

How to use layers in Illustrator

When creating complex artwork, keeping track of all the items in your document window is a challenge. Small items get hidden under larger items, and selecting artwork becomes difficult. Layers provide a way to manage all the items that make up your artwork. Think of layers as clear folders that contain artwork. If you reshuffle the folders, you change the stacking order of the items in your artwork. You can move items between folders and create subfolders within folders.

The structure of layers in your document can be as simple or complex as you want it to be. By default, all items are organized in a single, parent layer. However, you can create new layers and move items into them, or move elements from one layer to another at any time. The Layers panel provides an easy way to select, hide, lock, rename, and change the appearance attributes of artwork.

Layers panel overview

You use the Layers panel to list, organize, and edit the objects in a document (**Figure 1**). By default, every new document contains one layer, and each object you create is listed under that layer. However, you can create new layers and rearrange items to best suit your needs.

By default, Illustrator assigns a unique color (up to nine colors) to each layer in the Layers panel. The color appears next to the layer name in the panel. The same color appears in the illustration window in the bounding box, path, anchor points, and center point of a selected object. You can use this color to locate an object's corresponding layer quickly in the Layers panel, and you can change the layer color to suit your needs.

When an item in the Layers panel contains other items, a triangle appears to the left of the item's name. Click the triangle to show or hide the contents. If no triangle appears, the item contains no additional items.

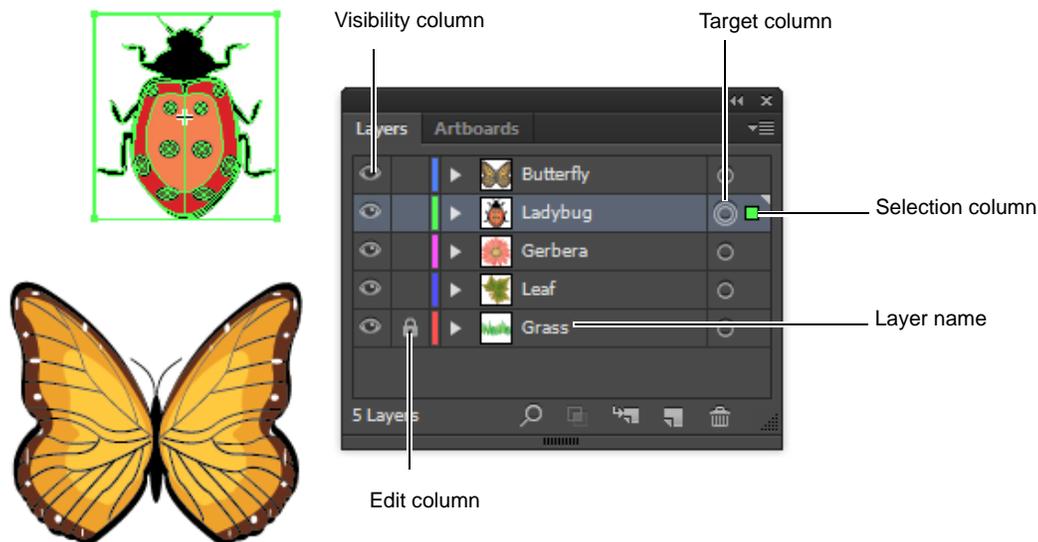


Figure 1 Layers panel

The Layers panel provides columns to the left and right of the listings. Click in a column to control the following characteristics:

- *Visibility column* Indicates whether items in the layers are visible or hidden (blank space), or whether they are template layers or outline layers.
- *Edit column* Indicates whether items are locked or unlocked. The lock icon indicates that the item is locked and cannot be edited; a blank space indicates the item is unlocked and can be edited.

