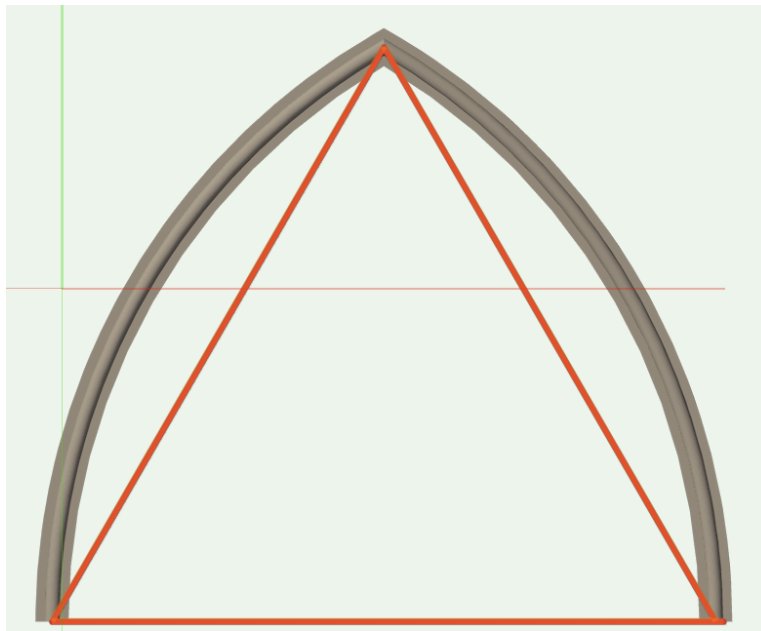An Introduction to Building Gothic Arches in Vectorworks
This tutorial will explain how to build a pointed arch model of a Tri Arch.
The Tri Arch derives its name from the three points of the arch that connect to create an   equilateral triangle.
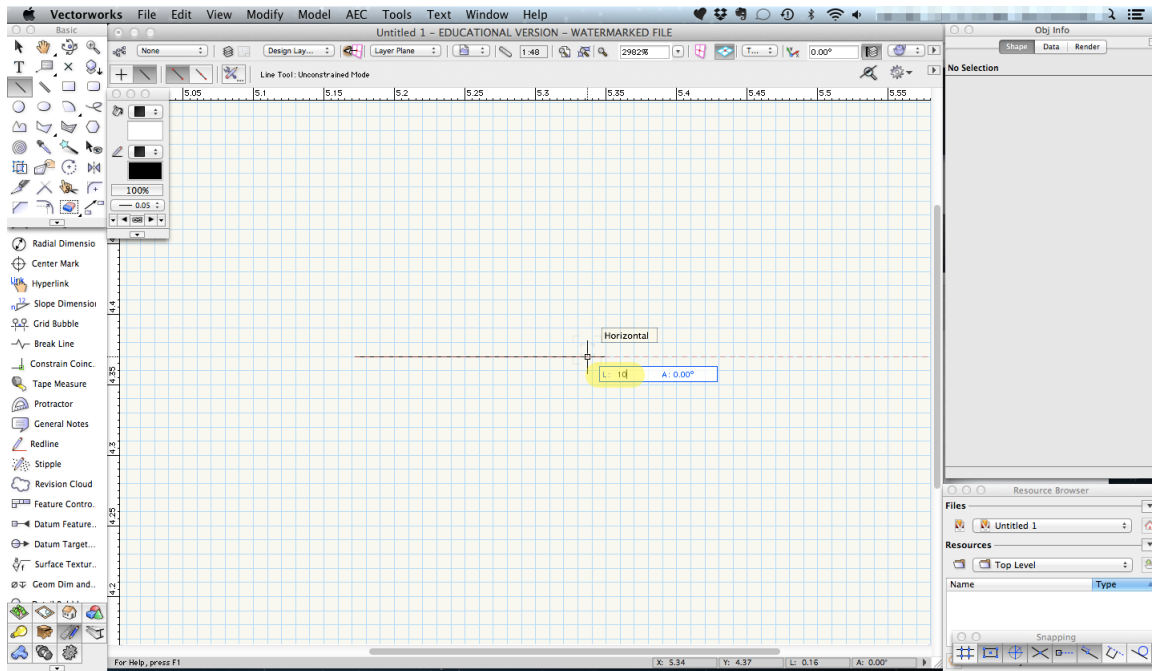

Step 1. Create a new document based on the course template, which can be found in the course website.

