
DESIGN & ILLUSTRATION > VECTOR

Illustrator's Pen Tool: The Comprehensive Guide

by [Ian Yates](#) 13 May 2011

Difficulty: Beginner Length: Medium Languages: English

[Vector](#) [Graphic Design](#) [Pen Tool](#) [Adobe Illustrator](#)



This post is part of a series called [Guides to Illustrator Tools](#).

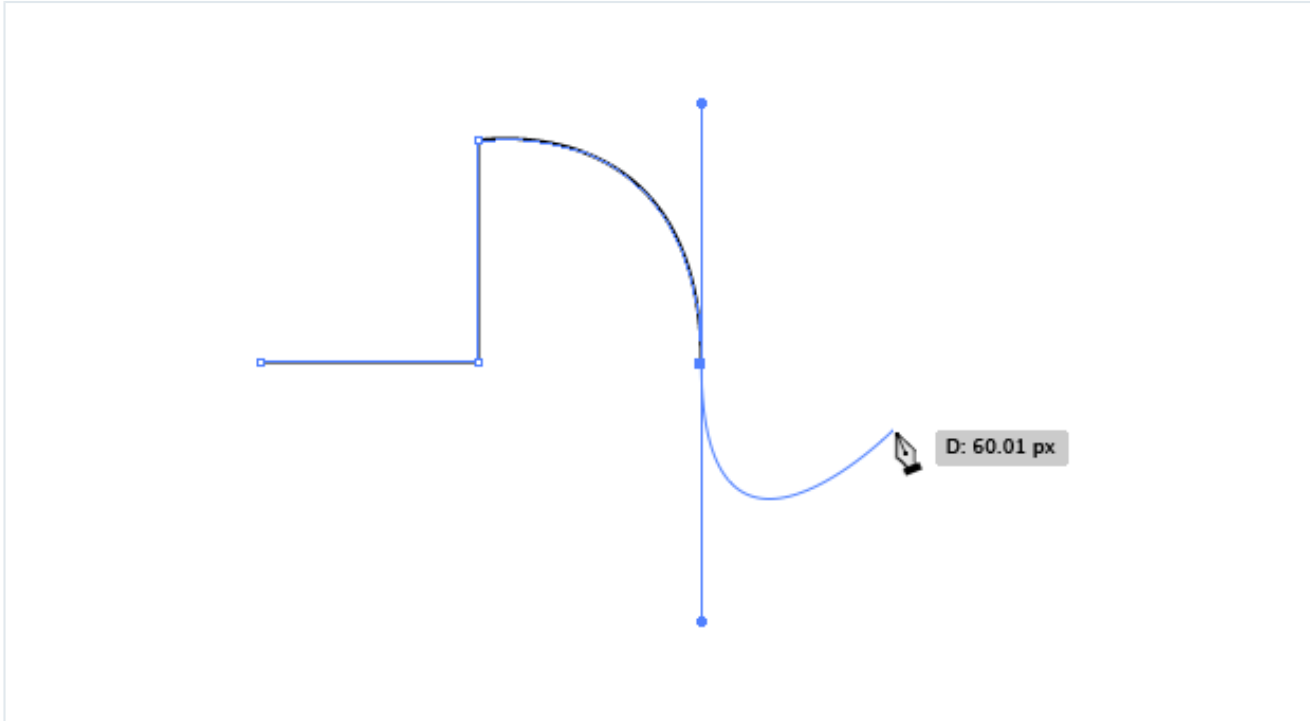
▶▶ [Illustrator's Blend Tool: A Comprehensive Guide](#)

If you use Adobe Illustrator, then it's almost certain that you use the Pen Tool when creating your paths. This comprehensive guide aims to introduce or remind you of features, shortcuts, and methods for working with what is arguably Adobe's most essential tool.

1. Functions

Pen Tool (P)

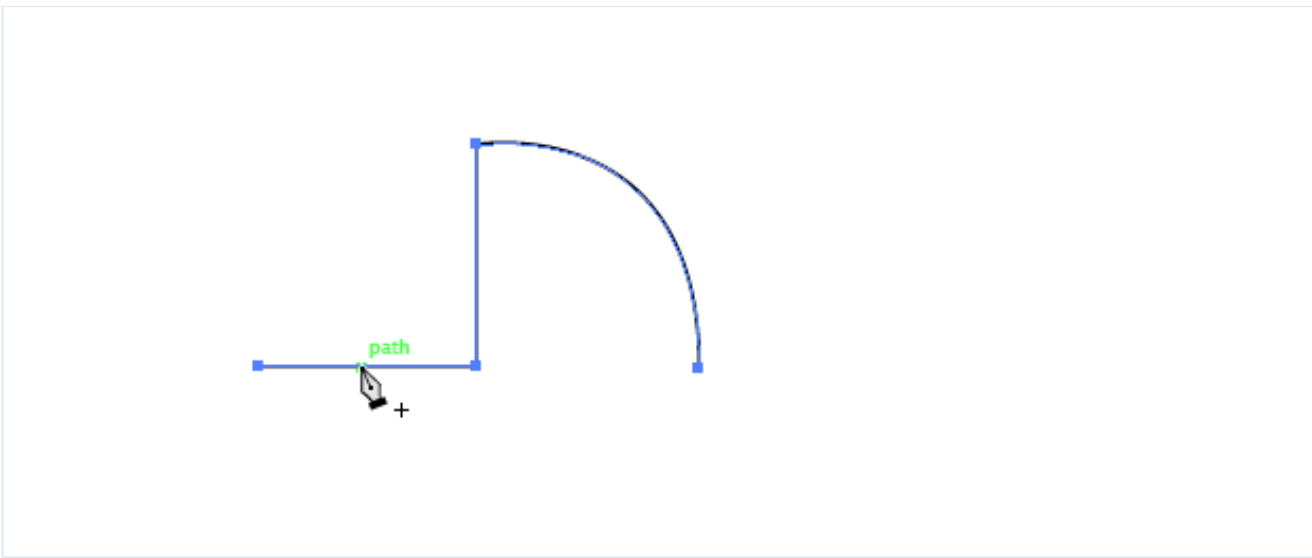
Click on artboard to create paths with straight segments, click and drag to create paths with [Bezier curves](#).



Note the tooltip which gives you precise pixel coordinates wherever your cursor points

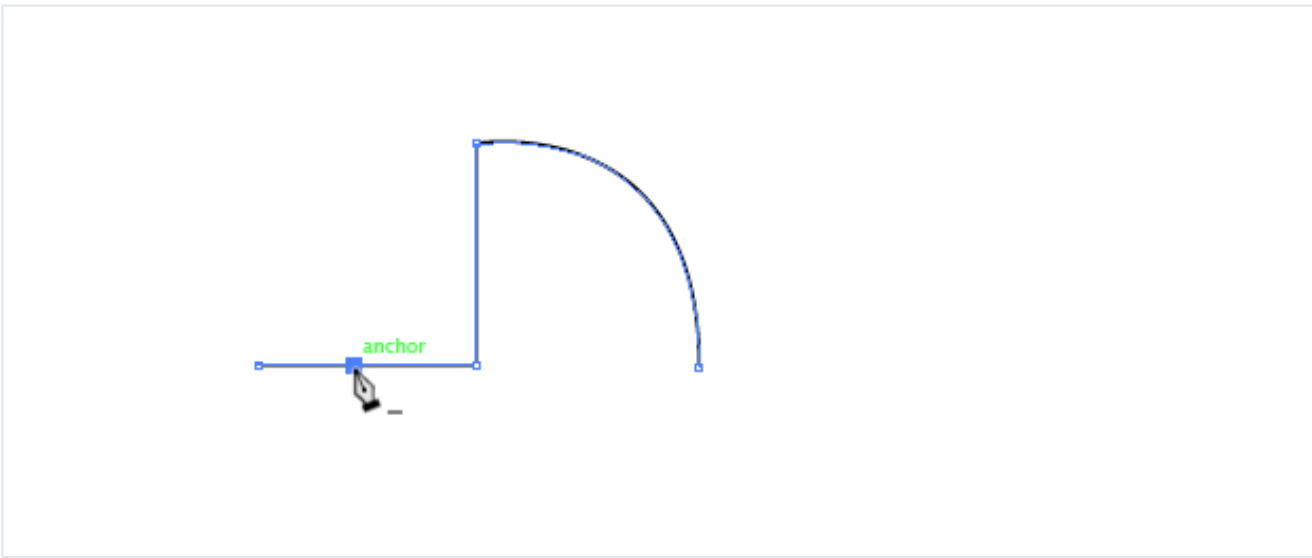
Add Anchor Point Tool (+)

Click on a path segment to add anchor points.



