chapter 1

GETTING STARTED WITH ILLUSTRATOR

1. Create a new document
2. Explore the Illustrator window
3. Create basic shapes
4. Apply fill and stroke colors to objects
5. Select, move, and align objects
6. Transform objects
7. Make direct selections

chapter 1

GETTING STARTED WITH ILLUSTRATOR

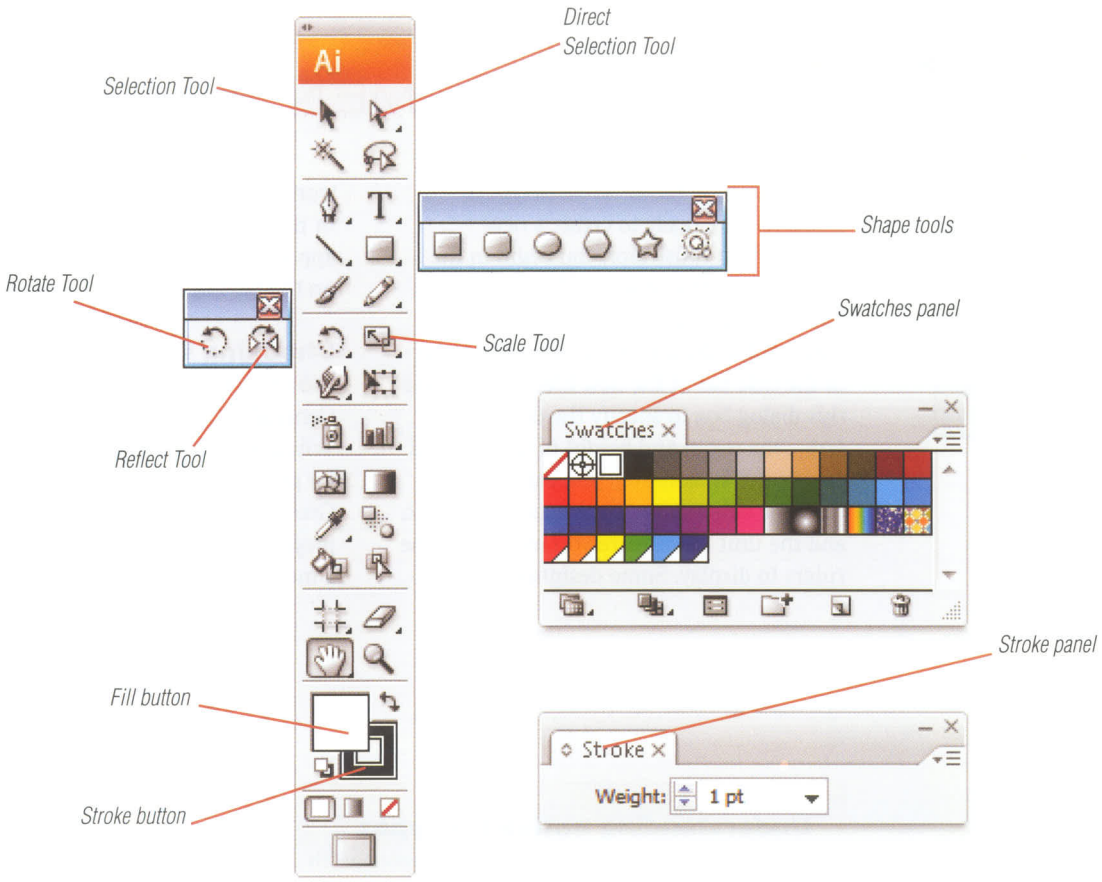
Getting to Know Illustrator

Adobe Illustrator CS3 is a professional illustration software application created by Adobe Systems Incorporated. If this name is familiar to you, it's because Adobe is a leading producer of graphics software for the personal computer. Along with Illustrator, Adobe produces an entire suite of applications, including InDesign, Acrobat, Type Manager, Dreamweaver, and, of course, the revolutionary and award-winning Photoshop.

With Illustrator, you can create everything from simple graphics, icons, and text to complex and multilayered illustrations, all of which can be used within a page layout, in a multimedia presentation, or on the Web.

Adobe Illustrator offers dozens of essential tools. Using them in combination with various menu commands, you have the potential to create any illustration that your imagination can dream up. With experience, you will find that your ability to create complex graphics rests on your ability to master simple, basic operations.

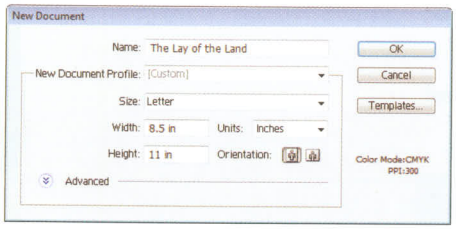
Tools You'll Use



LESSON 1

CREATE A NEW DOCUMENT

What You'll Do



In this lesson, you will start Adobe Illustrator and create a new document.

Creating a New Document

When you are ready to create a new document in Illustrator, you begin in the New Document dialog box. In the New document dialog box, you specify the name of the document, which will appear in the title bar of the new file. You also use this dialog box to specify the document size—the width and height of the finished document. In addition, you can choose the page orientation, landscape or portrait, and the unit of measure you would like the rulers to display. Some designers like to work with inches; others prefer points or picas. Finally, you can choose the appropriate color mode to work in based on the type of document you are creating.

Choosing Color Modes and Document Size

Generally, CMYK Color (Cyan, Magenta, Yellow, and Black) is the color mode used for print projects, and RGB Color (Red, Green, and Blue) is the color mode used for projects that will appear on a screen, such as a monitor, a television or on the Web. The

Understanding native file types

The "native" Illustrator file format is noted as an .ai suffix. Native Illustrator files can be opened and placed by other Adobe software packages, most notably Photoshop and InDesign. If you want to save an Illustrator file for use in QuarkXPress, save the file as an Illustrator EPS (Encapsulated PostScript). QuarkXPress does not recognize nor does it import Illustrator files in the native .ai format.

New Document Profile menu in the New Document dialog box allows you to specify the type of document you need. You can choose Print, Web, Mobile and Devices, Video and Film, as well as Basic CMYK or Basic RGB. The dialog box options available depend on which profile you choose. For example, if you choose Mobile and Devices, the Color Mode changes to RGB, the unit of measure changes to pixels, and the Device Central button appears in the dialog box. This button launches Adobe Device Central which allows you to preview how your document will appear on a specific device or mobile phone. If you choose Print, the dialog box will offer all of the appropriate settings for a document that you intend to print.

Another method for specifying the color mode is to click the expand button to the left of the word Advanced, click the Color Mode list arrow, then choose RGB or CMYK.

Once a document is created, you may change color mode settings by clicking File on the menu bar, pointing to Document Color Mode, then clicking CMYK Color or RGB Color. In addition, once a document is created, you can alter the current settings, such as the page size, in the Document Setup dialog box. The Document Setup command is on the File menu.

Choosing a Unit of Measure

Precision is often a key to good design, and many designers choose points and picas as units of measure. A point is 1/72 of an inch. A pica is 12 points, or 1/6 of an inch. Defining your artboard in points and picas versus inches is a matter of personal preference. As a designer, you're probably familiar with points and picas, but would you really refer to a letter-size page as 612 × 792 points? On the other hand, when working in inches, using measurements such as 29/32 of an inch would also be a bit ridiculous. Working with a combination of the two is the best bet; many designers work in points for text, rules, and strokes, but they define the page itself in inches.

To set your preferences for units of measure, click Edit on the menu bar, point to **Preferences,** then click Units & Display Performance. Click the General, Stroke, and Type list arrows to choose your preferred unit of measure. The General setting determines the units of measurement for the page and objects on the page.

You'll certainly want to measure your strokes and type in points. Imagine setting type in ¾" Garamond!

QUICKTIP

If you are using a Macintosh, you will find the Preferences command on the Illustrator menu.

Using the Illustrator Options dialog box

Let's say that you have a friend, a co-worker, or a client that you want to send an Illustrator CS3 file to, but you find out that he or she never upgraded to CS3, and therefore cannot open a CS3 file. No problem: Adobe Illustrator CS3 makes it easy to save files that previous versions of Illustrator can open. Simply click the Save As command on the File menu. In the Save As dialog box, choose Adobe Illustrator(*.AI), then click Save. The Illustrator Options dialog box opens. Click the Versions list arrow, then choose the format you need. CS Formats include CS3, CS2, and CS. Legacy Formats include Illustrator 3, 8, 9, 10, and Japanese Illustrator 3.

Create a new document (Windows)

1. Click the **Start button** on the taskbar, point to **All Programs**, click **Adobe Design Premium CS3** (or the name of your Adobe suite), then click **Adobe Illustrator CS3**.
2. Click **File** on the menu bar, then click **New**.
3. Type **The Lay of the Land** in the New Document dialog box.

   TIP Note that you have *named* the file in the New Document dialog box, but you have not yet *saved* it.
4. Click the **Size list arrow** to view the available sizes, then click **Letter**, if necessary.
5. Click the **Units list arrow**, then click **Inches**, if necessary.

   The size of your artboard will be 8.5" × 11".
6. Click the **left icon** next to Orientation (Portrait as opposed to Landscape) as the page orientation.
7. Click the **Expand button** to the left of the word Advanced, click the **Color Mode list arrow**, then click **CMYK**.

   Your New Document dialog box should resemble Figure 1.
8. Click **OK** to create a new document with these settings.
9. Click **File** on the menu bar, then click **Close**.

You started Illustrator in Windows, then created a new document.

FIGURE 1
New Document dialog box (Windows)

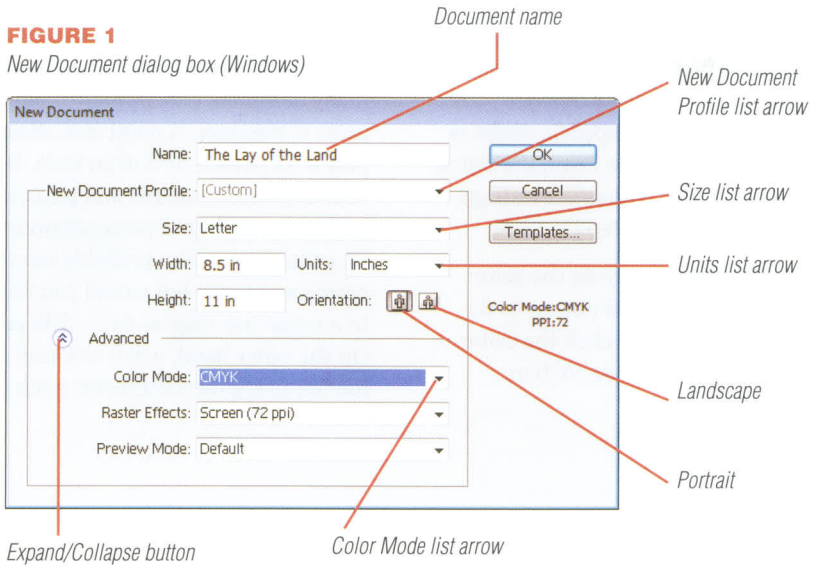
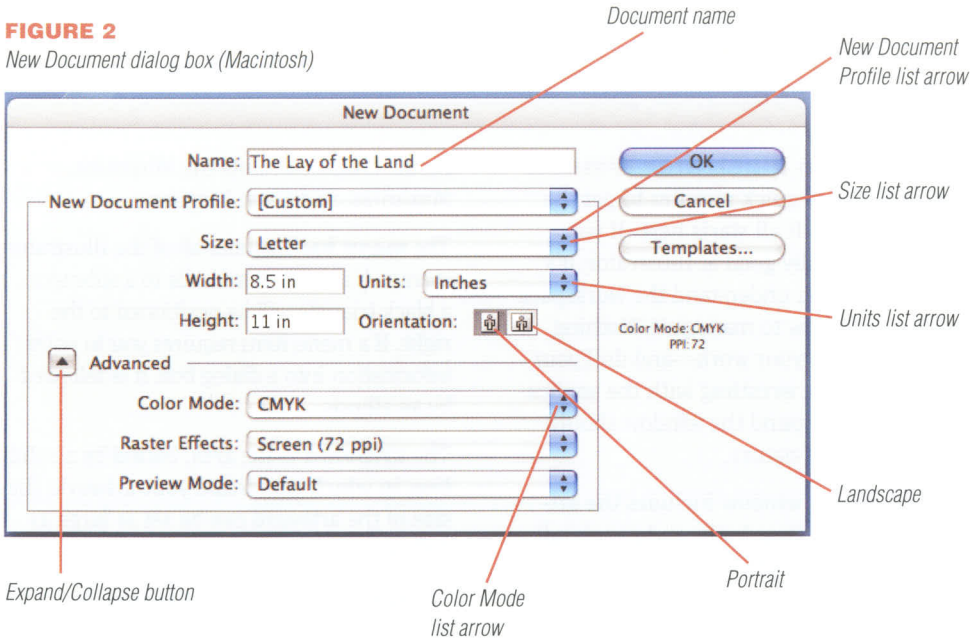


FIGURE 2
New Document dialog box (Macintosh)



Create a new document (Macintosh)

1. Double-click the **hard drive icon**, then navigate to and double-click the **Adobe Illustrator CS3 folder**.
2. Double-click the **Adobe Illustrator CS3 program icon**.
3. Click **File** on the menu bar, then click **New**.
4. Type **The Lay of the Land** in the New Document dialog box, as shown in Figure 2.

