



CHAPTER 2

MANIPULATING SHAPES

In This Section...

- Show how to arrange shapes above each other
- Weld intersecting shapes
- Clip intersecting shapes to the top-most shape
- Use the Ginsu Knife to subdivide shapes
- Convert text shapes into line art

There are many tools available that allow you to modify or combine shapes.

From the **Arrange** menu, the **Order To Front** and **Order To Back** commands are used to control the display order in how shapes appear above each other. Similarly, shapes can be moved **Forward** and **Backward** in the display order.

From the **Layout** menu, the **Group** command is used to bind shapes into collections, which allows the shapes to be moved as a single unit. The **Ungroup** command is used to release the collection.

Double-clicking a group of shapes will open the **Group Viewer**, which lists the shapes that are part of that group. Selecting a shape within the **Group**

Viewer will display all the attributes and operations that have been applied to that shape.

Ways to use the Group Viewer

1. Double-click an attribute for one of the shapes within the group. Changes to that attribute will only apply to that shape without changing the group.
2. Drag a color from the Shop Palette, and drop it onto the "Layer" attribute within the **Group Viewer**. The fill color of the shape will be changed.
3. Select a shape that is not part of the group, and use **InstantReplay** (see InstantReplay) to look at the operations that have been applied to that shape. Drag an operation from the **InstantReplay** window, and drop it into the list of operations displayed within the **Group Viewer**. The operation will be automatically re-applied to the shape that is selected within the **Group Viewer**.

From the **Tools** toolbar, the **Weld Tools** are used to fuse shapes together into a combined shape. Alternatively, the weld tools can clip overlapping shapes. In either case, the weld tools actually create new shapes.

From the **Arrange** menu, the **Clipping** command is used to clip overlapping shapes to the top-most shape. This is similar to a weld, except that the

original shapes are not destroyed, and the **Clipping Clear** command can be used to reverse the effect.

From the **Tools** toolbar, the **Ginsu Knife** Tools are used to subdivide shapes. The subdivided shapes can either become closed contours, or they can be left as open paths.

From the **Arrange** menu, the **Text to Graphics** command is used to convert text shapes into line art. This is usually done in order to combine the text shapes with other line art.

Outlines and Inlines

From the **Transform** menu, the **Outline** command is used to add the effect of contour lines either around a shape (Outline), or within the shape contour (Inline). The **Create Mask** option will weld the resulting outlines and/or inlines into a single shape.

From the **Transform** menu, the **Contour Object** command is similar to the **Outline** command. A positive **Offset** will create an outline, whereas a negative **Offset** will create an inline. Overlapping portions of the contour object will be automatically welded into a single shape.



Miter Limit

The **Miter Limit** is a distance that is expressed as a percentage of the outline or inline thickness. For a sharp corner of the original shape, the resulting outline corner may be quite steep. If the **Clipped** button is enabled, then the outline corner will be clipped as per the **Miter Limit**. Only corners that are less than or equal to 90 degrees will be clipped.



Original outline



Clipped outline

Transformation

From the **Transform** menu, the **Transformation** command is used to apply special effects and distortions to shapes.

Chisel Effect




From the **Transform** menu, the **Chisel Effect** command is used to create a raised, three-dimensional effect. The result is similar to a shaded or beveled appearance, which can be enhanced with the gradient fill tools.

Metamorphosis


From the **Transform** menu, the **Metamorphosis** command is used to blend two shapes together, and multiple intervening shapes with distinct gradients can be created.

Shadow

From the **Transform** menu, the **Shadow** command is used to add background shapes that create the appearance of shadows.





-  **Block Shadow:** The Block Shadow is used to give shapes the perception of depth.
-  **Perspective Shadow:** The Perspective Shadow is used to give shapes the perception of distance.
-  **Drop Shadow:** The Drop Shadow is similar to the Block Shadow, though the

perceived space between the original shapes and their shadows is not filled.

-  **Cast Shadow:** The Cast Shadow is used to create the perception of a light source, such that the shapes project a shadow as if onto a nearby surface.

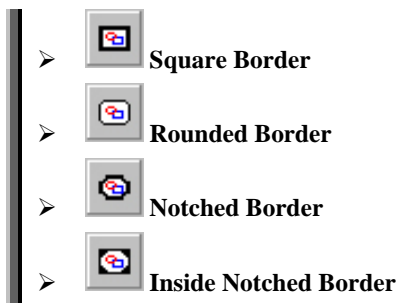


At the far-right of the Shadow SmartBar, the Outline checkbox is used to increase the thickness of the shadow effect. When creating a shadow outline, the following outline options may be used:

-  **Point:** Corners of the shadow outline are sharp
-  **Miter:** Corners of shadow outline are clipped (See the Outline tool for an example of the miter limit)
-  **Round:** Corners of the shadow outline are rounded and smooth
-  **Relief Shadow:** Create a gap (equal to the Thickness setting) between the shape and the shadow outline

Decorative Border

The **Decorative Border** tool is used to create a border shape that encloses either the sign blank or selected shapes. The **Decorative Border** tool is available from both the **Shape Tools** flyout, and the **Layout** menu.



The **ClipArt Viewer** is also used to choose from a collection of preset decorative borders. Dozens of sign blank designs are available from the clipart signblanks directory.

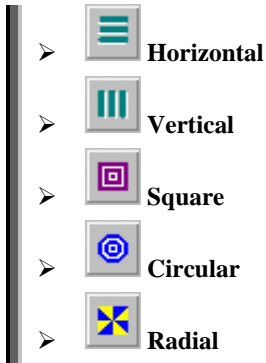
Round Corners

From the **Transform** menu, the **Round Corner** tool is used to create rounded corners for either inside or outside contours of vector shapes.

Most of the parametric shape tools include extra controls for rounding corners. However, the **Round Corner** tool is useful for scanned or imported vector shapes that would otherwise require node editing to create the rounded corners.

Stencils

From the **Shape Tools** flyout, the **Stencil** tool is used to create the appearance of work that has been designed using a stencil pattern. Other shapes will be visible beneath the stencil shape.



A common stencil technique is to duplicate the shape, and then apply a stencil to the duplicate. Then apply different colors to the duplicate and original shape to create a stripe pattern.



Creating a striped stencil pattern

1. In the General Preferences dialog, set the Duplicates X and Y offsets to zero
2. Set the shape fill color to red
3. Create a duplicate of the shape. Since the X and Y offsets were set to zero, the duplicate will have the same coordinates as the original shape.
4. Set the duplicate fill color to blue
5. Apply a stencil to the duplicate