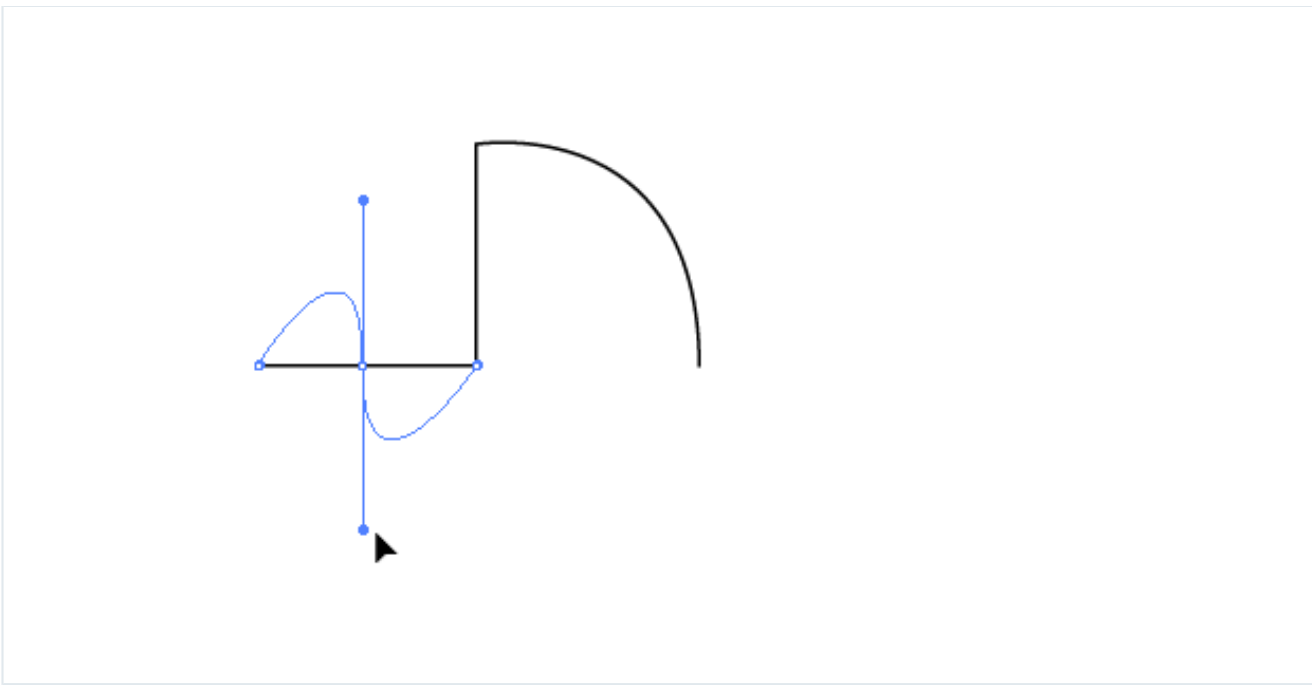
Delete Anchor Point Tool (-)

Click on anchor point to remove from path.

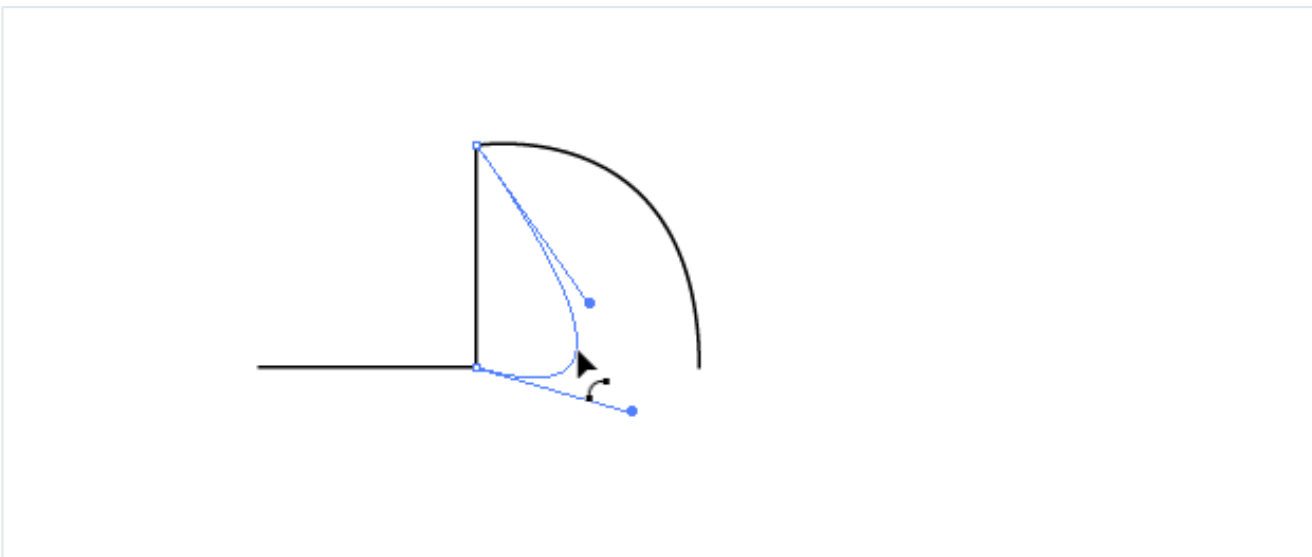


Convert Anchor Point (Shift-C)

Click on an anchor point and drag to create bezier handles where there were none, click on an anchor point with handles to remove them.

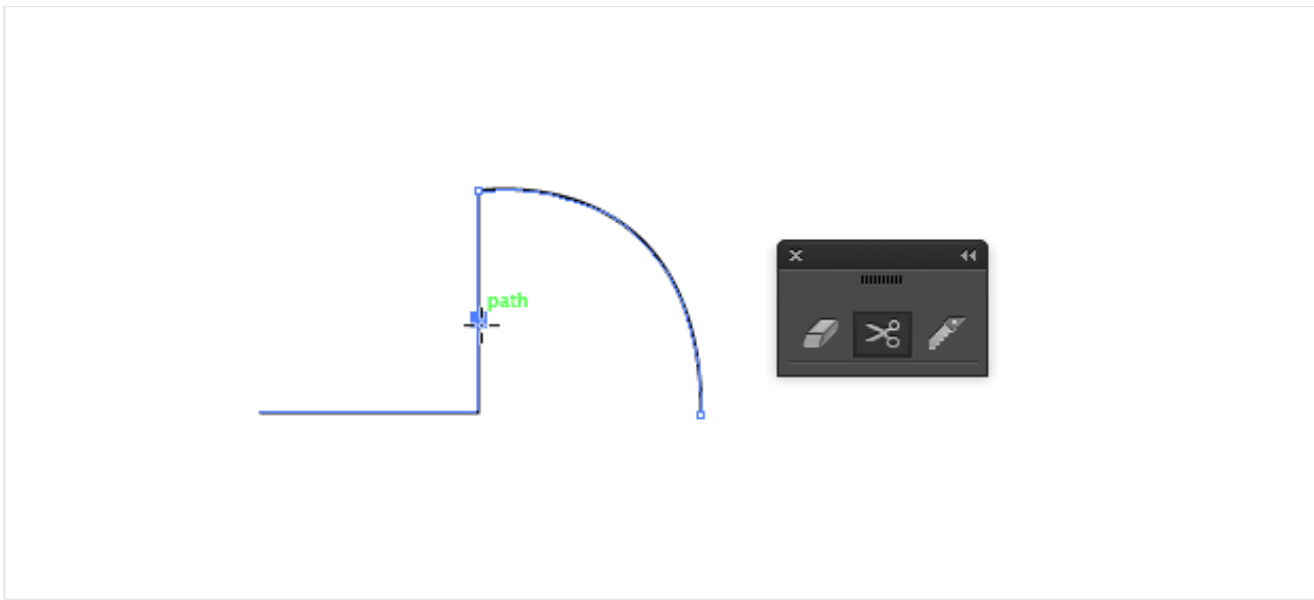


Alternatively, click and drag midway along a path to manipulate it as a curve.



Scissors Tool (C)

Not part of the Pen Tool group, but definitely associated with it. Click on a path segment to divide into two paths.



2. Keyboard Shortcuts

- Select **Pen Tool (P)**
- Select **Add Anchor Point Tool (+)**
- Select **Delete Anchor Point Tool (-)**
- Select **Convert Anchor Point Tool (Shift-C)**
- Select **Scissors Tool (C)**
- Join two anchor points (**Command/Control-J**)

3. The Cursors

The Pen Tool takes on different forms depending on what you're doing when you're using it. Each cursor intuitively makes you aware of the action you are about to perform.

