

Adobe Illustrator® CS6

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Adobe Illustrator CS6

Module 5

(Using Styles, Symbols, and 3D Effects)

Combining Shapes

Working with Perspective Drawing

Using 3D Effects

Using Graphic Styles

Working with Symbols

Using the Warp tools

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1.) Combining Shapes

You can combine vector objects to create shapes in a variety of ways. The resulting paths or shapes differ depending on the method you use to combine the paths.

Compound paths

Compound paths let you use an object to cut a hole in another object. For example, you can create a doughnut shape from two nested circles. Once you create a compound path, you can no longer select the objects separately; however, you can select and edit the combined path.

Compound shapes

Compound shapes let you combine multiple objects and specify how you want each object to interact with the other objects. Compound shapes are more versatile than compound paths because they provide four kinds of interactions: add, subtract, intersect, and exclude. In addition, you can select each object within a compound shape to edit it or change its interaction mode.

Pathfinder effects

Pathfinder effects let you combine multiple objects using one of ten interaction modes. Unlike compound shapes, you can't edit the interactions between objects when you use a Pathfinder effect.

The Pathfinder Palette

You use the Pathfinder palette (**Window > Pathfinder**) to combine objects into new shapes (See Figure 1).

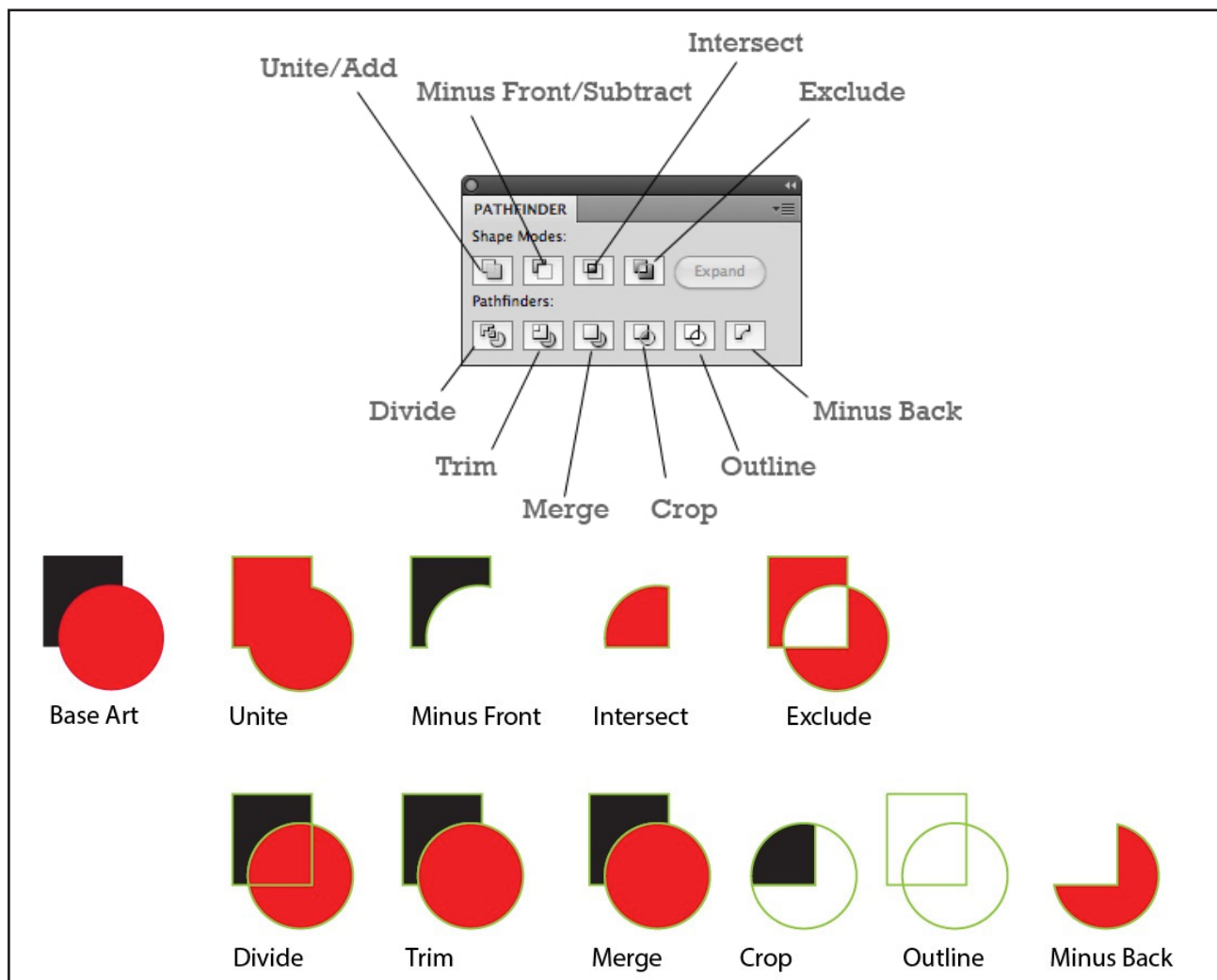


FIGURE 1 – THE PATHFINDER PALETTE AND ITS RESULTS

Shape modes let you control the interaction between components of a compound shape. You can choose from the following shape modes:

- **Add To Shape Area** adds the area of the component to the underlying geometry.
- **Subtract from Shape Area** cuts out the area of the component from the underlying geometry.
- **Intersect Shape Areas** uses the area of the component to clip the underlying geometry as a mask would.
- **Exclude Overlapping Shape Areas** uses the area of the component to invert the underlying geometry, turning filled regions into holes and vice versa.

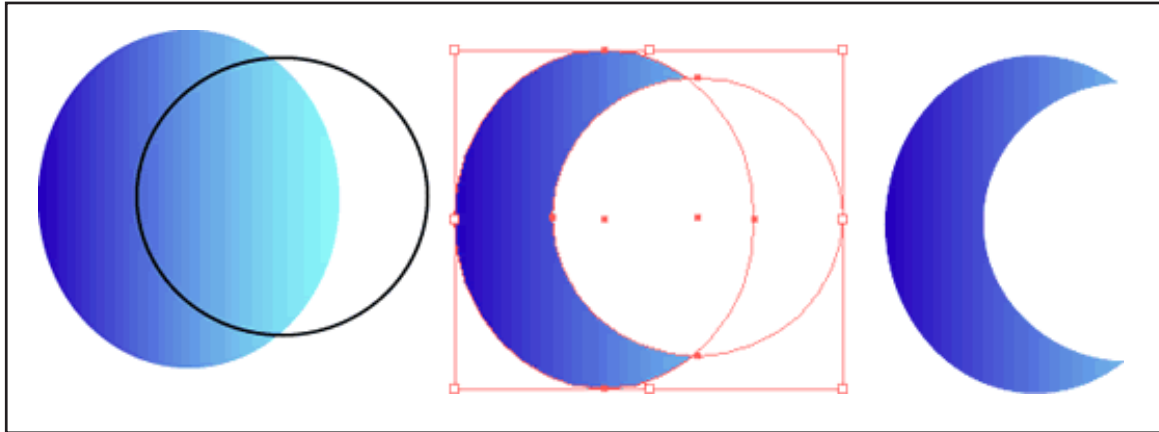


FIGURE 2 – ONE SHAPE SUBTRACTED FROM ANOTHER USING THE PATH-FINDER PALETTE

Pathfinder effects can be applied to any combination of objects, groups, and layers. The final shape combination is created when you click a pathfinder button; after that, you cannot edit the original objects. If the effect results in multiple objects, they are automatically grouped together.

