



Adobe Illustrator CS5

Part 1: Introduction to Illustrator

Summer 2011, Version 1.0

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Introduction

Adobe Illustrator CS5 is used to create graphics and type in vector format. Vector graphics are made up of points, lines, and curves that are defined by mathematical equations. Vector graphics are resolution independent, which means that they can be resized to any size without losing quality. This handout provides an overview of the Illustrator CS5 user interface and vector graphics, and covers how to create different shapes using the Pen tool.

Downloading the Data Files

This handout includes sample data files that can be used for hands-on practice. The data files are stored in a self-extracting archive. The archive must be downloaded and executed in order to extract the data files.

- The data files used with this handout are available for download at <http://www.calstatela.edu/its/training/datafiles/illustratorcs5p1.exe>.
- Instructions on how to download and extract the data files are available at <http://www.calstatela.edu/its/docs/download.php>.

Starting the Program

The following steps are for starting Illustrator CS5 using the computers in the ITS Training Program computer labs. The steps for starting the program on other computers may vary.

To start Illustrator CS5:

1. Click the **Start** button, click **All Programs**, click **Adobe Design Premium CS5.5**, and select **Adobe Illustrator CS5.1**.

Exploring the User Interface

The Illustrator interface offers many tools, menus, and panels that allow you to work in optimum productivity (see Figure 1). Each element is explained in detail in the following sections.

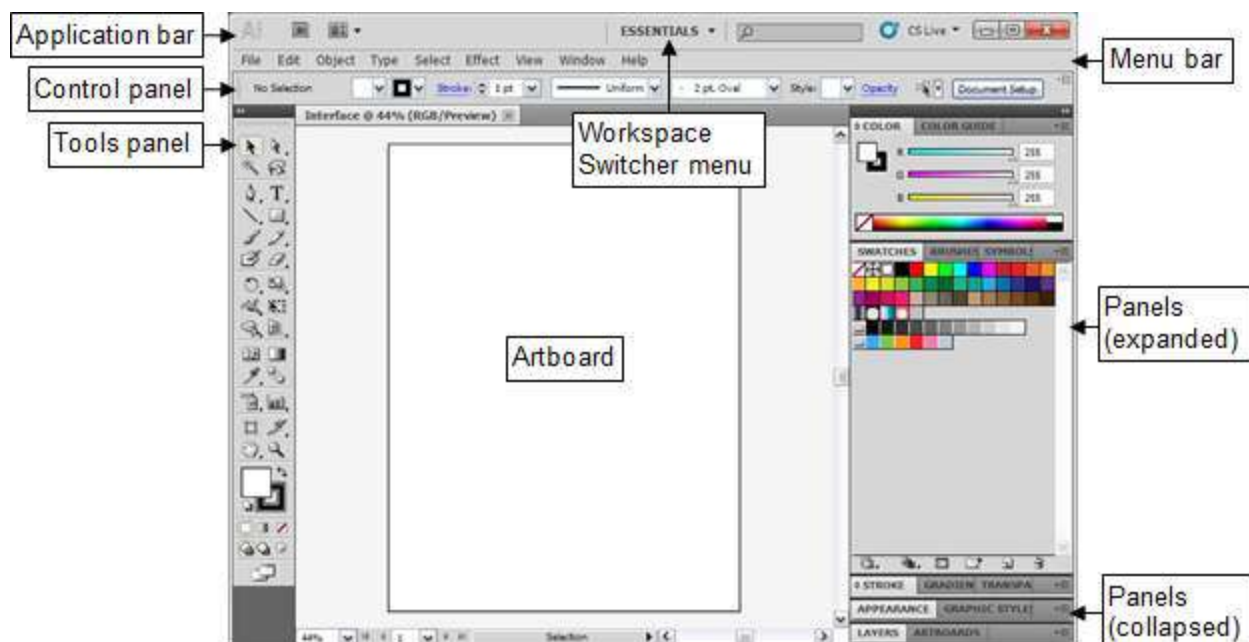


Figure 1 – Illustrator CS5 Program Window

Application Bar

The *Application* bar is located at the top of the program window (see Figure 2). It contains the Menu bar (depending on the size of the window), the Workspace Switcher menu, the Search box, and other controls. At the right end of the Application bar are the Minimize, Restore/Maximize, and Close buttons which are used to control the program window.



Figure 2 – Application Bar

Menu Bar

Depending on the size of the program window, the *Menu* bar appears either below or at the left end of the Application bar (see Figure 3). It provides access to many of Illustrator's powerful commands which are grouped according to function (see Table 1).

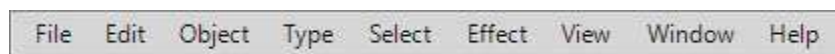


Figure 3 – Menu Bar

Table 1 – Menu Bar

Menu	Description
File	Includes the Open, Save, and Print commands.
Edit	Includes the Cut, Copy, and Paste commands.
Object	Includes command for controlling objects.
Type	Includes command related to typography.
Select	Includes selection commands such as All, Deselect, and Reselect.
Effect	Includes command for creating different types of effects.
View	Includes command for displaying the grid and rulers.
Window	Provides access to all the panels.
Help	Provides access to Illustrator Help.

Workspace

The Illustrator interface includes various elements such as panels, bars, and windows that you can use to create and manipulate your documents. Any arrangement of these elements is called a *workspace*. You can select from several preset workspaces or create one of your own. The default workspace is called *Essentials*. You can quickly switch to a different workspace using the *Workspace Switcher* menu on the Application bar (see Figure 4).

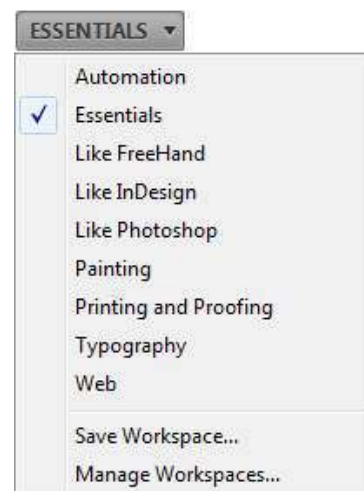


Figure 4 – Workspace Switcher Menu

Panels


Panels, which are listed in the Window menu, provide quick access to many tools that make modifying artwork easier. By default, some panels are docked and appear as icons at the right side of the program window (see Figure 5). Clicking a panel's icon expands the panel (see Figure 6). Clicking the double arrow at the top of the dock expands or collapses all panels. You can move panels by dragging the panel tab or panel title bar to the desired location. You can also resize panels by dragging any side of the panel. Most panels have a menu with additional options that can be accessed by clicking the menu button  in the upper-right corner of the panel.



Figure 5 – Collapsed Panels

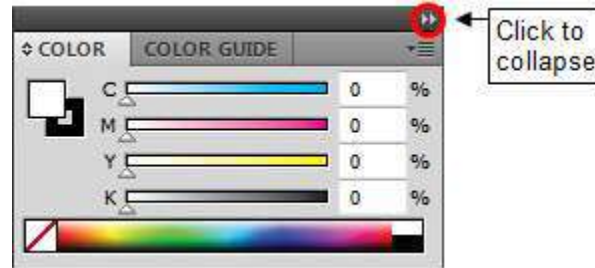


Figure 6 – Expanded Color Panel

Tools Panel

The *Tools* panel is located on the left side of the program window. It contains selection tools, drawing and painting tools, editing tools, viewing tools, type tools, the Fill and Stroke boxes, and screen mode options (see Figure 7). You can display the tools in the Tools panel in one column or two columns by clicking the double arrow at the top of the panel. Positioning the mouse pointer over a tool displays the tool's name and keyboard shortcut.