   TIP Note that you have *named* the file in the New Document dialog box, but you have not yet *saved* it.
5. Click the **Size list arrow** to view the available sizes, then click **Letter**.
6. Click the **Units list arrow**, then click **Inches**, if necessary.

   The size of your artboard will be 8.5" × 11".
7. Click the **left icon** next to Orientation (Portrait as opposed to Landscape) as the page orientation.
8. Click the **Expand button** to the left of the word Advanced, click the **Color Mode list arrow**, then click **CMYK**.

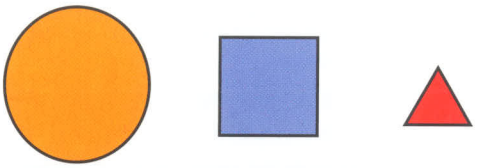
   Your New Document window should resemble Figure 2.
9. Click **OK** to create a new document with these settings.
10. Click **File** on the menu bar, then click **Close**.

You started Illustrator in Macintosh, then created a new document.

LESSON 2

EXPLORE THE ILLUSTRATOR WINDOW

What You'll Do



In this lesson, you will learn about the key architecture of the Illustrator window and practice some basic Illustrator skills.

Touring the Illustrator Window

Let's take a few quick minutes to get the lay of the land. It all starts here. If you want to get really good at Illustrator, it's critical that you understand the workspace and learn to how to manage it. Nothing will slow down your work—and dull your creativity—like wrestling with the application. Moving around the window should become second nature.

The Illustrator window includes the artboard, scratch area, tools, and panels, all of which are described below. Figure 3 shows some of the more commonly used panels.

The **title bar** contains the name of your document, magnification level, and color mode; it also contains the Minimize, Maximize, and Close buttons.

The **menu bar** includes all of the Illustrator menus. If a menu item leads to a submenu, a black triangle will be positioned to the right. If a menu item requires you to enter information into a dialog box, it is followed by an ellipsis.

The **artboard** is the area, bound by a solid line, in which you create your artwork; the size of the artboard can be set as large as 227" × 227".

The **scratch area** is the area outside the artboard where you can store objects before placing them on the artboard; objects on the scratch area will not print.

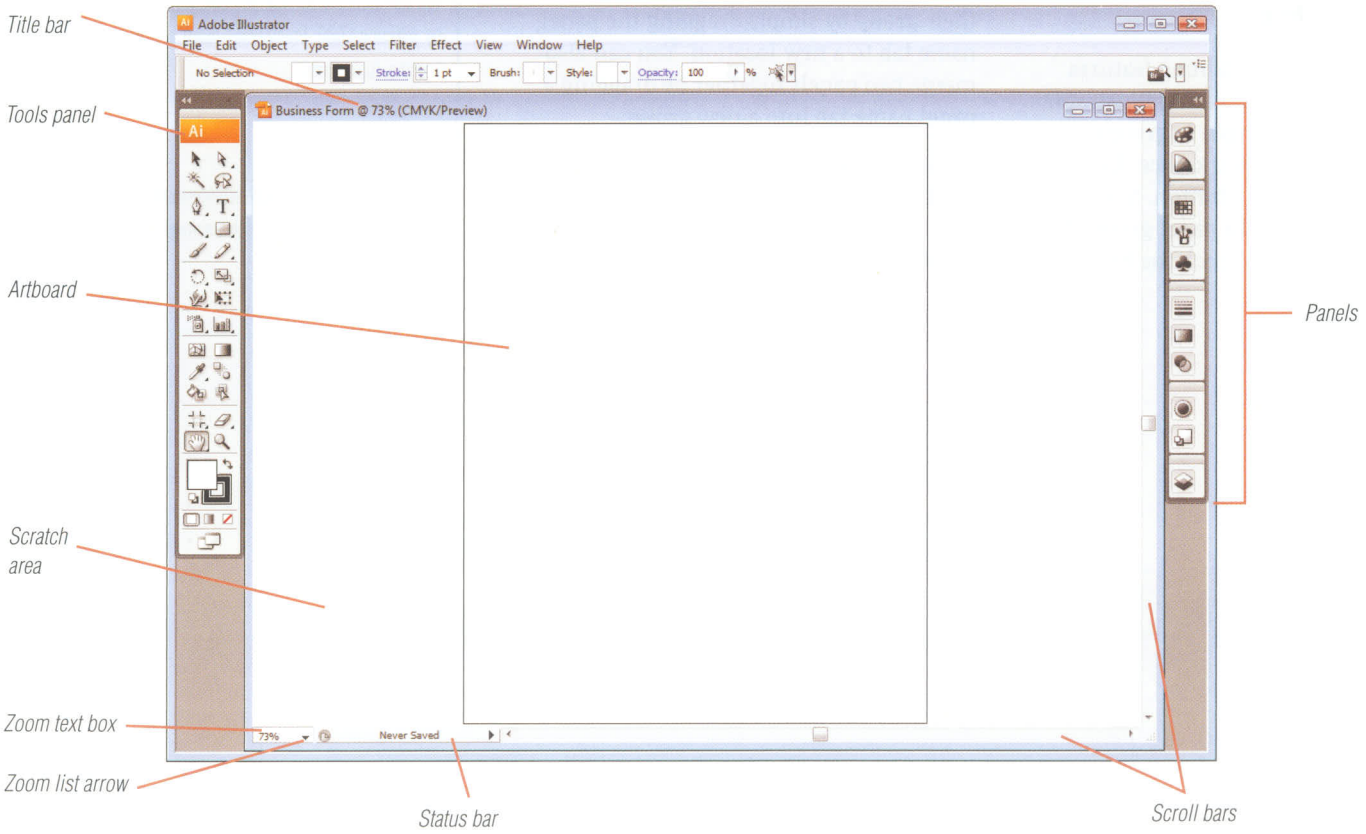
The **Tools panel** contains tools that let you create, select, and manipulate objects in Illustrator. A tiny black triangle beside a tool indicates "hidden" tools behind that tool. Press and hold a tool to expose the panel of hidden tools behind it. Click the Tearoff tab (the tiny black triangle next to the last tool in the panel) to create a floating toolbar.

QUICKTIP

Click the tiny double arrows at the top left corner of the Tools panel to toggle between a two-column and a single-column Tools panel.

The **Zoom text box** in the lower-left corner of the Illustrator window displays the current magnification level. To the right of the Zoom text box is the Zoom menu, which you access by clicking the Zoom list arrow. The Zoom menu lets you choose another magnification level to work in.

FIGURE 3
Illustrator window



The **status bar** contains a list arrow menu from which you can choose a status line with information about the current tool, the date and time, the number of undo operations, or the document color profile.

Scroll bars run along the bottom and right sides of the window; dragging the scroll boxes, clicking in a scroll bar, or clicking the scroll arrows changes the portion of the document displayed in the Illustrator window.

Panels are windows containing features for modifying and manipulating Illustrator objects. Panels are arranged in groups on the right side of the workspace. Each group is represented by a button. Simply click a button to expand a panel group. To expand all panel groups, click the Expand Dock button at the top of the panels window. To resize the panels section of the workspace, drag the three horizontal lines to the left of the Expand Dock button.

Panels are grouped by function. For example, if you click the Gradient button, you'll see that the Gradient panel is grouped with the Stroke and Transparency panels. If you drag the top of the panel group, all panels in the group move together. You can separate panels from their group by simply dragging the panel name tab to a new location. You can also merge two panels together by dragging a panel name tab into a new group.

Docking panels allows you to arrange multiple panels or panel groups vertically. Like grouped panels, docked panels move together. To dock a panel or a panel group to another panel group, drag one of the panel name tabs in the group to the bottom edge of another panel then release when the bottom edge is highlighted.

Not all panels are represented by a button in the Illustrator workspace, however, all panels can be accessed using the Window menu.

QUICKTIP

You can temporarily hide all open panels and the Tools panel by pressing [Tab]. Press [Tab] again to show the panels and the Tools panel.

QUICKTIP

You can restore the default arrangement of panels by clicking Window on the menu bar, pointing to Workspace, then clicking [Basic].

Using Quick Keys in Illustrator

Along with the various tools in the Tools panel, the commands on the menu bar are essential for performing both basic and complex operations in Illustrator. Many of the menu commands execute operations that you will use over and over again. For that reason, it is a smart idea to memorize the quick keys associated with the basic menu commands. When a quick key is available, it is listed beside the command in the menu.

Many make the mistake of associating quick keys with speed. True, using quick keys will speed up your work, but the real benefit of them is that they help your work flow with fewer disruptions. Leaving your keyboard, moving your mouse, and clicking on a menu command all disrupt the essential flow of your work. Quick keys allow you to quickly execute a command without taking your hands off the keyboard or your eyes off the monitor.

Quick keys are not for 'power users' only; anybody working in Illustrator can use them beneficially. Make learning quick keys a fun part of your work; test yourself along the way. They are so intuitively assigned that you may even find yourself guessing correctly!

In Illustrator, the best place to start memorizing quick keys is with commands on the File, Edit, and Object menus, especially for Open, Close, Save,

CKTIP

nageable area is the area inside the dotted line on the
ard, which is intended to represent the portion of the
that a default printer can print. Most designers find
otted line annoying and irrelevant. If it appears on
artboard, hide it by clicking Hide Page Tiling on the
menu.

ips with the Adobe Creative
a file browser that allows you
allows you to categorize your
and on the View menu, you
ate created, By File size, and By
w your files, ords and metadata to each file, and
es, such as files that call for a cer-
ed additional metadata into an
so, simply select the file in Bridge,
left side of the dialog box are
2, and so on. However, if you click
nation about the file, such as the
ion will then appear in the
To access Bridge, click File on the
perfect tool to help you organize

TABLE 1: Essential Illustrator Quick Keys (Windows)

command	Windows	command	Windows
Outline	[Ctrl][Y]	Deselect	[Ctrl][Shift][A]
Preview	[Ctrl][Y]	Cut	[Ctrl][X]
Fit in Window	[Ctrl][0]	Copy	[Ctrl][C]
Zoom In	[Ctrl][+]	Paste	[Ctrl][V]
Zoom Out	[Ctrl][-]	Paste in Front	[Ctrl][F]
Access Hand Tool	[Spacebar]	Paste in Back	[Ctrl][B]
Access the Zoom In Tool	[Ctrl][Spacebar]	Undo	[Ctrl][Z]
Access the Zoom Out Tool	[Ctrl][Spacebar][Alt]	Redo	[Ctrl][Shift][Z]
Select All	[Ctrl][A]		

TABLE 2: Essential Illustrator Quick Keys (Macintosh)

command	Macintosh	command	Macintosh
Outline	⌘[Y]	Deselect	⌘[Shift][A]
Preview	⌘[Y]	Cut	⌘[X]
Fit in Window	⌘[0]	Copy	⌘[C]
Zoom In	⌘[+]	Paste	⌘[V]
Zoom Out	⌘[-]	Paste in Front	⌘[F]
Access Hand Tool	[Spacebar]	Paste in Back	⌘[B]
Access the Zoom In Tool	⌘[Spacebar]	Undo	⌘[Z]
Access the Zoom Out Tool	⌘[Spacebar][option]	Redo	⌘[Shift][Z]
Select All	⌘[A]		

Navigate the Illustrator artboard

1. Click **File** on the menu bar, click **Open**, navigate to the drive and folder where your Data Files are stored, click **AI 1-1.ai,** then click **Open**.
2. Click **File** on the menu bar, click **Save As**, type **Window Workout** in the File name text box (Win) or the Save As text box (Mac), navigate to the drive and folder where your Data Files are stored, click **Save**, then click **OK** to close the Illustrator Options dialog box.
3. Click **View** on the menu bar, note the quick key for Outline, then click **Outline**.

