

## Inkscape Lesson: Node Editing

Make 1 (all) and Make 2 (all who are still learning Inkscape)

Vector lines (aka paths), can be manipulated in a variety of ways by altering little objects called nodes. In this exercise, you will use node editing techniques to make a design suitable for use as a sticker, a laser cut object or a stencil.

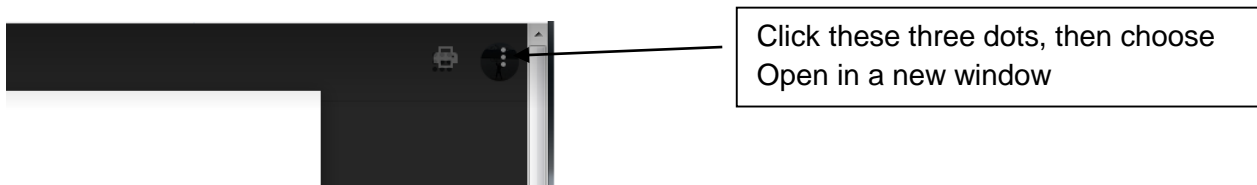
### Introduction

Nodes are key to using Inkscape to create awesome projects. Today we learn how to edit nodes.

Our project today will be to edit nodes on some text, just so we're all doing the same thing. Soon we'll do a more interesting project.

Nodes show up in most of our Inkscape projects moving forward. Sometimes you pull an image in from the Internet and then need to remove some part of it, or clean something up before you can cut out a vinyl or laser project. Today's lesson is designed to get you familiar with simple node editing.

Today you are going to modify the document "NodeEditStarterFile.svg" (attached to the Google Classroom) to add slots to the text "D8" where appropriate so that it will laser cut well. Download the file from the Google Classroom. To do this, you need to click on it, then click on the three dots to the right and choose "Open in a new window":

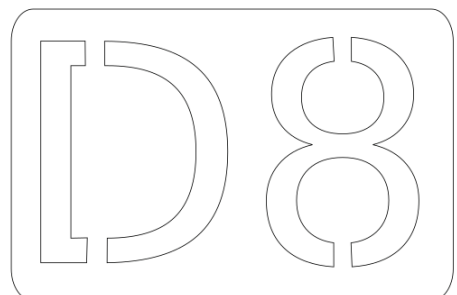


then click on the download button in the new window to get the file downloaded. Switch to the Desktop or Downloads folder (where the file downloads to depends on how your computer is set up) and then double-click the file "NodeEditStarterFile.svg" to open it in Inkscape.

Here is what the file looks like when you open it:

**D8**

Be sure that you have it open in Inkscape, not Chrome. Keep this PDF open and walk through the following steps to change our starter D8 to something that would laser cut better by adding slots to make it look like the image to the right.



Steps:

After you open the file in Inkscape (see previous page for detailed instructions), do a Save As... from the File menu and change the file name to "yourname-Node Editing.svg" while you're saving it to the Desktop. Do this right now so you don't lose your work along the way.

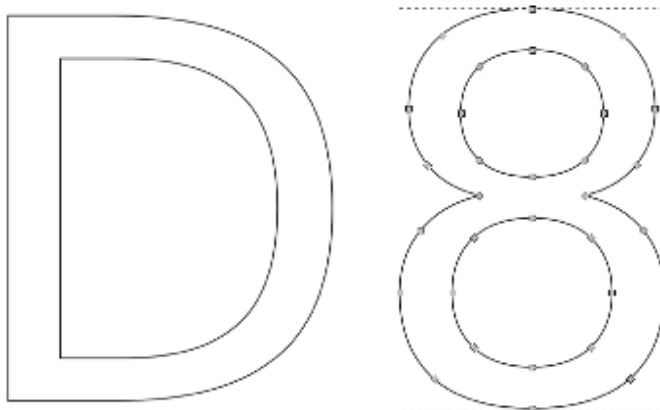
Use Object, Fill and Stroke to get rid of the Fill and add Stroke. Set the stroke width to .005 inches and the color to 255 red. Turn the text into a path by selecting it with the selection arrow tool and choosing Path > Object to Path. Confirm that your text has been converted to a vector path by selecting it with the node selector and noticing the nodes.