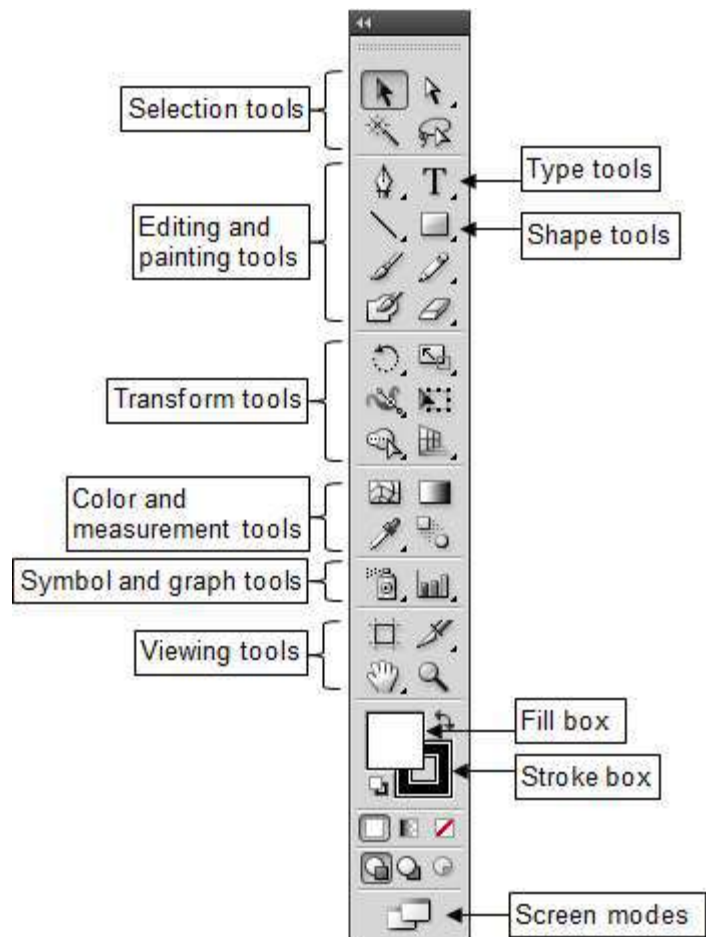


Figure 7 – Tools Panel

Hidden Tools

The Tools panel groups similar tools together, displaying only one tool from a group at a time while hiding the rest. A small black triangle at the lower-right corner of a tool icon indicates the presence of hidden tools (see Figure 8).

To select a hidden tool:

1. In the **Tools** panel, click and hold down the mouse button on a tool icon with a black triangle, and then drag to the desired tool and release the mouse button (see Figure 9).

NOTE: The selected tool replaces the default tool in that slot until another tool is selected.



Figure 8 – Black Triangle on a Tool Icon

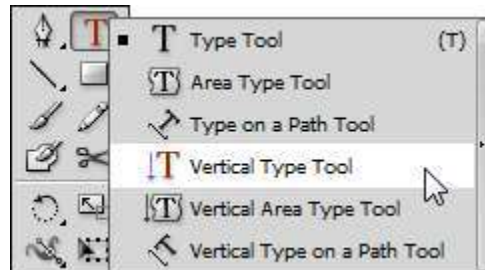


Figure 9 – Hidden Tools Menu

Control Panel

By default, the *Control* panel appears below the Menu bar (see Figure 10). It provides quick access to options related to the selected object or tool. The options displayed in the Control panel vary depending on the type of object or tool that is selected. When text in the Control panel is blue and underlined, clicking the text displays a related panel or dialog box.



Figure 10 – Control Panel

Opening a File

You can open files that were created in Illustrator as well as compatible files that were created in other applications. Illustrator recognizes all common graphic file formats such as TIFF, JPEG, GIF, PNG, BMP, and PSD. The native file format of Illustrator is AI.

To open a file:

1. Click the **File** menu and select **Open** (see Figure 11). The **Open** dialog box opens.

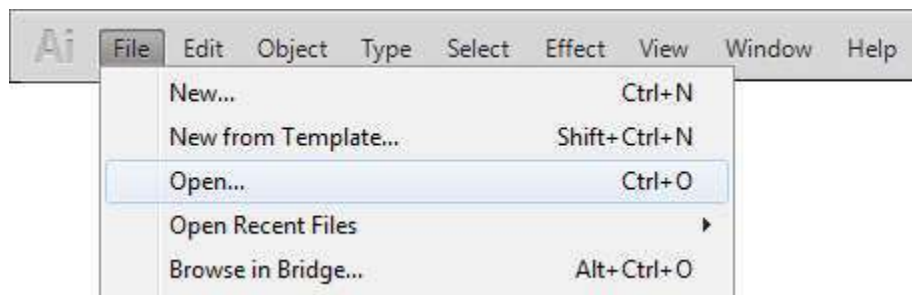


Figure 11 – File Menu

2. Navigate to the folder that contains the sample data files, select the **Layers.ai** file, and then click the **Open** button.

Using the Layers Panel

The *Layers* panel is used to list, organize, and edit the objects in an Illustrator document (see Figure 12). By default, every new document contains one layer. You can create new layers and rearrange items to best suit your needs. By creating multiple layers in your artwork, you can control how overlapping objects are displayed. The artwork at the top of the Layers panel is at the front of the stacking order, while artwork at the bottom is at the back of the stacking order.

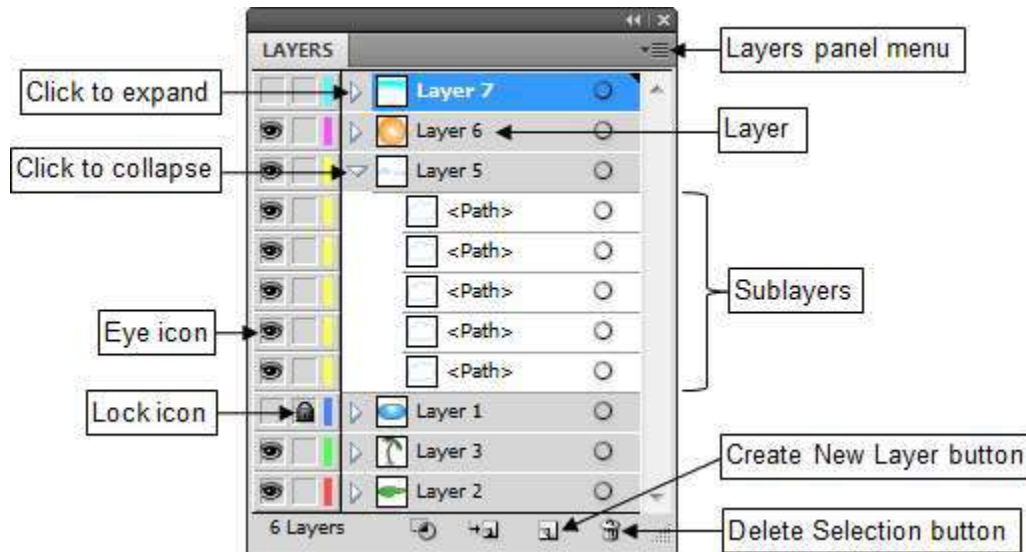







Figure 12 – Layers Panel

To practice working with layers:

1. To display the **Layers** panel, click the **Window** menu and select **Layers**, or click the **Layers** panel icon  on the right side of the workspace (see Figure 12).
2. To hide or unhide a layer, click in the **Visibility** column to the left of the layer's name. An eye icon  indicates that the layer is visible; a blank space indicates that the layer is hidden.
3. To lock or unlock a layer, click in the **Edit** column to the left of the layer's name. A lock icon  indicates that the layer is locked and cannot be edited; a blank space indicates that the layer is unlocked and can be edited.
4. To create a new layer, click the **Create New Layer** button  located at the bottom of the **Layers** panel.
5. To delete a layer, select the layer in the **Layers** panel, and then click the **Delete Selection** button  located at the bottom of the panel.
6. To move a layer, drag the layer in the **Layers** panel to the desired location, and then release the mouse button (see Figure 13).

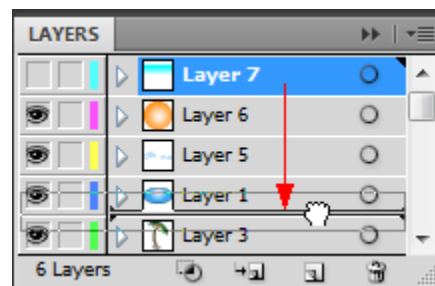


Figure 13 – Moving Layers

7. To rename a layer, double-click the layer's name in the **Layers** panel to open the **Layer Options** dialog box, type a new name in the **Name** box, and then click the **OK** button (see Figure 14).

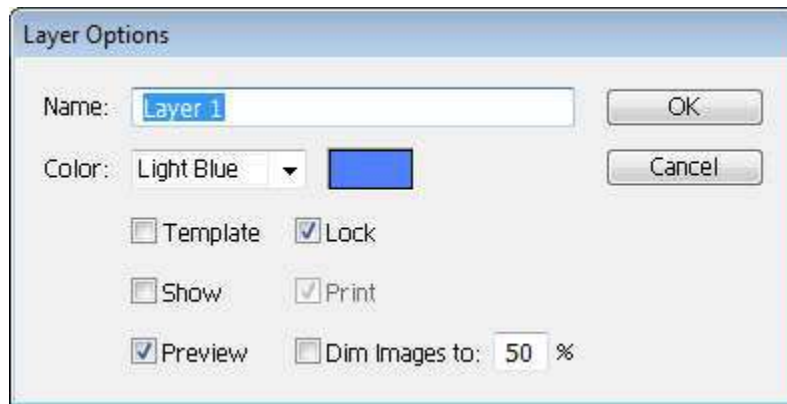




Figure 14 – Layer Options Dialog Box

8. To display sublayers, click the triangle  to the left of the layer's name. To hide sublayers, click the triangle  again (see Figure 12).

NOTE: If no triangle appears to the left of a layer's name, the layer does not have sublayers.

Vectors Graphics

Illustrator is an ideal program to create vector graphics because it includes tools and features designed for vector use. Vector graphics are made up of points, lines, and curves defined by mathematical equations. Since vector graphics are resolution independent, you can freely modify them without losing detail or clarity. Raster images, on the other hand, use a rectangular grid of picture elements (pixels) to represent images. Raster images are resolution dependent. As a result, they can lose detail and appear jagged if they are scaled to high magnifications. In general, use Illustrator if you need to create art or type with clean lines that look good at any magnification; use Photoshop for images that need pixel editing, color correcting, painting, and other special effects. Figure 15 is an example of an image created in Illustrator. The difference between a vector graphic and a raster image can be seen in Figure 16 and Figure 17 respectively. When magnified, the vector graphic maintains its quality, but the raster image looks pixelated.

NOTE: Figure 16 and Figure 17 are the same image. One is converted to a raster.

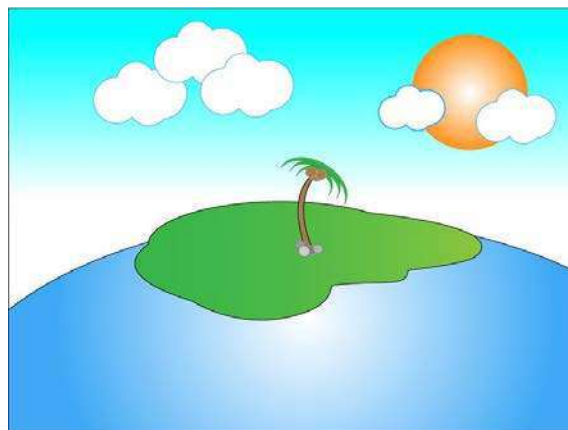


Figure 15 – Full Image in Illustrator

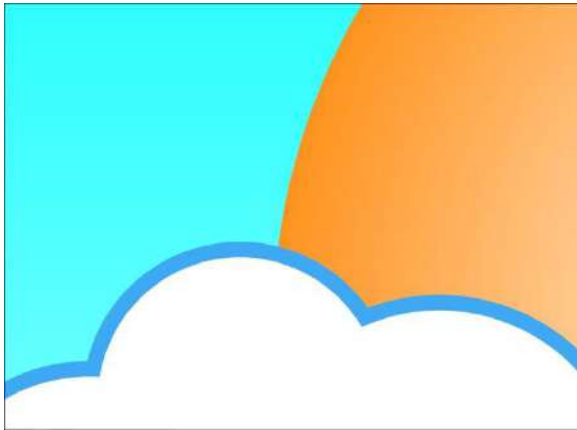


Figure 16 – Vector Graphic Zoomed at 1600%



Figure 17 – Raster Image Zoomed at 1600%

Creating a Cube

Illustrator can be used to create basic shapes such as rectangles, ellipses, and polygons. The shape tools are organized under the Rectangle tool in the Tools panel. This lesson covers how to create a cube using the Rectangle tool. It consists of taking two-dimensional squares and transforming them to create a three-dimensional cube.

To create a cube:

1. Click the **File** menu and select **New**. The **New Document** dialog box opens (see Figure 18).
2. Type **Cube** in the **Name** box.
3. Click the **Units** arrow and select **Inches** from the list.
4. Type **5** in the **Width** box and **5** in the **Height** box.
5. Click the **OK** button.