   As shown in Figure 4, outline mode shows the skeleton of your work—the lines and curves that you have drawn. Outline mode can be useful for making very specific selections.
4. Click **View** on the menu bar, note the quick key for Preview, then click **Preview**.

   Preview mode shows your work complete with the colors and styles you used.
5. Toggle between Outline and Preview modes using the quick key, then return to Preview mode.
6. Click the **Zoom Tool** in the Tools panel, then click the **circle** four times.
7. Click the **Selection Tool** in the Tools panel.
8. Click **View** on the menu bar, then click **Fit in Window**.

(continued)

FIGURE 4
Viewing the document in outline mode

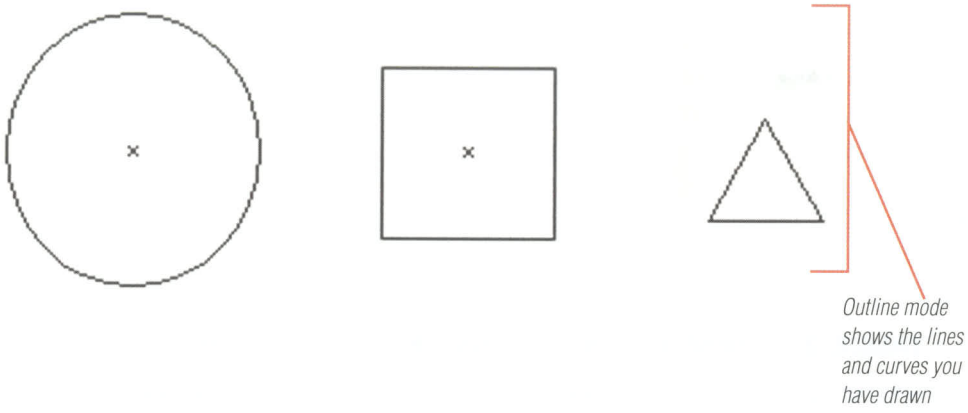
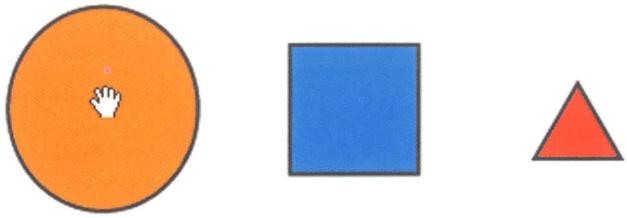


FIGURE 5
Moving the artboard with the Hand Tool



9. Click **View** on the menu bar, note the quick keys for Zoom In and Zoom Out, then release the menu.
10. Use the quick key to zoom in to 200%.

    TIP The current magnification level appears in the title bar and the Zoom text box in the lower-left corner.
11. Use the quick key to zoom out to 66.67%.
12. Press and hold **[Spacebar]**, notice that the pointer changes to the Hand Tool, then click and drag the **artboard** with the Hand Tool, as shown in Figure 5.

    The Hand Tool allows you to move the artboard in the window; it's a great alternative to using the scroll arrows. Always press [Spacebar] to access the Hand Tool, so as not to interrupt the flow of your work.

You opened an Illustrator document, saved it with a new name, and used menu commands and the Zoom Tool to change the view size of the artboard. You then used the Hand Tool to move the artboard around.

Exploring the Adobe Illustrator CS3 Welcome Screen

When you start Adobe Illustrator CS3 for the first time, the Welcome Screen appears. The Welcome Screen includes a list of recently opened items on the left and new document templates on the right, such as Web Document and Mobile and Devices Document. The From Template link leads you to pre-designed templates. Templates can really help you jump-start a project if you're running out of time or need some creative guidance. Templates are categorized into two categories: Basic and Inspiration. Within those categories are many more. For example, in the Basic category, you'll find more categories, such as Artist, Event Planning, and Environmental. Within those folders are the actual templates, such as Business Card, Post Card, or DVD Menu. If you've already installed CS3 and the Welcome Screen doesn't open when you launch the application, fear not! Simply click Help on the menu bar, then click Welcome Screen. If you do not want the Welcome Screen to appear each time, simply click the Don't show again check box in the Welcome Screen dialog box.

Work with objects

1. Click **Select** on the menu bar, then click **All**.
2. Click **View** on the menu bar, then click **Show Bounding Box**, if necessary.

   The bounding box is a box with eight hollow white squares that appears around an object or objects when selected.

   TIP If you see Hide Bounding Box on the View menu, the bounding box is already showing.
3. Click **View** on the menu bar, then click **Hide Bounding Box**.
4. Click **Select** on the menu bar, then click **Deselect**.
5. Click the **Selection Tool** in the Tools panel, then move each shape—one at a time—to the bottom of the page.
6. Click **Edit** on the menu bar, then click **Undo Move**.

   The last object you moved returns to its original position, as shown in Figure 6.
7. Undo your last two steps.
8. Click **Edit** on the menu bar, then click **Redo Move**.
9. Redo your last two steps.
10. Click the **artboard** to deselect, click the **red triangle**, click **Edit** on the menu bar, then click **Copy**.
11. Click **Edit** on the menu bar, then click **Paste**.

(continued)

FIGURE 6
Undoing your last step

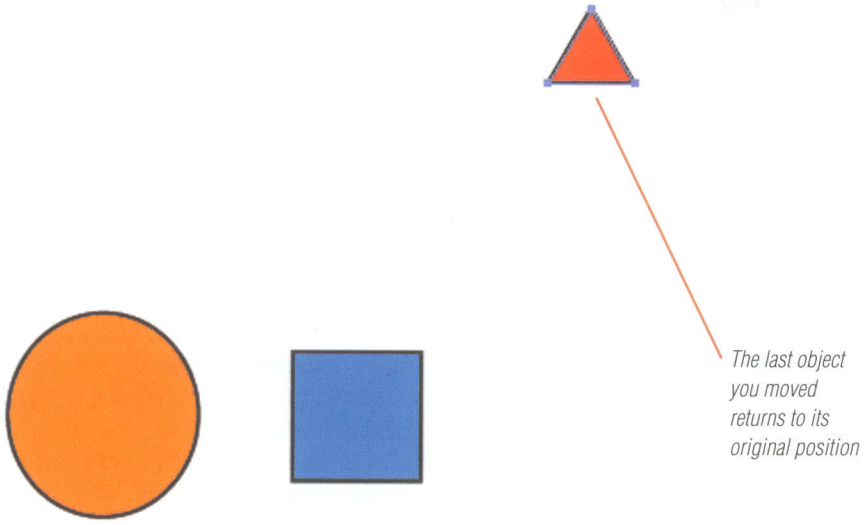
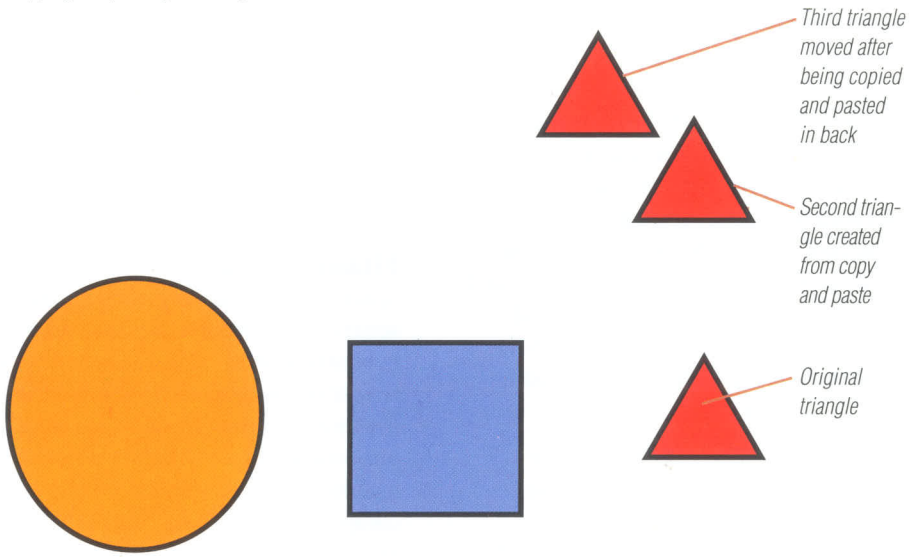


FIGURE 7
Copying and pasting the triangle



12. Copy the new triangle, click **Edit** on the menu bar, then click **Paste in Back**.

    The Paste in Front and Paste in Back commands paste the copied object from the clipboard in front or in back of a selected object. If you select an object, copy it, and then choose Paste in Front; the copy will be pasted above the original in exactly the same location.

13. Move the top red triangle to expose the copied triangle pasted behind it, as shown in Figure 7.

14. Save your work, then close Window Workout.

You moved objects on the artboard and used the Undo and Redo commands on the Edit menu. You selected and copied objects, then applied the Paste in Back command to position a copy precisely in back of its original.

LESSON 3

CREATE BASIC SHAPES

What You'll Do

In this lesson, you will examine the differences between bitmap and vector graphics. Then you will use the Rectangle Tool to examine Illustrator's various options for creating simple vector graphics.

Getting Ready to Draw

Are you eager to start drawing? Do you want to create complex shapes, special effects, and original art? Perhaps you are a self-taught user of Adobe Illustrator, and your main interest is to graduate to advanced techniques and add a few of those cool special effects to your skill set. Good for you! Enthusiasm is priceless, and no book can teach it. So maintain that enthusiasm for this first exercise, where you'll start by creating a square. That's right . . . a square.

Consider for a moment that Mozart's sublime opera Don Giovanni is based primarily on eight notes, or that the great American novel can be reduced to 26 letters. Illustrator's foundation is basic geometric shapes, so let's start at square one . . . with one square.

Don't rush. As you work, keep in mind that the lessons you will learn here are the foundation of every great illustration.

Understanding Bitmap Images and Vector Graphics

Computer graphics fall into two main categories—bitmap images and vector graphics. To create effective artwork, you need to understand some basic concepts about the two.

Bitmap images are created using a square or rectangular grid of colored squares called **pixels**. Because pixels (a contraction of "picture elements") can render subtle gradations of tone, they are the most common medium for continuous-tone images—what you perceive as a photograph. All scanned images are composed of pixels. All "digital" images are composed of pixels. Adobe Photoshop is the leading graphics application for working with digital "photos." Figure 8 shows an example of a bitmap image. The number of pixels in a given inch is referred to as the image's **resolution**. To be effective, pixels must be small enough to create an image with the illusion of continuous tone. Thus, bitmap images are termed **resolution-dependent**.

The important thing to remember about bitmap images is that any magnification—resizing the image to be bigger—essentially means that fewer pixels are available per inch (the same number of pixels is now spread out over a larger area). This decrease in resolution will have a negative impact on the quality of the image. The greater the magnification, the greater the negative impact.

Graphics that you create in Adobe Illustrator are vector graphics. **Vector graphics** are created with lines and curves and are defined by mathematical objects called vectors. Vectors use geometric characteristics to define the object. Vector graphics consist of **anchor points** and **line segments**, together referred to as **paths**.

For example, if you use Illustrator to render a person's face, the software will identify the iris of the eye using the mathematical definition of a circle with a specific radius and a specific location in respect to other graphics. It will then fill that circle with the color you have specified. Figure 9 shows an example of a vector graphic.

Computer graphics rely on vectors to render bold graphics that must retain clean, crisp lines when scaled to various sizes. Vectors are often used to create logos or "line art," and they are the best choice for typographical work, especially small and italic type.

As mathematical objects, vector graphics can be scaled to any size. Because they are not created with pixels, there is no inherent resolution. Thus, vector graphics are termed **resolution-independent**. This means that any graphic that you create in Illustrator can be output to fit on a postage stamp or on a billboard!

FIGURE 8
Bitmap graphics

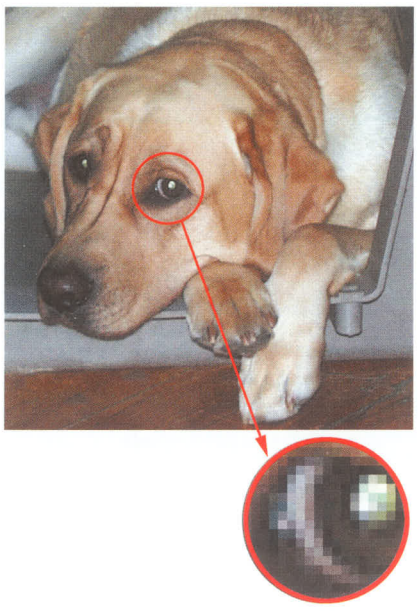


FIGURE 9
Vector graphics

Use the Rectangle Tool

1. Click **File** on the menu bar, click **New**, create a new document that is 8" wide by 8" in height, name the file **Basic Shapes**, then click **OK**.
2. Click **File** on the menu bar, click **Save As**, navigate to the drive and folder where your Data Files are stored, click **Save,** then click **OK** to close the Illustrator Options dialog box.
3. Click **View** on the menu bar, then click **Hide Page Tiling**, if necessary.
4. Click the **Swap Fill and Stroke button** in the Tools panel to reverse the default colors.

