



Path Editing

Path Editing

In this lesson, we're going to explore ways to modify paths and shapes, otherwise known as vector tools. When you use a vector tool, you are not creating pixels (like you would find in a normal photograph). Instead, you are creating paths, which are a series of dots that are connected with straight lines or smooth curves.

If you are not used to using the Pen Tool to create paths and shapes, know that there is a separate Masters Academy lesson that teaches you how to use the Pen Tool. That skill will be crucial for following along with this lesson.

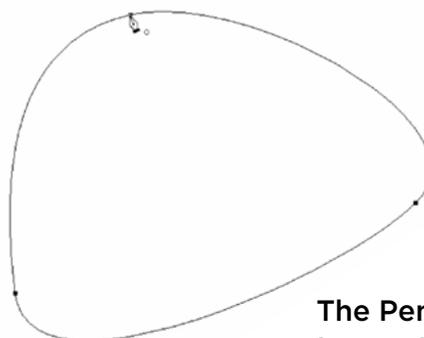
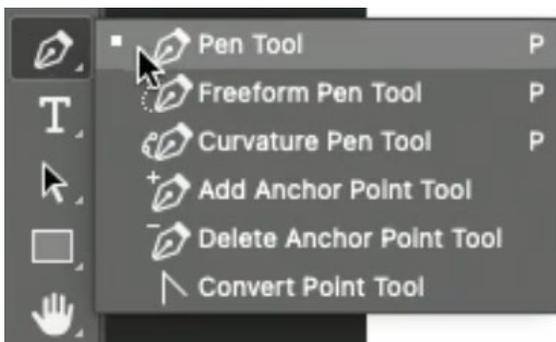
You can access that video here: <https://mastersacademy.com/course/vid029/>

NOTE: I have also included the handbook for that Pen Tool lesson at the end of this PDF, in case you need a refresher!

Once you learn the basics and know how to create shapes and paths, you can then use those to fill an area via a shape layer or to limit where a layer appears via a vector mask. Then you can get more sophisticated by combining more than one shape together.

Path Basics & Paths Panel (Timestamp 1:35)

Start with a new, empty Photoshop document and activate the Pen Tool. When creating a shape with the Pen Tool, a single click will place a point that will have a hard edge and create a straight line segment. Click and drag to create a smooth curve. Click back on the first point to close the shape.

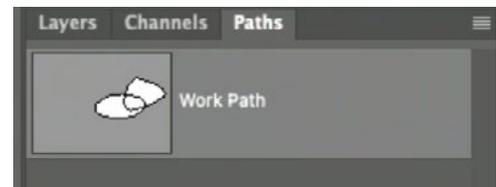
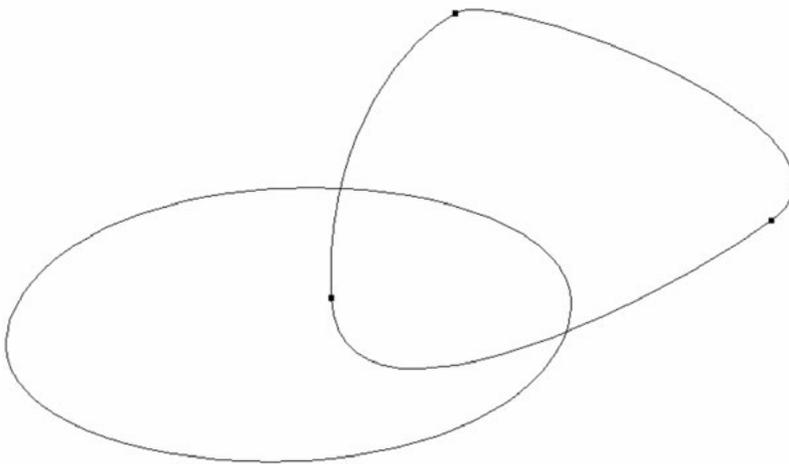


The Pen Tool is being used to create a path shape.

The Paths Panel is grouped with the Layers Panel on the right side of the screen. After you create a path, it will appear in this panel. In the path thumbnail, the white part is the area that you defined. The path will be named “Work Path” unless you change it.



If the Work Path is active and you use the Pen Tool to create another shape, this shape will be added to the Work Path. If the Work Path is no longer active when you create another shape, this shape will REPLACE the existing Work Path. You can think of the Work Path as something that’s fleeting. It is a temporary path that will go away unless you name it. If you name the path (by double-clicking on the path name), and then click away from it so that it’s no longer active, you can use the Pen Tool to create another shape and this will create a NEW Work Path.