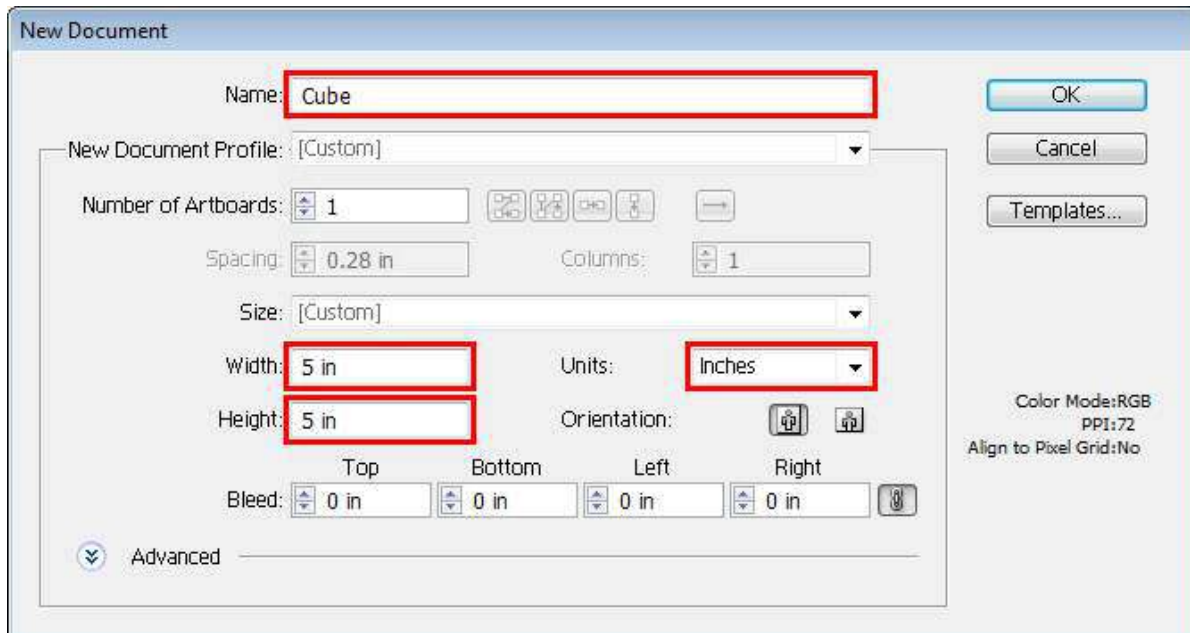



Figure 18 – New Document Dialog Box

6. Select the **Rectangle** tool  in the **Tools** panel.
7. On the artboard, hold down the **Shift** key and drag the mouse pointer diagonally to draw a square (see Figure 19). Release the mouse button and then the **Shift** key.

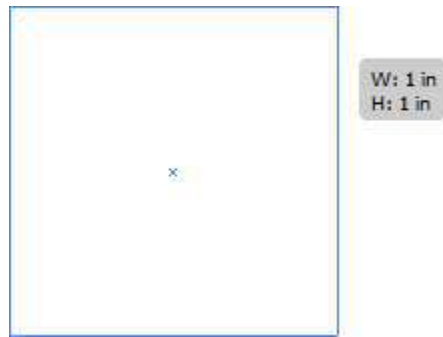





Figure 19 – Square

8. In the **Control** panel, click the **Fill** box  and select a fill color, and then click the **Stroke** box  and select a stroke color.
9. Select the **Selection** tool  in the **Tools** panel.
10. On the artboard, hold down the **Alt** key and drag the square to create a copy (see Figure 20). Release the mouse button and then the **Alt** key.

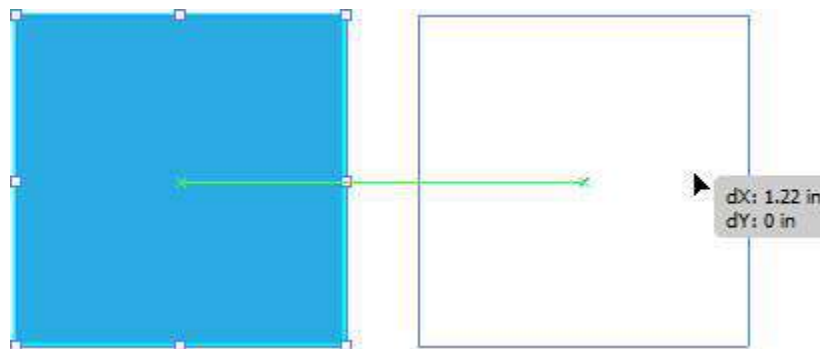



Figure 20 – Duplicating the Square

11. Repeat step 10 to create another copy of the square.
12. With the **Selection** tool , click to select one of the squares on the artboard.
13. Click the **Effect** menu, point to **3D**, and select **Rotate** (see Figure 21). The **3D Rotate Options** dialog box opens (see Figure 22).

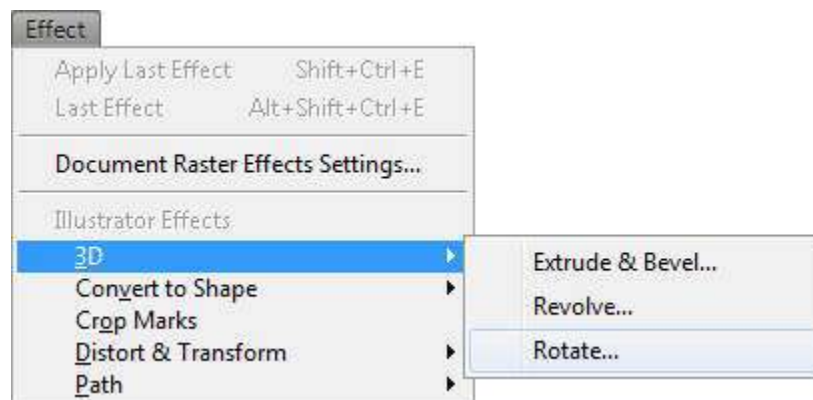


Figure 21 – Effect Menu

14. Click the **Position** arrow and select **Isometric Left** from the list.

NOTE: To preview the effect on the artboard, select the **Preview** check box.

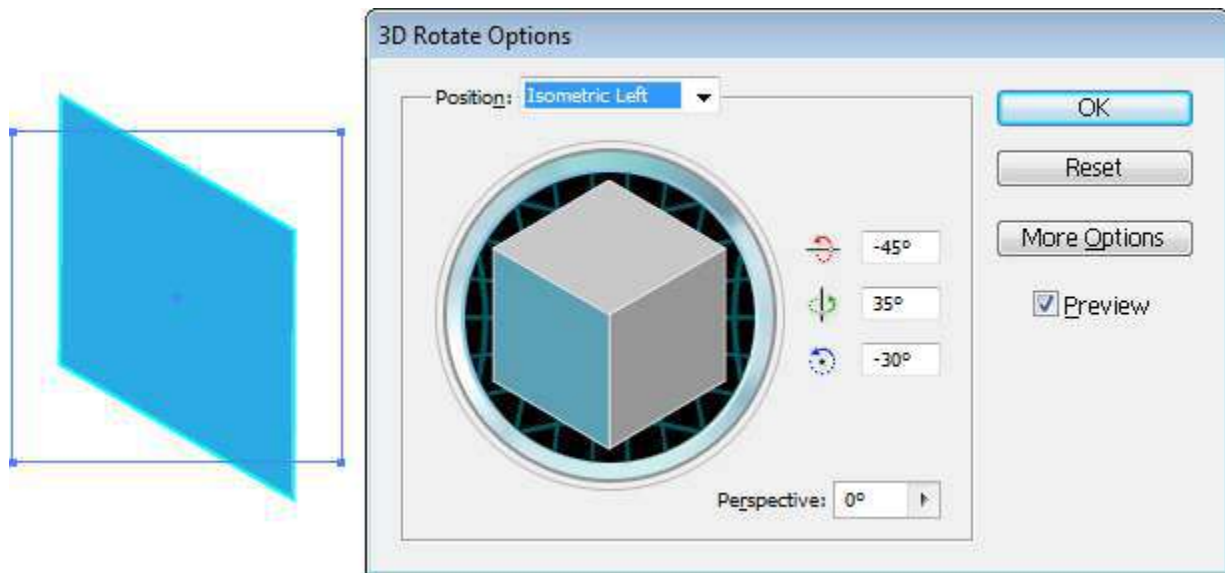


Figure 22 – 3D Rotate Options Dialog Box and Preview

15. Click the **OK** button.

16. For the two remaining squares, repeat steps 12 through 15 to set the position of one square to **Isometric Top** and the other square to **Isometric Right**.