The node selector tool looks like this:



It is just below the regular selector arrow tool.

Click on the 8 and you should see little node boxes all around. This shows you that you have converted the text to a path. Text objects in Inkscape don't have nodes; when you convert them to a path then you can start taking them apart (you also have to convert text to a path to cut text on the vinyl cutter.)

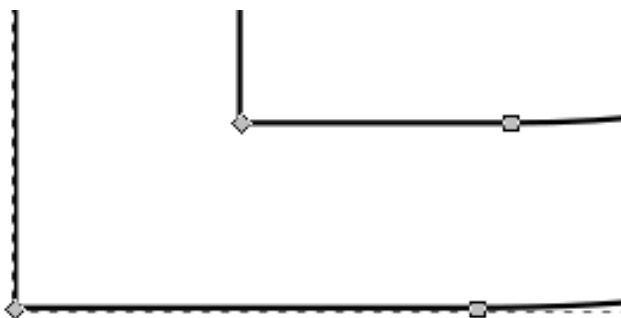


In this assignment you are cutting pieces out of the D and the 8 at the top and the bottom. You'll end up making four slots altogether (2 for the D and 2 for the 8.)

Zoom in to a place where you want to add a connector, say the bottom of the D:

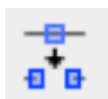


Select the node tool and click on the letter. You will see the little square nodes showing.

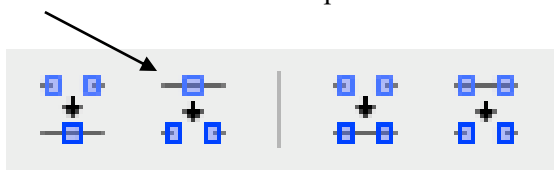


Either select a node, or add your own by double-clicking on the line then break the path using the correct icon from the toolbar:

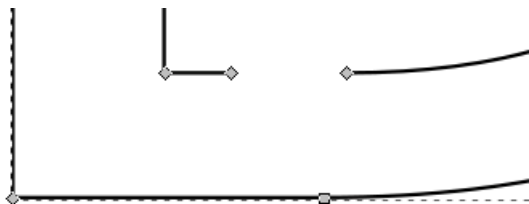
This one:



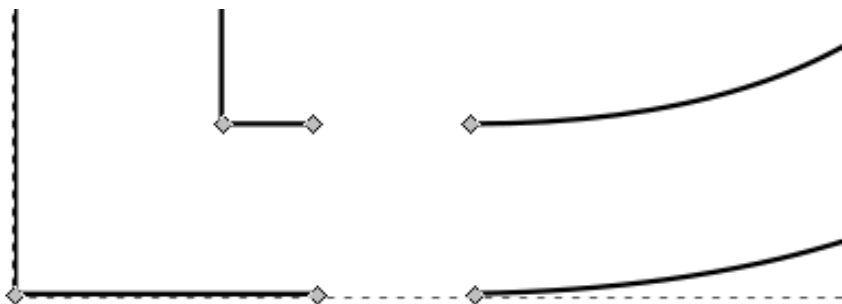
Here's where it is located up in the toolbar:



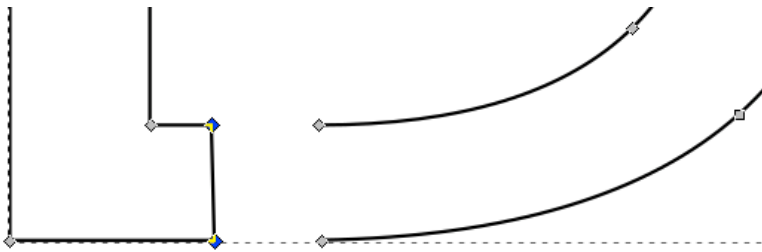
These icons control node editing. We want the second from the left: break path at selected node. Click that. Now, add or select another nearby node, and break the path again. (You can add a node anywhere when you are using the node tool by double clicking on a line.) Once you have broken the path at two nodes, select the segment in between your two nodes and delete it. You've opened a gap:



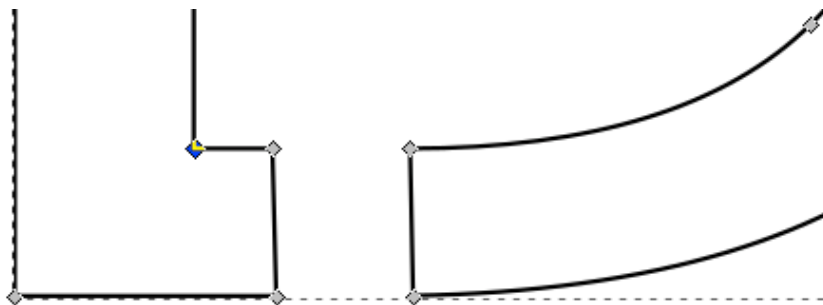
Repeat on the line below, and you'll have something like this:



Now, select the end nodes on the left side of your gap (either drag a selection box around them both or click and then shift click to select them both) and choose the third node tool from the left, which joins two nodes with a straight line:

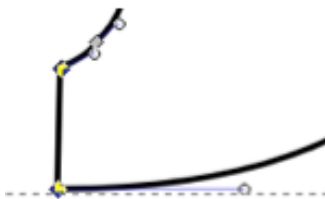


Repeat on the other side and you have made the D laser-cuttable:

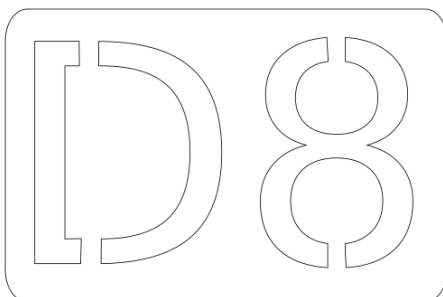


You can move the nodes around to make things line up nicely if necessary.

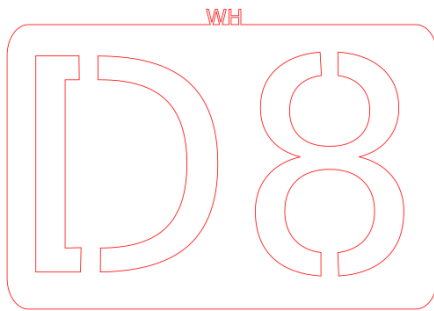
**Note:** It is sometimes necessary to edit the nodes to preserve the shape of the font when you break the paths. Experiment with adjusting the nodes themselves or their handles until you get the look you want. Node handles change the shape of the path around the nodes. Use Ctrl - z to undo unwanted changes.



Add a slot to the top and bottom of the D, and then one slot each for the top and bottom of the 8. When you are done, add a box around the letters. Give the box rounded corners 20 Rx, 20Ry. It should look like this:



Finally, write your initials in a new piece of text, locate them so they are slightly overlapping the rectangle, then union them with the outer rounded rectangle like this (I put "WH" on mine, as those are my initials:



Here is a checklist to see if you are done:

- 1) Add a slot to the top and bottom of the D.
- 2) Add one slot to the top of the 8 and one to the bottom
- 3) Add a box to surround it all nicely
- 4) Make sure the box has rounded corners 20 Rx and 20 Ry.
- 5) Add your initials to the outer rounded rectangle, overlapped, then Unioned with the Path>Union function.
- 6) Make sure there is no fill and that all strokes are set to .005 inches and are 255 Red.

When you are done make sure you have named the file "your name-node editing.svg" and turn in via the Google classroom for this assignment. We aren't laser cutting these, so you're done!