Two overlapping shapes were made using the Pen Tool. In the Paths Panel, the white part of the thumbnail depicts the shape that’s being defined.

TIP: You can change the size of the thumbnails in the Paths Panel by right-clicking in an empty part of the panel. A pop-up menu will give you three different thumbnail size choices.

The Pen Tool was used to create a path, but that path isn’t doing anything yet. It could be attached to a layer as a vector mask so it would limit the layer’s visibility. The mask would only allow the layer to be visible in the areas where the path is white (in the path thumbnail). You could also use the path to apply a vector mask to a new solid color layer, otherwise known as a Shape Layer.

How to Make Paths Interact (4:48)

If you have a path with multiple components, you can control how the active component of the path will interact with the others. The active component of the path will have the points visible. Click on the Path Operations icon  in the Options Bar (above the image window) and a menu will present you with the following options.

Combine Shapes This option will combine the shapes into one single path component.

Subtract Front Shape This will cause the active component to create a hole in the other parts of the path.

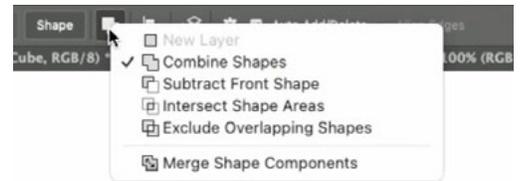
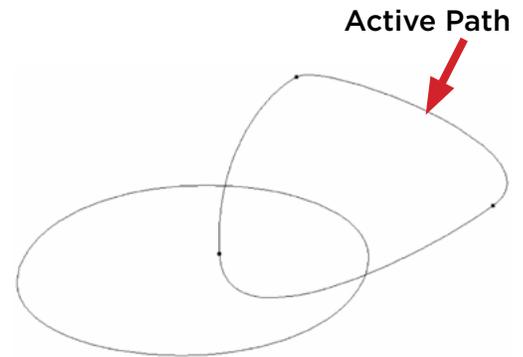
Intersect Shape Areas This will only keep the area where the active component overlaps with the others.

Exclude Overlapping Shapes This option will create a hole in the area where the active path component overlaps with the other component[s].

Merge Shape Components Once the paths components are interacting in the way that you want, you can merge the result by choosing this option. This will create one single, continuous path component and remove any visible paths that are not part of the final shape.

To save the path, double-click on the name “Work Path” and give the new path a name.

When you hover the Pen Tool over the document window, an asterisk will appear next to the tool tip, indicating that you’re about to create a new, independent component of the active path.



Front shape was subtracted



Paths were intersected



Path excludes overlapping shapes

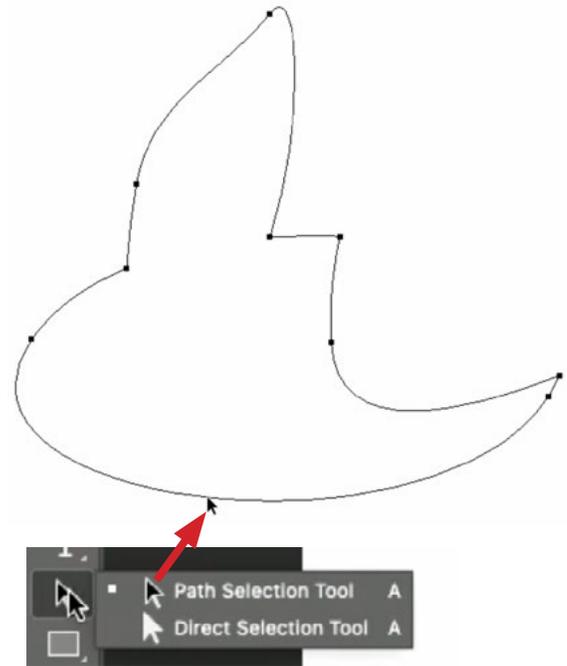


Front shape was subtracted, then we merged shape components.