   Your fill color should now be black and your stroke color white. The **fill color** is the inside color of an object. The **stroke color** is the color of the object's border or frame.
5. Click the **Rectangle Tool** in the Tools panel.
6. Click and drag the **Rectangle Tool pointer** on the artboard, then release the mouse to make a rectangle of any size.
7. Press and hold **[Shift]** while you create a second rectangle.

   Pressing and holding [Shift] while you create a rectangle constrains the shape to a perfect square, as shown in Figure 10.
8. Create a third rectangle drawn from its center point by pressing and holding **[Alt]** (Win) or **[option]** (Mac) as you drag the **Rectangle Tool pointer**.

   TIP Use [Shift] in combination with [Alt] (Win) or [option] (Mac) to draw a perfect shape from its center.

You created a freeform rectangle, then you created a perfect square. Finally you drew a square from its center point.

FIGURE 10
Creating a rectangle and a square

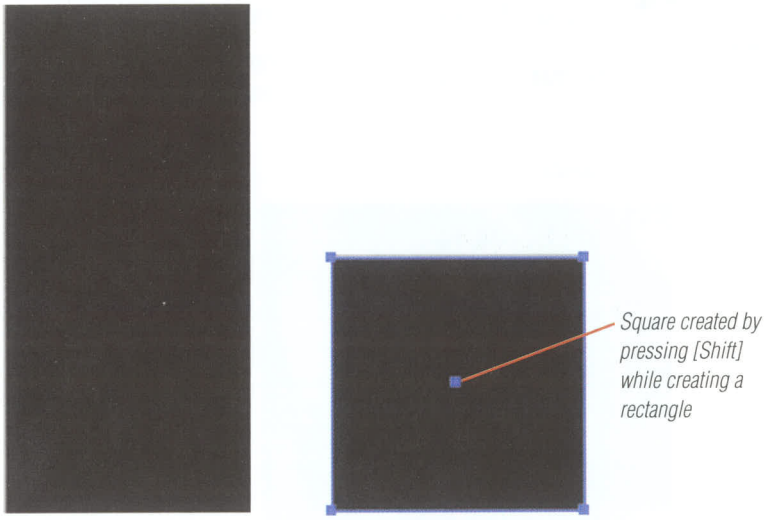
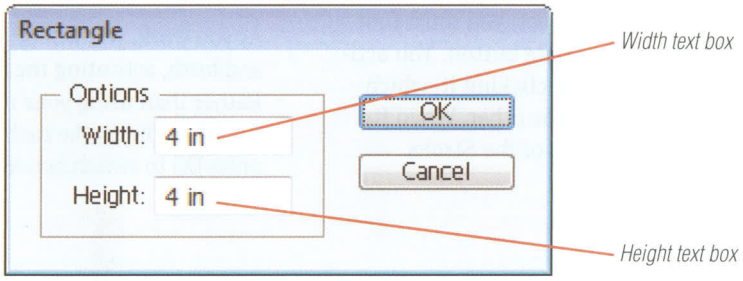


FIGURE 11
Rectangle dialog box



Use the Rectangle dialog box

1. Click **Select** on the menu bar, then click **All** to select all of the objects.
2. Click **Edit** on the menu bar, then click **Cut** to remove the objects from the artboard.
3. Click anywhere on the artboard.

   When a shape tool is selected, clicking once on the artboard opens a dialog box, which allows you to enter precise information for creating the object. In this case, it opens the Rectangle dialog box.
4. Type **4** in the Width text box, type **4** in the Height text box, as shown in Figure 11, then click **OK**.
5. Save your work.

Using the Rectangle Tool, you clicked the artboard, which opened the Rectangle dialog box. You entered a specific width and height to create a perfect 4" square.

LESSON 4

APPLY FILL AND STROKE COLORS TO OBJECTS

What You'll Do

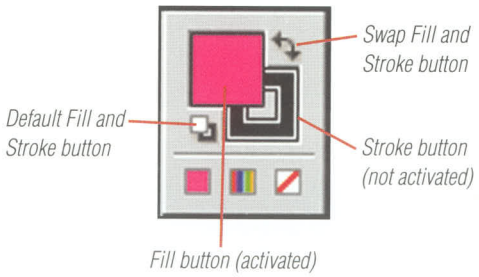
In this lesson you will use the Swatches panel to add a color fill to an object and apply a stroke as a border. Then you will use the Stroke panel to change the size of the default stroke.

Activating the Fill or Stroke

The Fill and Stroke buttons are at the bottom of the Tools panel. To apply a fill or stroke color to an object, you must first activate the appropriate button. You activate either button by clicking it, which moves it in front of the other. When the Fill button is in front of the Stroke button, the fill is activated, as shown in Figure 12. The Stroke button is activated when it is in front of the Fill button.

As you work, you will often switch back and forth, activating the fill and the stroke. Rather than using your mouse to activate the fill or the stroke each time, simply press [X] to switch between the two modes.

FIGURE 12
Fill and Stroke buttons



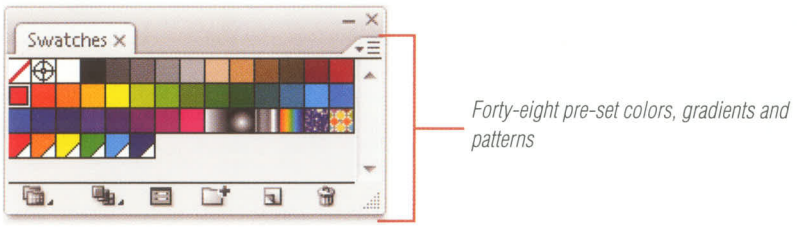
Applying Color with the Swatches Panel

The Swatches panel as shown in Figure 13, is central to color management in the application and a simple resource for applying fills and strokes to objects.

The panel has 48 preset colors, along with gradients and patterns. The swatch with the red line through it is called [None] and used as a fill for a "hollow" object. Any object without a stroke will always have [None] as its stroke color.

When an object is selected, clicking a swatch in the panel will apply that color as a fill or a stroke, depending on which of the two is activated in the Tools panel. You can also drag and drop swatches onto unselected objects. Dragging a swatch to an unselected object will change the color of its fill or stroke, depending upon which of the two is activated.

FIGURE 13
Swatches panel



Apply fill and stroke colors

1. Verify that the new square is still selected.
2. Click the **Swatches button** to open the Swatches panel.

   Your Swatches panel may already be available.
3. Click any blue swatch in the Swatches panel to fill the square.

   Note that the Fill button in the Tools panel is now also blue.

   TIP When you position your pointer over a color swatch in the Swatches panel, a tooltip appears that shows the name of that swatch.
4. Click the **Selection Tool**, then click anywhere on the artboard to deselect the blue square.
5. Drag and drop a **yellow swatch** onto the blue square.

   The fill color changes to yellow because the Fill button is activated in the Tools panel. Your colors may vary from the colors shown in the figures.
6. Press **[X]** to activate the Stroke button in the Tools panel.
7. Drag and drop the **red swatch** in the Swatches panel onto the yellow square.

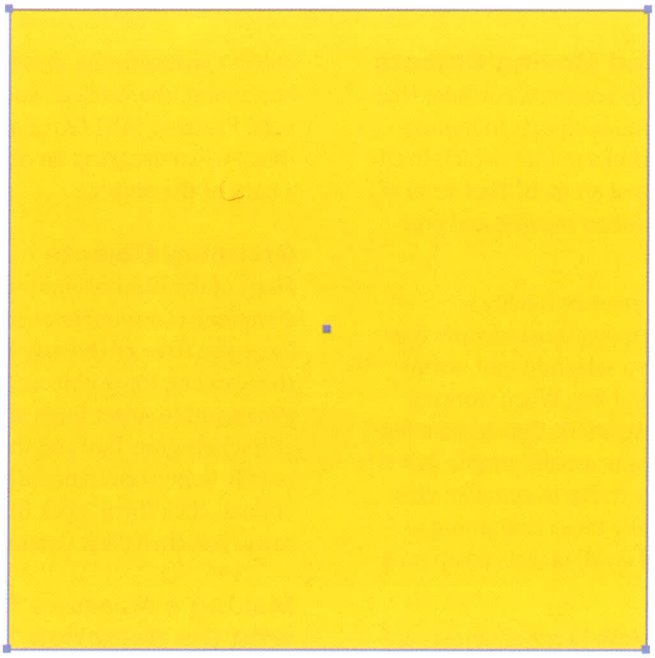
   As shown in Figure 14, a red stroke is added to the square because the Stroke button is activated in the Tools panel.
8. Click the **Stroke button** to display the Stroke panel.

   Your Stroke panel may already be available.

(continued)

FIGURE 14
Red stroke is added to the yellow square

FIGURE 15
Yellow square without a stroke



9. Select the square, click the **Weight list arrow** in the Stroke panel, then click **8 pt**.

   TIP Illustrator positions a stroke equally inside and outside an object. Thus, an 8 pt stroke is rendered with 4 pts inside the object and 4 pts outside.

10. Click **[None]** in the Swatches panel to remove the stroke from the square.

    Your screen should resemble Figure 15.

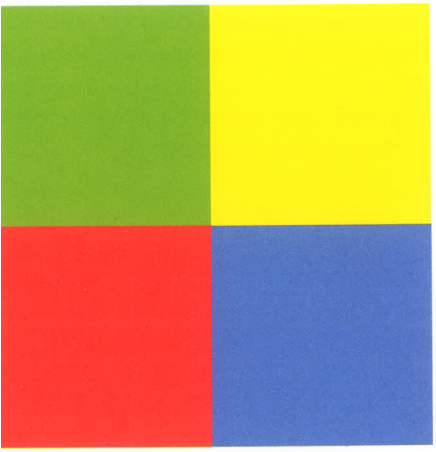
11. Save your work.

You filled the square with blue by clicking a blue swatch in the Swatches panel. You then changed the fill and stroke colors to yellow and red by dragging and dropping swatches onto the square. You used the Stroke panel to increase the weight of the stroke, then removed the stroke by choosing [None] from the Swatches panel.

LESSON 5

SELECT, MOVE, AND ALIGN OBJECTS

What You'll Do



In this lesson, you will use the Selection Tool in combination with Smart Guides to move, copy, and align four squares.

Selecting and Moving Objects

When it comes to accuracy, consider that Illustrator can move objects incrementally by fractions of a point—which itself is a tiny fraction of an inch! That level of precision is key when moving and positioning objects.

Before you can move or modify an Illustrator object, you must identify it by selecting it with a selection tool, menu item, or command key. When working with simple illustrations that contain few objects, selecting is usually simple, but it can become very tricky in complex illustrations, especially those containing a large number of small objects positioned closely together.

Two very basic ways to move objects are by clicking and dragging or by using the arrow keys, which by default move a selected item in 1-pt increments. Pressing [Shift] when dragging an object constrains the movement to the horizontal, the vertical, and 45° diagonals. Pressing [Alt] (Win) or [option] (Mac) when dragging an object creates a copy of the object.

Grouping Objects

Many of the illustrations you create will be composed of a number of small objects. Once you have established the relationships among those objects, grouping them allows you to select them all with one click of the Selection Tool and then move or modify them simultaneously. To group objects, click them, click Object on the menu bar, then click Group.