- **Minus Back** subtracts the objects in back from the front most object. You can use this command to delete areas of an illustration by adjusting the stacking order.
- **Divide** separates a piece of artwork into its component filled faces (a face is an area undivided by a line segment).
- **Trim** removes the part of a filled object that is hidden. It removes any strokes and does not merge objects of the same color.
- **Merge** removes the part of a filled object that is hidden. It removes any strokes and merges any adjoining or overlapping objects filled with the same color.
- **Crop** divides artwork into its component filled faces, and then deletes all the parts of the artwork that fall outside the boundary of the topmost object. It also removes any strokes.
- **Outline** divides an object into its component line segments, or edges. This command is useful for preparing artwork that needs a trap for overprinting objects.

Pathfinder Options

You can set Pathfinder Options from the Pathfinder palette menu or by double-clicking a Pathfinder effect in the Appearance palette.

Precision affects how precisely the Pathfinder filters calculate an object's path. The more precise the calculation, the more accurate the drawing and the more time is required to generate the resulting path.

Remove Redundant Points removes unnecessary points as you click a Pathfinder button.

Divide and Outline Will Remove Unpainted Artwork deletes any unfilled objects in the selected artwork as you click the Divide or Outline button.


2.) Working with Perspective Drawing

You can draw or render artwork in perspective, using a feature set that works based on established laws of perspective drawing. Perspective in drawing is an approximate representation, on a flat surface, of an image as it is seen by the eye.

Objects drawn in perspective are characterized primarily by the following:

- They are drawn **smaller** as their **distance** from the observer increases.
- The perspective objects are **foreshortened**, which means that an object or distance appears shorter than it actually is, because it is angled toward the viewer.

Perspective Grid

The Perspective Grid allows you to approximately represent a scene on a flat surface, as it is naturally perceived by the human eye. For example, you can render a road or a pair of railway tracks, which seem to meet or vanish in the line of vision. The Perspective Grid allows you to create and render artwork in perspective. You can find the Perspective Grid tool () in the Tools panel

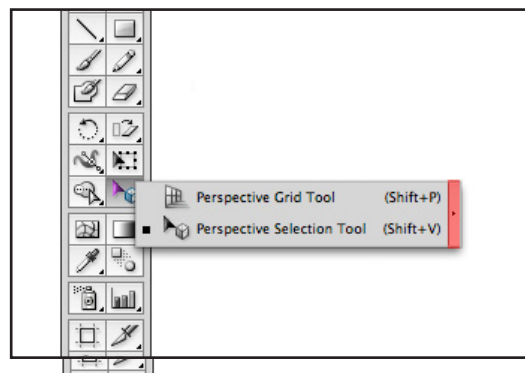


FIGURE 3 – PERSPECTIVE GRID AND SELECTION TOOLS

Grid Presets

In order to begin working with content in perspective, it is helpful to see and set up the Perspective Grid the way you want and choose the grid of 1,2, and 3 Point perspective. You use the Perspective Grid to draw and snap content in perspective, although the grid is non-printing. The Perspective Grid, by default, is set up as a two-point perspective, and you can easily change that using presets. A grid in Illustrator can have up to three points of perspective as seen in Figure 5. To select one of the default perspective grid preset, click View> Perspective Grid and then select from the required preset.

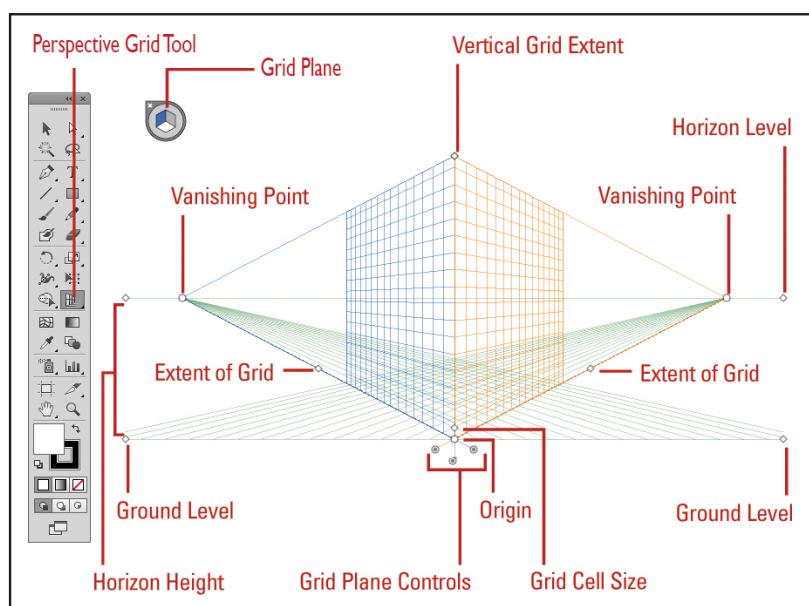


FIGURE 4 – PERSPECTIVE GRID AND ITS PARTS

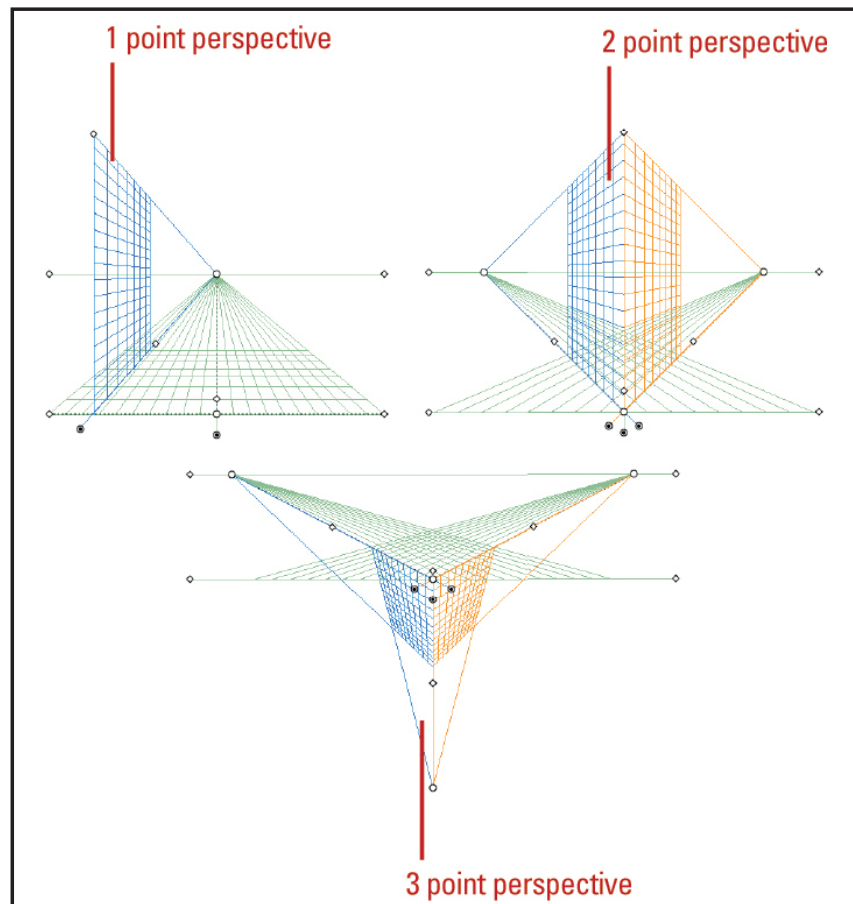


FIGURE 5 – PERSPECTIVE GRID PRESETS

Plane Switching Widget

When you select the Perspective Grid, a Plane Switching Widget also appears in the upper-left corner of the Document window. You can change the position of the widget and other options by double-clicking the Perspective Grid tool in the Tools panel.

