

The Zen of Illustrator

Zen: “*Seeking enlightenment through introspection and intuition rather than scripture.*”*

You’re comfortable with the basic operations of your computer. You’ve read through “An Overview of Adobe Illustrator” in the *User Guide*. You’ve logged enough hours to Illustrator to be familiar with how each tool (theoretically) functions. You even understand how to make Bézier curves. Now what? How do you take all this knowledge and turn it into a mastery of the medium?

As with learning any new artistic medium (such as engraving, watercolor, or airbrush), learning to manipulate the tools is just the beginning. Thinking and seeing in that medium is what really makes those tools part of your creative arsenal. Before you can determine the best way to construct an image, you have to be able to envision at least some of the possibilities. The first key to mastering Illustrator is to understand that Illustrator’s greatest strength comes not from its many tools and functions but from its extreme flexibility in terms of how you construct images. The first part of this chapter, therefore, introduces you to a variety of approaches and techniques for creating and transforming objects.

Once you’ve got yourself “thinking in Illustrator,” you can begin to *visualize* how to achieve the final results. What is the simplest and most elegant way to construct an image? Which tools will you use? Then, once you’ve begun, allow yourself the flexibility to change course and try something else. Be willing to say to yourself: How else can I get the results that I want?

* Adapted from *Webster’s New World Dictionary of the English Language*

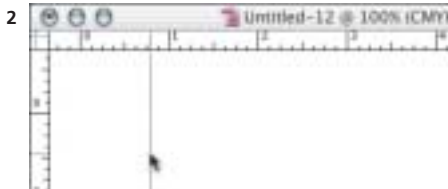
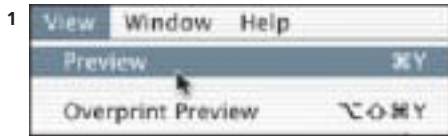
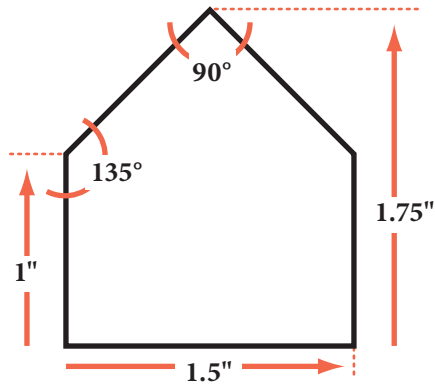
The second key to mastering Illustrator (or any new medium) is perfecting your hand/eye coordination. In Illustrator, this translates into being proficient enough with the “power-keys” to gain instant access to tools and functions by using the keyboard. With both eyes on the monitor, one hand on the mouse, and the other hand on the keyboard, an experienced Illustrator user can create and manipulate objects in a fraction of the time required otherwise. The second part of this chapter helps you to learn the “finger dance” necessary to become a truly adept power-user.

The ability to harness the full power of Illustrator’s basic tools and functions will ultimately make you a true master of Adobe Illustrator. Treat this chapter like meditation. Take it in small doses if necessary. Be mindful that the purpose of these exercises is to open up your mind to possibilities, not to force memorization. When you can conceptualize a number of different ways to create an image, then the hundreds of hints, tips, tricks, and techniques found elsewhere in this book can serve as a jumping-off point for further exploration. If you take the time to explore and absorb this chapter, you should begin to experience what I call the “Zen of Illustrator.” This magical program, at first cryptic and counterintuitive, can help you achieve creative results not possible in any other medium.

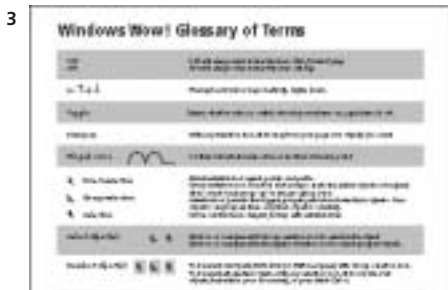
Building Houses

Sequential Object Construction Exercises

Overview: Explore different approaches to constructing the same object with Illustrator's basic construction tools.



Dragging out a guide from the Ruler, and choosing Window > Info to open the Info palette if it's not open before you begin



Hold down the Shift key to constrain movement to horizontal/vertical direction. For more modifier key help, see the end of this chapter for the "Finger Dance" lesson.

This sequence of exercises explores different ways to construct the same simple object, a house. The purpose of these exercises is to introduce you to the flexibility of Illustrator's object construction, so don't worry if some exercises seem less efficient than others. In Preferences > Units & Display Performance, set Units > General for Inches (so you can use the numbers provided and the measurements above). And read through the recommendations below for preparing your working environment.

1 Work in Outline mode. Doing so keeps you from being distracted by fills or line weights, and lets you see the centers of geometric objects (marked by "x").

2 Use Show Rulers and Show Info. Choose Show Rulers (View menu) so you can "pull out" guides. Use the Info palette to view numeric data as you work, or ignore the numeric data and just draw the houses by eye.

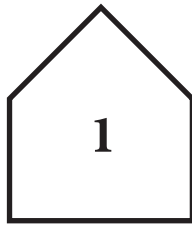
3 Read through the *Wow! Glossary*. Please make sure to read *How to use this book* and the *Glossary* pull-out card.

4 Use "modifier" keys. These exercises use Shift and Option (Opt) or Alt keys, which you must hold down until *after* you release your mouse button. If you make a mistake, choose Undo and try again. Some functions are also accessible from the Context-sensitive menu. Try keyboard shortcuts for frequently-used menu commands.

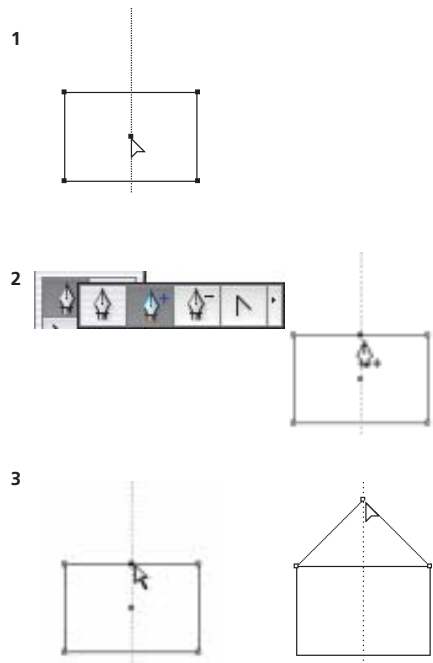
Exercise #1:

Use Add Anchor

Point tool

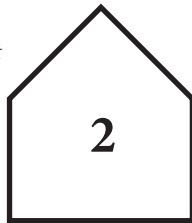


- 1 Create a rectangle and a vertical guide.** Create a wide rectangle (1.5" x 1") and drag out a vertical guide that snaps to the center.
- 2 Add an anchor point on the top.** Use the Add Anchor Point tool to add a point on the top segment over the center guide.
- 3 Drag the new point up.** Use the Direct Selection tool to grab the new point and drag it up into position (.75" for a total height of 1.75").