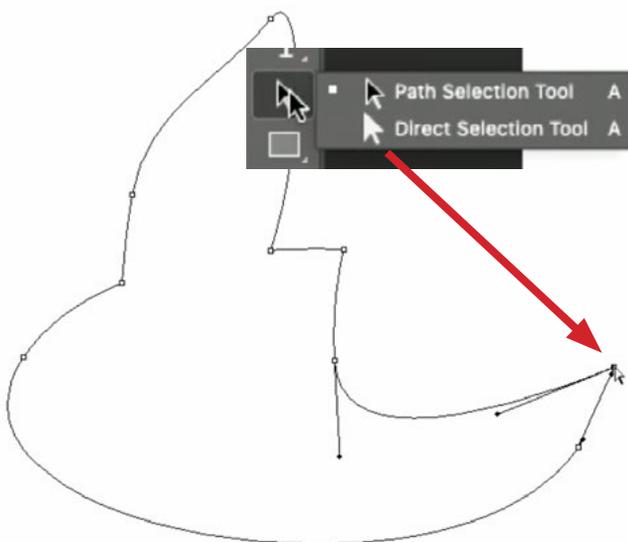
The Path Selection Tool & Direct Selection Tool (8:40)

Now let's look at how the Pen Tool relates to the Path Selection Tool and the Direct Selection Tool. When you use the Path Selection Tool to click on a path, it selects the entirety of the path. All of the points that make up the path will turn black to indicate that they're active. When the entire path is active, you can click and drag on it to move the entire shape.

When you use the Direct Selection Tool to click on the path, it will not select the entire shape. The points that make up the path will become hollow, which means that they're not active. You can then use the Direct Selection Tool to click and drag on Independent parts of the path. You can drag an individual point, one of the handles that extend from a point or an individual path segment.



The Path Selection Tool is being used to move the path as a whole.



The Direct Selection Tool is used to move an individual point on the path.

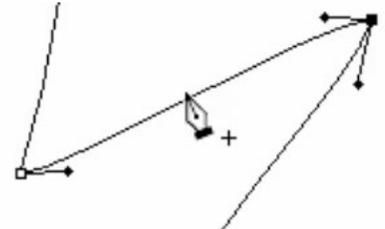
Command key to switch between tools

When either the Path Selection Tool or the Direct Selection Tool is active, you can easily switch to the other tool by holding down the Command key (Ctrl on Win). As soon as you click somewhere, it will officially switch to the other tool. If the Path Selection Tool is active, you can hold down the Command key and you will see the tool tip change to the Direct Selection Tool. As soon as you click in the document, it will keep the Direct Selection Tool active. The same goes when it's the other way around.

When the Direct Selection Tool is active, you can select and move more than one point at a time by holding down the Shift key to click on additional points.

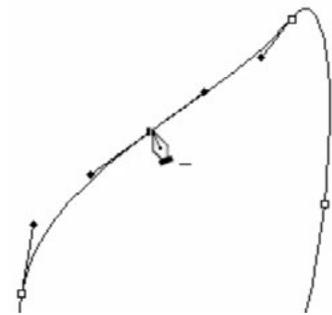
Modify a Shape Path (11:10)

Add a point There are a few different ways that you can modify a shape. With the Pen Tool active, you can hover your cursor over a path line and you will see a little plus icon appear next to the tool tip. This indicates that a new point will be added when you click on the path. When you add a new point, it will attempt to not change the shape of the existing path.

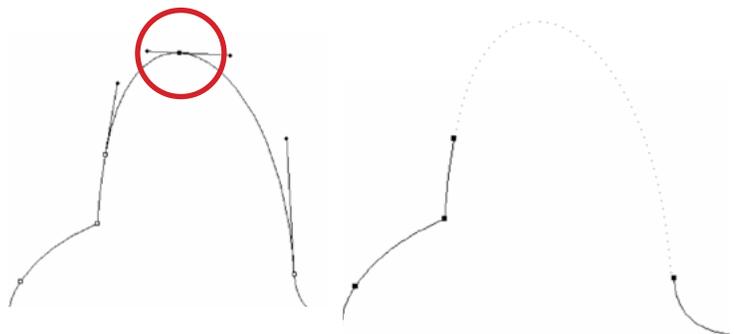


Move a point If you want to move that new point, you will need to use the Direct Selection Tool and there is a fast way of accessing that. When the Pen Tool is active, hold down the Command key (Ctrl on Win) and it will temporarily switch to the Direct Selection Tool, as long as you have the key held down. When you release the Command key, it will go back to using the Pen Tool.