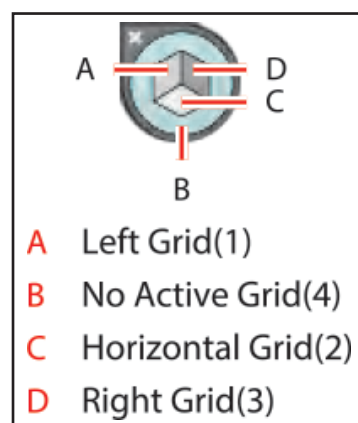


FIGURE 6 – PLANE SWITCHING WIDGET

Drawing new objects in perspective

To draw objects in perspective, use the line group tools or rectangle group tools while the grid is visible. While using the rectangle or line group tools, you can switch to the Perspective Selection tool by pressing Cmd (Mac OS) or Ctrl (Windows).

You can also switch the active plane using the keyboard shortcut 1 (left plane), 2 (horizontal plane), and 3 (right plane) with these tools selected.

Attach objects to perspective

Illustrator provides the option to attach objects to an active plane on the perspective grid. To add an object to the left, right, or horizontal grid:

- Select the active plane on which you want to place the object. You can select the active plane using 1, 2, or 3 keyboard shortcut command or by clicking on one of the faces of the cube in the Perspective Grid Widget.
- Click Object > Perspective > Attach to Active Plane.

Release objects with perspective

If you want to release an object with a perspective view, click Object > Perspective > Release with Perspective option. The selected object is released from the associated perspective plane and is available as a normal artwork.

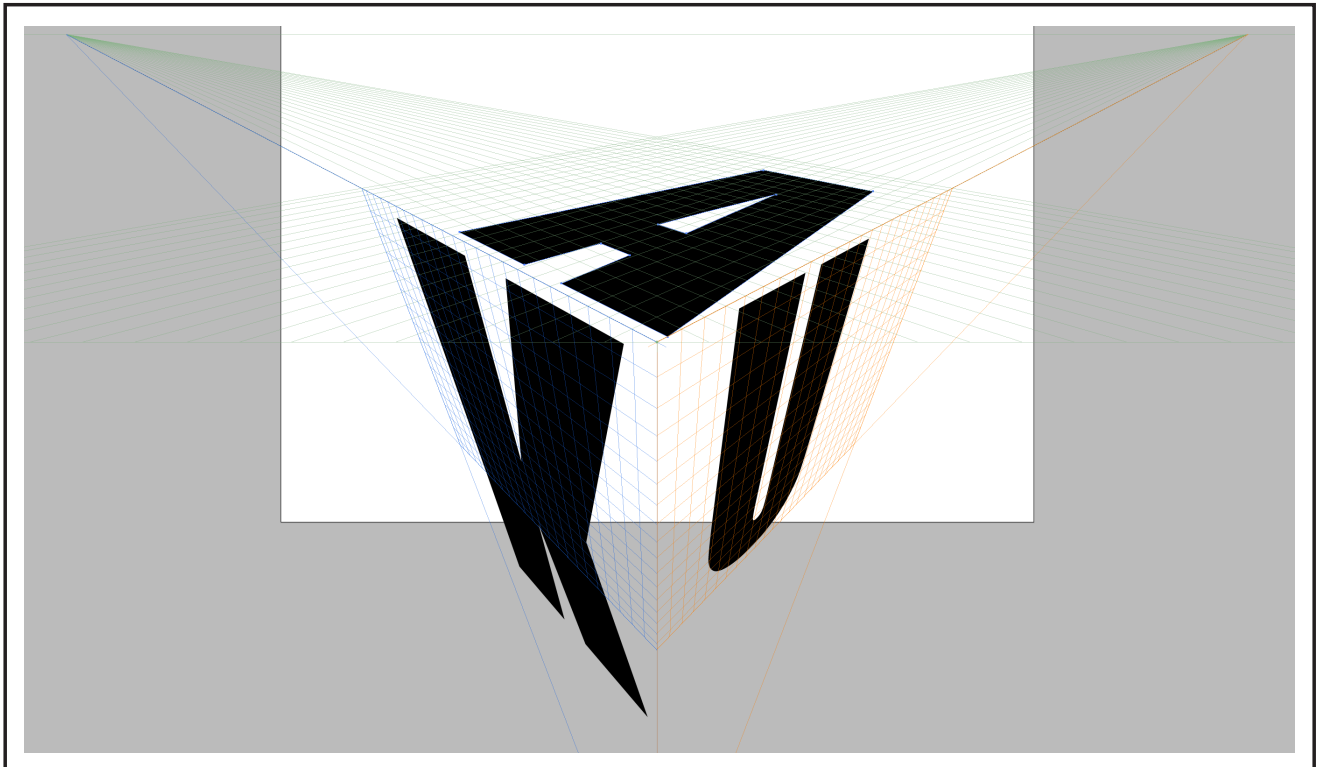


FIGURE 7 – EDITING TEXT IN PERSPECTIVE

3.) Using 3D Effect

3D effects enable you to create three-dimensional objects from two-dimensional (2D) artwork. You can control the appearance of 3D objects with lighting, shading, rotation, and other properties. You can also map artwork onto each surface of a 3D object.

There are two ways to create a 3D object: by extruding or revolving. Additionally, you can rotate a 2D or 3D object in three dimensions.

Extruding 3D Objects

Extruding extends a 2D object along the object's z axis to add depth to the object. For example, if you extrude a 2D ellipse, it becomes a cylinder.

- Select an object.
- Choose **Effect > 3D > Extrude & Bevel**.
- The 3D Extrude & Bevel Options dialog box appears (See Figure 8).
- Click More Options to view the complete list of options, or Fewer Options to hide the extra options.
- Select Preview to preview the effect in the document window as you create it.