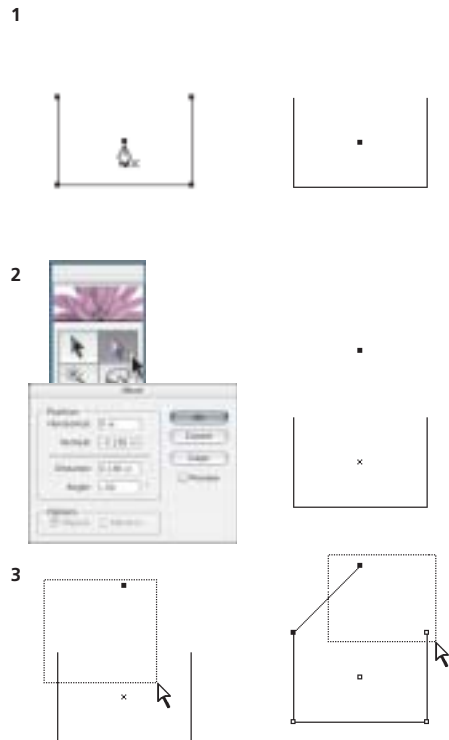


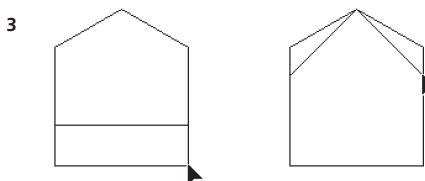
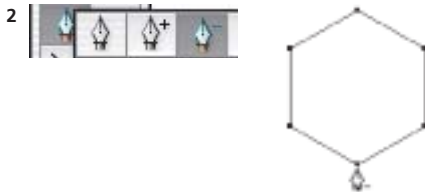
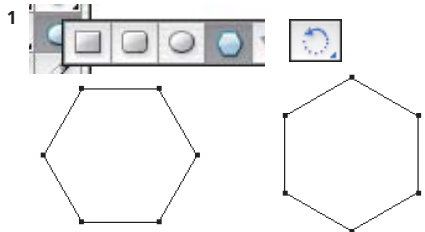
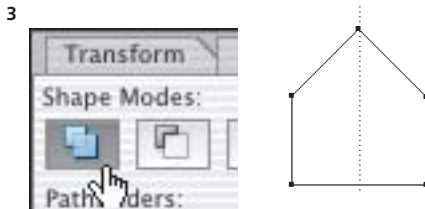
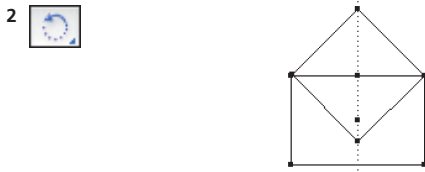
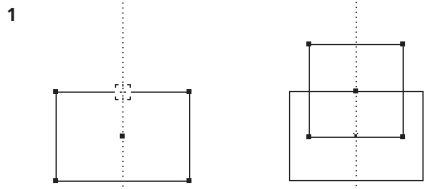
Exercise #2:

Make an extra point

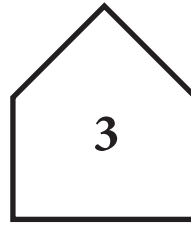


- 1 Create a rectangle, delete the top path and place a center point.** Create a wide rectangle (1.5" x 1"). With the Direct Selection tool, select the top path segment and delete it. With the Pen tool, place a point on top of the rectangle center point.
- 2 Move the point up.** Double-click on the Selection tool in the Toolbox to open the Move dialog box and enter a 1.25" vertical distance to move the point up.
- 3 Select and join the point to each side.** Use the Direct Selection tool to select the left two points and Join (Object > Path > Join) them to the top point. Repeat with the right two points.





Exercise #3:
Rotate and Add



- 1 Create two rectangles, one centered on the other.** Create a wide rectangle (1.5" x 1") and drag out a vertical guide, snapping it to the center. Hold down Opt/Alt and click with the Rectangle tool (Opt/Alt-click) on the center guide (on the top segment). Enter 1.05" x 1.05".
- 2 Rotate one rectangle.** Double-click the Rotate tool to rotate the new rectangle around its center and enter 45°.
- 3 Select and Add the rectangles.** Marquee-select both objects, choose Window > Pathfinder and click the Add icon. Switch to Preview mode to see the single shape!

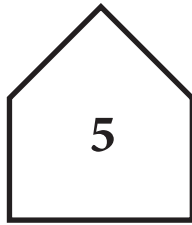
Exercise #4:
Make a six-sided polygon



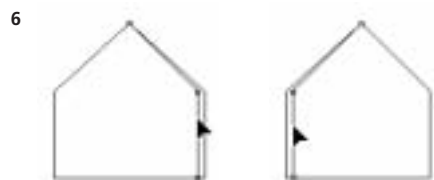
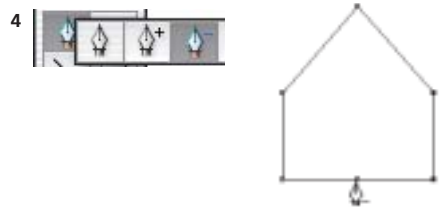
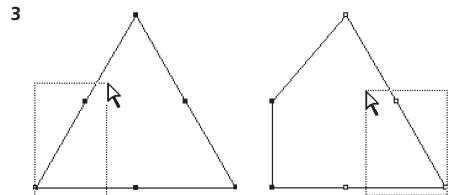
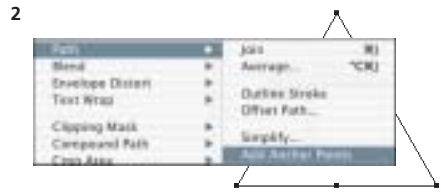
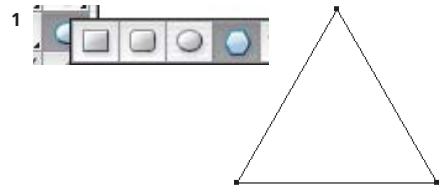
- 1 Create a six-sided polygon.** With the Polygon tool selected, click once and enter 6 sides and a .866" Radius. Then double-click the Rotate tool and enter 30°.
- 2 Delete the bottom point.** With the Delete Anchor Point tool, click on the bottom point to delete it.
- 3 Move the two bottom points down, then the two middle points.** Use the Direct Selection tool to select the bottom two points. Then grab one of the points and Shift-drag in a vertical line (down .423"). Lastly, Direct-select, grab and Shift-drag the middle two points down vertically into position (down .275").

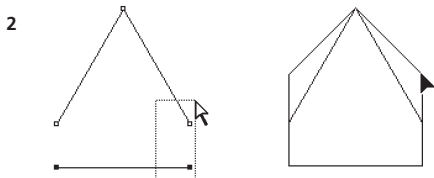
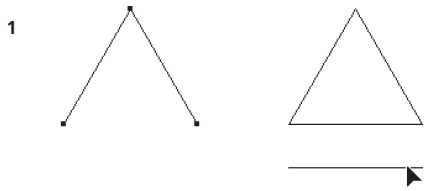
Exercise #5:

Use Add Anchor Points filter in a three-sided polygon

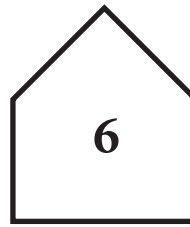


- 1 Create a three-sided polygon.** With the Polygon tool selected, click once, then enter 3 sides and a 1.299" Radius.
- 2 Use the Add Anchor Points filter.** With the polygon still selected, choose Object > Path > Add Anchor Points (use the default keyboard shortcut, or create your own).
- 3 Average the two left points, then Average the two right points.** Direct-select the two left points and Average them along the vertical axis (Context-sensitive: Average, or Object > Path > Average), then repeat for the two right points.
- 4 Delete the bottom point.** With the Delete Anchor Point tool, click on the bottom point to delete it.
- 5 Move the top point down.** Use the Direct Selection tool to select the top point, then double-click on the Direct Selection tool itself (in the Toolbox) to open the Move dialog box and enter a -0.186 " vertical distance.
- 6 Slide in the sides towards the center.** Use the Direct Selection tool to click on the right side of the house and drag it towards the center until the roofline looks smooth (hold down your Shift key to constrain the drag horizontally). Repeat for the left side of the house. Alternatively, select the right side and use the β key on your keyboard to nudge the right side towards the center until the roofline looks smooth. Then, click on the left side to select it, and use the γ key to nudge it towards the center. (If necessary, change your Keyboard Increment setting in the Preferences > General dialog.)



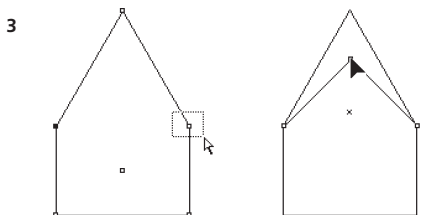
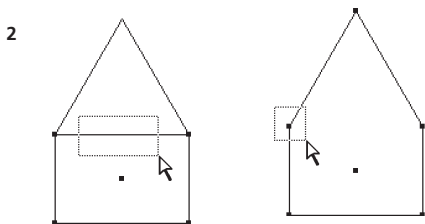
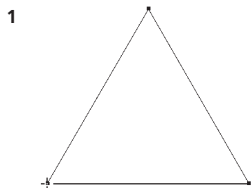


Exercise #6:
*Cut a path and
 Paste in Front*



1 Cut, paste, then move the bottom of a triangle. With the Polygon tool selected, click once and enter 3 sides and a .866" Radius. With the Direct Selection tool, select and Cut the bottom path to the Clipboard, choose Edit > Paste in Front, then grab the bottom path and drag it into position (down .423").

2 Create the sides and move middle points into place. Direct-select the two right points and join them, then repeat for the two left points. Finally, select the two middle points, and grab one to drag *both* up (.275").



Exercise #7:
Join two objects



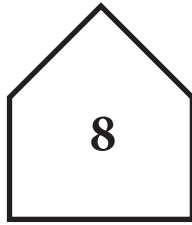
1 Make two objects. Click once with the Polygon tool, enter 3 sides and a .866" Radius. Zoom in on the lower left corner and, with the Rectangle tool, click exactly on the lower left anchor point. Set the rectangle to 1.5" x 1" .