(Caps Lock to toggle between pointer and cross hair)



Prepared to begin path



Whilst midway through creating or editing a path (with grid coordinates)



When mouse button is pressed



When ready to add an anchor point to path



When ready to remove an anchor point from path



When hovered over begin point of path; to close path



When hovered over endpoint of existing path; to continue path



When ready to convert path or anchor point



When ready to, or in the action of manipulating a curved path



When ready to join new path to existing path

4. Secondary Mouse Controls (With Path Selected)

1. Pen Tool hovers over anchor point: changes to Delete Anchor Point Tool
2. Pen Tool hovers over path segment: changes to Add Anchor Point Tool
3. Pen Tool hovers over end anchor point: changes to Continue Anchor Point Tool

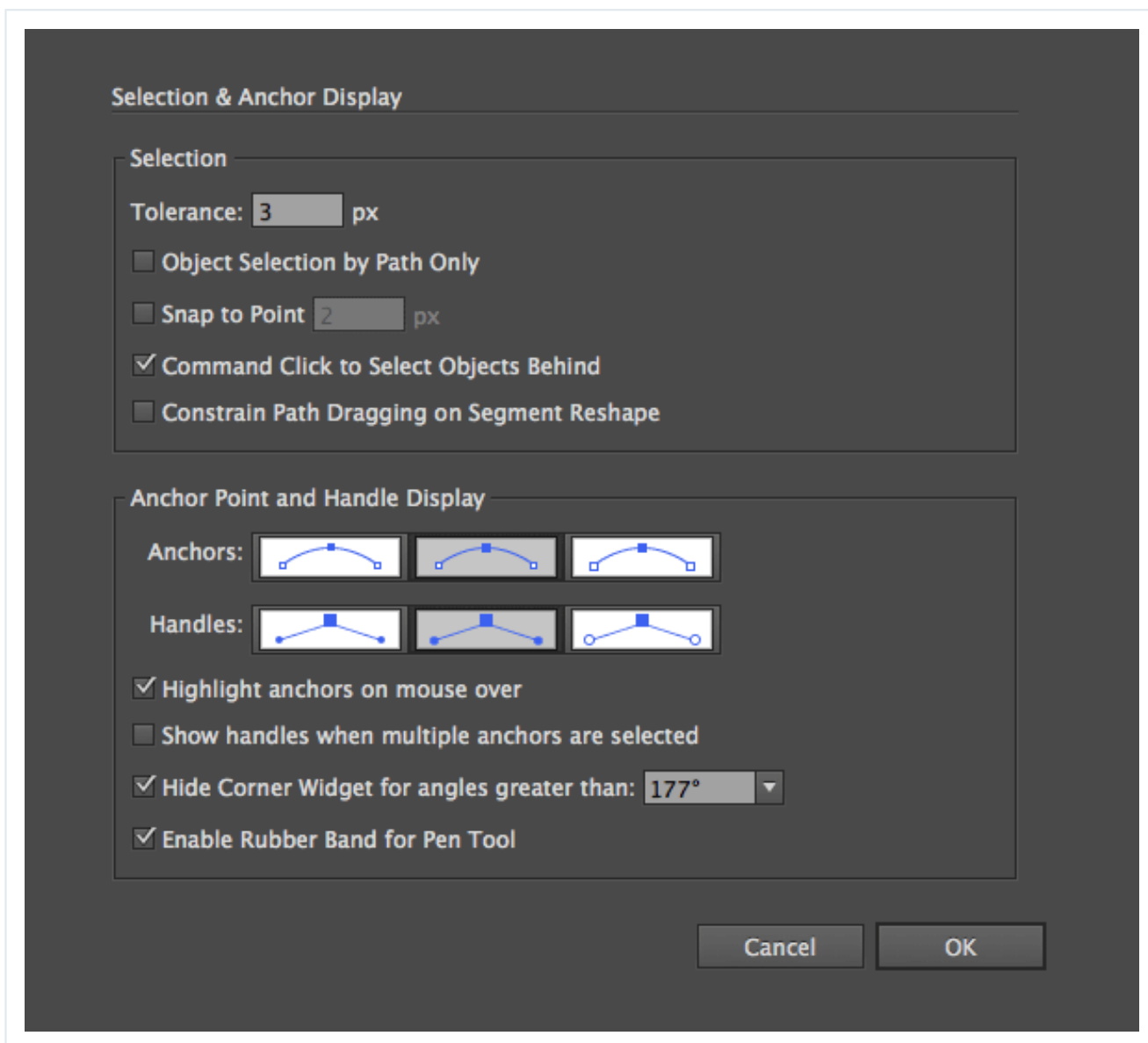
5. Keyboard Controls

1. Hold **Shift** to constrain movements to 45°, 90°, 135° or 180° whilst creating or editing anchor points and handles.
2. Select anchor point with **Direct Selection Tool (A)** and click **Delete**. Anchor and adjoining path segments will be deleted leaving two paths.
3. **Pen Tool-Option (Alt)**: changes to Convert Anchor Point Tool.
4. **Pen Tool** hover over bezier handle + **Command (Control)**: allows editing of bezier curve.
5. **Pen Tool-Option (Alt)** whilst creating bezier curve: splits curve (unhinges handles).
6. **Pen Tool** hover over bezier handle + **Option (Alt)**: splits curve (unhinges handles).

7. **Scissors Tool (C)-Option (Alt)**: changes to Add anchor point tool.
8. **Add Anchor Point Tool-Option (Alt)**: changes to Delete Anchor Point Tool.
9. **Delete Anchor Point Tool-Option (Alt)**: changes to Add Anchor Point Tool.

6. Preferences

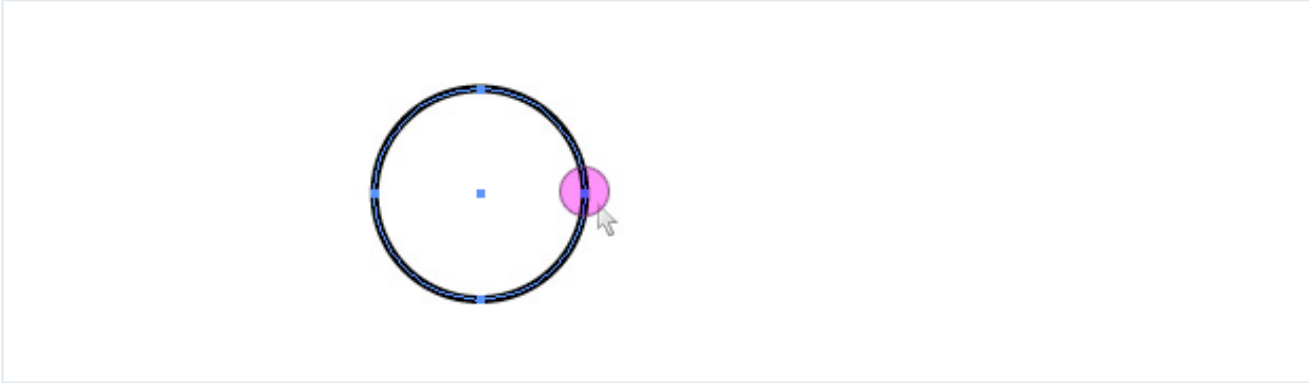
You can access the preferences which influence the Pen Tool (P) and other related tools by going to **Illustrator > Preferences > Selection & Anchor Display**.



Selection & Anchor Display

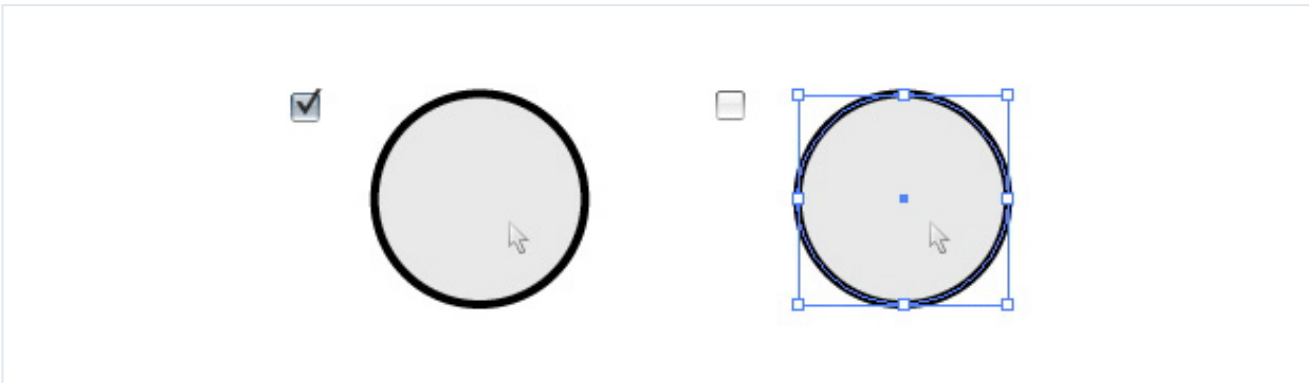
Tolerance

Radius of the selection area around anchor points. Must be between 1 and 8 pixels, 1px if you're deadly accurate with your mouse or have a lot of anchors in close range of one another, 8px if you prefer less precision. 3px is the default value.