17. On the artboard, hold down the **Shift** key and click to select the three squares.

18. Click the **Object** menu and select **Expand Appearance**.

19. Click the **Select** menu and select **Deselect**.

20. On the artboard, drag each square to construct the cube (see Figure 23).

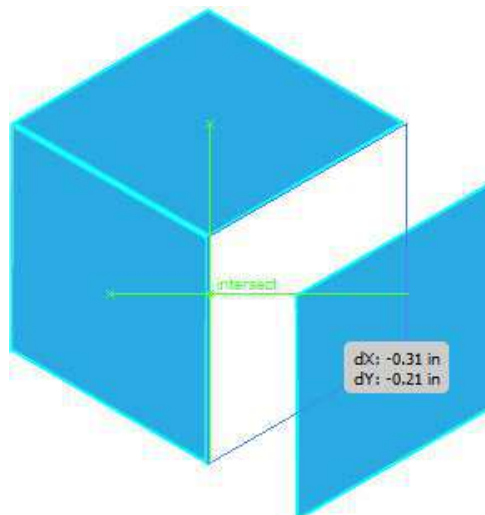


Figure 23 – Cube Formation

Tracing Using the Pen Tool


The *Pen* tool is the most versatile tool in Illustrator. It can be used to draw straight lines, curves, and complex shapes. It can also be used to trace images. The following lesson consists of tracing a raster image and converting it to a vector graphic.

To trace an image:

1. Open the **Leaf.ai** file from the data files folder.
2. In the **Layers** panel, create a new layer and rename it to **leaf1** (see Figure 24).



Figure 24 – Layers Panel with Leaf1 Layer

3. Select the **Pen** tool  in the **Tools** panel.
4. On the artboard, click anywhere on the outline of the upper-left leaf to create the first anchor point (see point 1 on Figure 25).
5. Click and hold down the mouse button at another point on the leaf's outline to create the second anchor point (see point 2 on Figure 25), drag outward to create a curved path over the outline of the leaf (see Figure 25), and then release the mouse button.

NOTE: As you drag, direction handles appear on both sides of the anchor point (see Figure 25). The angle and length of the direction handles determine the shape and size of the curved segment.



Figure 25 – Leaf with Anchor Points and Curved Path

6. Click the second anchor point to remove one of the direction handles (see point 2 on Figure 26). This removes any influence on the next anchor point.




Figure 26 – Anchor Point with One Direction Handle

7. Continue creating anchor points on the outline of the first leaf until it is completely enclosed (see Figure 27).

NOTE: If you make a mistake while drawing with the **Pen** tool, click the **Edit** menu and select **Undo Pen**.



Figure 27 – Enclosed Leaf

NOTE: To adjust the shape of curved segments, select the **Direct Selection** tool  in the **Tools** panel, click the outline of the curved segment to display the curve's anchor points and direction handles, and then drag either the anchor points or the direction handles to make the necessary adjustments (see Figure 28).

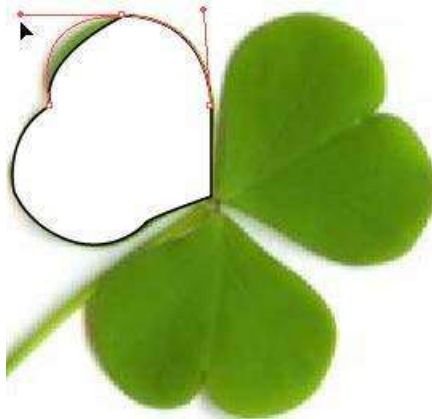



Figure 28 – Adjusting the Shape of Curved Segments

8. In the **Layers** panel, create a new layer and rename it to **leaf2**.
9. Use the method described in steps 3 through 7 to trace the second leaf on the artboard.
10. In the **Layers** panel, create a new layer and rename it to **leaf3**.
11. Use the method described in steps 3 through 7 to trace the third leaf on the artboard.
12. In the **Layers** panel, click the eye icon  to hide the **leaf1**, **leaf2**, and **leaf3** layers, and then create a new layer and rename it to **stem**.
13. Use the method described in steps 3 through 7 to trace the stem on the artboard.
14. In the **Layers** panel, make all layers visible and position the **stem** layer below the **leaf1** layer (see Figure 29 and Figure 30).

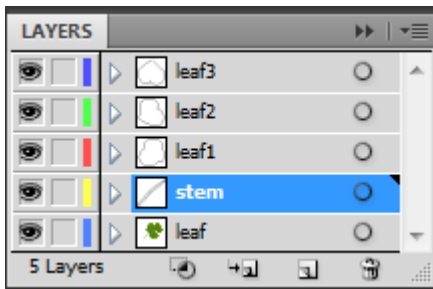



Figure 29 – Layers Panel with Three New Leaf Layers and Stem Layer



Figure 30 – Traced Leaves and Stem

15. In the **Layers** panel, create a new layer, rename it to **circle**, and position it above the **leaf3** layer.
16. In the **Tools** panel, select the **Ellipse** tool  hidden under the **Rectangle** tool (see Figure 31).

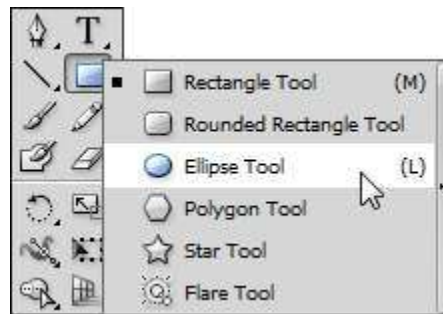





Figure 31 – Ellipse Tool

17. On the artboard, hold down the **Shift** key and drag the mouse pointer diagonally to draw a small circle at the center of the leaves.
18. Select the **Selection** tool  in the **Tools** panel.
19. On the artboard, click to select the stem, and then hold down the **Shift** key and click to select the three leaves.
20. Click the **Color** panel icon  on the right side of the workspace to display the **Color** panel (see Figure 32).
21. Click the menu button  in the upper-right corner of the **Color** panel and select the **RGB** color mode.
22. To fill in the traced shapes with a green color, select the **Fill** box, and then enter **110** in the **R** (red) box, **190** in the **G** (green) box, and **68** in the **B** (blue) box.