- *Target column* Indicates whether items are targeted for application of effects and edit attributes in the Appearance panel. When the target button appears as a double-ring icon, the item is targeted; a single ring icon indicates that the item is not targeted.
- *Selection column* Indicates whether items are selected. A color box appears when an item is selected. If an item, such as a layer or group, contains some objects that are selected and other objects that are unselected, a smaller selection color box appears next to the parent item. If all of the objects within the parent item are selected, the selection color boxes are the same size as the marks that appear next to selected objects. You can use the Layers panel to display some items as outlines and other items as they will appear in the final artwork. You also can dim linked images and bitmap objects so you can edit artwork on top of the image more easily. This is especially useful when tracing a bitmap image.
- *Layer name* Indicates the name of the item as it appears in the Layers panel. To edit the layer name, double-click the item name in the Layers panel.

How to create a layer and move objects to a different layer:

1. In the Layers panel, click the name of the layer above which (or in which) you want to add the new layer (Figure 2).
2. To add a new layer above the selected layer, click the Create New Layer button in the Layers panel.

Note: You can also create a new sublayer inside the selected layer by using the Create New Sublayer button.

The new layer is added.

3. To move an object to a different layer, select the object in the Layers panel.
4. Drag the selected-art indicator, located at the right of the layer in the Layers panel, to the layer you want (Figure 3).
5. To edit the layer name, double-click the item name in the Layers panel and type a new name in the text field (Figure 4).

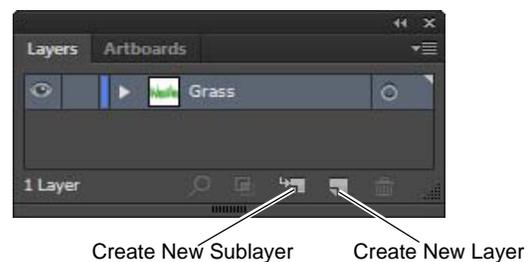


Figure 2 Layers panel

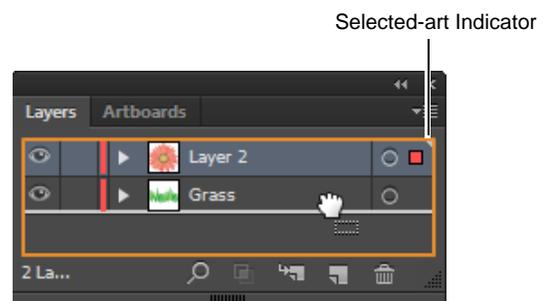


Figure 3 Dragging a layer in the Layers panel



Figure 4 Renaming a layer in the Layers panel

How to release items to separate layers:

1. In the Layers panel, click the name of a layer or group that contains multiple objects (**Figure 9**).
2. Do one of the following:
 - To release each item to a new layer, choose Release To Layers (Sequence) from the Layers panel menu.
 - To release items into layers and duplicate objects to create a cumulative sequence, choose Release To Layers (Build) from the Layers panel menu. The bottommost object appears in each of the new layers, and the topmost object only appears in the topmost layer (**Figure 10**). For example, assume Layer 2 contains an Atom (bottommost object), Radiation, a Flask, and DNA (topmost object). This command creates four layers—one with each element added sequentially. This is useful for creating cumulative animation sequences.