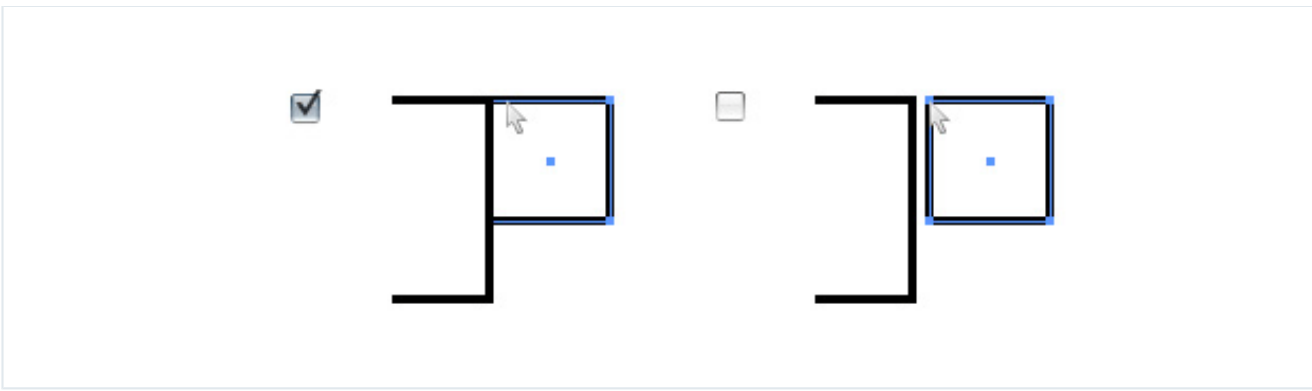
Object Selection by Path Only

When checked, this option allows selection of objects only by clicking their paths. Clicking on their filled areas is ineffective, comparable to working in Outline mode (**View > Outline**).

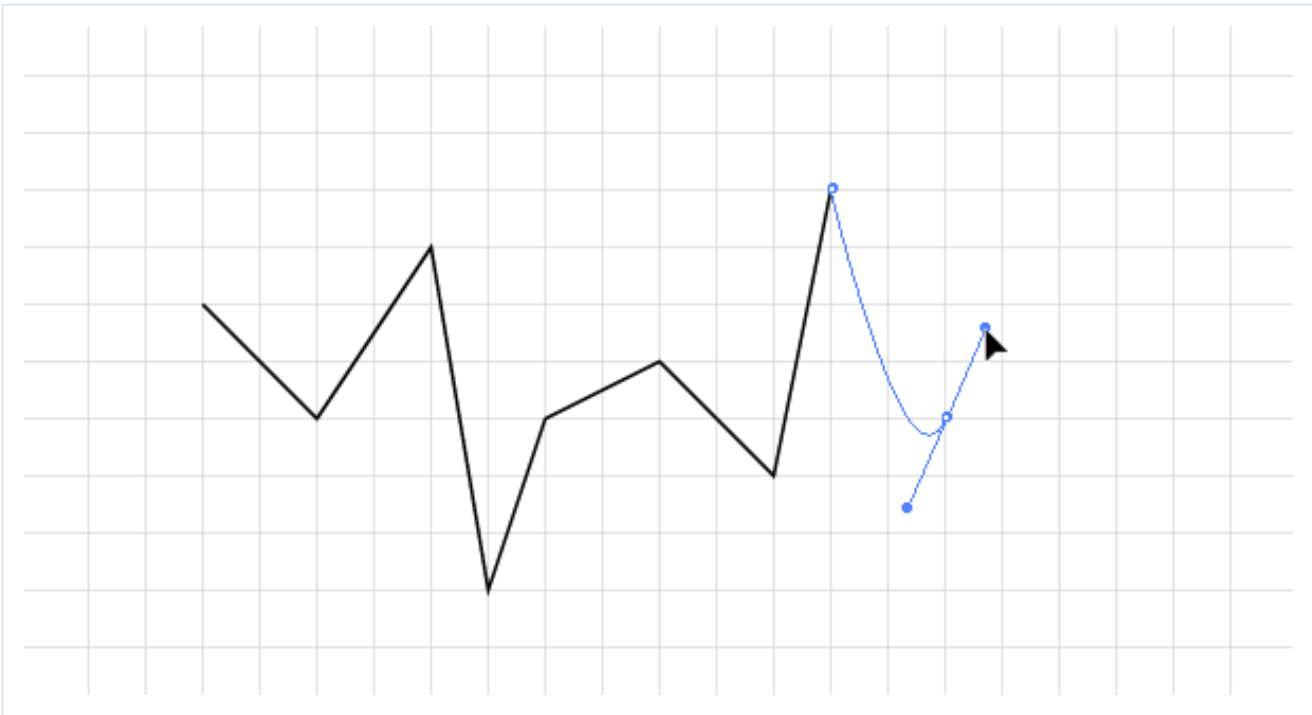


Snap to Point

Also checkable via **View > Snap to Point**, though via the **Selection & Anchor Display** dialogue the tolerance can also be determined from 1 to 8 pixels. This value again represents the radius around anchor points. When lining up two objects, anchor points from one will snap to points of the other should they be positioned within the specified range.



It's worth noting that since the release of Adobe Illustrator CC 2014 Bezier handles are immune to grid-snapping. You can therefore make sure your anchors all stick to the grid (great for web use) whilst maintaining precision with free curves.



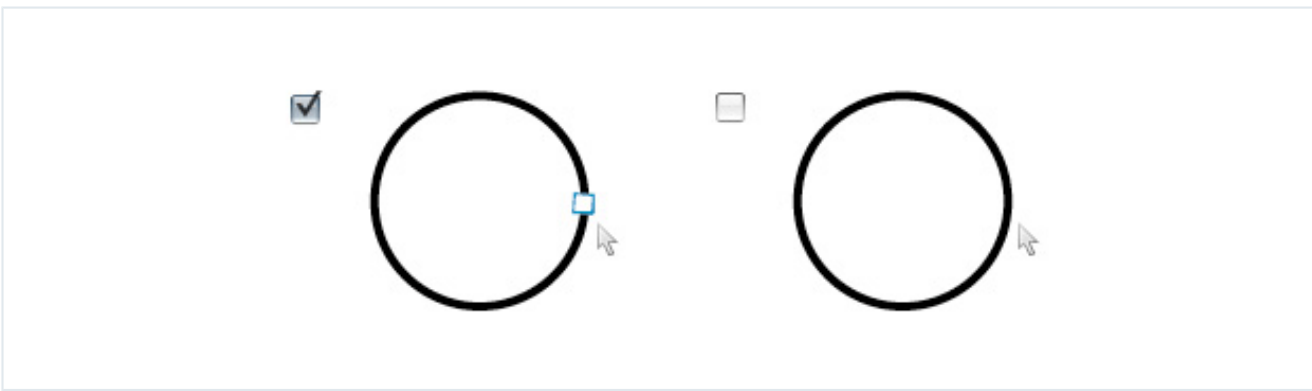
Anchor Point and Handle Display

Determines the way in which your path anchor points and handles are displayed.