Making a Marquee Selection with the Selection Tool

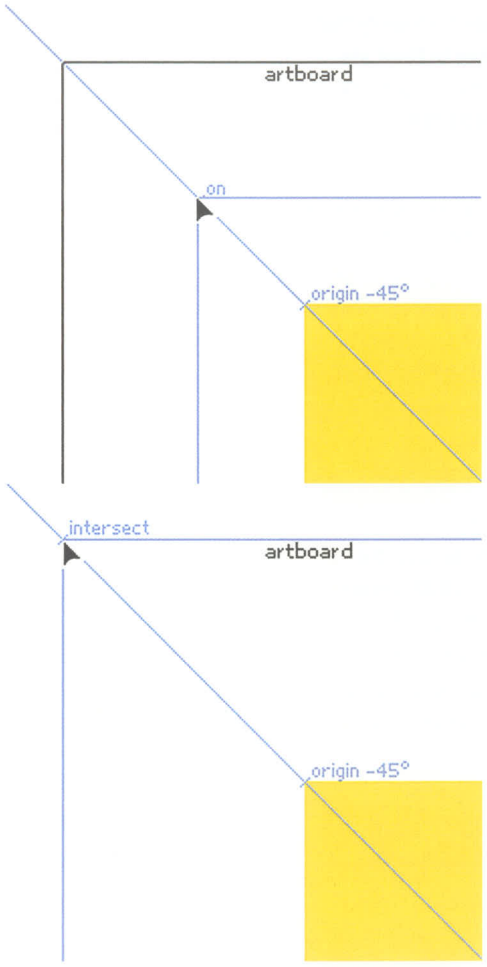
By now, you're familiar with using the Selection Tool to select objects. You can also use the Selection Tool to create a marquee selection, a dotted rectangle that

disappears as soon as you release the mouse. Any object that the marquee touches before you release the mouse will be selected. Marquee selections are very useful for both quick selections and precise selections. Practice, and make this part of your skill set.

Working with Smart Guides

Smart Guides are temporary guides that can be turned on and off on the View menu. Smart Guides help you move and align objects in relation to other objects or in relation to the artboard. With Smart Guides turned on, you will see words, called Smart Guides, that identify visible or invisible objects, page boundaries, intersections, anchor points, paths, and center points as you move your mouse along the objects on the artboard. When you move an object, Smart Guides give you a visual reference for precise alignment, as shown in Figure 16. For example, if you want to align two squares exactly side by side, Smart Guides will signal you when the two items come into contact, using the word "intersect."

FIGURE 16
Using Smart Guides



Select and move an object using Smart Guides

1. Click **View** on the menu bar, then click **Fit in Window**.
2. Click **View** on the menu bar, then verify that both Smart Guides and Snap to Point are checked by verifying that there is a check mark to the left of each menu item.

   TIP If you do not see a check mark next to Smart Guides or Snap to Point, click View on the menu bar, then click each item, one at a time, to turn these two features on.

   Snap to Point automatically aligns anchor points when they get close together. When dragging an object, you'll see it "snap" to align itself with a nearby object (or guide).
3. Click the **Selection Tool** in the Tools panel, then click the **yellow square**.
4. Identify the anchor points, paths, and center point, as shown in Figure 17.
5. Move the Selection Tool pointer over the anchor points, over the paths that connect the points, and over the center point.
6. Position the pointer over the top-left anchor point, click and drag so that the anchor point aligns with the top-left corner of the artboard, as shown in Figure 18, then release the mouse.

   The Smart Guide changes from "anchor" to "intersect" when the two corners are aligned.

You used the Selection Tool in combination with Smart Guides to position an object exactly at the top-left corner of the artboard.

FIGURE 17
Anchor points, paths, and center point

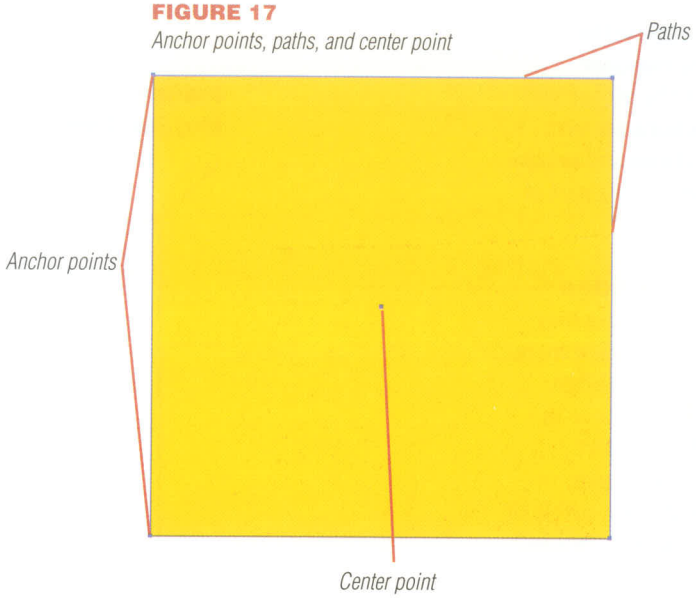


FIGURE 18
Intersecting two points

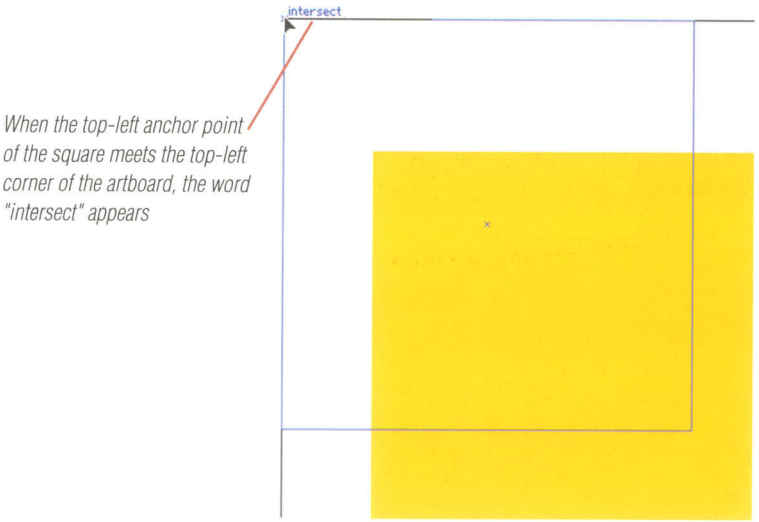
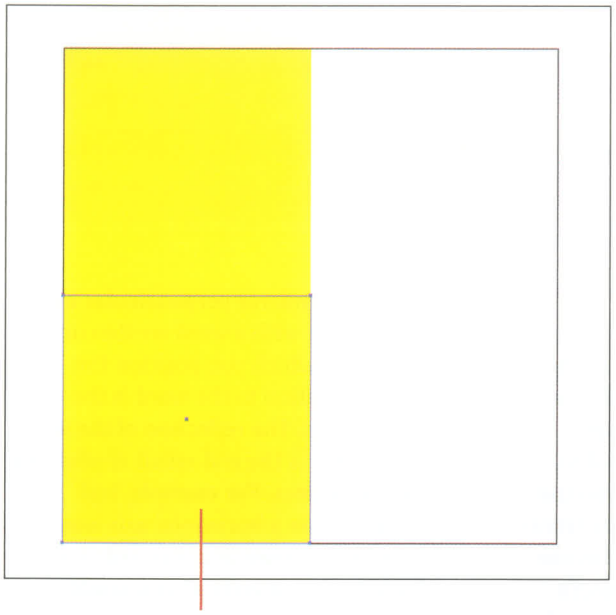
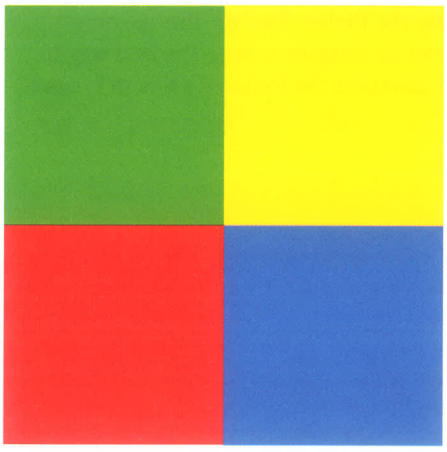


FIGURE 19
Duplicating the square



A copy of the original square

FIGURE 20
Four squares created using drag and drop



Duplicate objects using drag and drop

1. Click the **top-left anchor point**, press and hold **[Shift][Alt]** (Win) or **[Shift][option]** (Mac), drag straight down until the top-left anchor point touches the bottom-left anchor point (the "intersect" Smart Guide will appear), then release the mouse.

   When moving an object, pressing and holding [Shift] constrains the movement vertically, horizontally, or on 45° diagonals. Pressing [Alt] (Win) or [option] (Mac) while dragging an object creates a copy of the object, as shown in Figure 19.

   TIP When you press [Alt] (Win) or [option] (Mac) while dragging an object, the pointer becomes a double-arrow pointer. When two anchor points are directly on top of each other, the Selection Tool pointer turns from black to white.

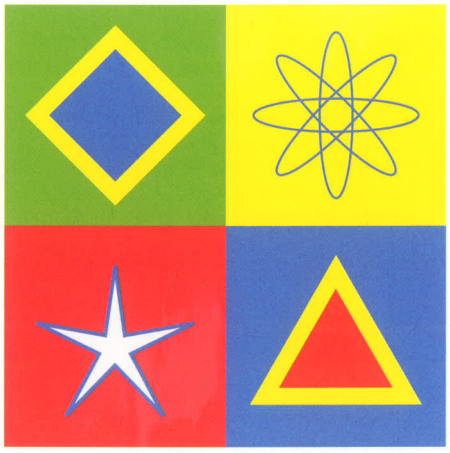
2. With the bottom square still selected, press and hold **[Shift]**, then click the **top square** to select both items.
3. Click the **top-left anchor point** of the top square, press and hold **[Shift][Alt]** (Win) or **[Shift][option]** (Mac), drag to the right until the top-left anchor point touches the top-right anchor point, then release the mouse.
4. Change the fill color of each square to match the colors shown in Figure 20.
5. Save your work.

You moved and duplicated the yellow square using [Shift] to constrain the movement and [Alt] (Win) or [option] (Mac) to duplicate or "drag and drop" copies of the square.

LESSON 6

TRANSFORM OBJECTS

What You'll Do



In this lesson, you will scale, rotate, and reflect objects, using the basic transform tools. You will also create a star and a triangle.

Transforming Objects

The Scale, Rotate, and Reflect Tools are the fundamental transform tools. As their names make clear, the Scale and Rotate Tools resize and rotate objects, respectively. Double-click a transform tool to open the tool's dialog box. When you use the tool's dialog box, the objects are transformed from their centerpoints. This can be a useful choice, because the object's position essentially doesn't change on the artboard or in relation to other objects.

Use the Reflect Tool to "flip" an object over an imaginary axis. The best way to understand the Reflect Tool is to imagine positioning a mirror perpendicular to a sheet of paper with a word written on it. The angle at which you position the mirror in relation to the word is the reflection axis. The reflection of the word in the mirror is the end result of what the Reflect Tool does. For example, text reflected across a horizontal axis would appear upside down and inverted. Text reflected across a vertical axis would appear to be inverted and running backwards, as shown in Figure 21.

You can transform an object using the desired tool or its dialog box. Each transform tool has a dialog box where you can

enter precise numbers to execute the transformation on a selected object. You can access a tool's dialog box by double-clicking the tool. Click the Copy button in the dialog box to create a transformed copy of the selected object. Figure 22 shows the Scale dialog box.

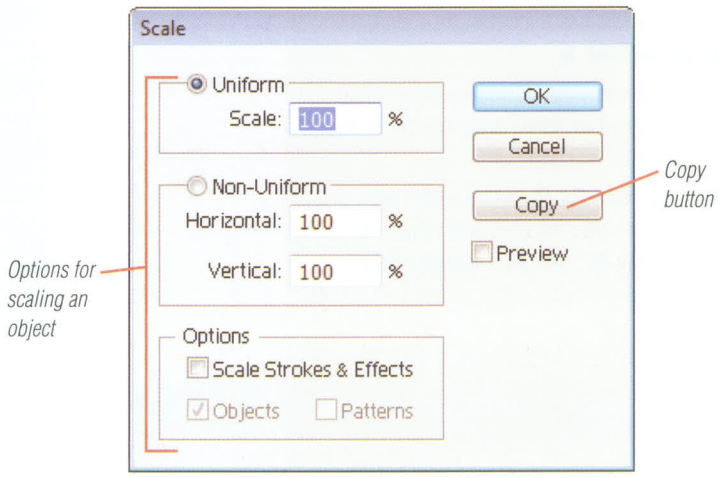
Repeating Transformations

One of the most powerful commands relating to the transform tools is Transform Again, found on the Object menu. Unfortunately, it is a command often overlooked by new users. Whenever you transform an object, selecting Transform Again repeats the transformation. For example, if you scale a circle 50%, the Transform Again command will scale the circle 50% again.

The power of the command comes in combination with copying transformations. For example, if you rotate a square 10° and copy it at the same time, the Transform Again command will create a second square, rotated another 10° from the first copy. Applying Transform Again repeatedly is very handy for creating complex geometric shapes from basic objects.

FIGURE 21
Reflected text

FIGURE 22
Scale dialog box



Use the Scale and Rotate Tools

1. Select the **green square**, double-click the **Scale Tool**, type **50** in the Scale text box, then click **OK**.
2. Click **Edit** on the menu bar, then click **Undo Scale**.