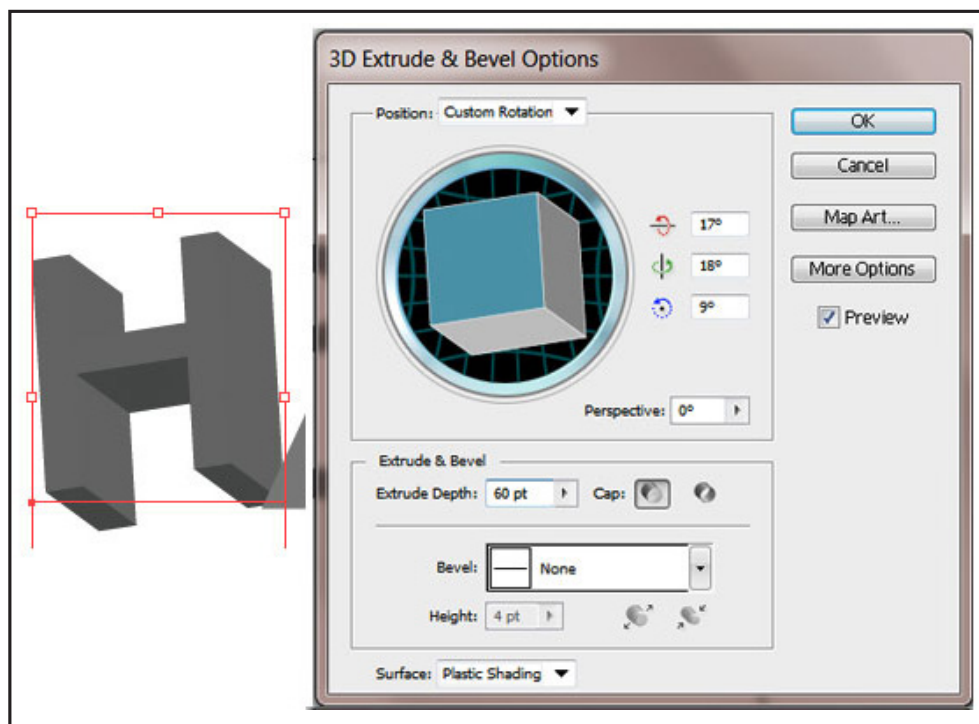


FIGURE 8 – EXTRUDE & BEVEL OPTIONS

Position sets how the object is rotated and the perspective from which you view it.

Extrude & Bevel determines the object's depth and the extent of any bevel added to or cut from it.

Surface creates a wide variety of surfaces, from dull and un-shaded matte surfaces to glossy and highlighted surfaces that look like plastic.

Lighting adds one or more lights, varies the light intensity, changes the object's shading color, and moves lights around the object, for dramatic effects. Note: This option is only visible after More Options has been clicked.

Map maps artwork onto the surfaces of a 3D object.

Under the same menu (**Effect > 3D**) you also have options for 3-dimensional rotation and revolving. Each will open its own dialog box similar to the Extrude & Bevel dialog.

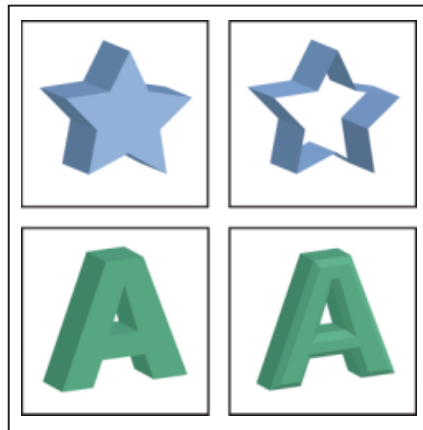


FIGURE 9 – EXTRUDING AN OBJECT

Revolving 3D Objects

Revolving sweeps a path or profile in a circular direction around the global y axis (revolve axis) to create a 3D object.

- Select the object.
- Choose **Effect > 3D > Revolve**.
- Select Preview to preview the effect in the document window.
- The Revolve Options dialog box opens.
- Click More Options to view the complete list of options, or Fewer Options to hide the extra options.
- Select Preview to preview the effect in the document window as you create it.

NOTE: *Because the revolve axis is vertically fixed, the open or closed path that you revolve typically needs to depict half of the desired 3D object's profile in a vertical and front-facing position; you can then rotate the 3D object's position in the effect's dialog box (See Figure 10).*

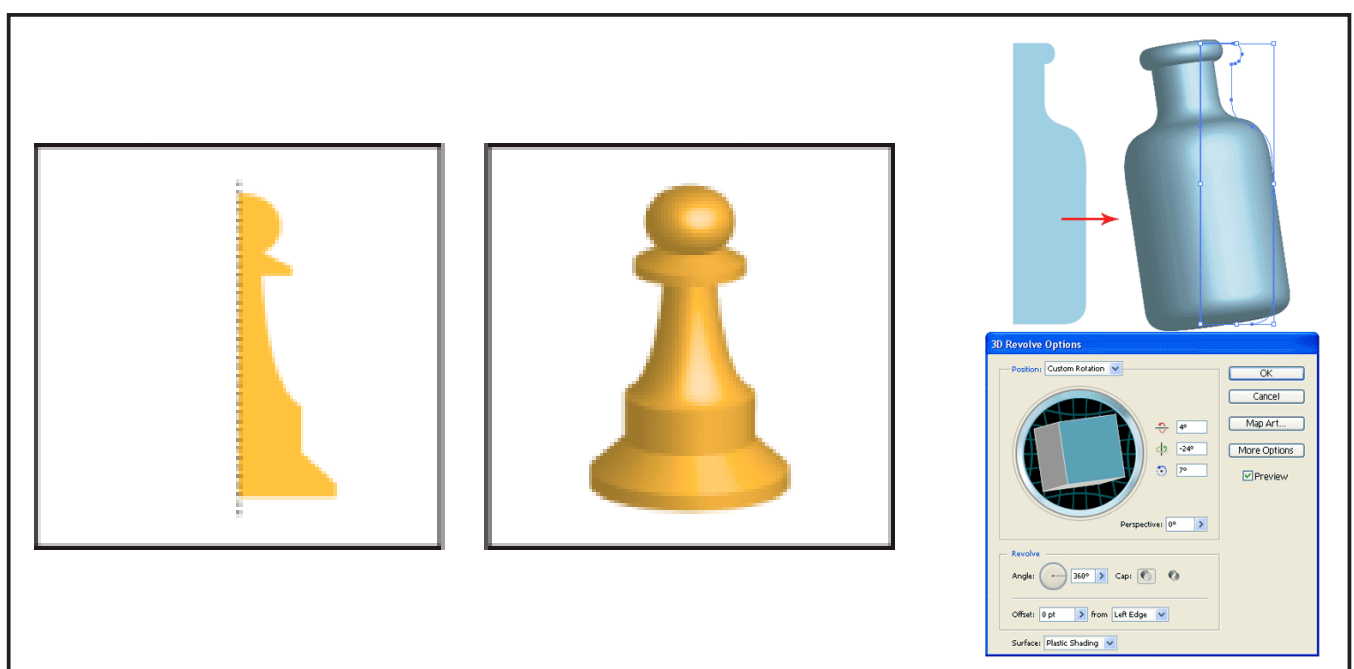


FIGURE 10 – REVOLVING AN OBJECT

Position sets how the object is rotated and the perspective from which you view it.

Revolve determines how to sweep the path around the object to turn it into three dimensions.

Surface creates a wide variety of surfaces, from dull and un-shaded matte surfaces to glossy and highlighted surfaces that look like plastic.

Lighting adds one or more lights, varies the light intensity, changes the object's shading color, and moves lights around the object, for dramatic effects.

Map allows you to map artwork onto the surfaces of a 3D object.

MAPPING ARTWORK TO A 3D OBJECT

Every 3D object is composed of multiple surfaces. For example, an extruded square becomes a cube that is made of six surfaces: the front and back faces, and the four side faces. You can map 2D artwork to each surface on a 3D object. For example, you might want to map a label or text onto a bottle-shaped object or simply add different textures to each side of an object. You can map artwork to objects that use the Extrude & Bevel or Revolve effect, but you can't map artwork to objects that only use the Rotate effect.