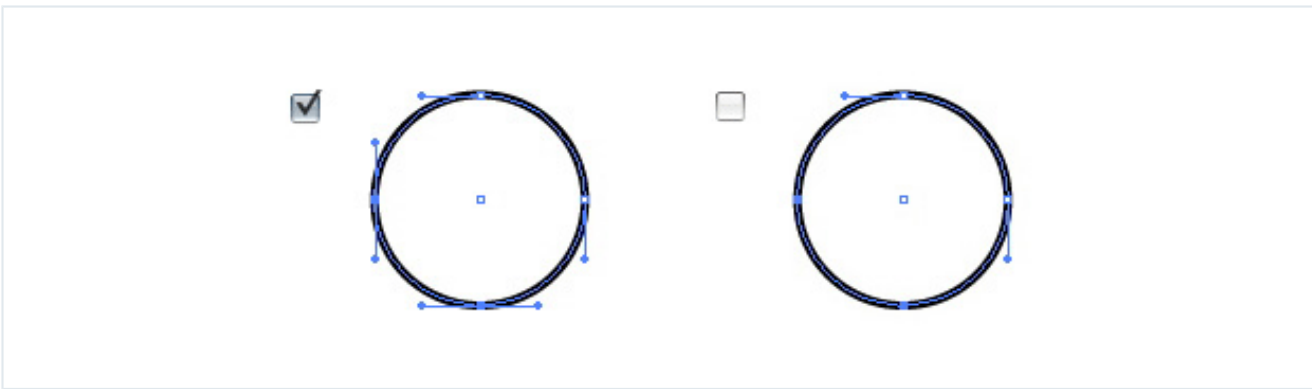
Highlight Anchors on Mouseover

When checked, highlights anchor points when hovered over with cursor.



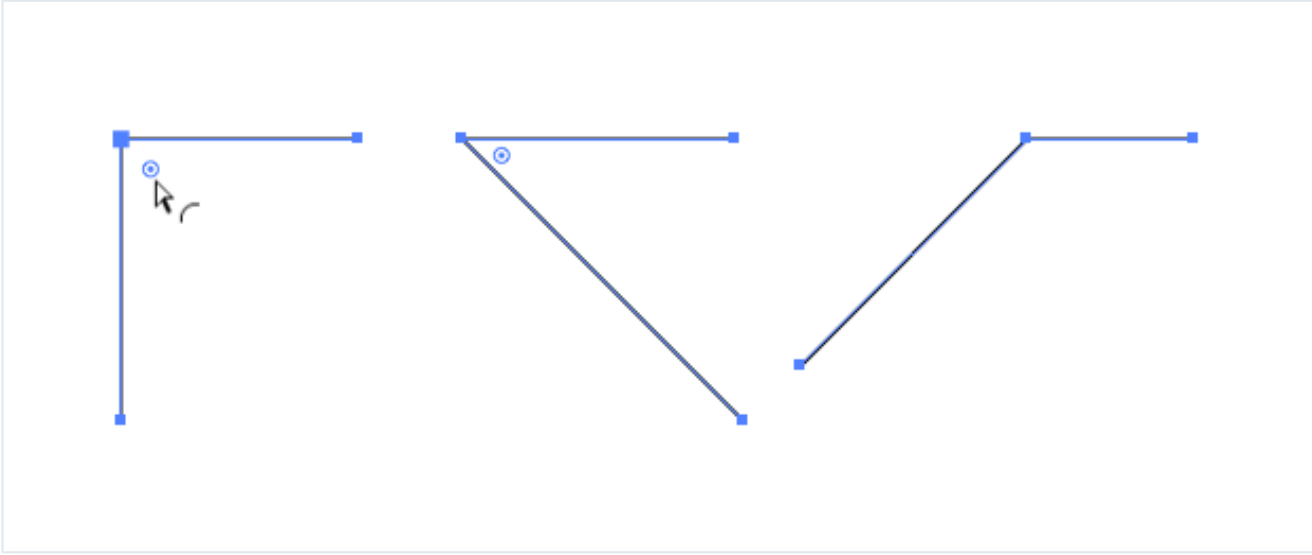
Show Handles When Multiple Anchors are Selected

When checked, this options displays the handles of points when multiple points are selected. Otherwise, handles of multiple selected points are *not* displayed.



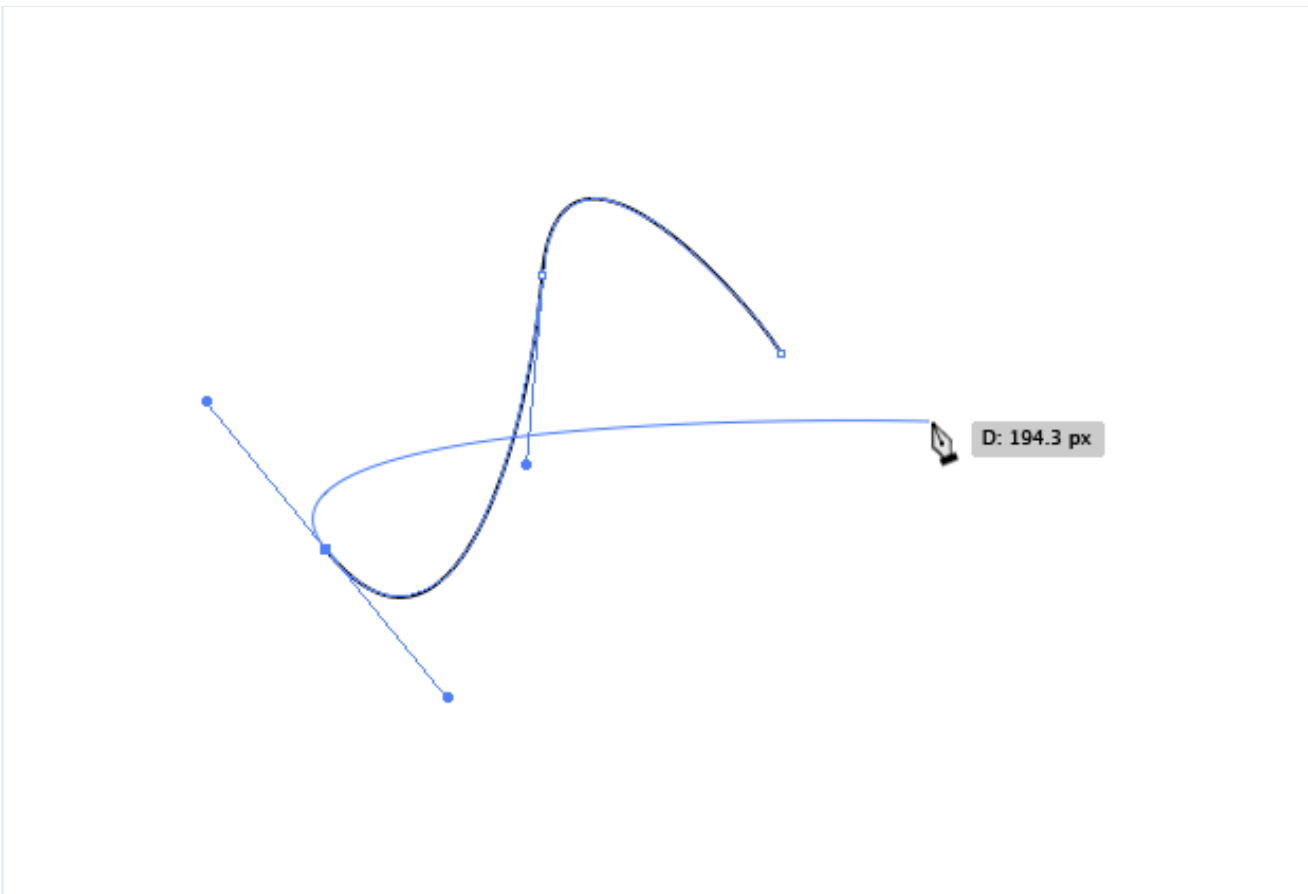
Hide Corner Widget

Corner widgets allow you to drag corners in order to make them rounded. You may find it helpful to specify the corner angle at which you no longer want to have the widget displayed. Choose from 105°, 120°, 135°, 150° or 165°.



Enable Rubber Band

When wanting to lay down an anchor point I always find it helpful to know what the path will look like. Checking the **Rubber Band** option gives you a preview of the path before you commit.