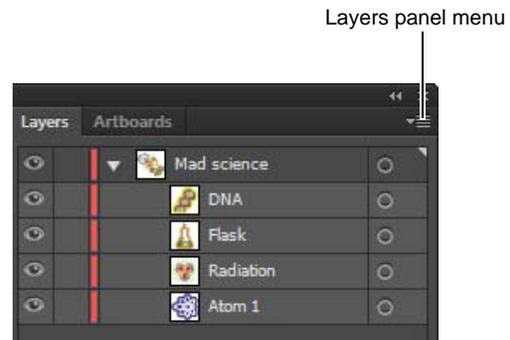


Figure 9 Layers panel with group selected

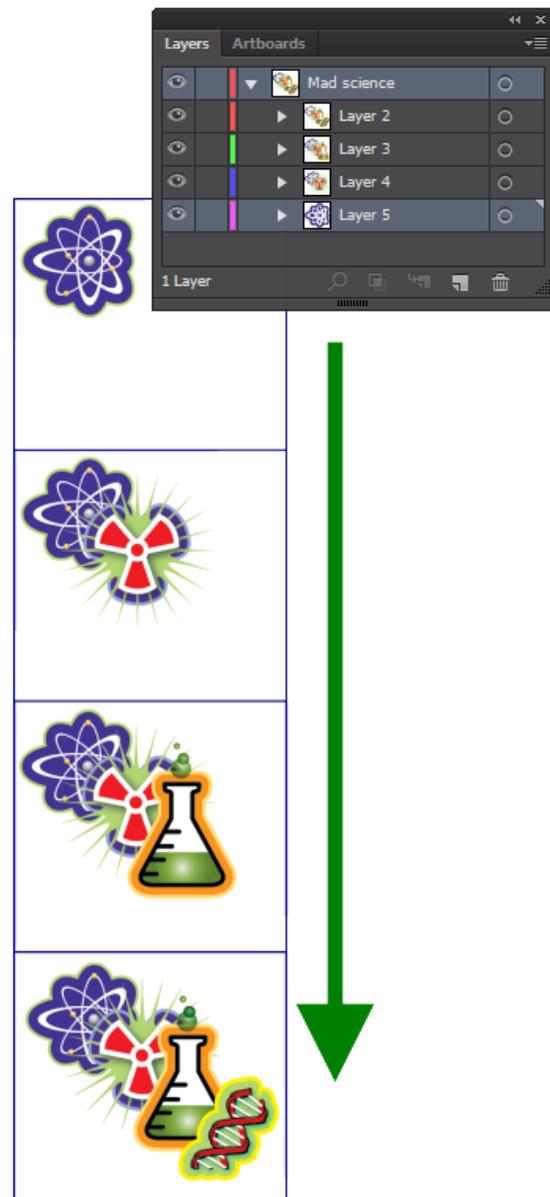


Figure 10 Items Released to Layers (Build)

Consolidate layers and groups

Merging and flattening layers are similar in that they both let you consolidate objects, groups, and sublayers into a single layer or group. With merging, you can select which items you want to consolidate; with flattening, all visible items in the artwork are consolidated in a single layer. With either option, the stacking order of the artwork remains the same, but other layer-level attributes, such as clipping masks, aren't preserved.

- To merge items into a single layer or group, hold down Ctrl (Windows) or Command (Mac OS) and click the names of the layers or groups you want to merge. Alternatively, hold down Shift to select all listings in between the layer or group names you click. Then, select Merge Selected from the Layers panel menu. Note that items will be merged into the layer or group you selected last. Layers can only merge with other layers on the same hierarchical level in the Layers panel. Likewise, sublayers can only merge with other sublayers that are within the same layer and at the same hierarchical level. Objects can't be merged with other objects.
- To flatten layers, click the name of the layer into which you want to consolidate the artwork. Then select Flatten Artwork from the Layers panel menu.

About clipping masks

A *clipping mask* is an object whose shape masks other artwork so only areas that lie within the shape are visible—in effect, clipping the artwork to the shape of the mask (**Figure 11**). The clipping mask and the objects that are masked are called a clipping set. You can make a clipping set from a selection of two or more objects or from all objects in a group or layer.

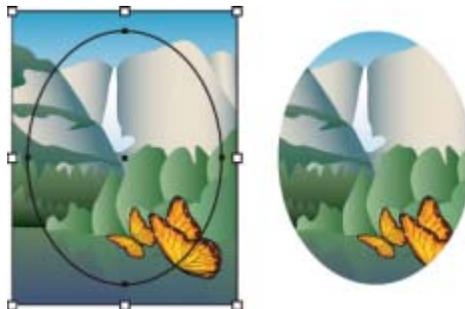


Figure 11 Before masking (left) compared to after masking (right)

Object-level clipping sets are combined as a group in the Layers panel. If you create layer-level clipping sets, the object on top of the layer clips all of the objects below it. All operations you perform on an object-level clipping set, such as transformations and alignment, are based on the clipping mask's boundary, not the unmasked boundary. Once you have created an object-level clipping mask, you can only select the clipped content by using the Layers panel or the Direct Selection tool or by isolating the clipping set.