2 Delete the middle lines and join the corners. Direct-select marquee the middle bisecting lines and delete. Select the upper-left corner points and Average-Join by either Averaging and then Joining the points (see exercises #5 and #6 above) or by pressing ⌘-Shift-Option-J/ Ctrl-Shift-Alt-J to average and join simultaneously. Select and Average-Join the upper right points.

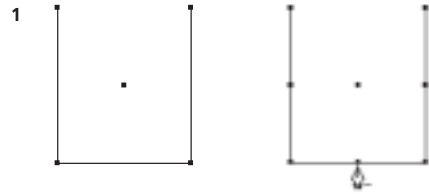
3 Drag the top point down. Grab the top point, hold the Shift key and drag it into position (down .55").

Exercise #8:

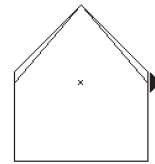
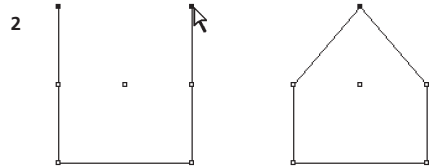
Use Add Anchor Points filter, then Average-Join



1 Make a tall rectangle, delete top path, add anchor points, remove bottom point. Create a tall rectangle (1.5" x 1.75") and delete the top path. Choose Add Anchor Points (Object > Path) and use the Delete Anchor Point tool to remove the bottom point.

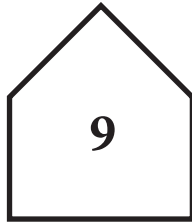


2 Select and Average-Join the top points and move middles into position. Direct-select the top two points and Average-Join (see Exercise #7, step 2). Then Direct-select the middle points, grab one, and with the Shift key, drag them both into position (up .125").



Exercise #9:

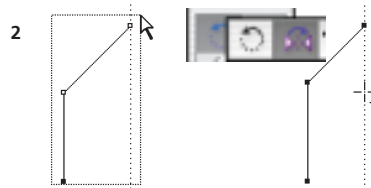
Reflect a Pen profile



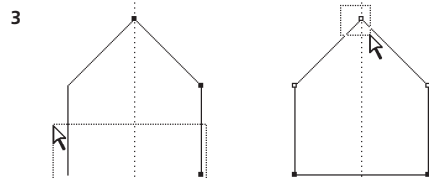
1 Create a house profile. Drag out a vertical guide, then reset the ruler origin on the guide. To draw the profile, use the Pen tool to click on the guide at the ruler zero point, hold down Shift (to constrain your lines to 45° angles) and click to place the corner (.75" down and .75" to the left) and the bottom (1" down).



2 Reflect a copy of the profile. Select all three points of the house profile. With the Reflect tool, Option/Alt-click on the guide line. Enter an angle of 90° and click Copy.



3 Join the two profiles. Direct-select and Join the bottom two points. Then Direct-select the top two points and Average-Join (see Exercise #7, step 2).



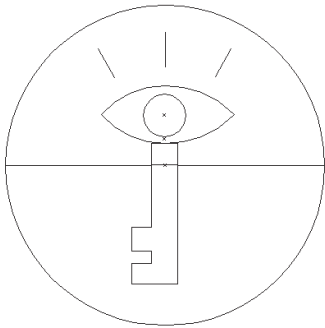
A Classic Icon

Five Ways to Re-create Simple Shapes

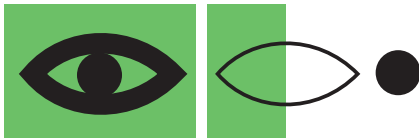
Overview: Finding different ways to construct the same iconic image.



1



The Outline view of the original logo



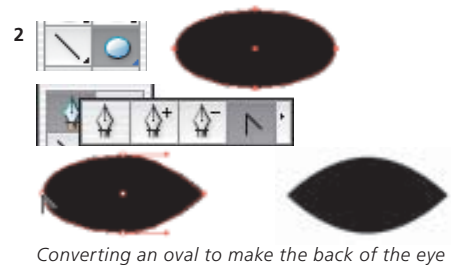
The original logo, constructed from a stroked line and a solid circle

You can construct even the simplest of iconic images in many ways. Patricia McShane and Erik Adigard of the M.A.D. graphics firm designed this classic logo for the *Computers Freedom & Privacy* annual conference. This conference addresses the effects of computer and telecommunications technologies on societal and personal freedom and privacy. This simple iconic representation of an eye is a perfect example of how you can explore different ways to solve the same graphics problem.

1 First, construct your logo in the way that seems most logical to you. Everybody's mind works differently, and the most obvious solutions to you might seem innovative to the next person. Follow your instincts as to how to construct each image. If design changes require you to rethink your approach (for instance, what if the client wanted a radial fill instead of the black fill?), try something slightly, or even completely, different.

Viewed in Outline mode, the original *Computers Freedom & Privacy* logo is clean and elegant with a minimum number of anchor points and lines. The M.A.D. team constructed the eye from a stroked line (made with the Pen tool) and a filled, black circle.

2 Make the outer eye shape. Create the solid black, almond-shaped object in any way you wish: Draw it with the Pen tool like M.A.D. did, or convert an ellipse into the correct shape by clicking on the middle points with the Convert Anchor Point tool from the Pen tool pop-up.



Converting an oval to make the back of the eye

3 Try using solid objects. Starting with your base object, construct the eye with overlapping solid objects. Scale a version of the outline for the green inset and place a black circle on the top.



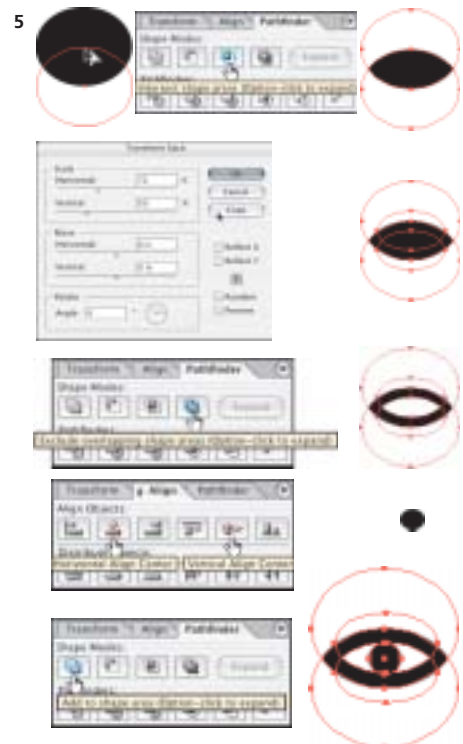
Constructing the logo with three solid objects

4 Try making a compound object. Use the objects that you created in the previous version to make a compound object that allows the inner part of the eye to be cut out. Select the outer black outline and the inner green inset and choose Object > Compound Paths > Make.



Constructing the logo from an outer compound object and an inner solid circle

5 Try using compound shapes. Compound shapes are powerful tools that let you combine shapes or create knockouts (see the *Drawing & Coloring* chapter for details on compound shapes). To create the back of the eye, start by creating an ellipse. With the ellipse still selected, switch to the Selection tool. Now hold Option-Shift (Mac)/Alt-Shift (Win) keys, grab the center of the ellipse and drag downward until the center of the new ellipse is at the bottom of the original ellipse. Select both shapes and click the Intersect button on the Pathfinder palette. To create the shape that will become the white of the eye, select the back of the eye, open the Object > Transform > Transform Each dialog box and enter: 70 % H, 50% V, then click Copy. To use this shape to knockout the white of the eye, first put it behind the back of the eye by using Object > Arrange > Send to Back, then select both objects and click on the Exclude button on the Pathfinder palette. Next, create the circle for the pupil over the knocked out eye shape, select them both, and click on the Vertical Align Center and Horizontal Align Center buttons on the Align palette. To finish, click on the Add button on the Pathfinder palette.