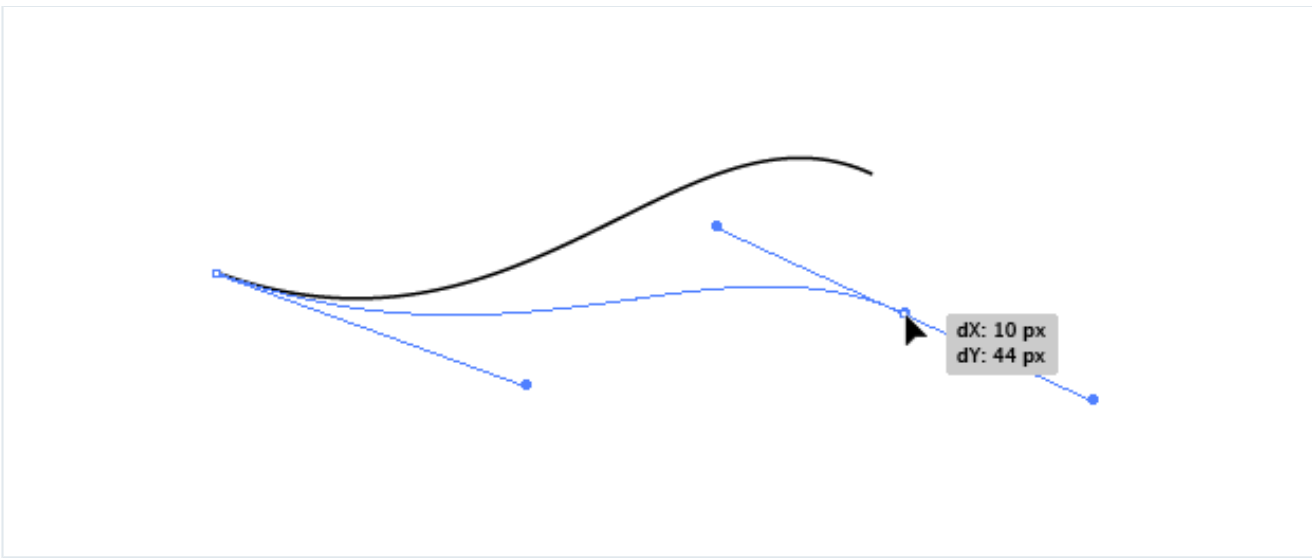


7. Other Shortcuts and Tips

Select the **Direct Selection Tool (A)** before selecting the Pen Tool (P). **Hold-Command (Control)** to give you access to the last tool selected (in this case the Direct Selection Tool) for editing of paths and handles without deselecting the path.

With path selected, use the **Spacebar** to give you access to the **Hand Tool (H)**. Move your screen without deselecting the path or changing tools.

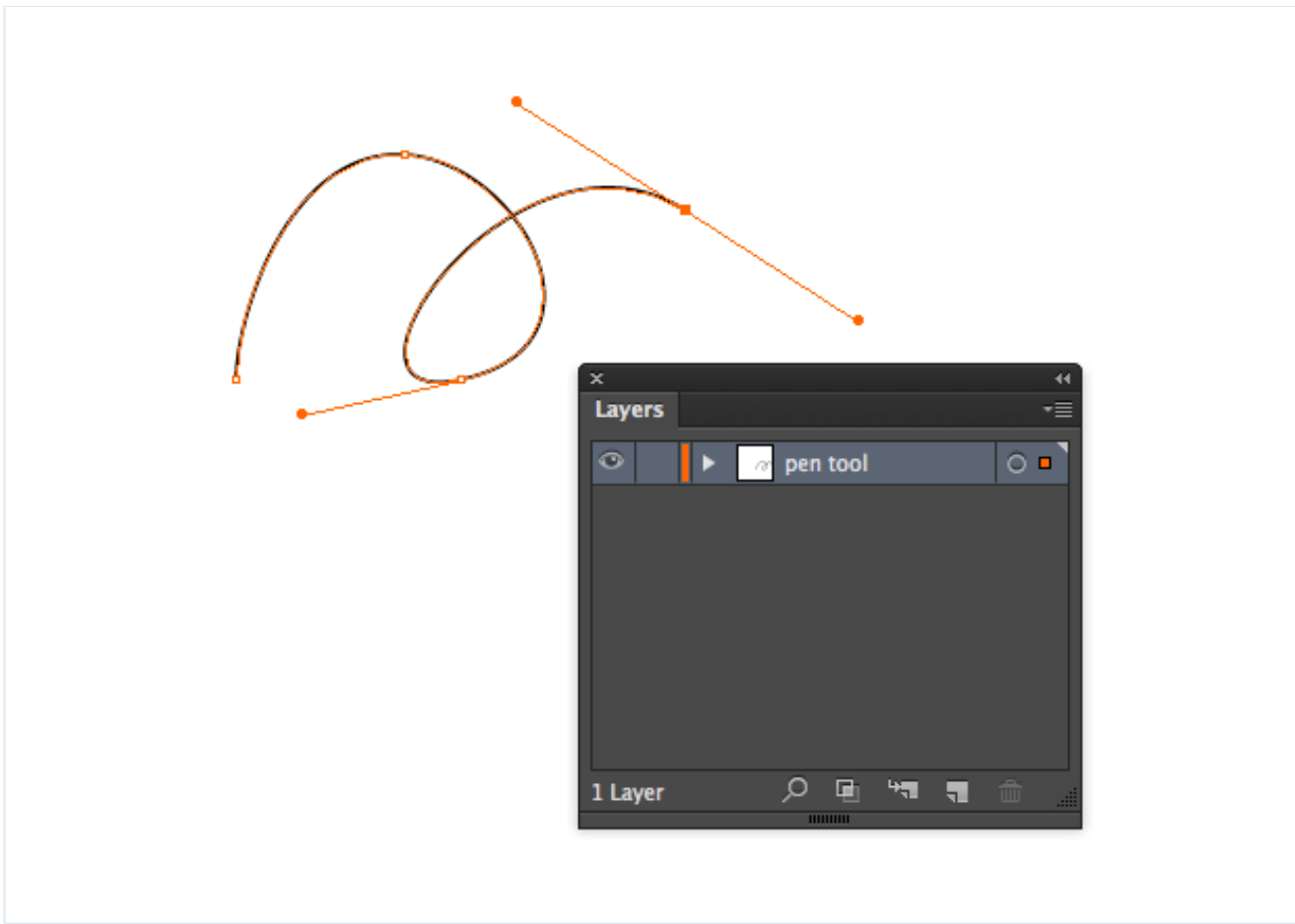
While creating or editing an anchor point, click and **Click-Hold-Spacebar** to alter the position of the anchor point you're working on. Since the release of Adobe Illustrator CC 2014 this manipulation is also possible on the closing anchor of a path.



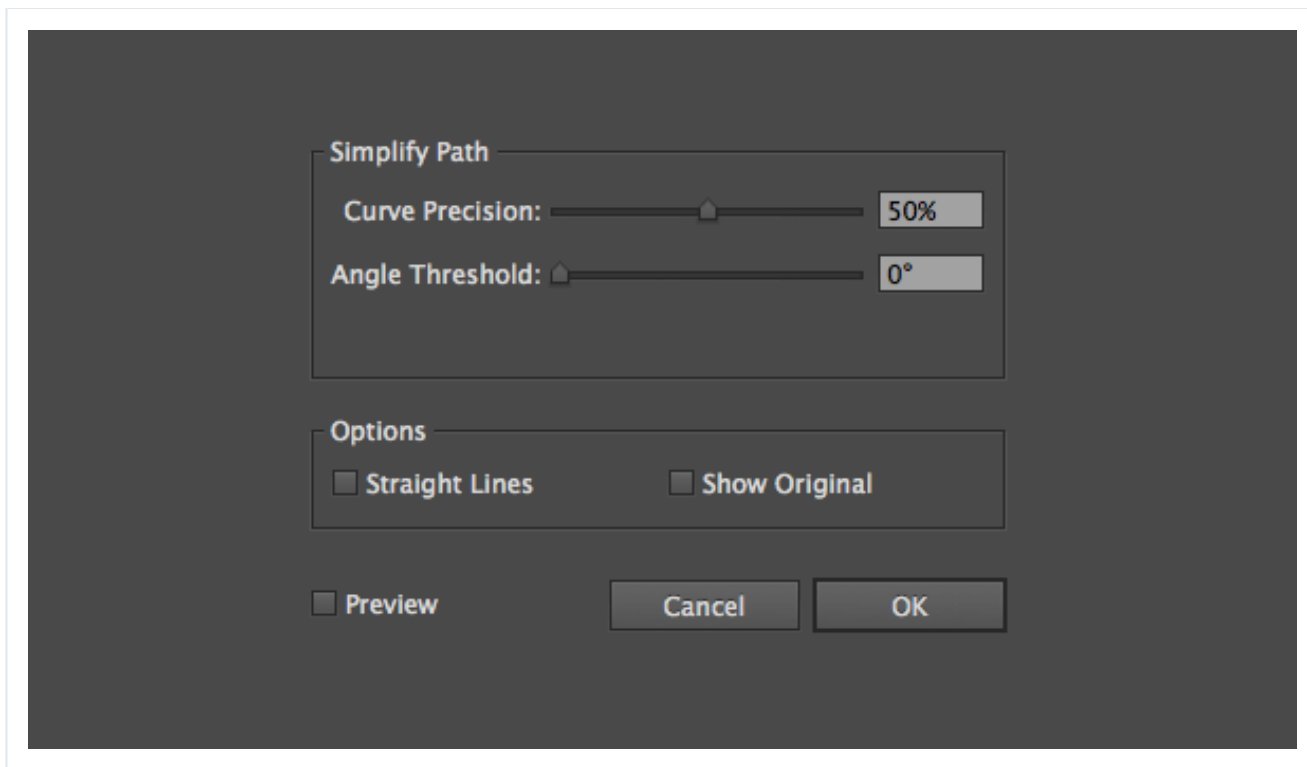
With the **Direct Selection Tool (A)** select the end point and starting point of a path. **Command (Control)-J** to Join.