The following guidelines apply to creating clipping masks:

- The objects you mask are moved into the clipping mask's group in the Layers panel if they don't already reside there.
- Only vector objects can be clipping masks; however, any artwork can be masked.
- If you use a layer or group to create a clipping mask, the first object in the layer or group masks everything that is a subset of the layer or group.
- Regardless of its previous attributes, a clipping mask changes to an object with no fill or stroke.

How to hide parts of objects with a clipping mask:

1. Create the object you want to use as the mask.

This object is called the *clipping path*. Only vector objects can be clipping paths.

2. Move the clipping path above the objects you want to mask in the stacking order.

In the example in **Figure 12**, the blue oval shape will be the clipping path.

3. In the Target column of the Layers panel, select all of the clipping path and the objects you want to mask (**Figure 12**).

4. Choose Object > Clipping Mask > Make.

The clipping mask is applied (**Figure 13**).

5. To edit a clipping mask, select and target the clipping path in the Layers panel.
6. Do any of the following:
 - Move the clipping path by dragging the object's center reference point with the Direct Selection tool.
 - Reshape the clipping path by using the Direct Selection tool.
 - Apply a fill and stroke to a clipping path (**Figure 14**).
7. To release objects from a clipping mask, select the group that contains the clipping mask and choose Object > Clipping Mask > Release.