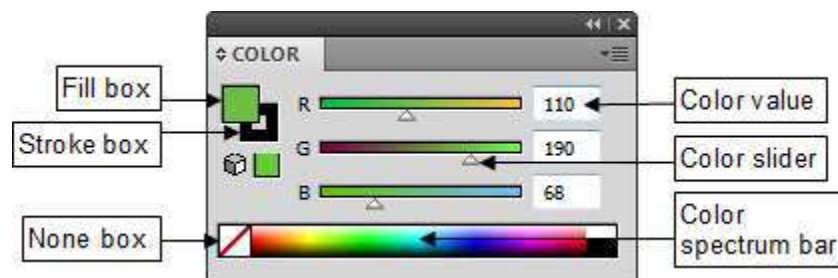


Figure 32 – Color Panel


23. On the artboard, select the small circle at the center of the leaves.
24. In the **Color** panel, select the **Fill** box, and then enter the **RGB** values **173, 209, 54**.
25. In the **Layers** panel, click the eye icon  to hide the **leaf** layer (see Figure 33). This hides the raster image of the clover and displays the vector-based clover (see Figure 34).



Figure 33 – Layers Panel with Hidden Leaf Layer





Figure 34 – Clover Vector Graphic

Creating Complex Vector Graphics

A complex shape can be created by adding basic shapes together. The more shapes you add, the more elaborate and complex the design will be. The following three lessons focus on creating complex vector graphics.

To create a swirl:

1. Click the **File** menu and select **New**. The **New Document** dialog box opens.
2. Type **Swirl** in the **Name** box.
3. Click the **Units** arrow and select **Inches** from the list.
4. Type **4** in the **Width** box and **6** in the **Height** box.
5. Click the **OK** button.
6. Select the **Ellipse** tool  in the **Tools** panel.
7. On the artboard, hold down the **Shift** key and drag to draw a circle (see Figure 35).
8. Select the **Pen** tool  in the **Tools** panel.
9. On the artboard, click to add three anchor points to form a triangle overlapping the circle (see Figure 35).

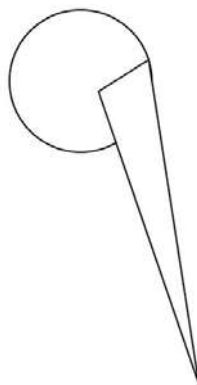


Figure 35 – Circle and Triangle

10. In the **Tools** panel, select the **Convert Anchor Point** tool  hidden under the **Pen** tool (see Figure 36).

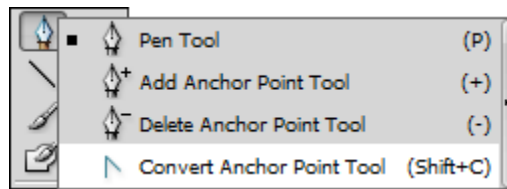


Figure 36 – Convert Anchor Point Tool

11. On the artboard, position the mouse pointer over each anchor point of the triangle and drag to curve the triangle (see Figure 37).

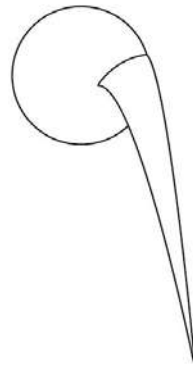




Figure 37 – Circle and Curved Triangle

12. Select the **Selection** tool  in the **Tools** panel.
13. On the artboard, hold down the **Shift** key and click to select both shapes.
14. Click the **Window** menu and select **Pathfinder**.
15. In the **Pathfinder** panel, click the **Unite** button  to combine both shapes (see Figure 38).

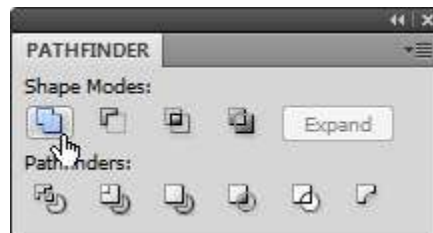


Figure 38 – Pathfinder Panel

16. Double-click the **Fill** box in the **Color** panel (see Figure 39). The **Color Picker** dialog box opens (see Figure 40).

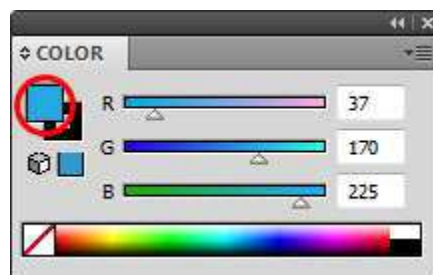


Figure 39 – Color Panel

17. Click inside the color field or the color spectrum to select a fill color.

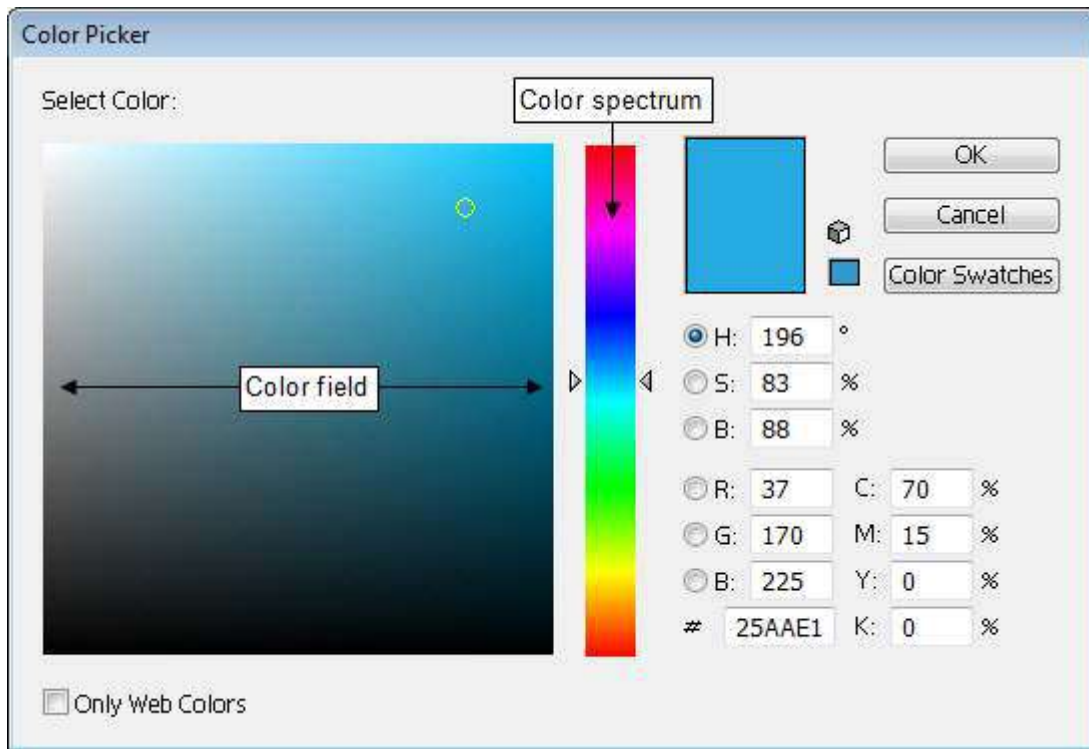


Figure 40 – Color Picker Dialog Box

18. Click the **OK** button to apply the selected color to the swirl (see Figure 41).

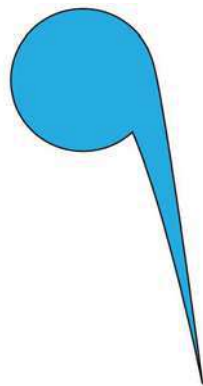




Figure 41 – Swirl

To create circle patterns:

1. Click the **File** menu and select **New**. The **New Document** dialog box opens.
2. Type **Circle Pattern** in the **Name** box.
3. Click the **Units** arrow and select **Inches** from the list.
4. Type **4** in the **Width** box and **4** in the **Height** box.
5. Click the **OK** button.
6. Select the **Ellipse** tool  in the **Tools** panel.
7. On the artboard, hold down the **Shift** key and drag to draw a circle.
8. Select the **Selection** tool  in the **Tools** panel.
9. Click to select the circle on the artboard.
10. In the **Color** panel, select the **Fill** box, and then click inside the color spectrum bar or drag the color sliders to apply a fill color to the circle (see Figure 42).

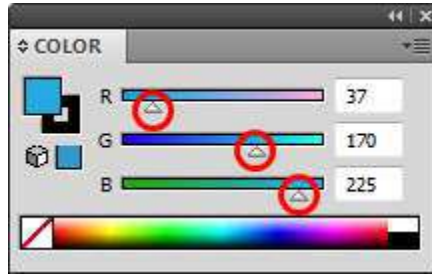


Figure 42 – Color Panel

11. Click the **Edit** menu and select **Copy**, and then click the **Edit** menu and select **Paste in Front** to duplicate the circle.
12. On the artboard, hold down **Shift+Alt** and drag a corner of the circle's bounding box toward the center to create the inner circle (see Figure 43).

NOTE: To show the bounding box, click the **View** menu and select **Show Bounding Box**.

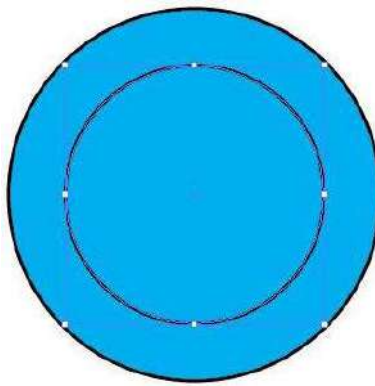


Figure 43 – Creating the Inner Circle

13. In the **Control** panel, click the **Fill** box and select a fill color to apply to the inner circle.
14. Repeat the process to create multiple circles (see Figure 44).

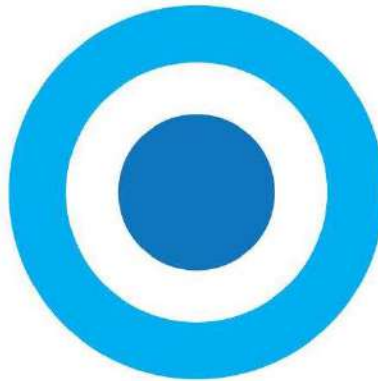


Figure 44 – Final Circle Pattern

To create blend patterns:

1. Click the **File** menu and select **New**. The **New Document** dialog box opens.
2. Type **Circle Blend** in the **Name** box.
3. Click the **Units** arrow and select **Inches** from the list.
4. Type **6** in the **Width** box and **4** in the **Height** box.
5. Click the **OK** button.






6. Select the **Ellipse** tool  in the **Tools** panel.
7. On the artboard, hold down the **Shift** key and drag to draw a circle.
8. Select the **Selection** tool  in the **Tools** panel.
9. Click to select the circle on the artboard.
10. In the **Control** panel, click the **Fill** box  and select a fill color, and then click the **Stroke** box  and select **None**  to remove the stroke (see Figure 45).




Figure 45 – Swatches Panel

11. On the artboard, hold down the **Alt** key and drag the circle to create a copy (see Figure 46).



Figure 46 – Duplicating the Circle

12. In the **Control** panel, click the **Fill** box  and select a different fill color for the new circle.
13. Click the **Object** menu, point to **Blend**, and select **Blend Options**. The **Blend Options** dialog box opens (see Figure 47).
14. Click the **Spacing** arrow and select **Specified Steps**, and then type **2** in the text box for the number of steps.
15. Click the **OK** button.

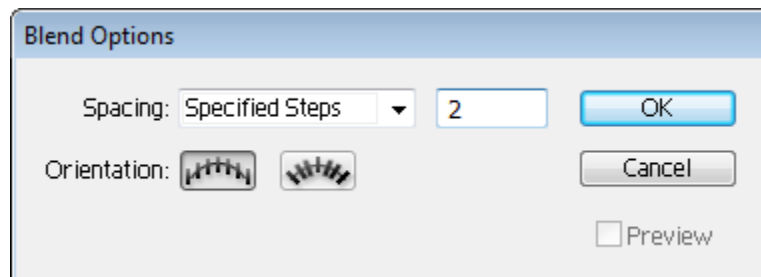


Figure 47 – Blend Options Dialog Box

16. Select the **Blend** tool  in the **Tools** panel.
17. Click once on each circle (see Figure 48).

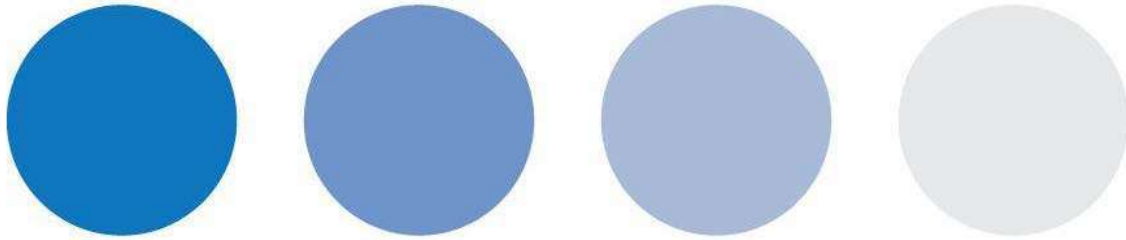





Figure 48 – Blend Tool Effect

Creating a Cartoon Character

This handout covers how to create basic shapes because they are the foundation of any type of artwork. Complex vector graphics are created by combining basic shapes. This lesson covers how to create a cartoon character using basic shapes.

To create a cartoon character:

1. Click the **File** menu and select **New**. The **New Document** dialog box opens.
2. Type **Cartoon** in the **Name** box.
3. Click the **New Document Profile** arrow and select **Web** from the list.
4. Click the **Size** arrow and select **640 x 480** from the list.
5. Next to **Orientation**, click the **Portrait** button .
6. Click the **OK** button.
7. Select the **Ellipse** tool  in the **Tools** panel.
8. On the artboard, hold down the **Shift** key and drag to draw a circle (see Figure 49).
9. Select the **Rectangle** tool  in the **Tools** panel.
10. On the artboard, drag to draw a rectangle overlapping the circle (see Figure 49).

NOTE: To display the grid, click the **View** menu and select **Show Grid**.