You can only map 2D artwork that's stored in the Symbols palette to a 3D object. Symbols can be any Illustrator art object, including paths, compound paths, text, raster images, mesh objects, and groups of objects. We will discuss Symbols in more detail later in this module.

To map artwork to a 3D object you can either use the Map Art button in the 3D effects dialog box when you apply the 3D effect, or you can double-click the Extrude & Bevel or Revolve effect in the Appearance palette and click Map Art.

4.) Using Graphic Styles

Graphic Styles are reusable appearance attributes which allow you to quickly change the look of an object. For example, you can change its fill and stroke color, alter its transparency, and apply effects in one step. All the changes you apply with graphic styles are completely reversible.

You can apply graphic styles to objects, groups, and layers. When you apply a graphic style to a group or layer, every object in the group or layer takes on the attributes of the graphic style. For example, assume you have a graphic style that consists of 50% opacity. If you apply the graphic style to a layer, all objects in or added to that layer will appear 50% opaque. However, if you move an object out of the layer, the object's appearance reverts to its previous opacity.

The Graphic Styles Palette

palette lists a default set of graphic styles when you create a new document. Graphic styles that are saved with the active document will display in the palette when that document is open and active. To display the Graphic Styles palette, choose **Window > Graphic Styles** (See Figure 11).

You can change how graphic styles are displayed in the palette by:

- Selecting a view option from the palette menu:
- Dragging styles to a different position in the palette.
- Selecting Sort by Name from the palette menu to list the graphic styles in alphabetical order.

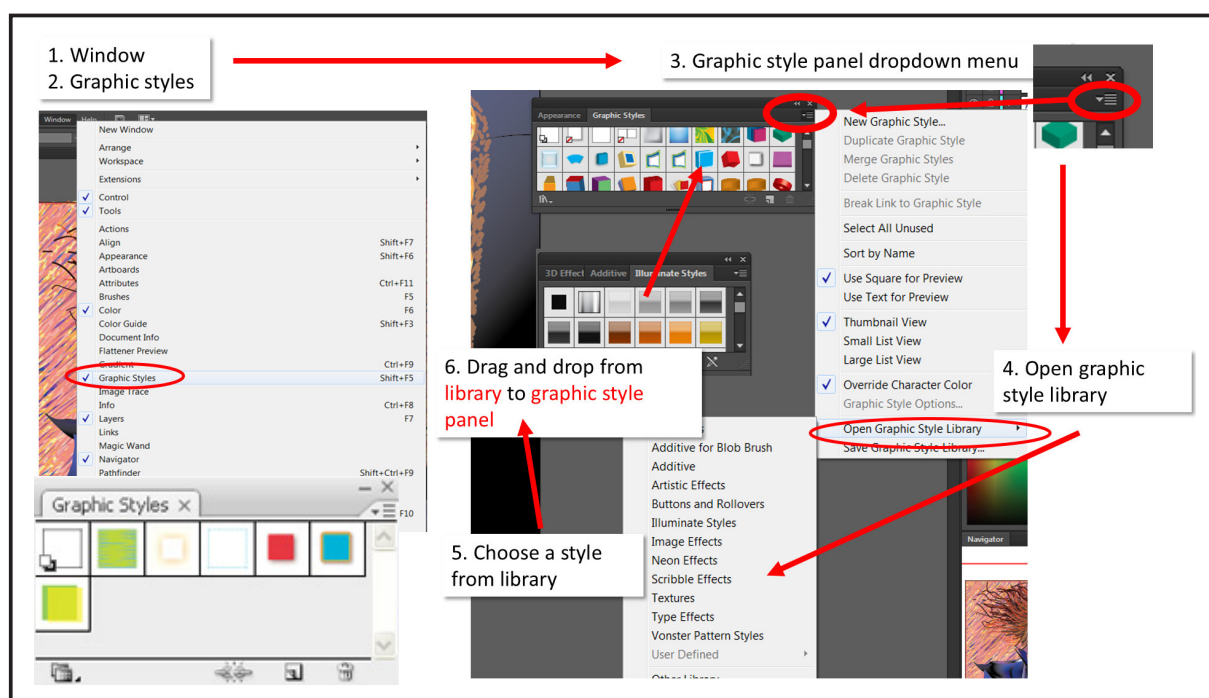


FIGURE 11 – THE GRAPHIC STYLES PANEL AND ITS LIBRARY

Creating a Graphic Style

It is easy to create graphic styles in Illustrator:

- Select an object with the style formatting you want to create your graphic style from.
- In the Graphic Styles palette, click the New Style button or select New Graphic Style from the palette menu.
- The style will appear in the palette.

----- or -----

- Drag the object from the illustration window into the Graphic Styles palette.

To name a graphic style:

- Double-click its thumbnail in the Graphic Styles palette (make sure no objects are selected first) and type a name in the Graphic Style Options dialog box and click OK.

----- or -----

- Alt-click the New Graphic Style button, when you create the new style, then enter the name of the graphic style, and click OK.

Applying a Graphic Style

- Select an object or group of objects or target a layer in the Layers palette.
- Click on a style from the Control palette or the Graphic Styles palette, or drag the graphic style onto an object in the document window. (The object does not have to be selected first.)
- *Note: To preserve the color of type when applying a graphic style, deselect Override Character Color in the Graphic Styles palette menu.*

Working with Graphic Styles

Updating Style Attributes

- Alt-drag the graphic style you want to use from the Artboard onto the graphic style you want to replace in the Graphic Styles palette.
- Select the graphic style you want to replace. Then select an object that has the attributes you want to use, and choose Redefine Graphic Style (and choose the style by name) from the Appearance palette menu.

All occurrences of the graphic style in the Illustrator document are updated to use the new attributes.

Breaking the Link to a Graphic Style

- Select the object, group, or layer that has the graphic style applied to it.
- In the Graphic Styles palette, click the Break Link To Graphic Style button or choose Break Link To Graphic Style from the palette menu.
- Also, if you change any appearance attribute of the selection (such as a fill, stroke, transparency, or effect) the link will be broken.

The object, group, or layer retains the same appearance attributes and is now independently editable. However, these attributes are no longer associated with a graphic style and will not be updated when the style is modified.

Duplicating a Graphic Style

- Choose Duplicate Graphic Style from the Graphic Styles palette menu, or drag the graphic style onto the New Style button.
- The new graphic style appears at the bottom of the list in the Graphic Styles palette.

Deleting a Graphic Style

Drag the style to the Delete button in the Graphic Styles palette or choose Delete Graphic Style from the palette menu.

Any objects, groups, or layers that used the graphic style retain the same appearance attributes; however, these attributes are no longer associated with a graphic style.

Creating a Graphic Style from Multiple Existing Styles

- **Ctrl-click** to select all the graphic styles you want to merge, and then choose Merge Graphic Styles from the Graphic Styles palette menu.

The new graphic style contains all the attributes of the selected graphic styles and is added to the end of the list of graphic styles in the palette.

5.) Working with Symbols

For art objects that you want to reuse in a document, you can create Symbols. For example, if you create a symbol from a flower, you can then add instances of that symbol multiple times to your artwork without actually recreating the artwork. Each symbol instance is linked to the symbol in the Symbols palette or a Symbols Library. Using symbols can save you time and reduce file size.

After you place a symbol, you can edit the symbol's instances on the Artboard and, if you want, redefine the original symbol with the edits. The symbolism tools let you add and manipulate multiple symbol instances at once.