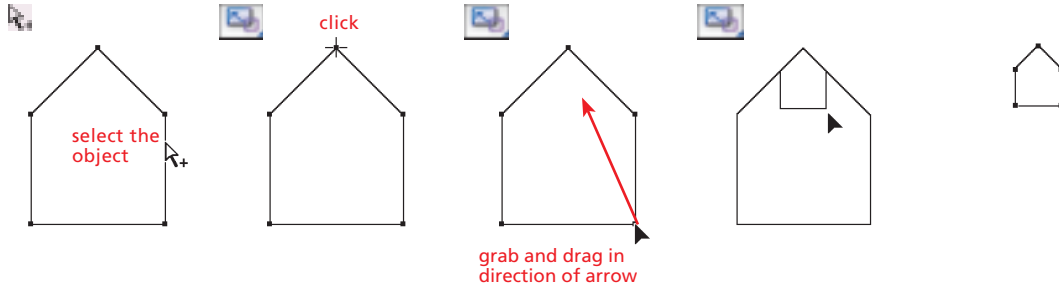


The same logo constructed using Copy, Compound Shape modes, and Transform Each

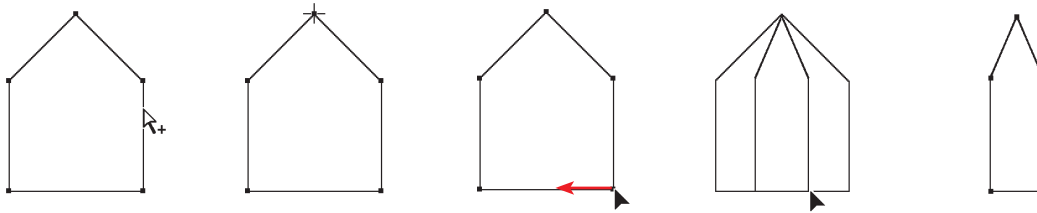
Zen Scaling

Note: Use the Shift key to constrain proportions. *Zen Scaling* practice is also on the *Wow! CD*.

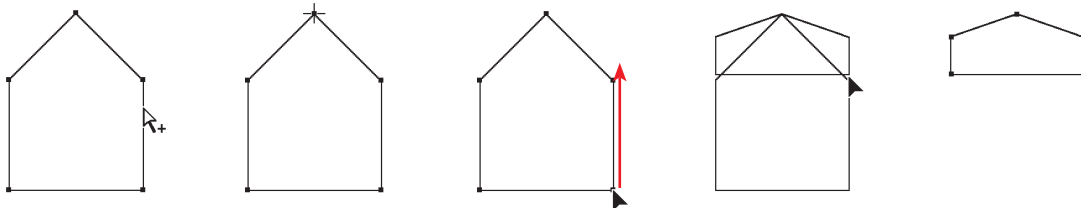
1 Scaling proportionally towards the top Click at the top, grab lower-right (LR), drag up



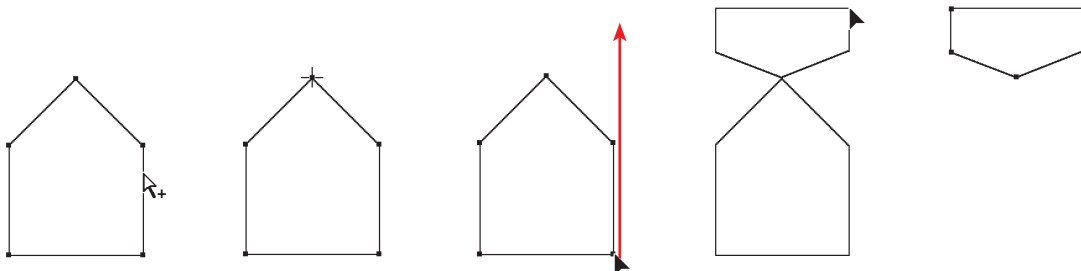
2 Scaling horizontally towards the center Click at the top, grab LR, drag inwards



3 Scaling vertically towards the top Click at the top, grab LR, drag straight up



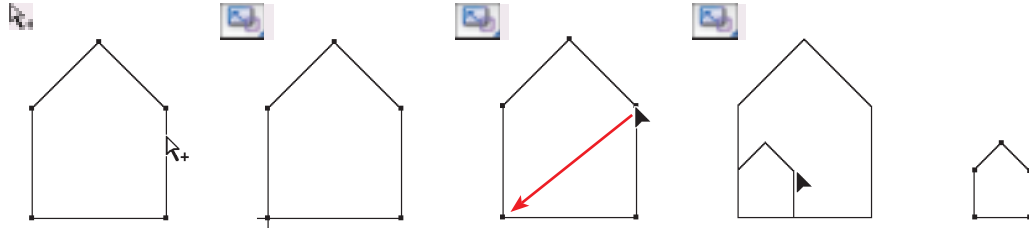
4 Scaling vertically and flipping the object Click at the top, grab LR, drag straight up



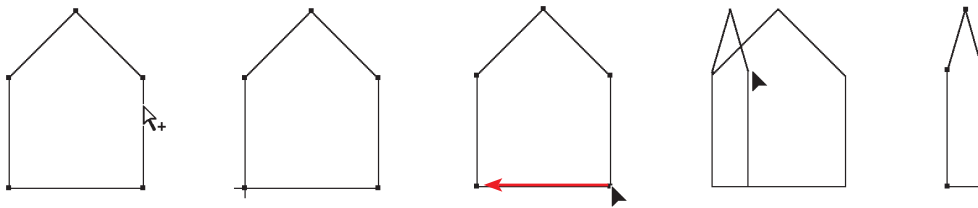
Zen Scaling *(continued)*

Note: Use the Shift key to constrain proportions. **Zen Scaling** practice is also on the **Wow! CD**.

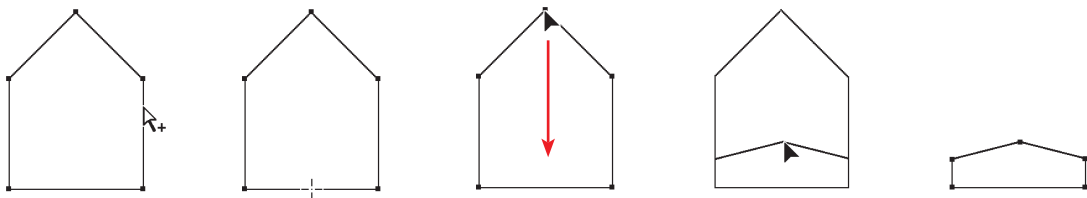
5 Scaling proportionally towards lower-left (LL) Click LL, grab upper-right, drag to LL



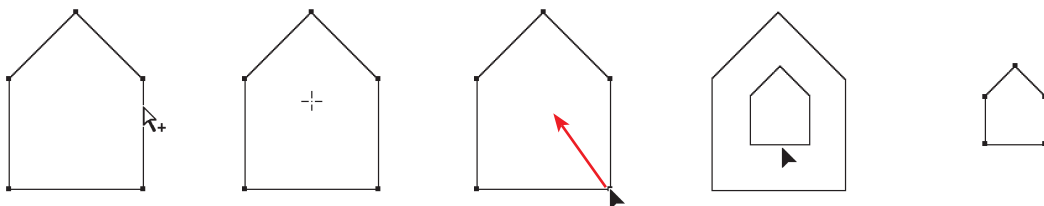
6 Scaling horizontally to the left side Click LL, grab lower-right (LR), drag to left



7 Scaling vertically towards the bottom Click center bottom, grab top, drag down



8 Scaling proportionally towards the center Click the center, grab corner, drag to center

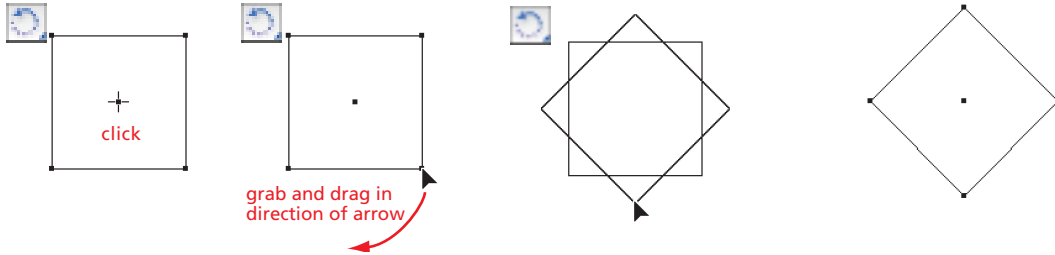


Or, to scale about the center, use the Scale tool to click-drag outside the object towards the center

Zen Rotation

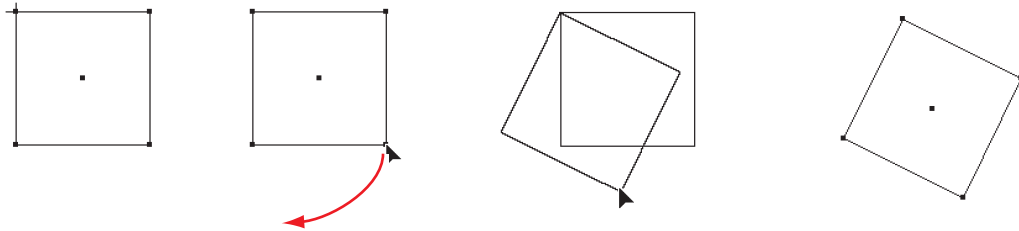
Note: Use the Shift key to constrain movement. **Zen Rotation** practice is also on the **Wow! CD**.