With the **Direct Selection Tool (A)** select the end point and starting point of a path. **Command (Control)-Option (Alt)-Shift-J** to join and average simultaneously.

Bear in mind that the colour of your highlighted paths and their Bezier handles is dependent on the colour of the layer they're placed on.

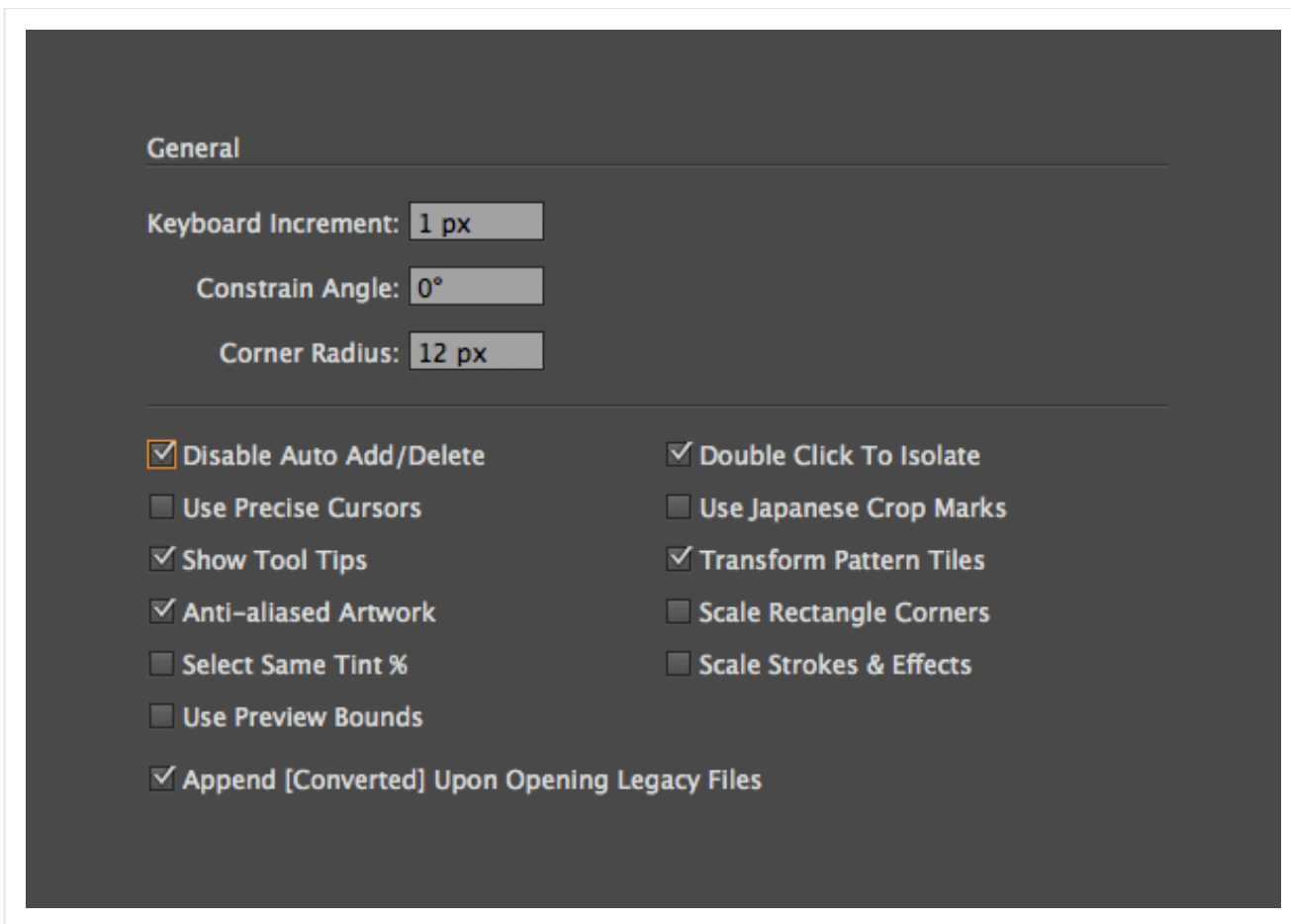


To smoothen a path by reducing the number of anchor points open the **Simplify** dialogue (**Object > Path > Simplify**) and adjust according to your needs.



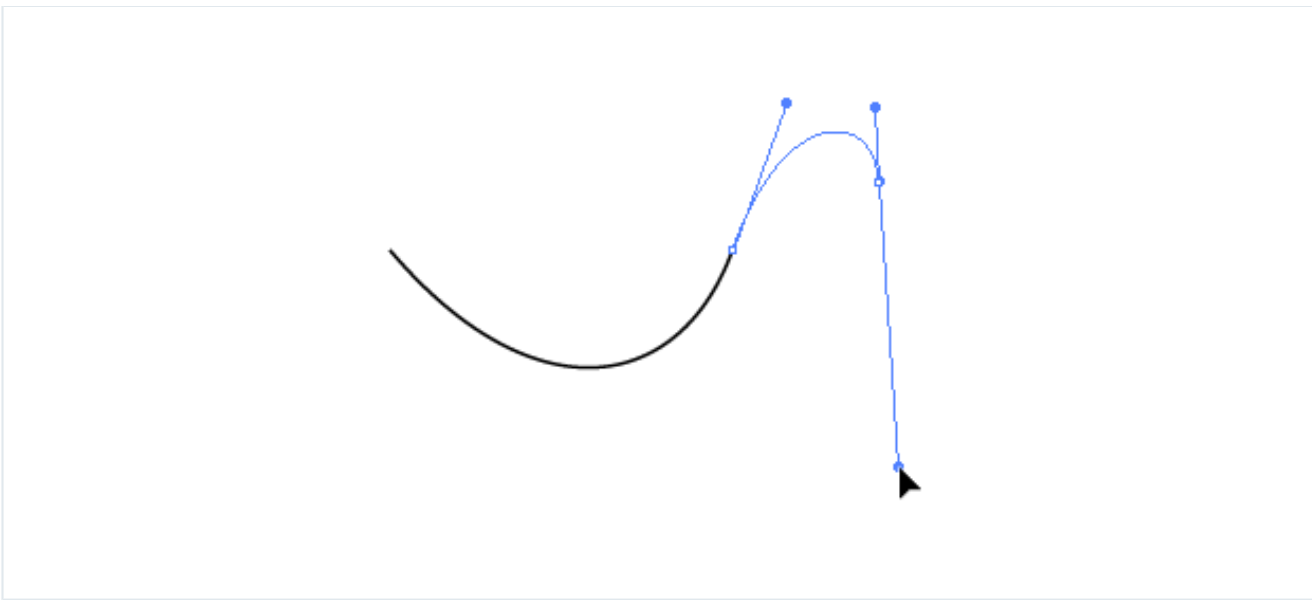
Conversely, should you want more anchor points to improve manipulation go to **Object > Path > Add Anchor Points**. A new anchor point will appear after every existing anchor point on the selected path.

To prevent the **Pen Tool (P)** from changing its function when interacting with other anchor points or paths, open the general preferences dialogue (**Illustrator > Preferences > General**) and check the **Disable Auto Add/Delete** option. The Pen Tool will now only draw paths.



Disable Auto Add/Delete

Since the release of Adobe Illustrator CC 2014, control over Bezier handles has improved. Now, whilst dragging handles of an anchor point press and hold **Command/Control** to independently stretch and shrink the leading handle, whilst keeping its *movement* paired to the trailing handle.