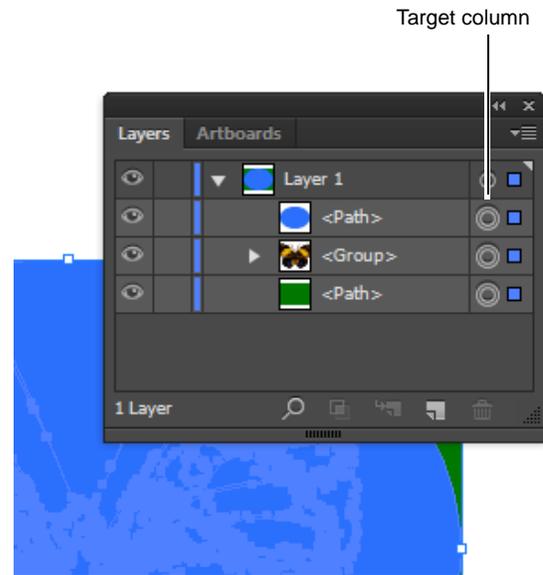


Figure 12 Layers panel with objects selected

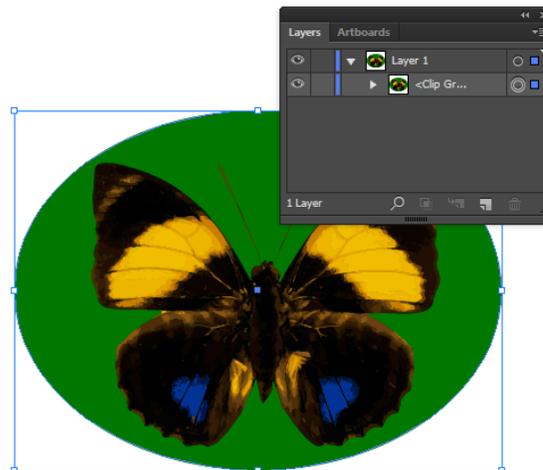


Figure 13 Clipping mask applied

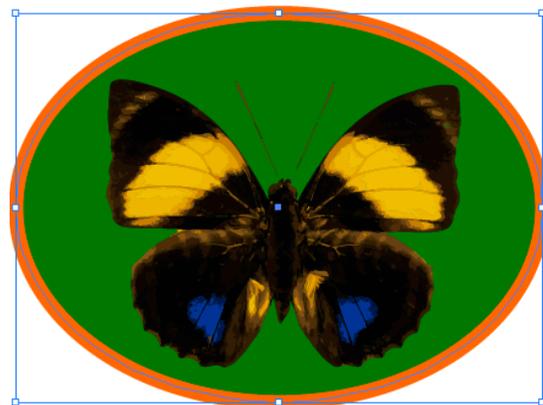


Figure 14 Stroke applied to clipping mask

About opacity masks

You use an opacity mask and a masking object to alter the transparency of artwork. The opacity mask (also referred to as masked artwork) provides the shape through which other objects show (**Figure 15**). The masking object defines which areas are transparent and the degree of transparency. You can use any colored object or raster image as the masking object. Illustrator uses the grayscale equivalents of the colors in the masking object for the opacity levels in the mask. Where the opacity mask is white, the artwork is fully visible. Where the opacity mask is black, the artwork is hidden. Shades of gray in the mask result in varying degrees of transparency in the artwork.

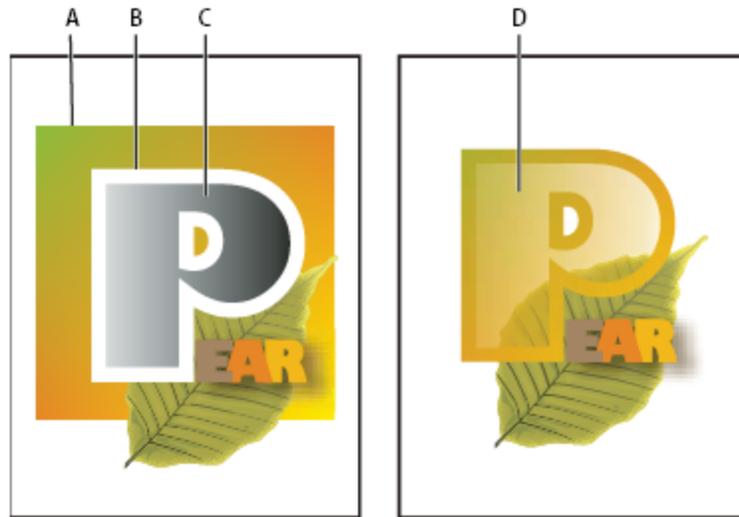


Figure 15 A. Underlying objects; B. Opacity mask artwork; C. Masking object filled with black-to-white gradient; D. C moved over the area of B and masking B

When you create the opacity mask, a thumbnail of the masking object appears in the Transparency panel to the right of the thumbnail of the masked artwork (**Figure 16**). (If these thumbnails aren't visible, choose Show Thumbnails from the panel menu.) By default, the masked artwork and the masking object are linked (as shown by a link between the thumbnails in the panel). When you move the masked artwork, the masking object moves along with it. However, when you move a masking object, the masked artwork doesn't move. You can unlink the mask in the Transparency panel to lock the mask in place and move the masked artwork independently.

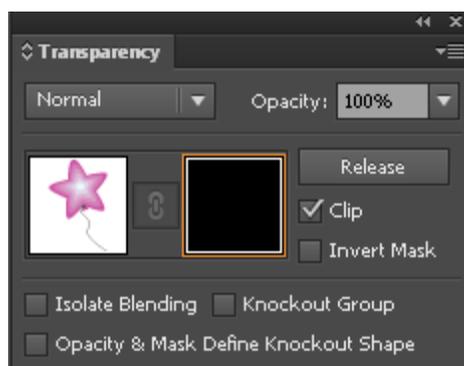


Figure 16 Transparency panel displays opacity mask thumbnails: left thumbnail represents the opacity mask, right thumbnail represents masking objects

How to create an opacity mask:

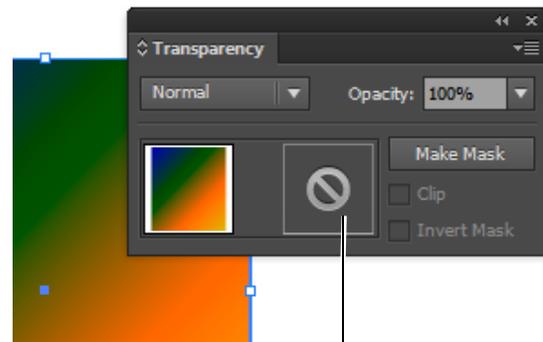
1. Select a single object or group, or target a layer in the Layers panel.
2. Open the Transparency panel and choose Show Options from the panel menu to see the thumbnail images (Figure 17).
3. Double-click directly to the right of the thumbnail in the Transparency panel.