Remove a point To remove a point, use the Pen Tool to hover your cursor over the point you want to remove. A little minus icon will appear to the right of the tool tip. When you click, it will remove that point from the path line. When you remove a point from the path, it won't sever the path line. It will instead connect the existing points to create a continuous shape.

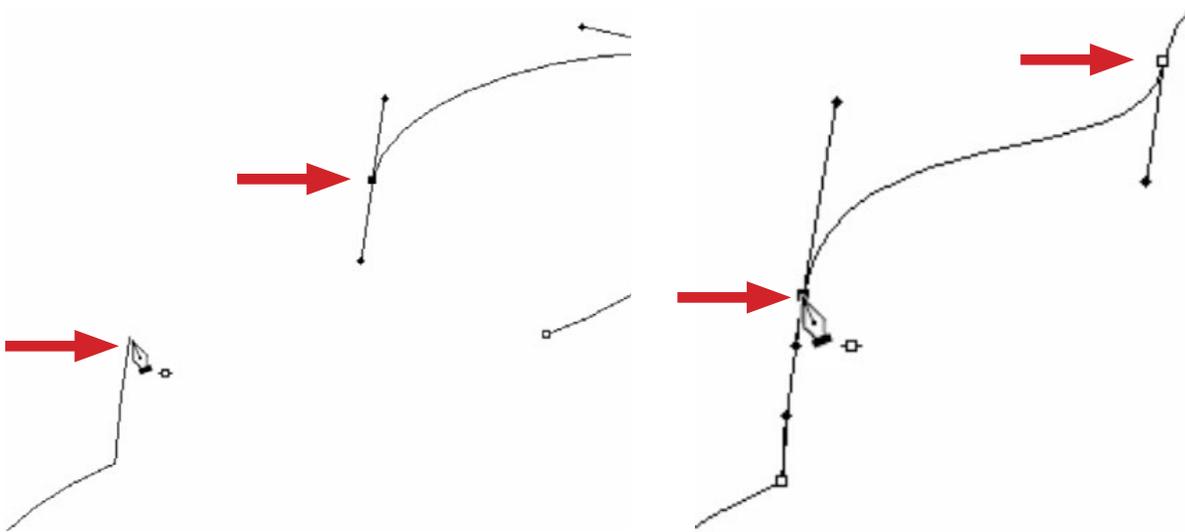


Break the path You can break a path by using the Direct Selection Tool to select the point (or points) you want to remove. Then tap the Delete key. This will remove the points and sever the path line so that it is no longer continuous.



The point was selected and then we tapped the Delete key to remove it and break the path.

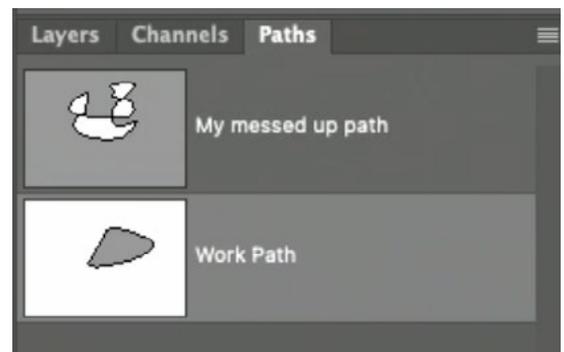
To connect broken path lines, first make sure the end point that you want to connect is active. Then click on the end point on the other broken segment where you would like the path line to be attached.



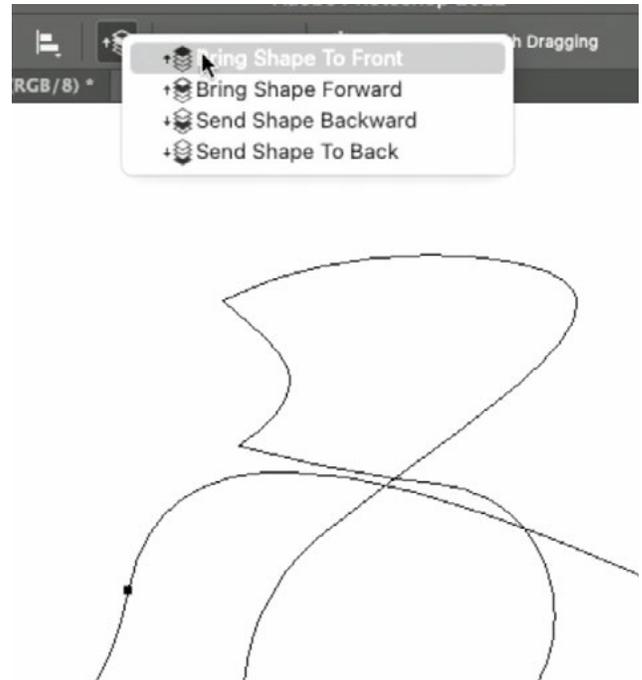
Here, we closed a broken path line by clicking on the end points to be connected.

