Illustrator:
The Pathfinder

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Guide to the Pathfinder Panel

Introductions

The Pathfinder doesn’t actually find paths. It may create new ones from existing shapes, but the name can be misleading to you if you have never used these tools in Illustrator. The panel itself is divided into two rows. The top four icons are called “Shape Modes,” and the bottom five are “Pathfinders.”
Note: If you have your Tool Tips turned on (Preferences> Show Tool Tips), you'll notice that a couple of the buttons are called one thing in the tip, but another in the Edit menu when you undo. “Unite” is the same as “Add,” and “Minus Front” is the same as “Subtract.”

Shape Modes

To Use the Add Shape Modes

1. Draw the Shapes you want to blend. For this example I will use a square and a polygon.

2. Position the polygon on top of the square. This can be done by selecting the polygon and dragging it to cover the square.

3. With both shapes selected use the ADD button.

If the objects are different colors, the merged shape takes on the attributes of the top-most object.
To Use the Subtract Shape Mode

1. Draw two circles

2. Select the first one and position on the second circle as shown below

3. Select both circles

4. Click the SUBTRACT button

To Use the Intersect Shape Mode

1. Draw a circle and a long narrow rectangle and position them as shown below. Next, select both objects

2. Click the INTERSECT button

**Intersect** Deletes everything that does not overlap, and combines the rest into a single shape.
To Use the Exclude Shape Mode

1. Draw your shapes or use the same shapes we used for the *Intersect* example

2. Select both objects.

3. Click the EXCLUDE button.

Exclude does the opposite of intersect getting rid of everything that *isn’t* overlapping, it gets rid of everything that does overlap. The resulting shapes become a compound path.
Multiple objects can be used when trying to combined or subtract paths. The order in which you place the shapes determines the outcome of your shape.

**Using Add for Multiple Shapes**

1. Draw at least three shapes. I’m using a square, oval and star.  
2. Select all three shapes.  
3. Click the **ADD** button

![Add Example](image)

**Using Subtract for Multiple Shapes**

1. Draw at least three shapes. I’m using a circle and two arrows  
2. Select all three shapes.  
3. Click the **SUBTRACT** button

![Subtract Example](image)

**Add** The resulting shape will take on the color attributes of the top-most object.

**Subtract** The front-most objects will be cut out from the back-most object.
Using Intersect for Multiple Shapes

1. Draw at least three shapes. I’m using a square, a circle and circle that has been divided and rotated.
2. Select all three shapes.
3. Click the INTERSECT button

Using Exclude for Multiple Shapes

1. Draw at least three shapes. I’m using a square, a circle and circle that has been divided and rotated. *Same as above example.*
2. Select all three shapes.
3. Click the EXCLUDE button

**Intersect** Only the areas in which all the objects overlap will remain.

**Exclude** When an even number of objects overlap, the overlap is cut out. When an odd number of objects overlap, the overlap becomes filled. And again, the resulting shape will take on the color attributes of the top-most object.
The Pathfinders

To Use Divide Pathfinder

1. Draw a circle and a line.
2. Select both objects.
3. Click the **DIVIDE** button.
   Your circle is now divided into two parts

4. Select the object. **Right click** and choose **Ungroup**

5. You can now click either half and drag them apart.

To Use Trim Pathfinder

1. Draw a polygon and a
2. Select both objects.
3. Click the **Trim** button.
   The shape of the polygon has been trimmed out of the rectangle.

4. Select the object. **Right click** and choose **Ungroup**

5. Click on the polygon shape and drag it away from the rectangle.
To Use Merge Pathfinder

*Merge:* Depending on the shapes you start with, you might think that Merge does exactly what Trim does. Merge has one exception, however. It does merge overlapping objects filled with the same color (regardless of the stacking order).

1. Draw a circle and a star.
2. Select both objects.
3. Click the **Merge** button.
   Your circle is now merged with the star.
4. Select the object. **Right click** and choose **Ungroup**
5. Click on the each star point and pull away from circle.

To Use Crop Pathfinder

*Crop:* Uses the topmost object to crop away everything else. Think of it as an inverse cookie cutter. It also removes strokes. The layering of your objects will determine your new shape.

1. Draw a circle, rectangle and a triangle
2. Select all objects.
3. Click the **Crop** button.
4. Try arranging your shapes differently and crop to see what you get.
To Use Outline Pathfinder

Outline is another Pathfinder that, at first glance, may seem to do nothing. As you use it you will see that it is sort of like Divide, the results are individual line segments rather than individual shapes.

1. Draw a square, circle and star.
2. Select all objects.
3. Click the Outline button.
4. With objects still select add a stroke color and increase the stroke weight.
5. With objects still selected Right Click and choose Ungroup.
6. Click on each section and drag away.

To Use Minus Back Pathfinder

Minus Back does the Opposite of Minus Front/Subtract. Anything overlapping and in back of the front most object goes away.

1. Draw a square and circle.
2. Select all objects.
3. Click the Minus Back.
4. Rearrange the order of the shapes and repeat Steps 2 & 3. Result.
Illustrator Tools

Every tool that has a black triangle in the corner of the button, has hidden tools associated with that tool. Click and hold the button and a pop up of all tools will appear.

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