An empty mask is created and Illustrator automatically enters mask-editing mode.

4. Use the drawing or text tools to draw a mask shape (Figure 18).
5. Click the masked artwork's thumbnail (left thumbnail) in the Transparency panel to apply and exit mask-editing mode (Figure 19).

Note: The Clip option sets the mask background to black. Therefore, if you use a black object, such as black type, to create an opacity mask with the Clip option selected, it will not be visible. To see the objects, use a different color or deselect the Clip option.

6. To convert an existing object into an opacity mask, select at least two objects or groups, and choose Make Opacity Mask from the Transparency panel menu. The topmost selected object or group is used as the mask.
7. To edit a masking object, click the masking object's thumbnail (right thumbnail) in the Transparency panel.
8. Alt-click (Windows) or Option-click (Mac OS) the mask thumbnail to hide all other artwork in the document window. (If the thumbnails aren't visible, choose Show Thumbnails from the panel menu.)
9. Use any of the Illustrator editing tools and techniques to edit the mask.
10. Click the masked artwork's thumbnail (left thumbnail) in the Transparency panel to exit mask-editing mode.



Double-click to create and edit opacity mask

Figure 17 Selected object and Transparency panel

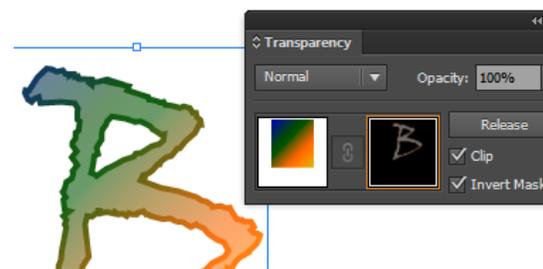


Figure 18 Drawing mask shape in mask-editing mode



Figure 19 Completed opacity mask

11. You can unlink, deactivate, or remove an opacity mask:

- To unlink a mask, target the masked artwork in the Layers panel, and then click the link symbol between the thumbnails in the Transparency panel. The masking object is locked in position and size, and the masked objects can be moved and resized independently. To relink, click the area between the thumbnails in the Transparency panel.
- To deactivate a mask, target the masked artwork in the Layers panel, and then Shift-click the masking object's thumbnail (right thumbnail) in the Transparency panel. When the opacity mask is deactivated, a red x appears over the mask thumbnail in the Transparency panel (**Figure 20**). To reactivate a mask, target the masked artwork in the Layers panel, and then Shift-click the masking object's thumbnail in the Transparency panel.
- Target the masked artwork in the Layers panel, and then select Release Opacity Mask from the Transparency panel menu. The masking object reappears on top of the objects that were masked.

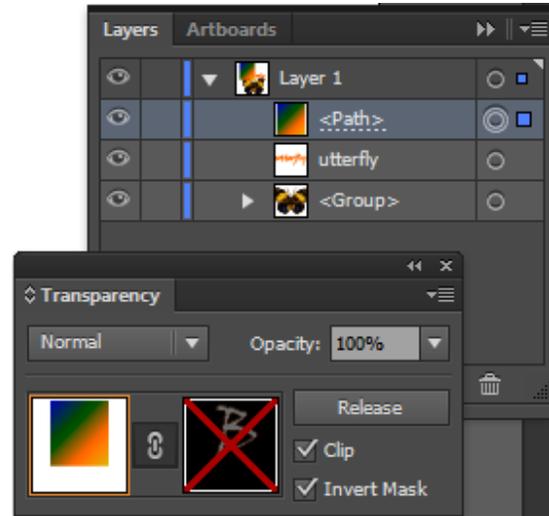


Figure 20 Transparency panel showing deactivated mask