Combining Paths (15:13)

After naming the Work Path so that it is no longer temporary, you can create additional paths and these will all appear in the Paths Panel (Just remember to name them to make them permanent.) We already talked about how you can control the way components of an individual path interact. Now let's look at how you can make separate paths interact.



Merge paths To merge two paths together into one path, make sure the first path is active, click on the Edit menu and choose copy. Then activate the second path, click on the Edit menu and choose paste. The copied path will be pasted into the active path. Then, you can use the menu in the Options Bar to determine how the individual path segments should interact. Note that the stacking order of the path segments will have an effect on how the paths are merged. For example, the first shape you created will be at the bottom of the stack. If you were to select this shape and then choose the Subtract option, nothing would happen because a shape can only subtract from what is below it. You can change the stacking order using the Stacking icon in the Options Bar.



The Pen Tool Handbook

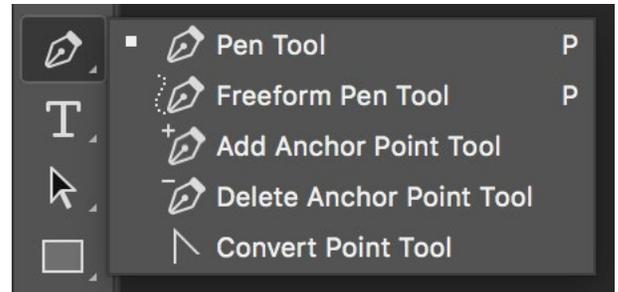
The following pages contain the handbook for the lesson referenced earlier that covers the Pen Tool. You can access that lesson video at the following link:

<https://mastersacademy.com/course/vid029/>

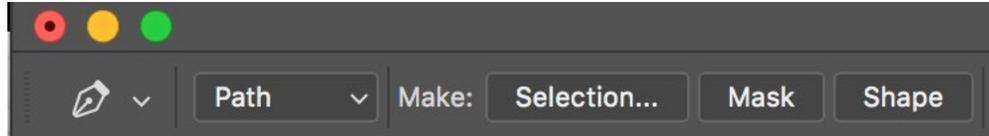
The Pen Tool in Photoshop

In this lesson, we're going to cover the basics of the Pen Tool in Photoshop. The Pen Tool can be used to draw shapes, select objects or to mask a layer so that it only shows up inside a particular shape. The Pen Tool is good for defining areas that are made up of straight lines and smooth curves. It is not good for selecting things that have soft edges, fuzz or fluffy hair.

The Pen Tool can be found in the Tool Bar on the left side of the interface. If you click and hold on the Pen Tool icon, you will see that there are different versions of the tool that you can choose from. When you use the Pen Tool, you are creating a path. Once you have a path in your document, you can do one of three things with it, and these options can be found in the Options Bar above the main image window.



If you click and hold on the Pen Tool icon in the Tool Bar, you will have access to all the versions of the tool.



Once you have a path, you can use these options to tell the path what to do.

- **Selection:** This option will convert the path into a selection.
- **Mask:** Choosing this option will turn the path into a mask, attached to the active layer.
- **Shape:** This will create a shape layer out of your custom path just as if you used the Shape Tool.

The second tool hidden behind the Pen Tool icon is the Freeform Pen Tool. When activated, you can use this tool to click and drag out a shape in a similar way that you would use the Lasso Tool. As long as you let go of your mouse button in the same place that you started, you will end up with a closed path. While this may be the easiest of the Pen Tool options, I find I use this one the least.

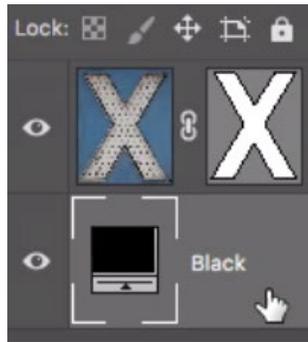
The version of the tool that I use the most is the regular old Pen Tool, and this is the top option as well as the default option for the tool.

