. Position the pointer over the point you just duplicated, and click when you see the width point handles appear.

To select a width point, you can click the width point, the width point handles, or the handle end points.



12 Option-drag (Mac OS) or Alt-drag (Windows) the left width point handle (on the left edge of the blue path area) to the right until you see a value of approximately 0.23 in for Side 2 in the measurement label. Release the mouse button and then the key.



Tip: After defining the stroke width, you can save the variable width as a "profile" that you can reuse later, from the Stroke panel or the Control panel. To learn more about variable width profiles, search for "Painting with fills and strokes" in Illustrator Help (Help > Illustrator Help).

Outlining strokes

Paths, like a line, can show a stroke color but not a fill color by default. If you create a line in Illustrator and want to apply both a stroke and a fill, you can outline the stroke, which converts the line into a closed shape (or compound path).

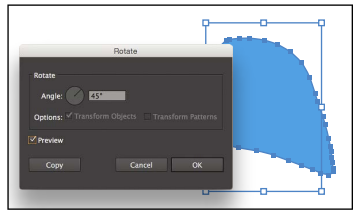
Next, you will outline the stroke of the blue line you edited with the Width tool.

1 With the Selection tool (), select the blue path you edited with the Width tool and choose Object > Path > Outline Stroke. This creates a filled shape that is a closed path.

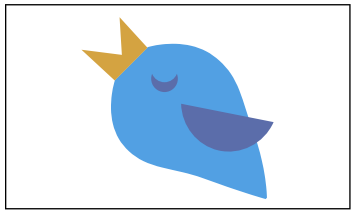
Note: If you outline the stroke and it shows as "Group" in the Selection Indicator on the left end of the Control panel, then there was a fill set on the line. If the artwork is a group, choose Edit > Undo Outline Stroke, apply a fill of None to the path, and then try again.

Tip: After outlining the stroke, the shape you have may be composed of a lot of anchor points. You can choose Object > Path > Simplify to try and simplify the path, which usually means fewer anchor points.

2 With the shape selected, choose Object > Transform > Rotate. In the Rotate dialog box, change the Angle to **45**, and click OK.



3 Drag the shapes into position like you see in the following figure.



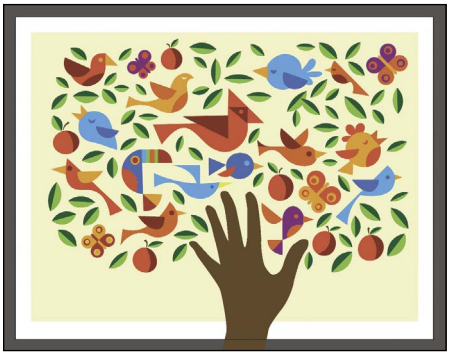
4 Choose Select > All On Active Artboard, and then choose Object > Group.

Finishing up the illustration

To finish the illustration, you will drag the artwork you grouped on each artboard into the main illustration on the left.

1. Choose View > Fit All In Window.
2. Choose View > Smart Guides to turn them off.
3. Drag each of the artwork groups into the main illustration like you see in the figure.

   You may want to adjust the size of each group so they fit within the existing artwork better. With the Selection tool, you can hold down the Shift key and drag a corner point. When finished resizing, release the mouse button and then the Shift key.



4. Choose View > Smart Guides to turn them on for the next lesson.
5. Choose File > Save, and then choose File > Close.

Review questions

1 Name two ways you can combine several shapes into one.

2 What is the difference between the Scissors tool ( ) and the Knife tool ( )?

3 How can you erase with the Eraser tool ( ) in a straight line?

4 What is the main difference between Shape Modes and Pathfinder Effects in the Pathfinder panel?

5 Why would you outline strokes?

Review answers

1 Using the Shape Builder tool ( ), you can visually and intuitively merge, delete, fill, and edit overlapping shapes and paths directly in the artwork. You can also use the Pathfinder effects, which can be found using the Effects menu or the Pathfinder panel, to create new shapes out of overlapping objects. As you saw in Lesson 3, "Using Shapes to Create Artwork for a Postcard," shapes can also be combined using the Shaper tool.

2 The Scissors tool ( ) is meant to split a path, graphics frame, or empty text frame at an anchor point or along a segment. The Knife tool ( ) cuts objects along a path you draw with the tool, dividing objects. When you cut shapes with the Knife tool, they become closed paths.

3 In order to erase in a straight line with the Eraser tool ( ), you need to press and hold the Shift key before you begin dragging with the Eraser.

4 In the Pathfinder panel, when a Shape Mode (such as Unite) is applied, the original objects selected are permanently transformed, but you can hold down a modifier key, and the original underlying objects are preserved. When a Pathfinder effect (such as Merge) is applied, the original objects selected are permanently transformed.

5 Paths, like a line, can show a stroke color but not a fill color by default. If you create a line in Illustrator and want to apply both a stroke and a fill, you can outline the stroke, which converts the line into a closed shape (or compound path).

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