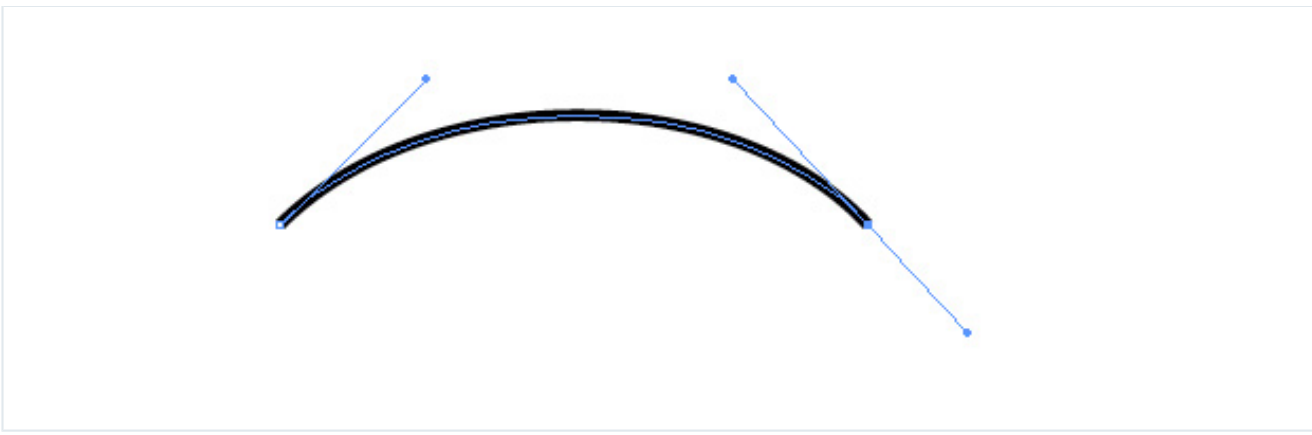


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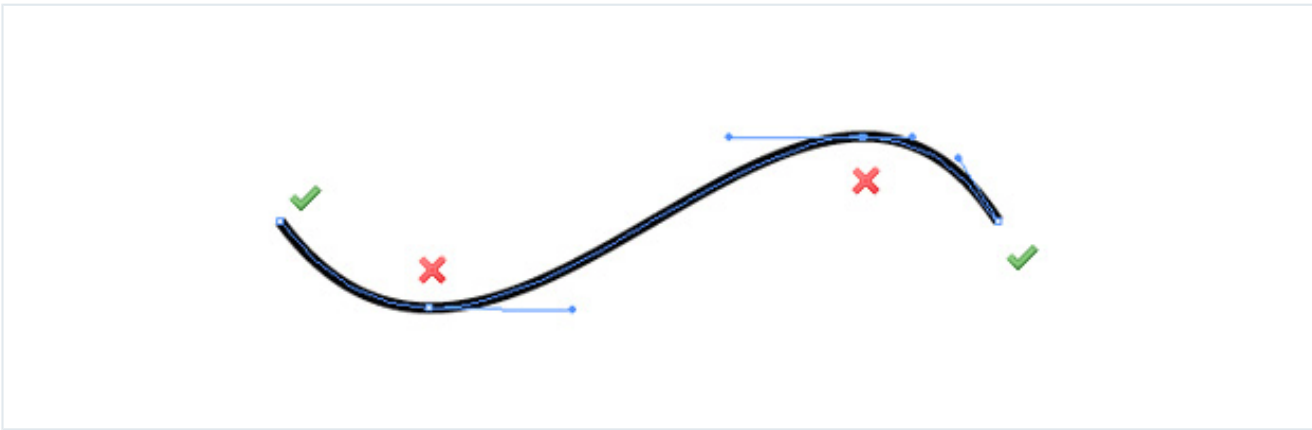
8. Best Practice Suggestions

Drag handles from the first anchor point when beginning a curved path.

Drag your handles around just one third of the curve you're creating for a smooth path.



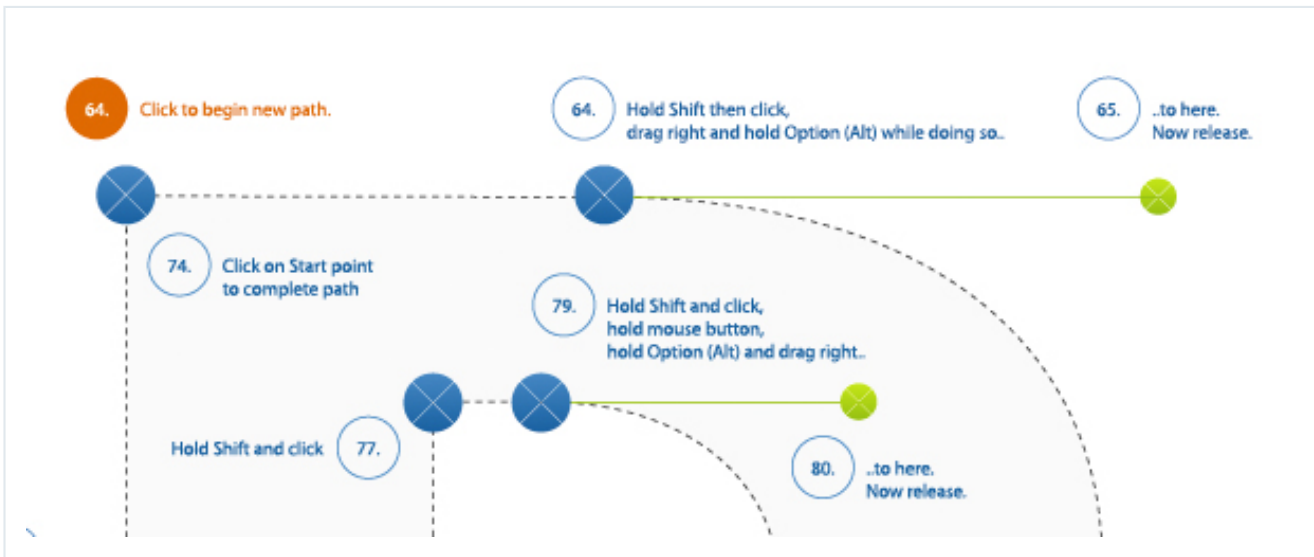
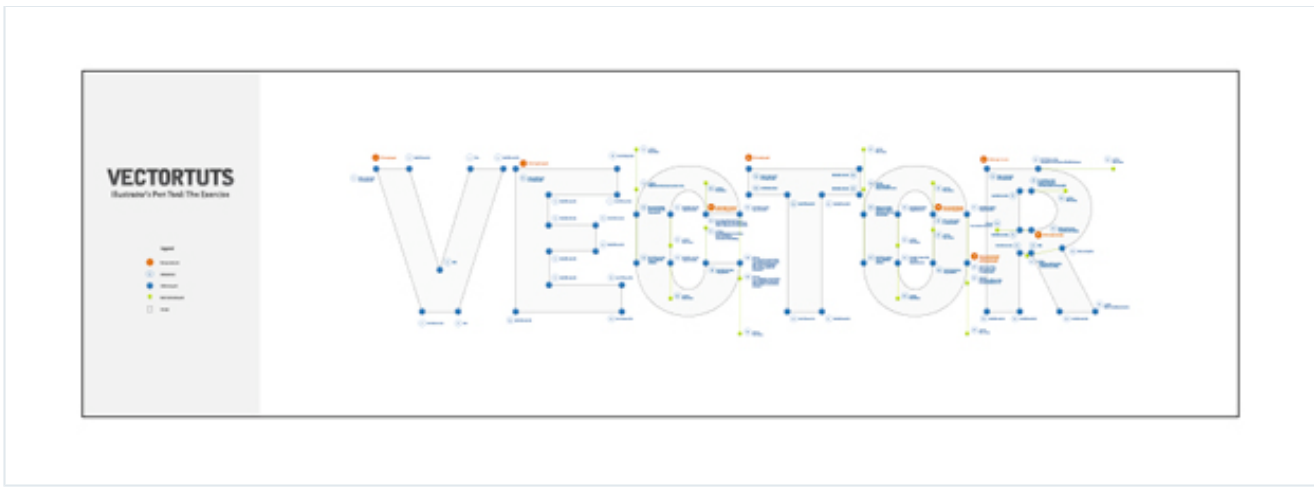
Position anchor points on a curve where the paths begin to change direction, not in the middle of its curve.



Be sparing with your use of anchor points, fewer points = neater path.

9. The Pen Tool Exercise

This is all well and good in theory, but while these tips are fresh in your mind why not put them into practice? Download the [Pen Tool Exercise](#) file and follow the guides to create precise paths, using the hints and shortcuts covered in this article.



If you need some inspiration for your designs, check out the [popular vectors](#) on Envato Market. If you're struggling to create a particular vector with the Pen Tool, you might find something there that you can use in your project.