Creating a shape made of straight lines The simplest kind of path to create is one that is made up of all straight lines. With the Pen Tool active, click in your document to add a point. Then click somewhere else to create a second point



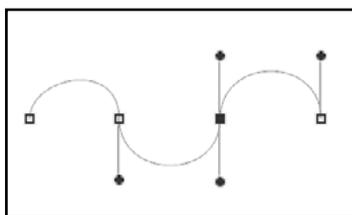
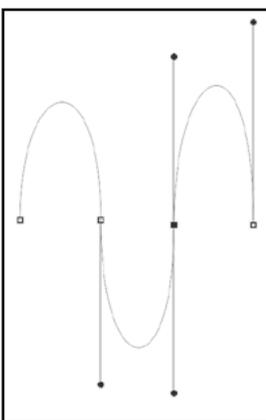
The circle icon appears next to the cursor when you're about to close the path.

with a straight line connecting them. Keep clicking to add points, creating the shape you desire. In order to create a finished, closed path, you will need to click back in the same place that you started. When you hover your cursor over that place, your cursor will get a little circle icon next to it, indicating that you are about to close the path.



Here is an example of when a straight-lined path is very useful. I wanted to mask everything except for the X in this layer. I used the Pen Tool to make a path around the X and then I chose Mask from the choices in the Options Bar.

Creating a shape made of curved lines If you click and drag with the Pen Tool, you will create a point with handles attached to it. These handles determine what direction the line will travel in when it moves away from the point. When creating a path for a curved object, you want to think about the different curves that the object is made out of. The points should be placed in the areas where one curve transitions into another curve and you would click and drag, placing points with handles in each of these areas. The length of the handle will determine how strongly it influences the direction of the line. A short handle will force the line to follow that direction for a short distance.



The length of the handles determine how strongly they influence the direction of the curve.

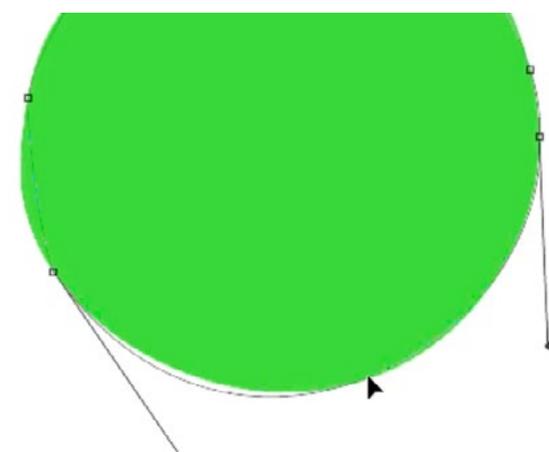
The points should be placed in the areas where one curve transitions into another curve and you would click and drag, placing points with handles in each of these areas. The length of the handle will determine how strongly it influences the direction of the line. A short handle will force the line to follow that direction for a short distance.

A long handle will force the line to follow that direction for a longer distance before deviating toward the next point.

It takes a little while to get used to knowing how long the handles should be. The following technique will help with that. The Direct Selection Tool can be found in the Tool Bar and it is designed to modify a path that you've already created. You can use it to click on the different points to make the handles re-appear so that you can modify them or you can use it to click and drag on the path itself. When dragging on the path itself, it will automatically change the length and angle of the handles on either side of the path segment. I like that this changes the length of the handles, but I don't want this to change the angles of the handles. I can specify this by turning on the "Constrain Path Dragging" check box in the Options Bar (when the Direct Selection Tool is active). If I do this, I can quickly create a path



The Direct Selection Tool can be found hidden behind the Path Selection Tool.



The Direct Selection Tool is used to drag the curve into the best position.

and then drag all of the curve segments to fine-tune how long the handles are, therefore perfecting the curve. If a curve is still slightly off, it means that you will have to adjust the direction of the handles.

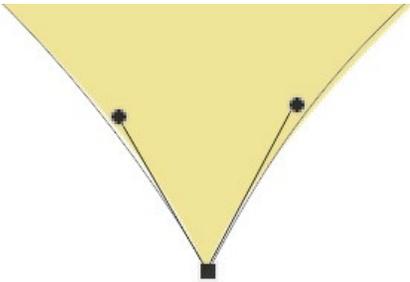
You can access the Direct Selection tool while you're in the Pen Tool by holding down the Command key (Ctrl on Win). The entire time you have the Command key held down, you will be using the Direct Selection Tool. When you let go, you will get the Pen Tool again.