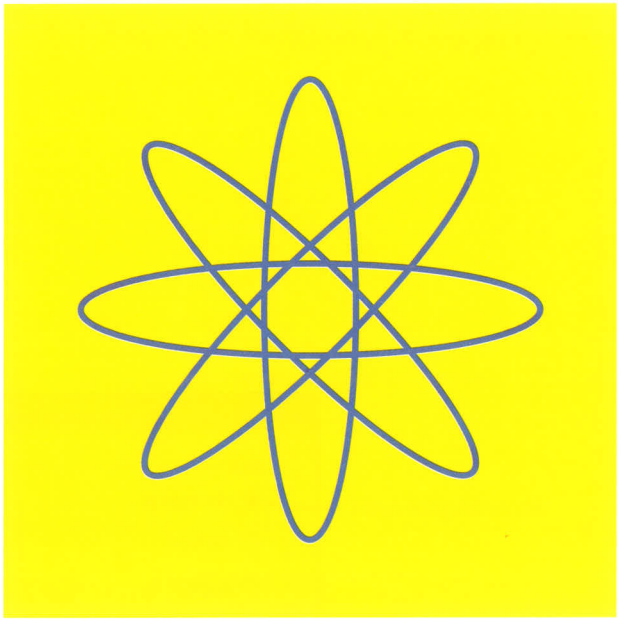
   TIP You can also undo your last step by pressing [Ctrl][Z] (Win) or [⌘][Z] (Mac).
3. Double-click the **Scale Tool** again, type **50** in the Scale text box, then click **Copy**.

   The transformation is executed from the center point; the center points of the original and the copy are aligned.
4. Fill the new square created in Step 3 with blue.
5. Double-click the **Rotate Tool**, type **45** in the Angle text box, click **OK**, then click the **Selection Tool**.
6. Apply a 22 pt, yellow stroke to the rotated square, deselect, then compare your screen to Figure 23.

You used the Scale Tool to create a 50% copy of the square, then filled the copy with blue. You rotated the copy 45°. You then applied a 22 pt, yellow stroke.

FIGURE 23
Scaling and rotating a square

FIGURE 24
Using the Transform Again command



Use the Transform Again command

1. Click the **Ellipse Tool** in the Tools panel.

   TIP To access the Ellipse Tool, press and hold the Rectangle Tool until a toolbar of shape tools appears, then click the Ellipse Tool.

2. Click the **artboard**, type **3** in the Width text box and **.5** in the Height text box, then click **OK**.
3. Change the fill color to [None], the stroke color to blue, and the stroke weight to 3 pt.
4. Click the **Selection Tool**, click the **center point** of the ellipse, then drag it to the center point of the yellow square. (*Hint*: The center Smart Guide appears when the two centers meet.)
5. Double-click the **Rotate Tool**, type **45** in the Angle text box, then click **Copy**.
6. Click **Object** on the menu bar, point to **Transform**, then click **Transform Again.**

   TIP You can also access the Transform Again command by pressing [Ctrl][D] (Win) or [⌘][D] (Mac).

7. Repeat Step 6 to create a fourth ellipse using the Transform Again command.

   Your screen should resemble Figure 24.

8. Select the four ellipses, click **Object** on the menu bar, then click **Group**.

You created an ellipse, filled and stroked it, and aligned it with the yellow square. You then created a copy rotated at 45°. With the second copy still selected, you used the Transform Again command twice, thus creating two more rotated copies. You then grouped the four ellipses.

Create a star and a triangle, and use the Reflect Tool

1. Select the **Star Tool**, then click anywhere on the artboard.

   The Star Tool is hidden beneath the current shape tool.

2. Type **1** in the Radius 1 text box, type **5** in the Radius 2 text box, type **5** in the Points text box, as shown in Figure 25, then click **OK**.

   A star has two radii; the first is from the center to the outer point, and the second is from the center to the inner point. The **radius** is a measurement from the center point of the star to either point.

3. Double-click the **Scale Tool**, type **25** in the Scale text box, then click **OK**.

   When you create a star using the Star dialog box, the star is drawn upside down.

4. Fill the star with white, then apply a 5 pt blue stroke to it.

5. Click the **Selection Tool**, then move the star so that it is completely within the red square.

6. Double-click the **Reflect Tool**, click the **Horizontal option button**, as shown in Figure 26, then click **OK**.

   The star "flips" over an imaginary horizontal axis.

   TIP The Reflect Tool is hidden beneath the Rotate Tool.

(continued)

FIGURE 25
Star dialog box

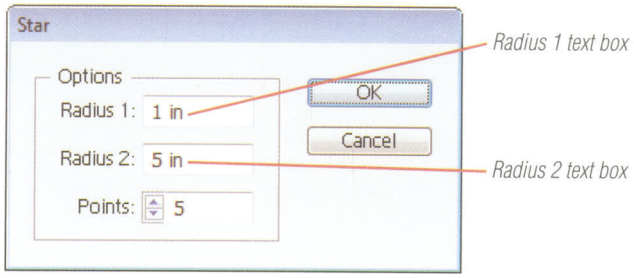


FIGURE 26
Reflect dialog box

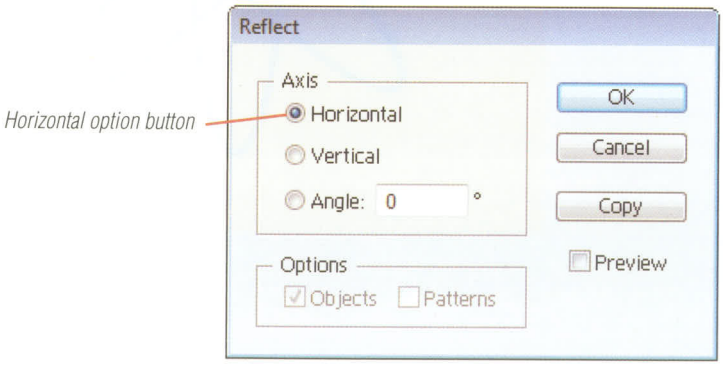


FIGURE 27
Reflecting the star horizontally

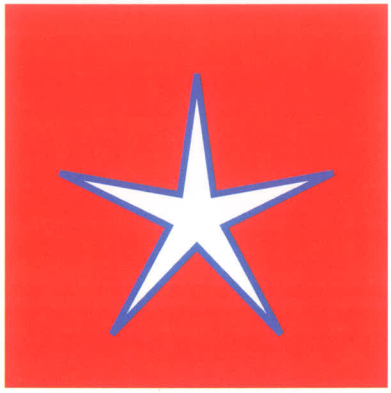
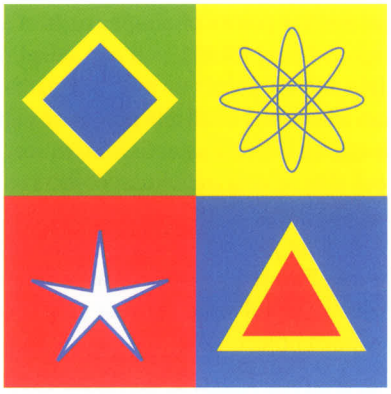


FIGURE 28
The finished project



7. Use the Selection Tool or the arrow keys on your keyboard to position the star roughly in the center of the red square.

   Your work should resemble Figure 27.

   TIP Arrow keys move a selected item in 1 pt increments, known as the Keyboard Increment. You can change this amount by clicking Edit (Win) or Illustrator (Mac) on the menu bar, pointing to Preferences, clicking General, then typing a new value in the Keyboard Increment text box.

8. Click the **Polygon Tool** in the Tools panel.

   The Polygon Tool is hidden beneath the current shape tool in the Tools panel.

9. Click anywhere on the blue square.
10. Type **1.5** in the Radius text box, type **3** in the Sides text box, then click **OK**.
11. Fill the triangle with red.
12. Change the stroke color to yellow and the stroke weight to 22 pt.
13. Position the triangle so that it is centered within the blue square.

    Your completed project should resemble Figure 28.

14. Save your work, then close Basic Shapes.

You used the shape tools to create a star and a triangle and used the Reflect Tool to "flip" the star over an imaginary horizontal axis.

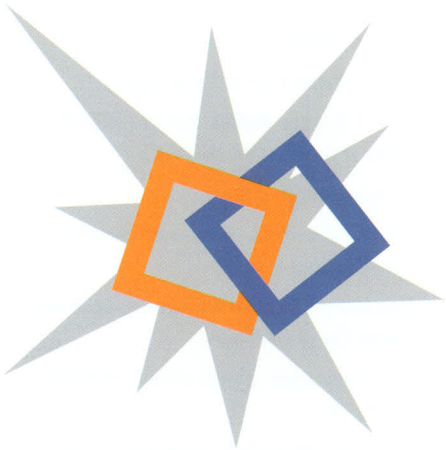
Selecting

The Select menu offers some powerful selection commands under the Same submenu. There you have commands to select by the same fill, stroke, fill and stroke, stroke color, and stroke weight. You can even select objects with the same opacity and blending mode applied. When it comes to selecting multiple objects, using the Select menu is much faster than Shift-clicking!

LESSON 7

MAKE DIRECT SELECTIONS

What You'll Do



In this lesson, you will use the Direct Selection Tool and a combination of menu commands, such as Add Anchor Points and Paste in Front, to convert existing shapes into new designs.

Using the Direct Selection Tool

The Direct Selection Tool selects individual anchor points or single paths of an object. Using [Shift], you can select multiple anchor points or multiple paths. You can also select multiple points or paths by dragging a direct selection marquee. The tool also selects individual objects within a group, which can be very useful for modifying just one object in a complex group. Figure 29 demonstrates the Direct Selection Tool selecting one piece of a grouped object.

Clicking the center of an object with the Direct Selection Tool selects the entire object. Clicking the edge selects the path only. You will know you have made this direct selection successfully if the anchor points on the object all appear white. A white anchor point is not selected.

The Direct Selection Tool gives you the power to distort simple objects such as squares and circles into unique shapes. Don't underestimate its significance. While the Selection Tool is no more than a means to an end for selecting and moving objects, the Direct Selection Tool is in itself a drawing tool. You will use it over and over again to modify and perfect your artwork.

Adding Anchor Points

As you distort basic shapes with the Direct Selection Tool, you will often find that to create more complex shapes, you will need additional anchor points to work with.

The Add Anchor Points command creates new anchor points without distorting the object. To add anchor points to an object, click the Object menu, point to Path, then click Add Anchor Points. The new points are automatically positioned exactly between the original anchor points. You can create as many additional points as you wish to use.

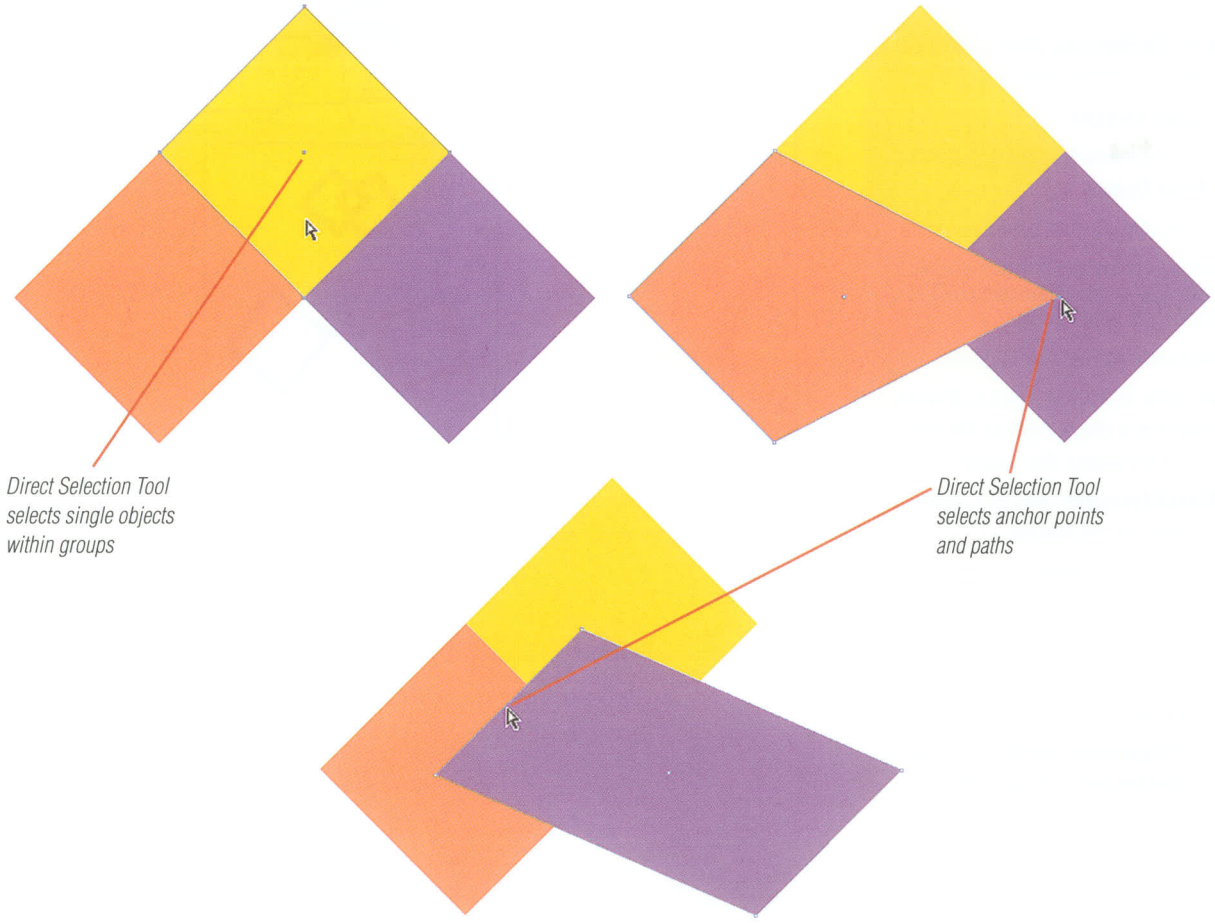
Turning Objects into Guides

Guides are one of Illustrator's many features that help you to work with precision. Any object you create can be turned into a guide. With the object selected, click the View menu, point to Guides, then click Make Guides. Guides can be locked or unlocked in