1 Rotating around the center Click in the center, then grab lower-right (LR) and drag

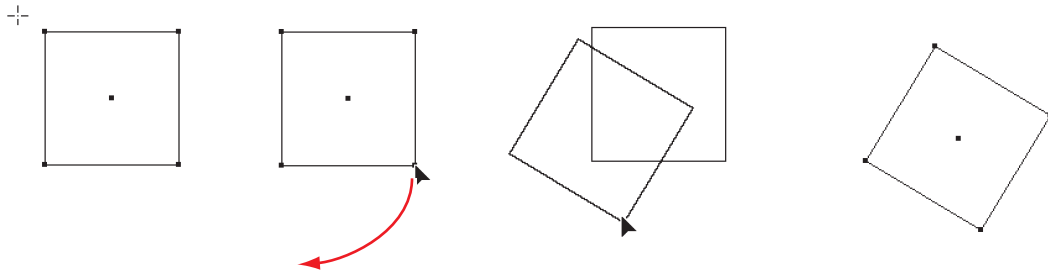


Or, to rotate about the center, use the Rotate tool to click-drag outside the object towards the center

2 Rotating from a corner Click in the upper left corner, then grab LR and drag



3 Rotating from outside Click above the left corner, then grab LR and drag



4 Rotating part of a path Marquee points with the Direct Selection tool, then use Rotate tool



Marquee the forearm with Direct Selection tool

With the Rotate tool, click on the elbow, grab the hand and drag it around

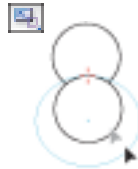
Creating a Simple Object Using the Basic Tools

Key: Click where you see a **RED** cross, grab with the **GRAY** arrow and drag towards **BLACK** arrow.

Make an ellipse and Option-drag a copy



Scale the copy



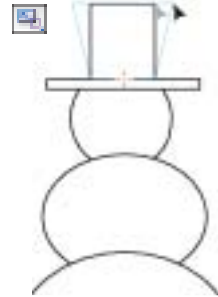
Scale a copy of middle ellipse—flipping it



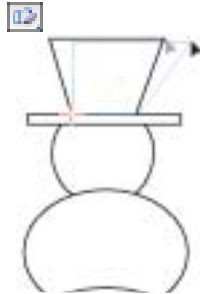
Make two rectangles, one thin, one tall



Scale the top two points outward



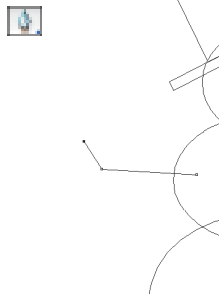
Shear the top of the hat



Shift-Group-select the entire hat, then rotate



With the Pen tool draw an arm with 3 points



Direct-select top point, Opt-drag, repeat



Marquee the arm with Group-select



With the Option key, use Reflect on arm



Add an elbow with Add Anchor Point tool



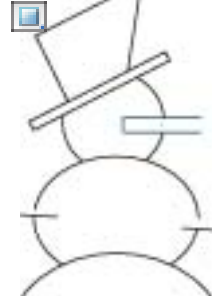
Marquee the forearm with Direct-select



Rotate the forearm path upwards



Make a rectangle, delete the right path



Draw rectangle ends, draw Pen smile



Fill hat, draw one eye, Alt-drag for eye, buttons



Shift-Direct-select multiple points on ellipses



Grab one of the selected points, drag slightly



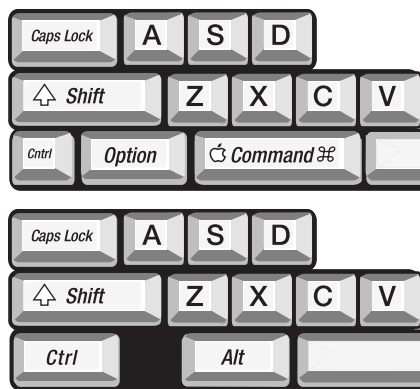
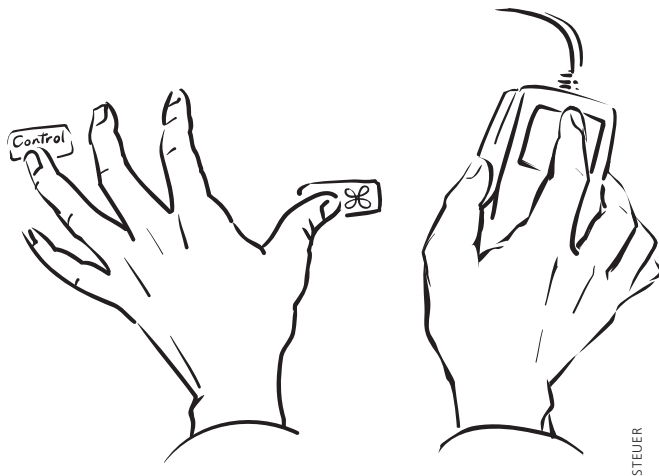
The final snowman



A Finger Dance

Turbo-charge with Illustrator's Power-keys

Overview: Save hours of production time by mastering the finger dance of Illustrator's power-keys.



Find a summary of Finger Dance power-keys on the pull-out quick reference card



If you are using the mouse to choose your selection tools from the Toolbox, then you need this lesson. With some time and patience, you'll be able to free up your mouse so that practically the only thing you do with it is draw. Your other hand will learn to dance around the keyboard accessing all of your selection tools, modifying your creation and transformation tools, using your Zoom and Hand tools, and last but not least, providing instant Undo and Redo.

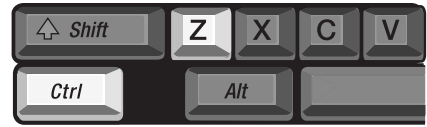
This "Finger Dance" is probably the most difficult aspect of Illustrator to master. Go through these lessons in order, but don't expect to get through them in one or even two sittings. When you make a mistake, use Undo (\mathbb{C} /Ctrl-Z). Try a couple of exercises, then go back to your own work, incorporating what you've just learned. When you begin to get frustrated, take a break. Later—hours, days, or weeks later—try another lesson. And don't forget to breathe.

Rule #1: Always keep one finger on the \mathbb{C} key (Ctrl for Windows). Whether you are using a mouse or a pressure-sensitive tablet, the hand you are not drawing with should be resting on the keyboard, with one finger (or thumb) on the \mathbb{C} key. This position will make that all-important Undo (\mathbb{C} -Z/Ctrl-Z) instantly accessible.

Rule #2: Undo if you make a mistake. This is so crucial an aspect of working in the computer environment that I am willing to be redundant. If there is only one key combination that you memorize, make it Undo (⌘-Z/Ctrl-Z).



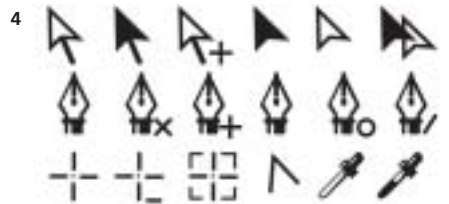
Rule #3: The ⌘ (Ctrl) key turns your cursor into a selection tool. In Illustrator, the ⌘/Ctrl key does a lot more than merely provide you with easy access to Undo. The ⌘/Ctrl key will convert any tool into the selection arrow that you last used. In the exercises that follow, you'll soon discover that the most flexible selection arrow is the Direct Selection tool.



Rule #4: Watch your cursor. If you learn to watch your cursor, you'll be able to prevent most errors before they happen. And if you don't (for instance, if you drag a copy of an object by mistake), then use Undo and try again.



Rule #5: Pay careful attention to when you hold down each key. Most of the modifier keys operate differently depending on *when* you hold each key down. If you obey Rule #4 and watch your cursor, then you'll notice what the key you are holding does.



Rule #6: Hold down the key(s) until after you let go of your mouse button. In order for your modifier key to actually modify your action, you *must* keep your key down until *after* you let go of your mouse button.

Rule #7: Work in Outline mode. When you are constructing or manipulating objects, get into the habit of working in Outline mode. Of course, if you are designing the colors in your image, you'll need to work in Preview, but while you're learning how to use the power-keys, you'll generally find it much quicker and easier if you are in Outline mode.