If you have a path that's already completed, you may find that you need to add a point in order to change or fine-tune the path. With the Pen Tool active, hover your cursor over the path. You will see a little plus (+) symbol appear next to the cursor and this means that you can click on the path to add a new point. You can then hold down the Command key to access the Direct Selection Tool to adjust the handles of the new point.



The plus symbol indicates that you can add a point to the curve.

Creating a path with abrupt corners When you click and drag, you get handles that come out of both sides of the point, creating a smooth curve. If you need to create a sharp angle, activate the Convert Point Tool, which can be found behind the Pen Tool icon in the Tool Bar. With the Convert Point Tool active, you can click and drag on the handles to move them independently of each other and create a sharp, angled transition in the path. To change a point that has a sharp angle and make it smooth again, use the Convert Point Tool to click on the point and drag out new handles.

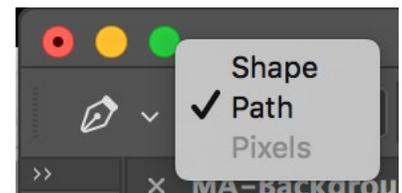


The Convert Point Tool will allow you to move the handles independently of each other, creating a sharp angle instead of a smooth curve.

Note that you don't have to manually use the menu to access the Convert Point Tool. There is an easy way to access it while using the Pen Tool. With the Pen Tool active, hold down the Option key (Alt on Win) to temporarily access the Convert Point Tool. The entire time you have the Option key held down, you will be using the Convert Point Tool. When you release the key, it will switch back to the Pen Tool. This makes it very easy to create both curved lines and sharp edges while creating a shape with the Pen Tool.

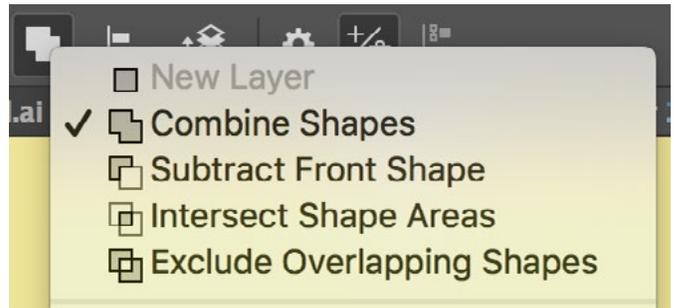
Sometimes, you will need your path to have a curve on one side of a point and a straight line on the other side of the point. With a point that has two handles creating a smooth curve, hold down the Option key (Alt on Win) to temporarily access the Convert Point Tool and click once on the point. This will remove the handle on the open end of the path. To create a handle on a point that doesn't have one already, hold down the Option key while you click on the point and drag out a handle.

Pen Tool Options In the Options Bar, there is a menu on the left side where you can decide whether you want to use the Pen Tool to create a Shape or a Path. I usually keep this set to Path. The options next to "Make:" will tell Photoshop what to do with your path. You can take a path and convert it into a selection, apply it as a mask or create a shape layer from it.



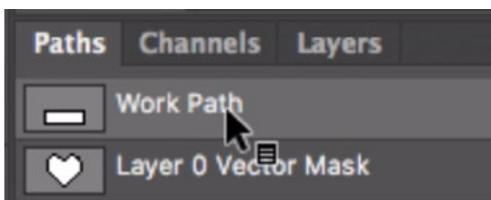
With the Pen Tool active, you can decide whether you want to use it to create a Shape or a Path.

The icon that looks like two overlapping squares will give you a menu where you can choose what happens if you draw an additional shape while the previous shape/path is still active. For example, if you choose the Subtract option, the current shape will create a hole in the previous shape in the areas where the two overlap.



This menu will determine how two paths will interact with each other.

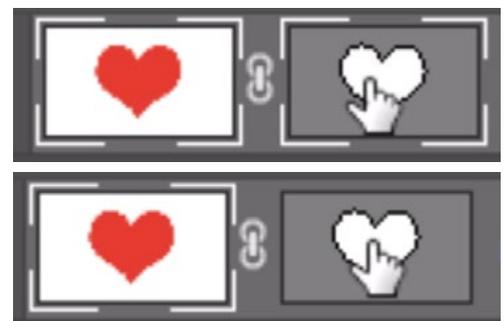
The Paths Panel After you have created a path, it will appear inside the Paths panel, which is usually hidden behind the Layers panel. If the Paths panel is not visible on your screen, you can access it by going to the Window menu and choosing Paths. By default, the active path will be called the Work Path, and this indicates that it's a temporary path. If you would like to make the path more permanent, so



The Paths panel can usually be found hidden behind the Layers panel.