the same location. It is a good idea to work with locked guides so that they don't interfere with your artwork. Unlock guides only when you want to select them or delete them.

When an object is turned into a guide, it loses its attributes, such as its fill, stroke, and stroke weight. However, Illustrator remembers the original attributes for each guide. To transform a guide back to its original object, first unlock, then select the guide. Click the View menu, point to Guides, then click Release Guides.

FIGURE 29
Using the Direct Selection Tool



Make guides and direct selections

1. Open AI 1-2.ai, then save it as **Direct Selections**.

   TIP Each time you save a Data File, click OK to close the Illustrator Options dialog box.

2. Click **View** on the menu bar, then click **Smart Guides** to turn this feature off.
3. Select the **green polygon**.
4. Click **View** on the menu bar, point to **Guides**, then click **Make Guides**.

   The polygon is converted to a guide.

   TIP If you do not see the polygon-shaped guide, click View on the menu bar, point to Guides, then click Show Guides.

5. Convert the purple starburst to a guide.
6. Click **View** on the menu bar, point to **Guides**, verify that there is a check mark to the left of Lock Guides, then release the mouse.
7. Click the **Direct Selection Tool**, then click the edge of the red square.

   The four anchor points turn white, as shown in Figure 30.

8. Click and drag the anchor points to the four corners of the guide to distort the square.

   Your work should resemble Figure 31.

You converted two objects into guides. You then used the Direct Selection Tool to create a new shape from a square by moving anchor points independently.

FIGURE 30
Red square selected with the Direct Selection Tool

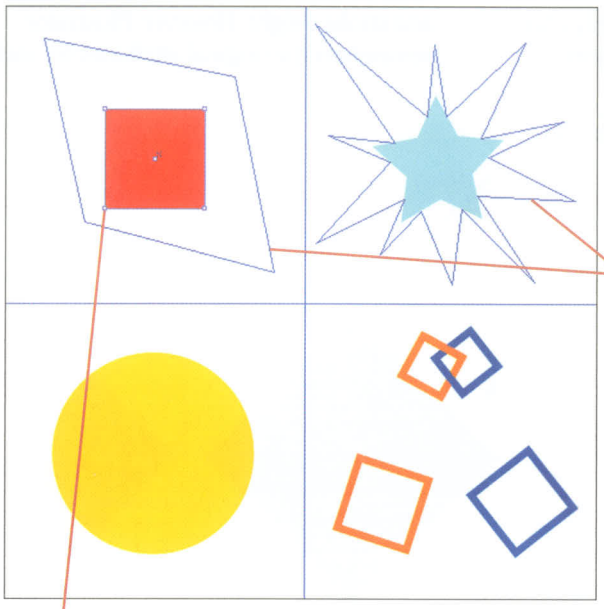


FIGURE 31
Red square distorted

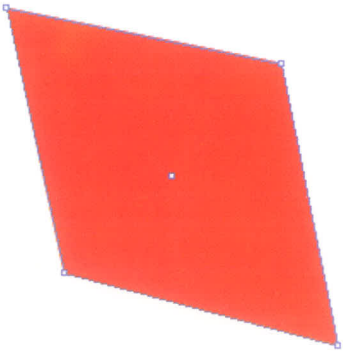


FIGURE 32
Star selected with Direct Selection Tool

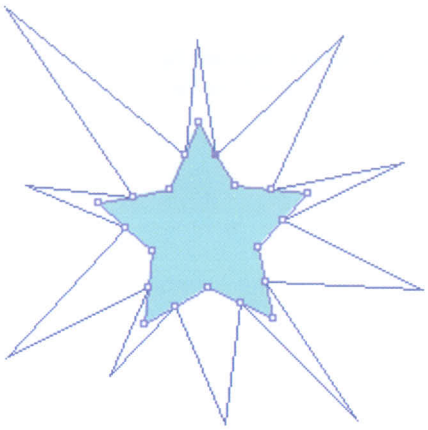
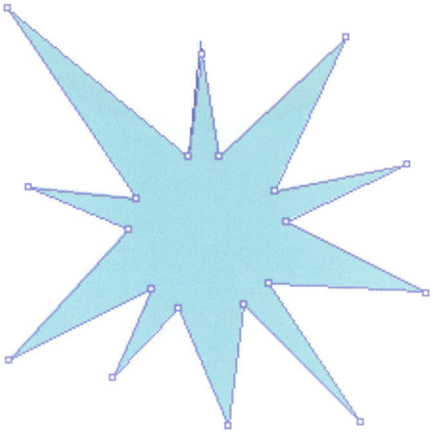


FIGURE 33
Completed starburst



Add anchor points

1. Using the **Direct Selection Tool** click the center of the light blue star, and note the anchor points used to define the shape.
2. Click **Object** on the menu bar, point to **Path**, then click **Add Anchor Points**.
3. Click the **artboard** to deselect the star, then click the edge of the star.

   All the anchor points turn white and are available to be selected independently, as shown in Figure 32.
4. Move the top anchor point on the star to align with the top point of the guide that you made earlier.
5. Working clockwise, move every other anchor point outward to align with the guide, creating a ten-point starburst.

   Your work should resemble Figure 33.
6. Select and move any of the inner anchor points to modify the starburst to your liking.

You used the Add Anchor Points command and the Direct Selection Tool to create an original ten-point starburst from a generic five-point star.

Making a direct selection marquee

When you create a marquee selection with the Selection Tool, any object the marquee touches is selected in its entirety. You can also use the Direct Selection Tool to create selection marquees. A Direct Selection Tool marquee selects only the anchor points and the paths that it touches. A Direct Selection Tool marquee is very useful for selecting multiple points or paths in one step.

Select paths

1. Click the edge of the yellow circle with the Direct Selection Tool.

   The yellow circle is comprised of four anchor points and four line segments, as shown in Figure 34. Clicking the edge selects one of the four segments.
2. Copy the segment.
3. Click **Edit** on the menu bar, then click **Paste in Front**.

   A copy is pasted directly on top of the selected segment.
4. Change the fill color to [None].
5. Change the stroke color to dark blue and the stroke weight to 14 pt.
6. Moving clockwise, repeat Steps 1, 2, 3, and 4 for the next three line segments, choosing different colors for each.

   Your finished circle should resemble Figure 35.

You selected individual segments of a circle, copied them, and then pasted them in front. You then created a special effect by stroking the four new segments with different colors.

FIGURE 34
Viewing the path of the circle

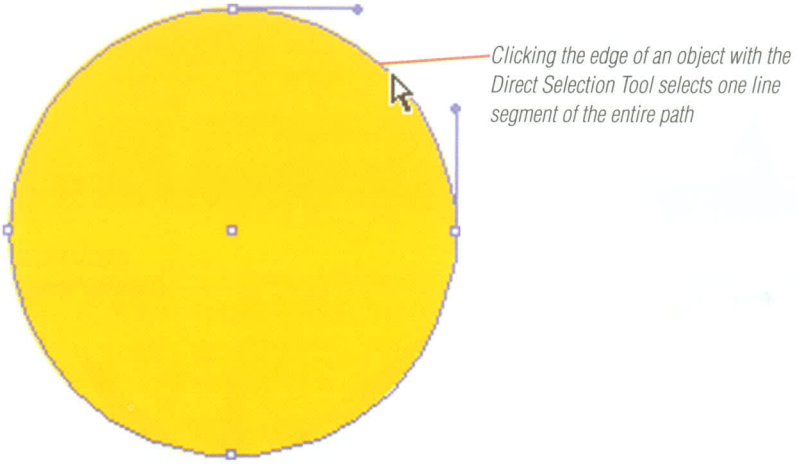


FIGURE 35
Completed circle

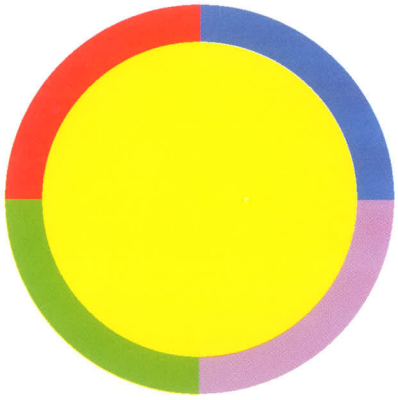
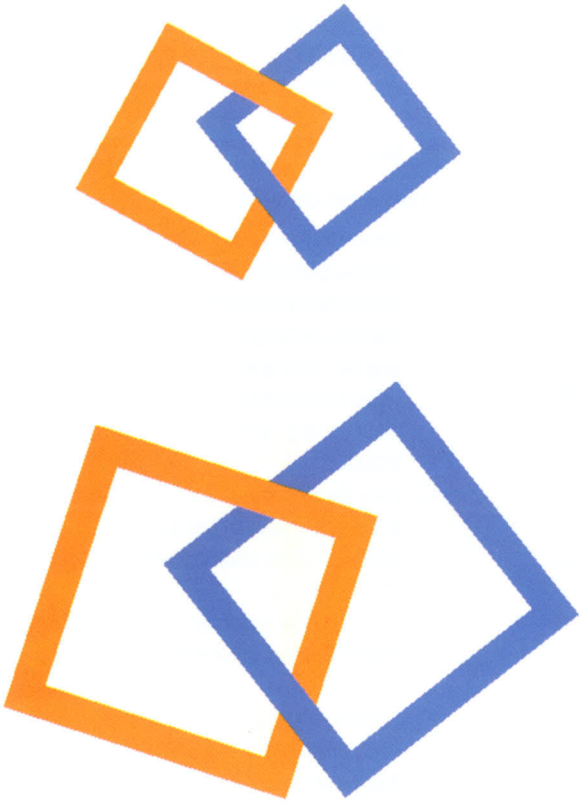


FIGURE 36
Completed linked squares



Create a simple special effect utilizing a direct selection

1. Click the Selection Tool, then overlap the large orange and blue squares so that they resemble the small orange and blue squares, then deselect.
2. Click the Direct Selection Tool, then select the top path of the orange square.
3. Copy the path.
4. Select the intersecting path on the blue square.
5. Paste in front, then save your work.

   Your work should resemble Figure 36.
6. Close the document.

   TIP Remember this technique; it's one you'll probably use over and over again when you create artwork in Illustrator.

You learned a classic Illustrator trick. Selecting only a path, you copied it and pasted it in front of an intersecting object to create the illusion that the two objects were linked.

SKILLS REVIEW

Start Illustrator and create a new document.

1. Create a new document and name it **Flag**.
2. Make the size of the document 6" × 4".
3. Select Inches for the type of units, and CMYK Color for the color mode, then click OK.
4. Click File on the menu bar, click Save As, navigate to the drive and folder where you store your Data Files, then click Save.
5. Click View on the menu bar, then click Hide Page Tiling, if necessary.
6. Create a circle at the center of the artboard.
7. Click the Selection Tool.

Explore the Illustrator window.