Universal Access conflict (Mac)

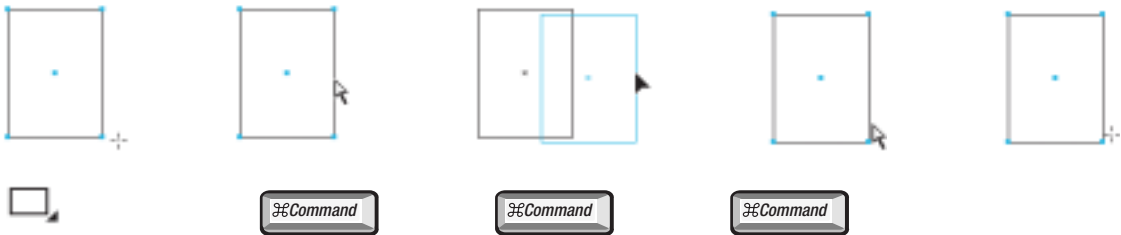
When you're using Illustrator, you should probably disable Universal Access, which is a feature developed for those with limited manual dexterity (System Preferences > Universal Access > Allow Universal Access Shortcuts). It can interfere with Illustrator's normal functioning. If you have limited manual dexterity, try using CE Software's QuicKeys to simplify menu selection, keystrokes, and object creation.

MACINTOSH FINGER DANCES

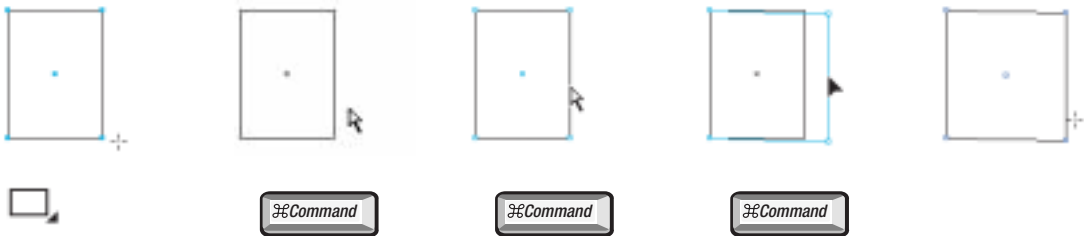
Before you begin this sequence of exercises, choose the Direct Selection tool, then select the Rectangle tool and drag to create a rectangle.



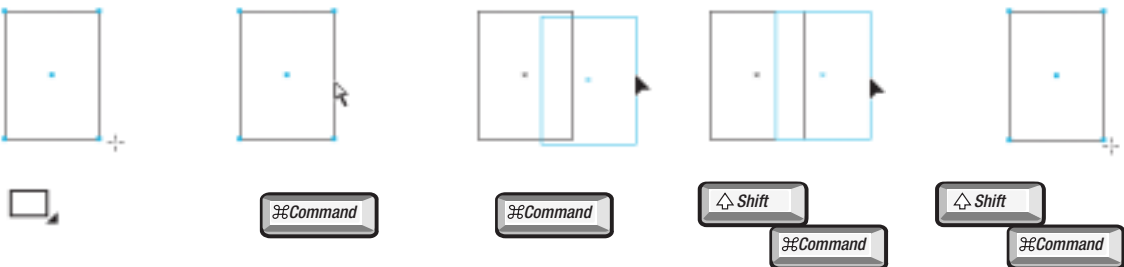
1 Finger Dance (⌘) Grabbing a selected object and moving it



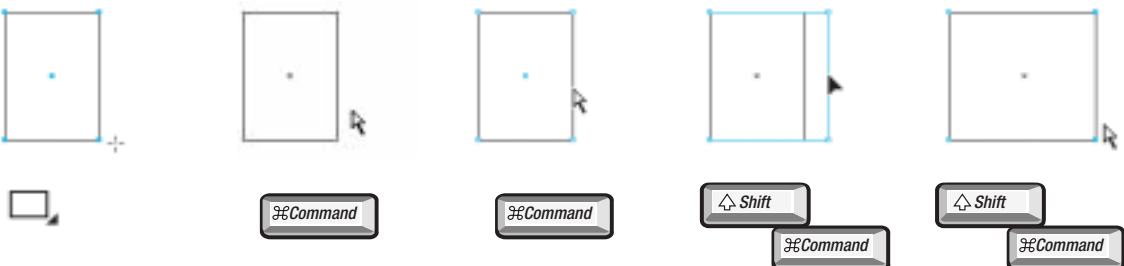
2 Finger Dance (⌘) Deselecting an object, selecting a path and moving it



3 Finger Dance (⌘-Shift) Moving a selected object horizontally



4 Finger Dance (⌘-Shift) Deselecting an object, selecting a path and moving it horizontally

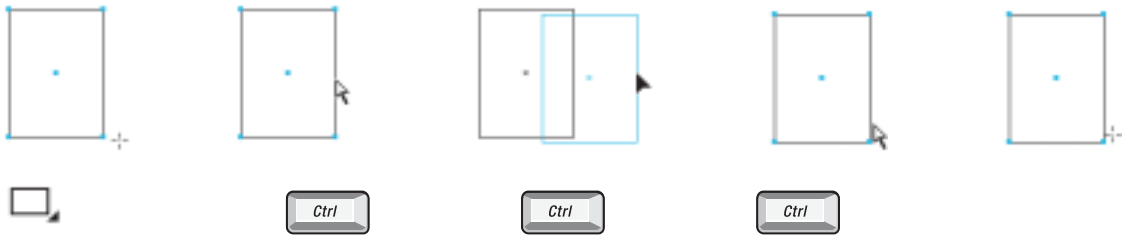


WINDOWS FINGER DANCES

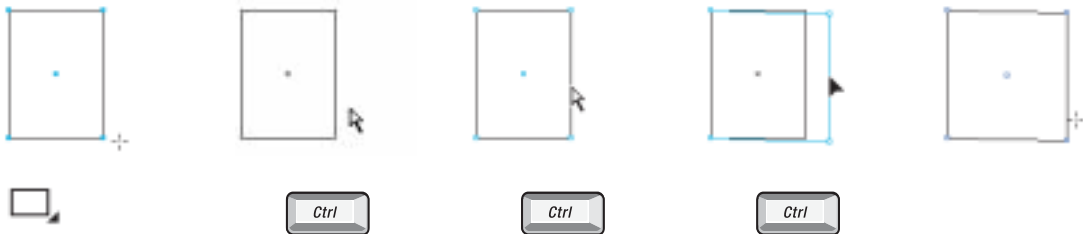
Before you begin this sequence of exercises, choose the Direct Selection tool, then select the Rectangle tool and drag to create a rectangle.



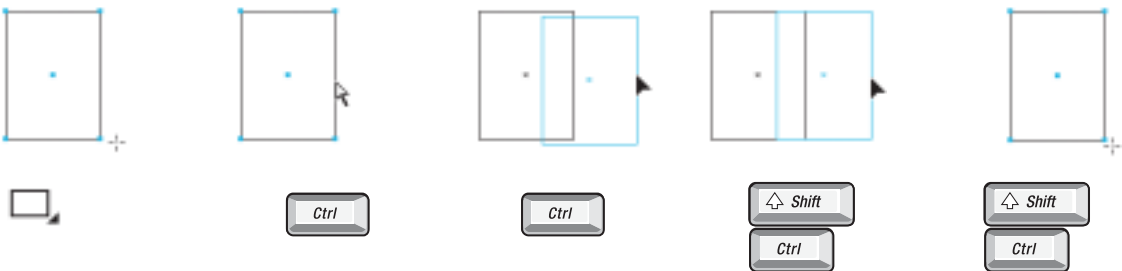
1 Finger Dance (Ctrl) Grabbing a selected object and moving it



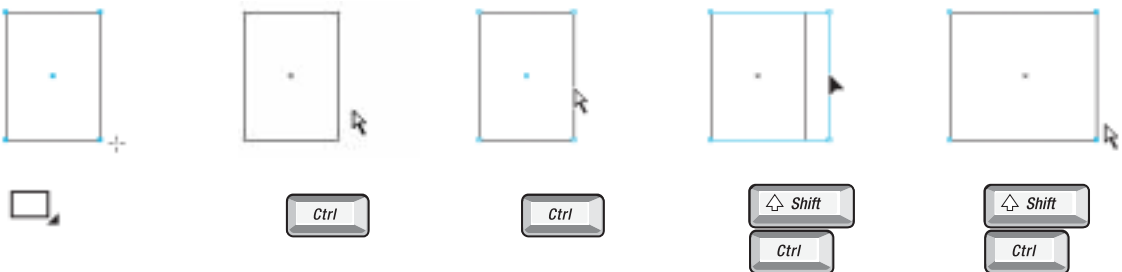
2 Finger Dance (Ctrl) Deselecting an object, selecting a path and moving it