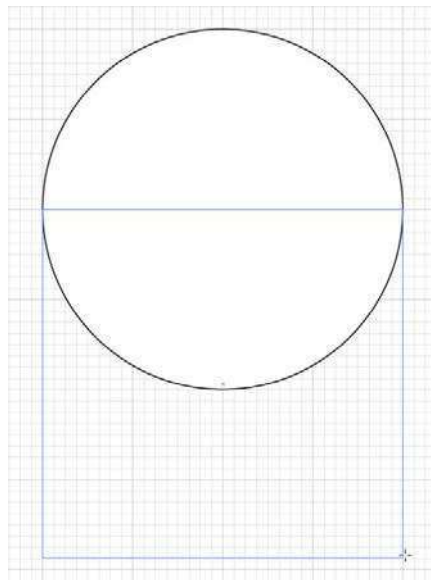


Figure 49 – Overlapping Circle and Rectangle



11. In the **Tools** panel, select the **Add Anchor Point** tool  hidden under the **Pen** tool.
12. On the artboard, click to add three evenly spaced anchor points at the bottom of the rectangle (see Figure 50).



Figure 50 – Adding Anchor Points on the Rectangle

13. Select the **Direct Selection** tool  in the **Tools** panel.
14. Drag the left and right anchor points up to create a jagged edge (see Figure 51).

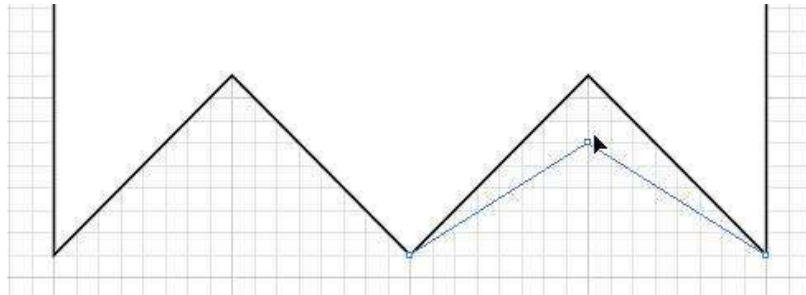




Figure 51 – Dragging Anchor Points

15. Select the **Selection** tool  in the **Tools** panel.
16. On the artboard, hold down the **Shift** key and click to select both shapes.
17. Click the **Window** menu and select **Pathfinder**.
18. In the **Pathfinder** panel, click the **Unite** button  to combine both shapes (see Figure 52).

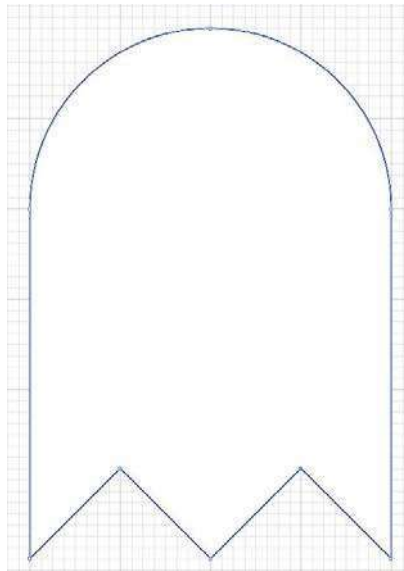




Figure 52 – Combining Two Shapes

19. To create the eyes, select the **Ellipse** tool  in the **Tools** panel.
20. On the artboard, hold down the **Shift** key and drag to draw a circle.
21. Select the **Selection** tool  in the **Tools** panel.
22. Click to select the circle on the artboard.
23. Click the **Edit** menu and select **Copy**, and then click the **Edit** menu and select **Paste in Front** to duplicate the circle.

24. On the artboard, hold down **Shift+Alt** and drag a corner of the circle's bounding box toward the center to create the inner circle (see Figure 53).

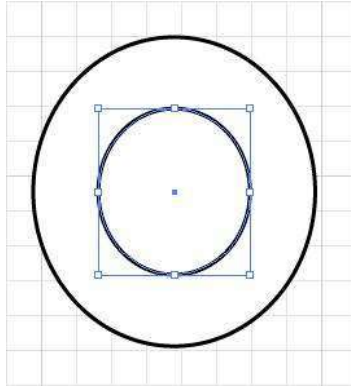


Figure 53 – Creating the Inner Circle

25. Drag the inner circle closer to the right side of the outer circle (see Figure 54).

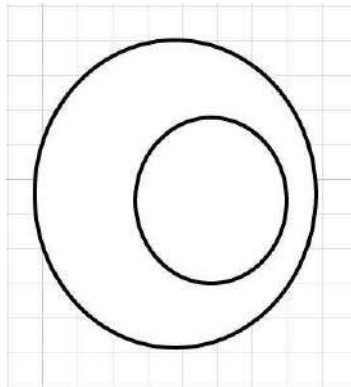


Figure 54 – Moving the Inner Circle

26. Click to select the outer circle on the artboard.
27. In the **Control** panel, click the **Fill** box and select **White**.
28. Click to select the inner circle on the artboard.
29. In the **Control** panel, click the **Fill** box and select **Black**.
30. On the artboard, hold down the **Shift** key and click to select both shapes, and then hold down the **Alt** key and drag the shapes to create a copy (see Figure 55).

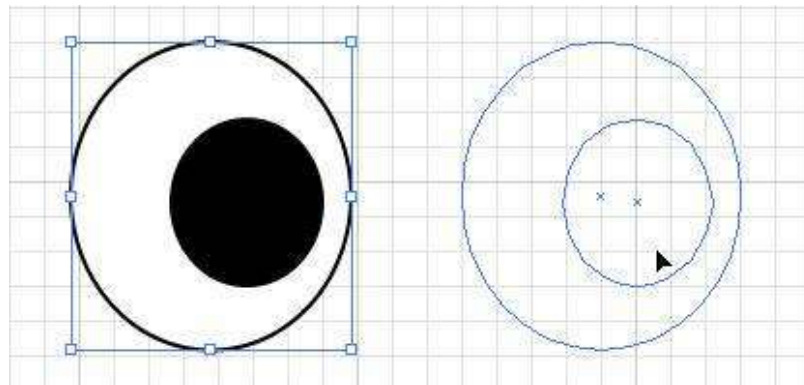


Figure 55 – Copying the Eye

31. Select both eyes and position them in the body of the character.

32. Click to select the body on the artboard.

33. In the **Control** panel, click the **Fill** box and select **Red** (see Figure 56).

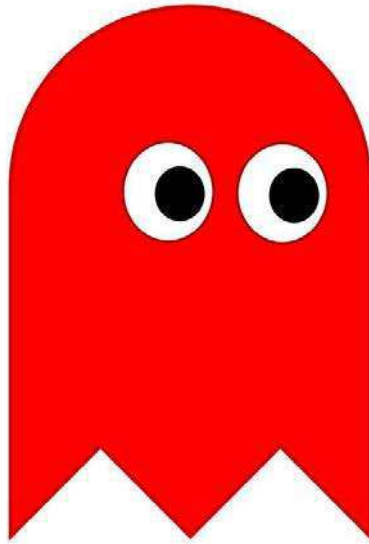


Figure 56 – Final Cartoon Character