1. Click View on the menu bar, then click Outline.
2. Click View on the menu bar, then click Preview.
3. Click View on the menu bar, then click Zoom In.
4. Click View on the menu bar, then click Zoom Out.
5. Press and hold [Spacebar] to access the Hand Tool, then move the artboard.
6. Click View on the menu bar, then click Fit in Window.
7. Select the circle, click Edit on the menu bar, then click Copy.
8. Click Edit on the menu bar, then click Paste in Front.
9. Move the new circle to the bottom of the artboard.
10. Click Edit on the menu bar, then click Undo Move.
11. Click Edit on the menu bar, then click Redo Move.
12. Click Select on the menu bar, then click All.
13. Click Select on the menu bar, then click Deselect.
14. Select all of the objects, click Edit on the menu bar, then click Cut.
15. Save your work.

Create basic shapes and apply fill and stroke colors.

1. Set the Fill and Stroke buttons in the Tools panel to black and [None], respectively.
2. Create a rectangle that is 3" × 1".
3. Show the Swatches panel, if necessary.
4. Fill the rectangle with a light yellow.

Select, move, and align objects.

1. Click View on the menu bar, then click Smart Guides, if necessary.
2. Move the rectangle so that its top-left anchor point intersects with the top-left corner of the artboard.
3. Click the top-left anchor point, press and hold [Shift][Alt] (Win) or [Shift][option] (Mac), drag straight down until the top-left anchor point touches the bottom-left anchor point (the "intersect" Smart Guide appears), then release the mouse.
4. Click Object on the menu bar, point to Transform, then click Transform Again.
5. Repeat Step 4.
6. Change the fill color of the second and fourth rectangles to a darker yellow.
7. Save your work.

Transform objects.

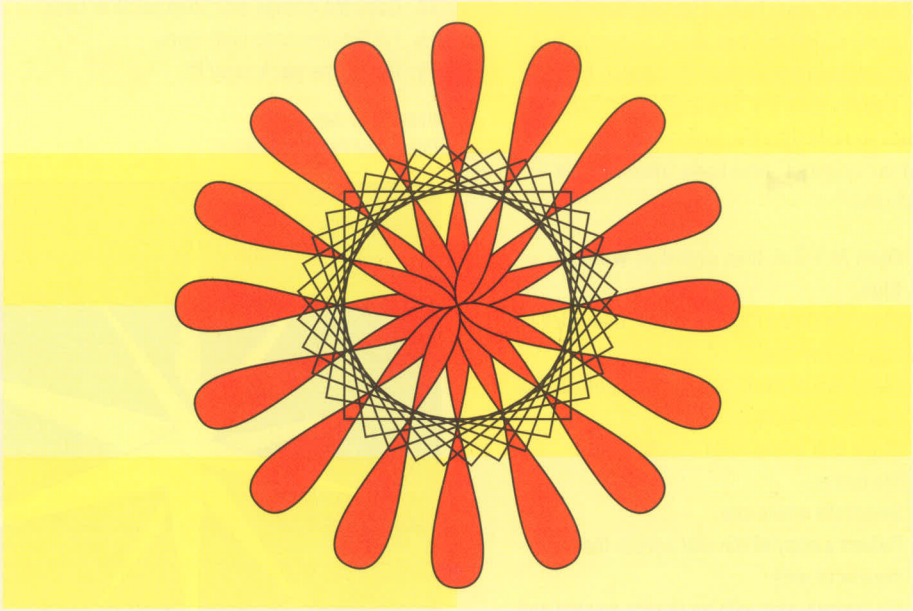
1. Select the four rectangles.
2. Double-click the Reflect Tool, click the Horizontal option button, then click Copy. The four rectangles are copied on top of the original rectangles.
3. Move the four new rectangles to the right so that they align with the right side of the artboard.
4. Click the Rectangle Tool, click the artboard, and create a square that is .75" × .75".
5. Apply a 1-point black stroke to the square and no fill.
6. Click the Selection Tool, click the edge of the square, then position it at the center of the artboard.
7. Use the Rotate dialog box to create a copy of the square rotated at 10°.
8. Apply the Transform Again command seven times.
9. Save your work.

SKILLS REVIEW (CONTINUED)

Make direct selections.

1. Use [Shift] to select each of the nine black squares.
2. Click Object on the menu bar, then click Group.
3. Scale the group of squares 200%.
4. Create a 3.75" × 3.75" circle, fill it with orange, add a 1-point black stroke, then position it at the center of the artboard.
5. Cut the circle from the artboard, click the group of black squares, click Edit on the menu bar, then click Paste in Back.
6. Adjust the location of the circle, as needed.
7. Click Object on the menu bar, point to Path, then click Add Anchor Points.
8. Deselect the circle by clicking anywhere on the artboard.
9. Click the Direct Selection Tool, then click the edge of the circle.
10. One at a time, move each of the four new anchor points to the center of the circle.
11. Switch to the Selection Tool, then select the orange-filled shape.
12. Double-click the Rotate Tool, type **22** in the Angle text box, then click Copy.
13. Apply the Transform Again command two times.
14. Save your work, then compare your illustration to Figure 37.
15. Close the Flag document.

FIGURE 37
Completed Skills Review



PROJECT BUILDER 1

The lady who owns the breakfast shop that you frequent knows that you are a designer and asks for your help. Her nephew has designed a sign for her store window, but she confides in you that she doesn't like it. She thinks that it's "boring" and "flat." She wants to redesign the sign with something that is "original" and feels "more like a starburst."

1. Open AI 1-3.ai, then save it as **Window Sign**.
2. Click the Direct Selection Tool, then click the edge of the star.
3. Move two of the outer anchor points of the star farther from its center.
4. Move four of the inner points toward the center.
5. Select the entire star.
6. Reflect a copy of the star across the horizontal axis.
7. Fill the new star with an orange swatch and reposition it to your liking.
8. Group the two stars.
9. Copy the group, then paste in back.
10. Fill the copies with black.
11. Using your arrow keys, move the black copies five points to the right and five points down.
12. Select only the orange star using the Direct Selection Tool.
13. Copy the orange star, then paste in back.
14. Fill the new copy with black.
15. Rotate the black copy 8°.
16. Apply a yellow fill to the orange star, then apply a 1-point black stroke to both yellow stars.
17. Save your work, then compare your illustration to Figure 38.
18. Close Window Sign.

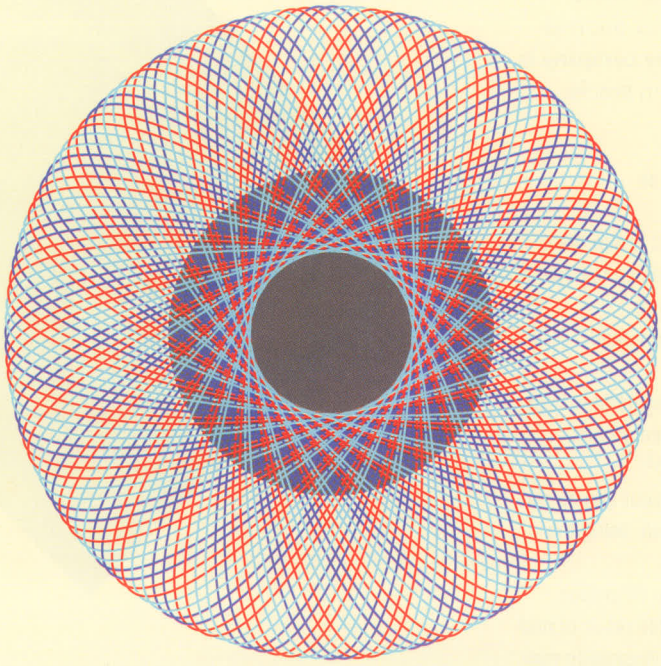
FIGURE 38
Completed Project Builder 1

PROJECT BUILDER 2

Iris Vision Labs has contracted with your design firm to bid on a design for their logo. Researching the company, you learn that they are a biotech firm whose mission is to develop cures for genetic blindness and vision problems. You decide to build your design around the idea of an iris.

1. Create a new document that is 6" × 6".
2. Save the document as **Iris Vision Design**.
3. Create an ellipse that is 1" wide × 4" in height, and position it at the center of the artboard.
4. Fill the ellipse with [None], and add a 1-point blue stroke.
5. Create a copy of the ellipse rotated at 15°.
6. Apply the Transform Again command 10 times.
7. Select all and group the ellipses.
8. Create a copy of the group rotated at 5°.
9. Apply a red stroke to the new group.
10. Transform again.
11. Apply a bright blue stroke to the new group.
12. Select all.
13. Rotate a copy of the ellipses 2.5°.
14. Create a circle that is 2" × 2".
15. Fill the circle with a shade of gray.
16. Remove the stroke from the circle.
17. Position the gray-filled circle in the center of the ellipses.
18. Cut the circle.
19. Select all.
20. Paste in back.
21. Save your work, then compare your illustration to Figure 39.
22. Close Iris Vision Design.

FIGURE 39
Completed Project Builder 2

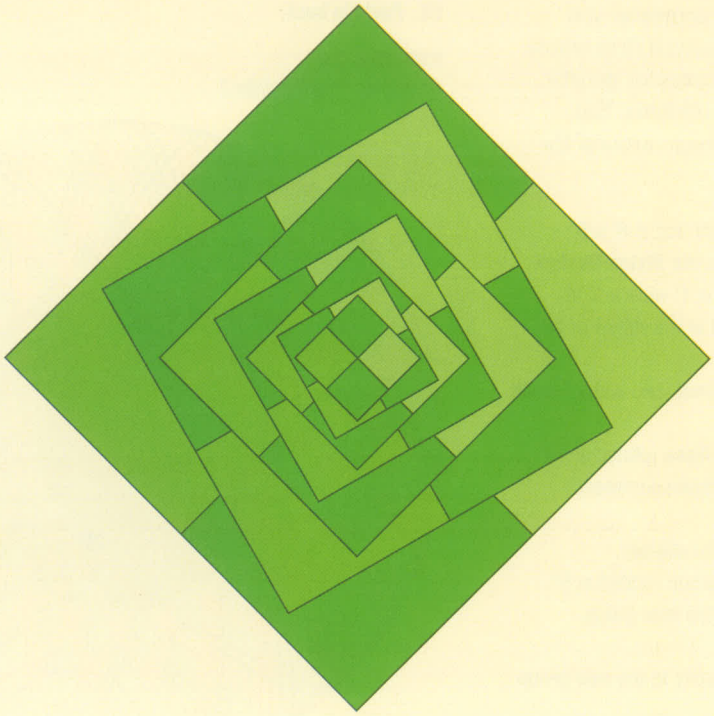


DESIGN PROJECT

The owner of Emerald Design Studios has hired you to design an original logo for her new company. She's a beginner with Illustrator, but she's created a simple illustration of what she has in mind. She tells you to create something "more sophisticated." The only other information that she offers about her company is that they plan to specialize in precise, geometric design.

1. Open AI 1-4.ai, then save it as **Emerald Logo**.
2. Select all four diamonds and group them.
3. Select the group of diamonds on the artboard, then create a 75% copy.
4. Use the Transform Again command five times.
5. Use Smart Guides or Outline mode to help you identify each of the seven groups.
6. Rotate one of the groups 75°.
7. Select two other groups of your choice and repeat the last transformation, using the Transform Again command.
8. Apply a dark green stroke to all groups. Figure 40 shows one possible result of multiple transformations. Your illustration may differ.
9. Save your work, then close Emerald Logo.

FIGURE 40
Completed Design Project



GROUP PROJECT

You attend a design school, and you're part of a team that is responsible for the artwork placed throughout the common areas of the school. One of the most admired professors brings you a file that he created in Illustrator, admitting that he's a beginner. Your team opens the file and notices that the file is poorly built—everything is misaligned and uneven. After consulting with the professor, your team decides that the file needs to be rebuilt from scratch.

1. Open AI 1-5.ai, then save it as **Rings**.
2. Distribute copies of the file to the members of your group.
3. Discuss with the group the areas of the file that are misaligned and poorly constructed.
4. Assign one member the task of pulling apart the file, object by object, to see how the effect was achieved.
5. Have the group create a "game plan" for reproducing the artwork with precision. Where's the best place to start? What's the best methodology for recreating the professor's design?
6. Have a group discussion about the art itself. If the professor is open to new ideas, how would the group suggest that the design could be improved?
7. Have one member work on the original Illustrator file.
8. Work as a group to rebuild the file, using precise methods.
9. Save your work, then compare your illustration to Figure 41.
10. Close the Rings document.

FIGURE 41
Completed Group Project