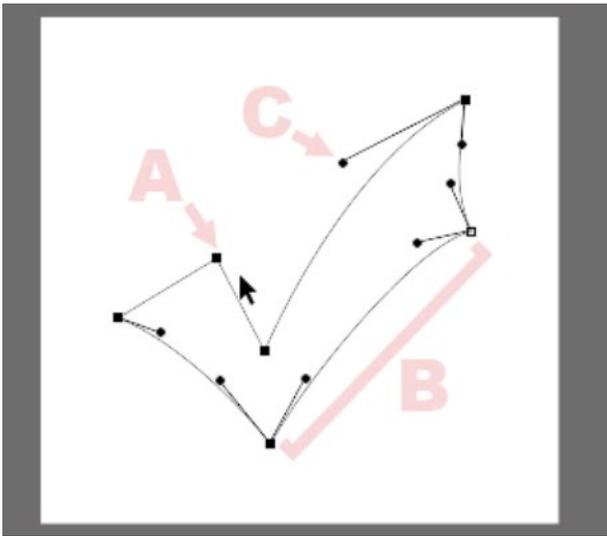
that you can hide it and then access it again later, double click on the text “Work Path” and give it a new name. This will save the path for future use and it will allow you to have a new Work Path. To work on a path that you previously saved, simply click on it in the Paths panel and it will become visible in your document.

Creating a mask from a path As we covered earlier, you can convert an active path into a layer mask by clicking the Mask button in the Options Bar at the top of the interface. When you do this, the layer mask will appear as a thumbnail next to the layer thumbnail in the Layers Panel. There will be brackets surrounding both thumbnails, indicating that both the layer and the path are active. You will still see the path in your document. To hide the path, simply click on the layer mask thumbnail to remove the brackets. Click on it again to make the path visible (and editable) again.



The path is active in the top screen shot and inactive in the bottom one.

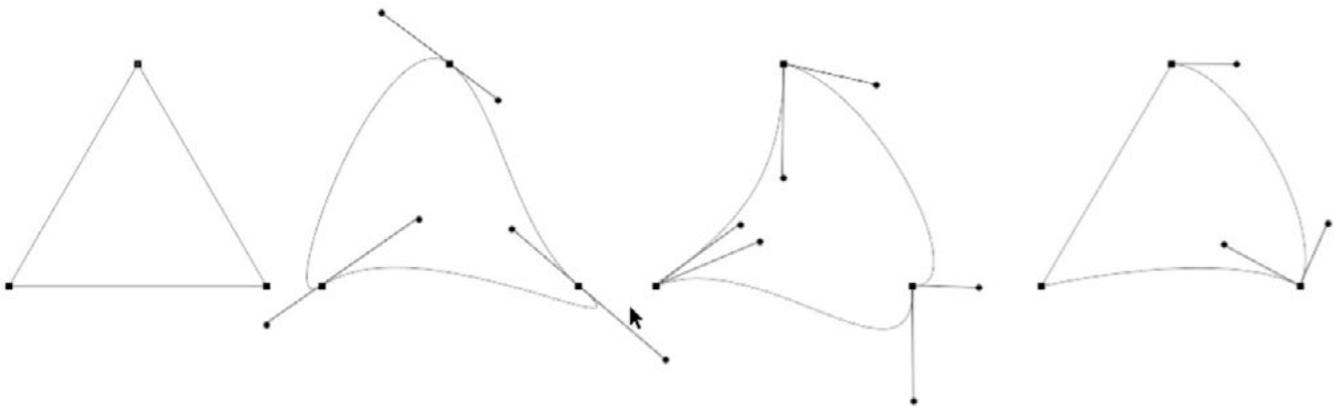
Visual Recap



A: Point

B: Path Segment

C: Handle



A path made up of points with no handles

A path made up of points with handles creating one smooth, continuous line.

A path made up of points with handles that create curves but point in different directions, creating abrupt transitions.

A path that combines different types of handles that create different types of transitions.