In addition to creating your own symbols, you can use **Symbol Libraries**, which are collections of pre-defined symbols grouped into categories such as Maps, Nature, Arrows, even Sushi.

The Symbols Palette.

The Symbols palette is used to manage the symbols in a given document. You can add symbols from existing symbol libraries or create your own symbols and add them to the Symbols palette. You can also rearrange, duplicate, sort, rename, and otherwise manage symbols using the Symbols palette. To manage your symbols, use the options found in the Symbols palette menu.

To display the Symbols palette, choose **Window > Symbols** (See Figure 12).

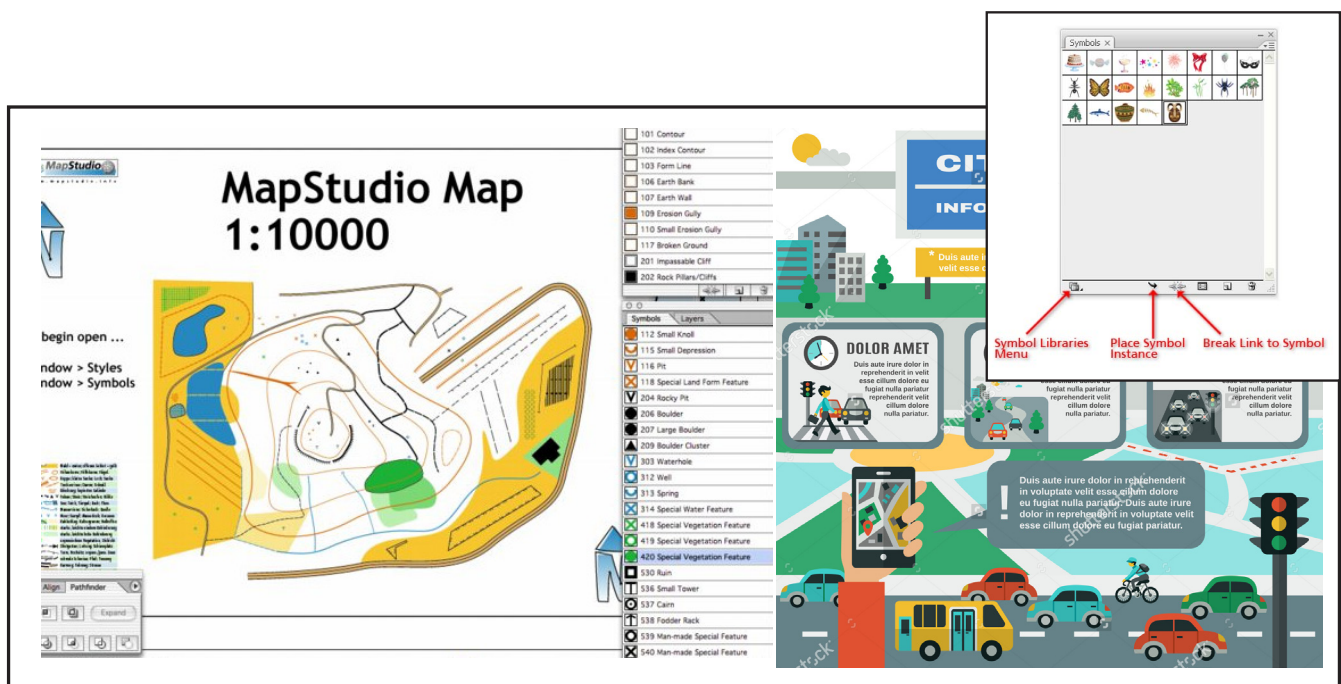


FIGURE 12 – USING THE SYMBOLS PALETTE TO PLACE SYMBOLS

To change how symbols are listed in the Symbols palette:

- Select a different view option from the palette menu: Thumbnail View, Small List View, or Large List View (See Figure 13).
- Drag the symbol to a different position. When a black line appears in the desired position, release the mouse button.
- Select Sort by Name from the palette menu to list the symbols in alphabetical order.
- To rename a symbol, choose Symbol Options from the palette menu (See Figure 13).

Symbol Libraries

To open a **Symbol Library**, choose Open Symbol Library from the Symbols palette options menu and then choose the library you wish to open from the menu. The library appears in a new palette (not the Symbols palette). You can select, sort, and view items in a symbol library the same as you do in the Symbols palette. However, you can't add items to, delete items from, or edit the items in symbol libraries.

Simply click on a Symbol in a symbol library to add it to the Symbols palette. To move multiple symbols from a library to the Symbols palette, **shift+click** or **ctrl+click** to select the desired symbols in the library and then choose Add to Symbols from the library's palette menu.

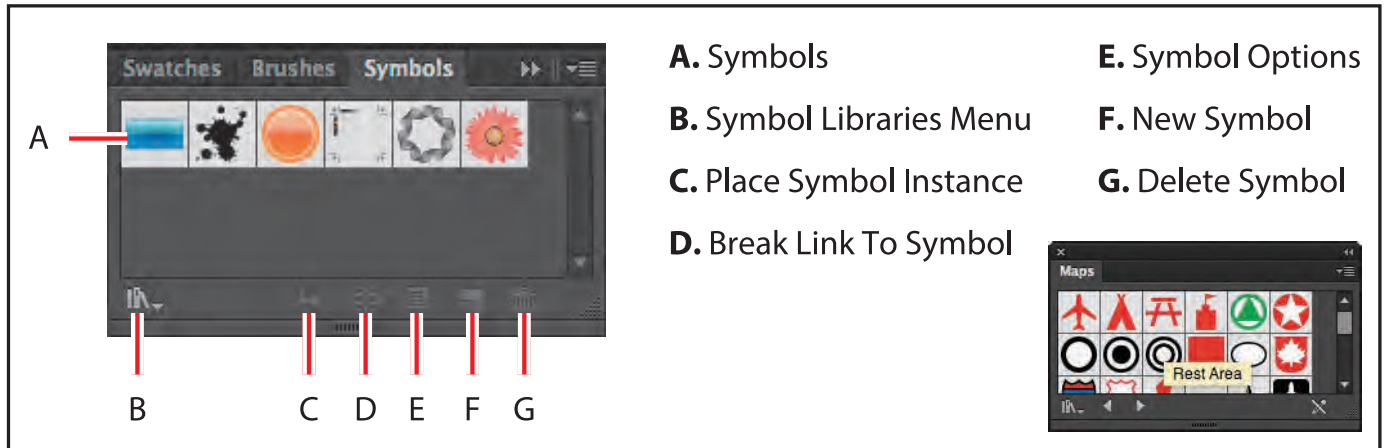


FIGURE 13 – SYMBOLS AND SYMBOL LIBRARIES

Creating Symbols

You can create symbols from most Illustrator objects, including paths, compound paths, text, raster images, mesh objects, and groups of objects. However, you cannot use linked art to create a symbol, nor can you use some groups, such as groups of graphs.

To create a new symbol:

- Select the artwork you want to use as a symbol.
- Drag the artwork to the Symbols palette.

----- or -----

Click the New Symbol button in the Symbols palette.

----- or -----

Choose New Symbol from the palette menu.

Tip: Hold Shift as you drag artwork to the Symbols palette if you want the existing artwork to become an instance of the newly created symbol.