3 Finger Dance (Ctrl-Shift) Moving a selected object horizontally



4 Finger Dance (Ctrl-Shift) Deselecting an object, selecting a path and moving it horizontally

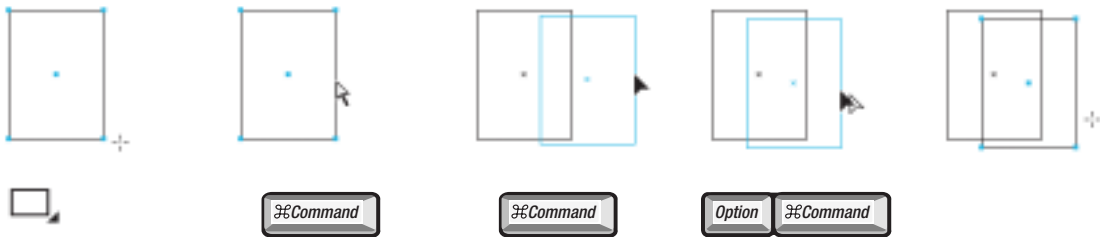


MACINTOSH FINGER DANCES

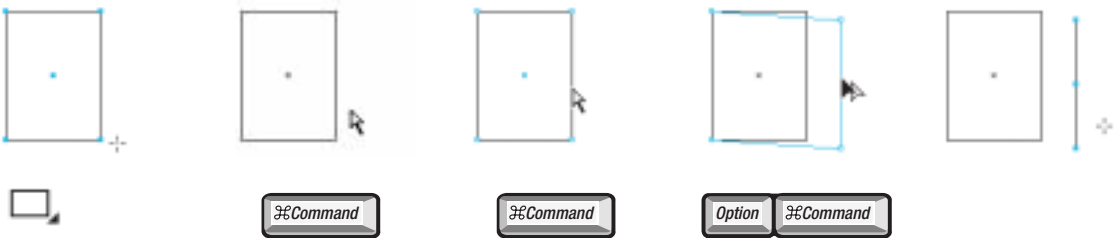
Before you begin this sequence of exercises, choose the Direct Selection tool, then select the Rectangle tool and drag to create a rectangle.



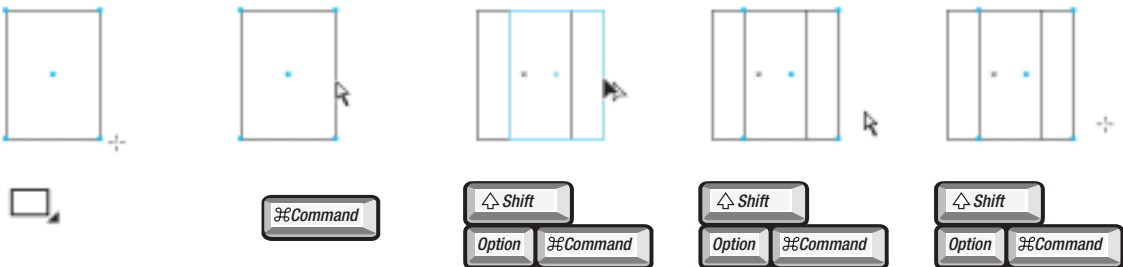
5 Finger Dance (⌘, then ⌘-Option) Moving a copy of a selected object



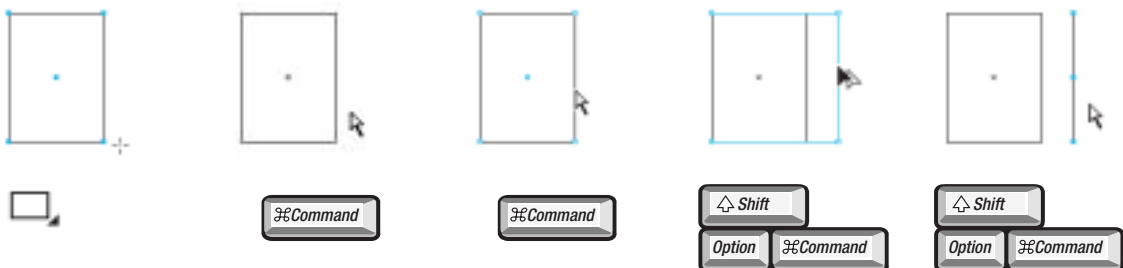
6 Finger Dance (⌘, then ⌘-Option) Deselecting an object, moving a copy of a path



7 Finger Dance (⌘, then ⌘-Shift-Option) Moving a copy of a selected object horizontally



8 Finger Dance (⌘, then ⌘-Shift-Option) Deselecting, moving a copy of the path horizontally

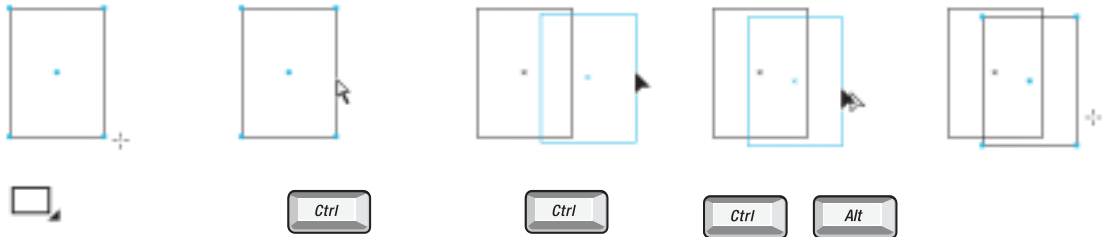


WINDOWS FINGER DANCES

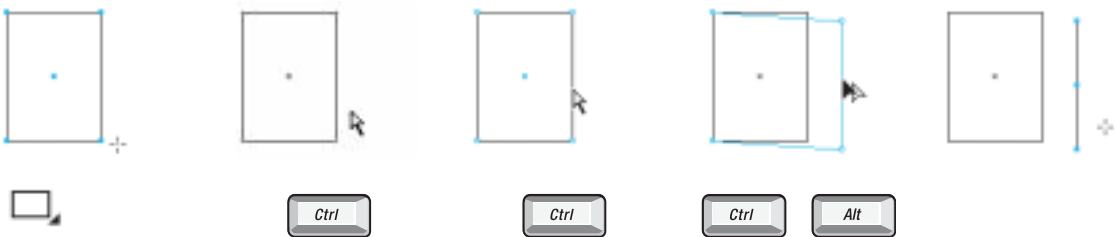
Before you begin this sequence of exercises, choose the Direct Selection tool, then select the Rectangle tool and drag to create a rectangle.



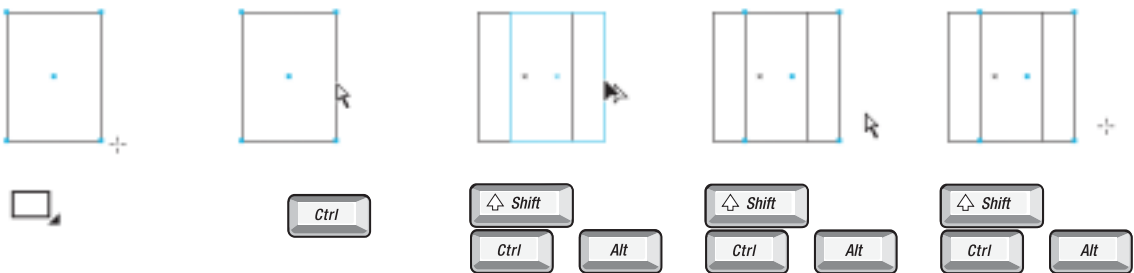
5 Finger Dance (Ctrl, then Ctrl-Alt) Moving a copy of a selected object



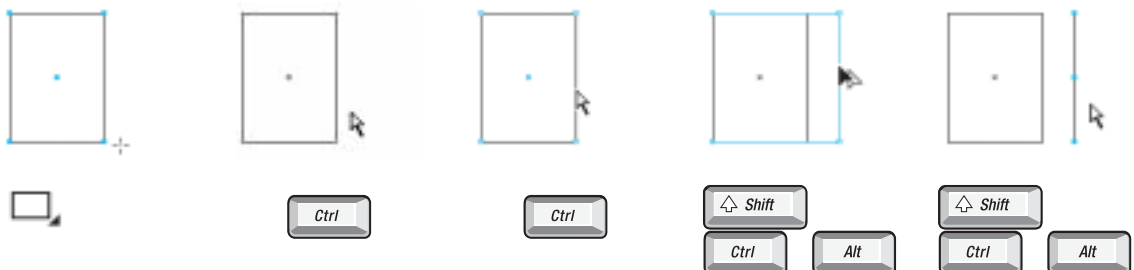
6 Finger Dance (Ctrl, then Ctrl-Alt) Deselecting an object, moving a copy of a path