Working with Symbols

Placing Symbols

- Select a symbol in the Symbols palette or a symbol library.
- Click the Place Symbol Instance button at the bottom of the Symbols palette to place the instance in the center of the Artboard.

----- or -----

Drag the symbol to the Artboard where you want it to appear.

----- or -----

Choose Place Symbol Instance from the Symbols palette menu.

A single symbol placed anywhere in your artwork (as opposed to existing only in the palette) is called an instance.

Expanding Symbols

You can move and transform symbol instances and perform any operation from the Transparency, Appearance, and Graphic Styles palettes or apply any effect from the Effect menu just as you do other objects. However, if you want to modify the individual components of a symbol instance, you must first expand it.

Select the symbol instance on the Artboard.

- Click the Break Link to Symbol button

----- or ----- Choose **Object > Expand**.

- The symbol is expanded into a group of objects which can now be edited individually but are no longer associated with the actual symbol.

After you modify a symbol instance, you can redefine the original symbol in the Symbols palette. When you redefine a symbol, all existing symbol instances take on the new definition.

Redefining Symbols

Expand a symbol instance as described above.

- Edit and select the artwork.
- Make sure the symbol you want to redefine is selected in the Symbols palette, and choose Redefine from the Symbols palette menu.

----- or -----

Alt-drag the modified symbol on top of the old symbol in the Symbols palette.

- The symbol is replaced in the Symbols palette and all instances are updated in the current file.

Selecting Symbols

To select all instances of a symbol in the document, select a symbol in the Symbols palette, and then choose Select All Instances from the palette menu.

Symbol Sets

A **symbol set** is a group of symbol instances that you create with the Symbol Sprayer tool. You can create mixed sets of symbol instances by using the Symbol Sprayer tool with one symbol and then using it again with another symbol.

As you work with symbol sets, keep in mind that the symbolism tools affect only the symbol or symbols selected in the Symbols palette. For example, if you create a mixed symbol instance set that represents a meadow with grass and flowers, you can change the orientation of just the grass by selecting the grass symbol in the Symbols palette and then using the Symbol Spinner tool. To change the size of both the grass and the flowers, select both symbols in the Symbols palette and then use the Symbol Sizer tool.

Creating Symbol Sets

- Select a symbol in the Symbols palette.
- Select the Symbol Sprayer tool from the Toolbox.
- Click or drag where you want to create the symbols.

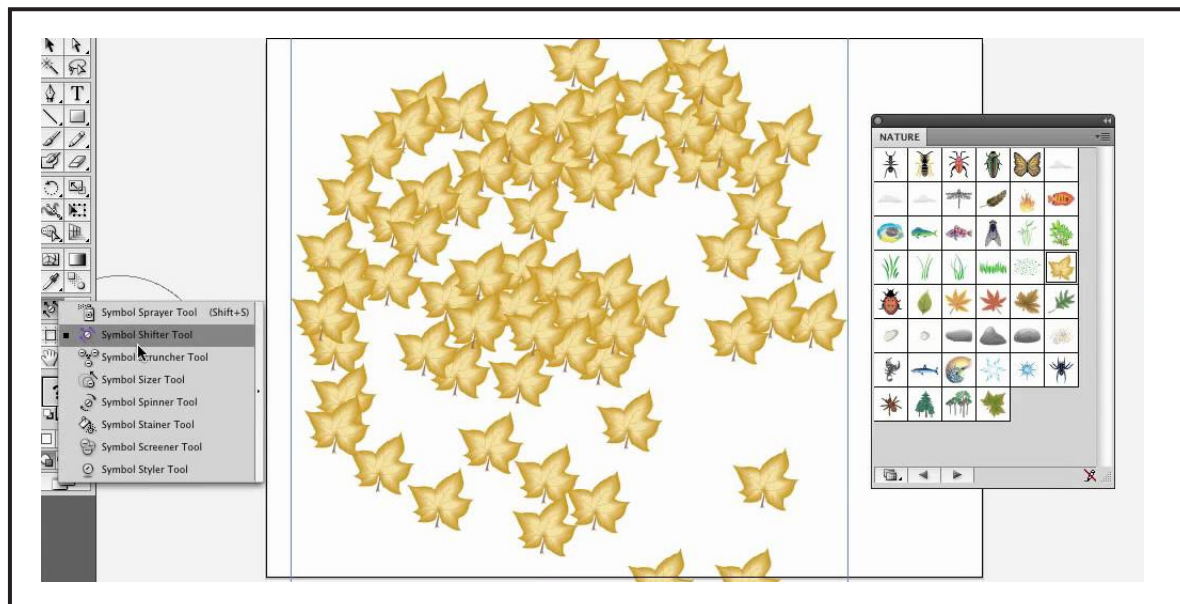


FIGURE 14 – USING THE SYMBOL SPRAYER TOOL TO CREATE A SYMBOL SET

Symbolism Tools

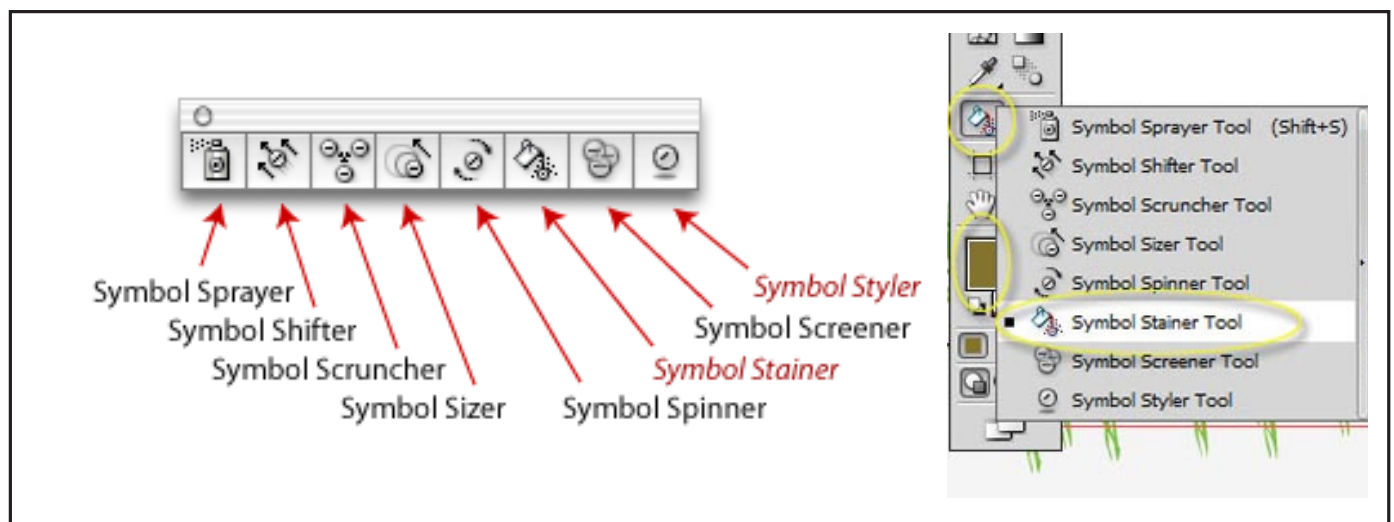


FIGURE 15 – SYMBOLISM TOOLS

The Symbol Sprayer tool places multiple symbol instances as a set on the Artboard.

The Symbol Shifter tool moves symbol instances

The Symbol Scruncher tool moves symbol instances closer together.

The Symbol Sizer tool resizes symbol instances.

The Symbol Spinner tool rotates symbol instances.

The Symbol Stainer tool colorizes symbol instances.

The Symbol Screener tool applies opacity to symbol instances.

The Symbol Styler tool applies the selected style to symbol instances.

Symbolism Tool Options

In the Symbolism Tool Options dialog box, click on a tool icon to display the specific settings for that tool (See Figure 16). To display the dialog box, double-click on any symbolism tool in the Toolbox.

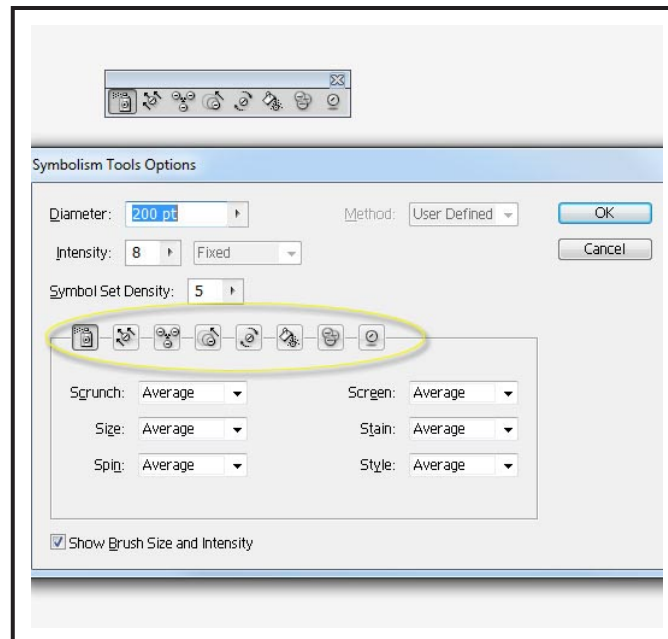


FIGURE 16 – SYMBOLISM TOOL OPTIONS DIALOG BOX

General options appear at the top of the Symbolism Tools Options dialog box regardless of which symbolism tool is selected. Tool-specific options appear in the lower area of the dialog box for the designated tool.

Diameter specifies the tool's brush size.

Intensity specifies the rate of change (higher values equal faster changes), or select Use Pressure Pen to use the input from a tablet or pen instead of the Intensity value.

Symbol Set Density specifies an attraction value for the symbol set (higher values result in more densely packed symbol instances).

Method specifies how the Symbol Scruncher, Sizer, Spinner, Stainer, Screener, and Styler tools adjust symbol instances.

User Defined gradually adjusts symbols in relation to the position of the cursor.

Random modifies the symbols randomly in the area under the cursor.

Average gradually smoothes out the symbol values.

Show Brush Size and Intensity displays the size as you use the tool.

Tip: At any time while using a symbolism tool, press [to decrease the diameter or] to increase it. Press Shift+[to decrease the intensity or Shift+] to increase it.

Symbol Sprayer options appear only when the Symbol Sprayer tool is selected and control how new symbol instances are added to symbol sets:

- **Average** adds new symbols with the average value of existing symbol instances within the brush radius.
- **User Defined** applies specific preset values for each parameter: Scrunch, Size, Spin, Screen, Stain, and Style.

Symbol Sizer options appear under the General options in the Symbolism Tools Options dialog box only when the Symbol Sizer tool is selected.

Proportional Resizing keeps each symbol instance shape uniform as you resize.

Resizing Affects Density moves symbol instances away from each other when they are scaled up and move them toward each other when they are scaled down.

6.) Using the Reshaping Tools

The Reshaping section of the Toolbox offers a series of tools which can be used to produce radical transformations of your artwork. These can be used on single objects or groups of objects.

To Reshaping artwork, simply select the object(s) you want to distort and click or drag on them with one of the Reshaping tools (See Figure 17).

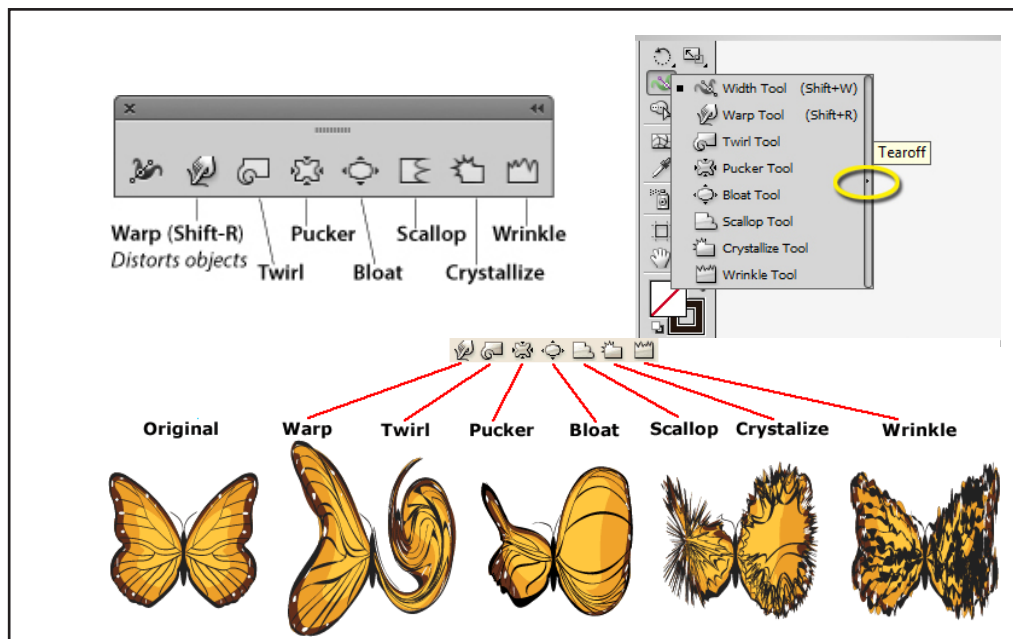


FIGURE 17 – RESHAPING TOOLS AND SAMPLES OF THEIR EFFECTS

To modify options for a Reshaping tool, double-click on the tool to open the Tool Options dialog box:

Width and Height control the size of the tool cursor.

Angle controls the orientation of the tool cursor.

Intensity specifies the rate of change for the distortion. Higher values equal faster changes.

Use Pressure Pen uses the input from a tablet or pen instead of the Intensity value.

Complexity (Scallop, Crystallize, and Wrinkle tools only) specifies how closely the results of the brush are spaced on the object's outline. This ties in with the Detail value.

Detail specifies the spacing between points introduced into the object's outline (higher values space points closer together).

Simplify (Warp, Twirl, Pucker, and Bloat tools only) specifies how much you want to reduce the superfluous points that do not measurably affect the overall appearance of the shape.

Twirl Rate (Twirl tool only) specifies the rate at which the twirl is applied. Enter a value between -180° and 180° . Negative values twirl the object clockwise and positive values twirl counterclockwise. Rates closer to 0° will twirl the object more slowly.

Horizontal and **Vertical** (Wrinkle tool only) specifies how far apart the control points are placed.

Brush Affects: Anchor Points, In Tangent Handles, Out Tangent Handles (Scallop, Crystallize, Wrinkle tools only) enable the tool brush to make changes to these properties.