7 Finger Dance (Ctrl, then Ctrl-Shift-Alt) Moving a copy of a selected object horizontally



8 Finger Dance (Ctrl, then Ctrl-Shift-Alt) Deselecting, moving a copy of the path

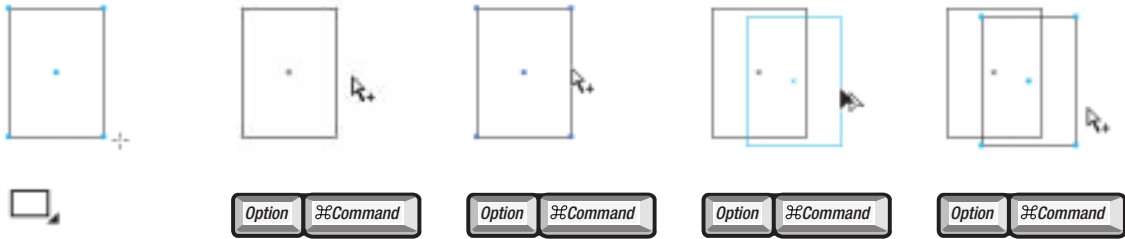


MACINTOSH FINGER DANCES

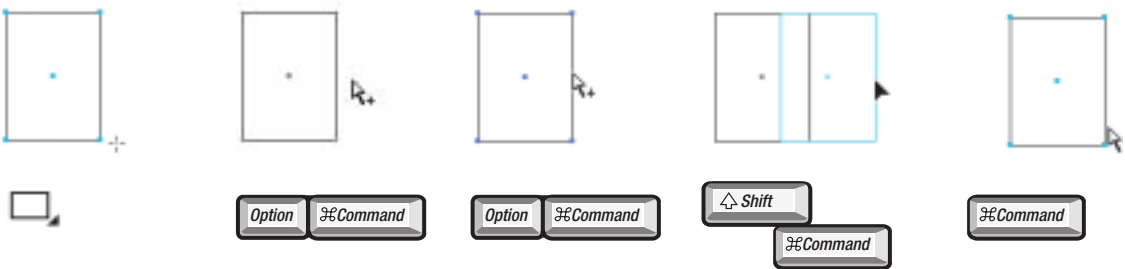
Before you begin this sequence of exercises, choose the Direct Selection tool, then select the Rectangle tool and drag to create a rectangle.



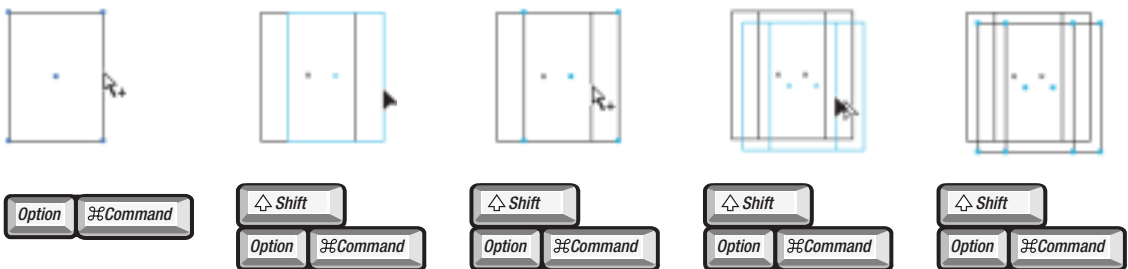
9 Finger Dance (⌘-Option, then ⌘-Option) Deselecting, Group-selecting, moving a copy



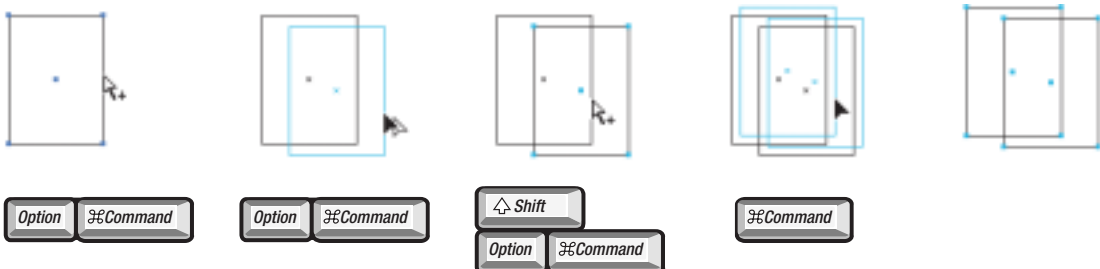
10 Finger Dance (⌘-Option, ⌘-Shift) Group-selecting, moving an object horizontally



11 Finger Dance (⌘-Option, ⌘-Option-Shift) Moving copies horizontally, adding selections



12 Finger Dance (⌘-Option, ⌘-Option-Shift, ⌘) Moving a copy, adding a selection, moving

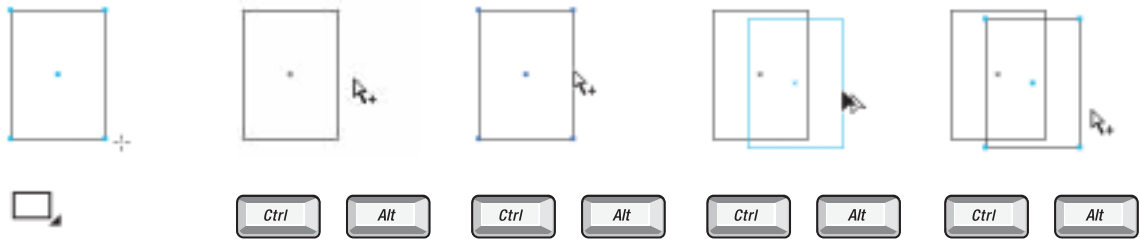


WINDOWS FINGER DANCES

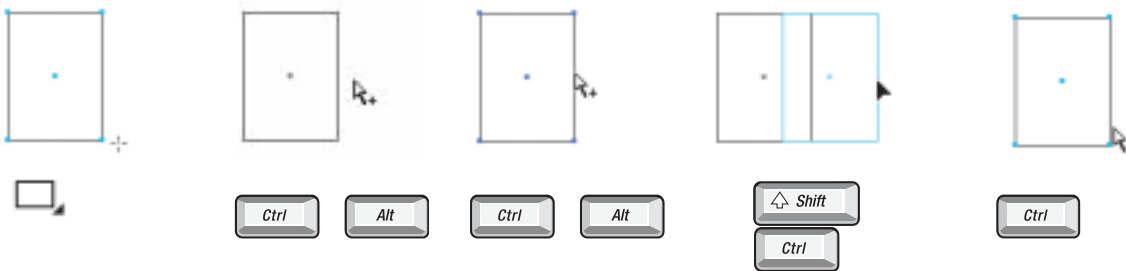
Before you begin this sequence of exercises, choose the Direct Selection tool, then select the Rectangle tool and drag to create a rectangle.



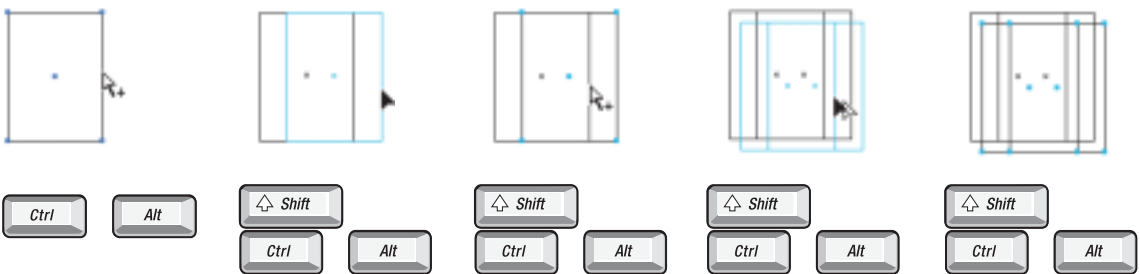
9 Finger Dance (Ctrl-Alt, then Ctrl-Alt) Deselecting, Group-selecting, moving a copy



10 Finger Dance (Ctrl-Alt, Ctrl-Shift) Group-selecting, moving an object horizontally



11 Finger Dance (Ctrl-Alt, Ctrl-Alt-Shift) Moving copies horizontally, adding selections



12 Finger Dance (Ctrl-Alt, Ctrl-Alt-Shift, Ctrl) Moving a copy, adding a selection, moving