Step 2. Draw in top/plan view.
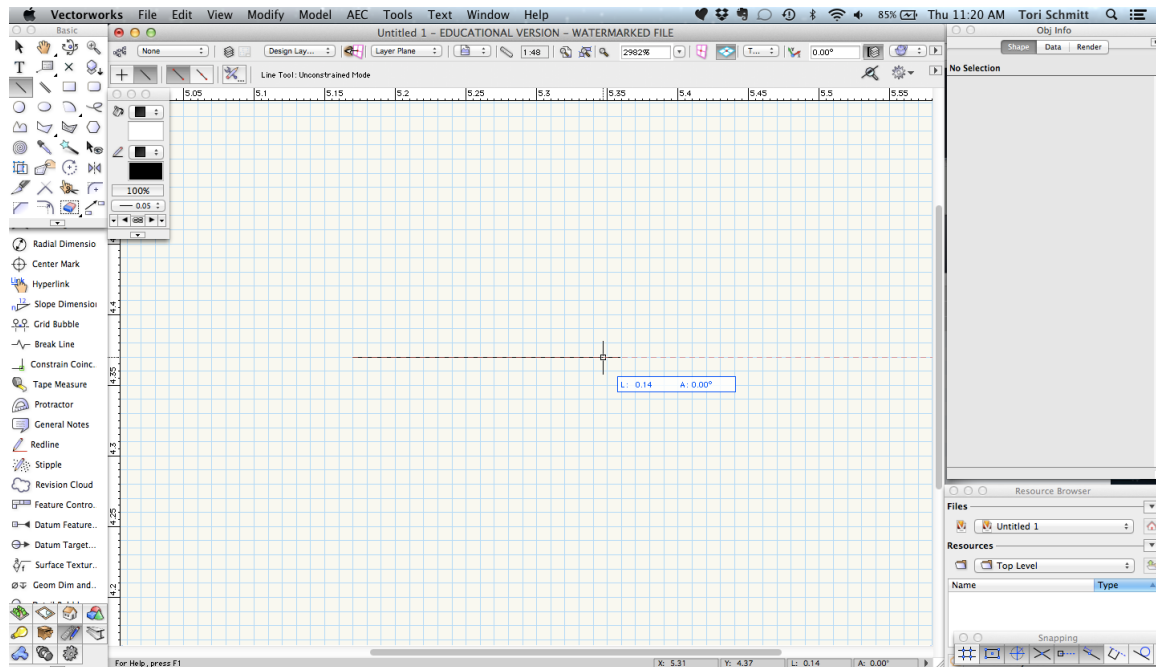
1. Select the Line tool from the "Basic Tools" palette. Click once to set the Line tool in the document. Hold the shift key and move the cursor to the right.


2. Hit the tab key to be able to enter 10m in the "L" field. Press enter. Click again to place the line. This step will ensure that the line is 10m in length.
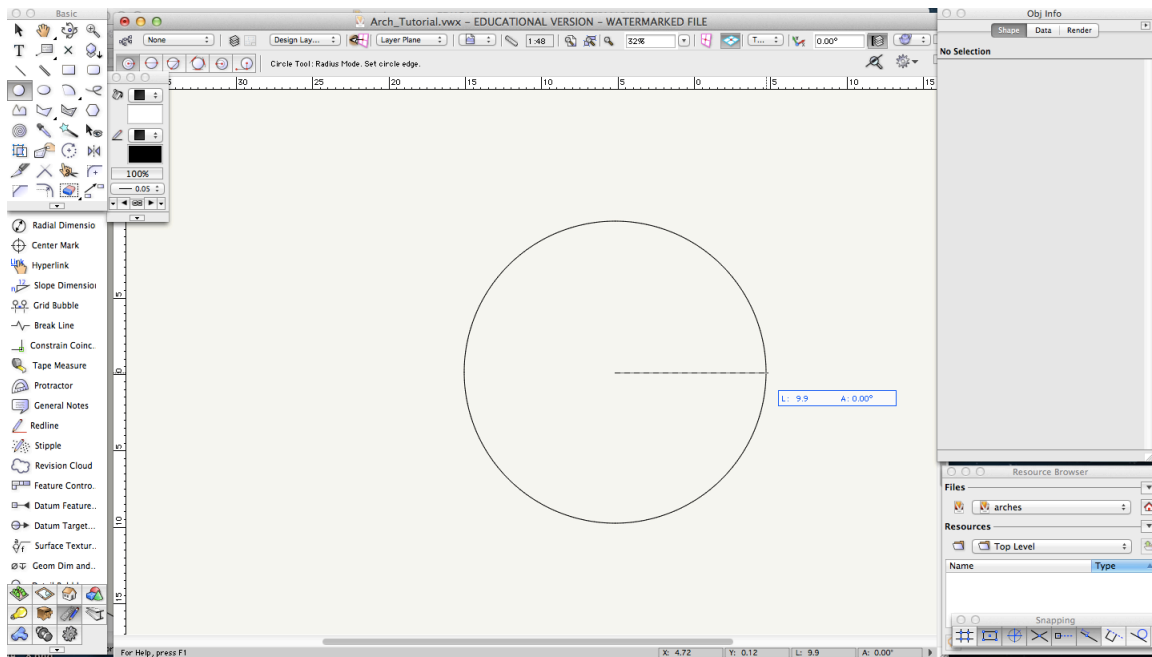

3. Select the "Circle" tool from the "Basic Tools" palette. Make sure the first mode (Radius Mode) is selected. Click to place the circle at the left end of the line. Extend the radius of the circle to the right end. The radius of the circle should be 10m
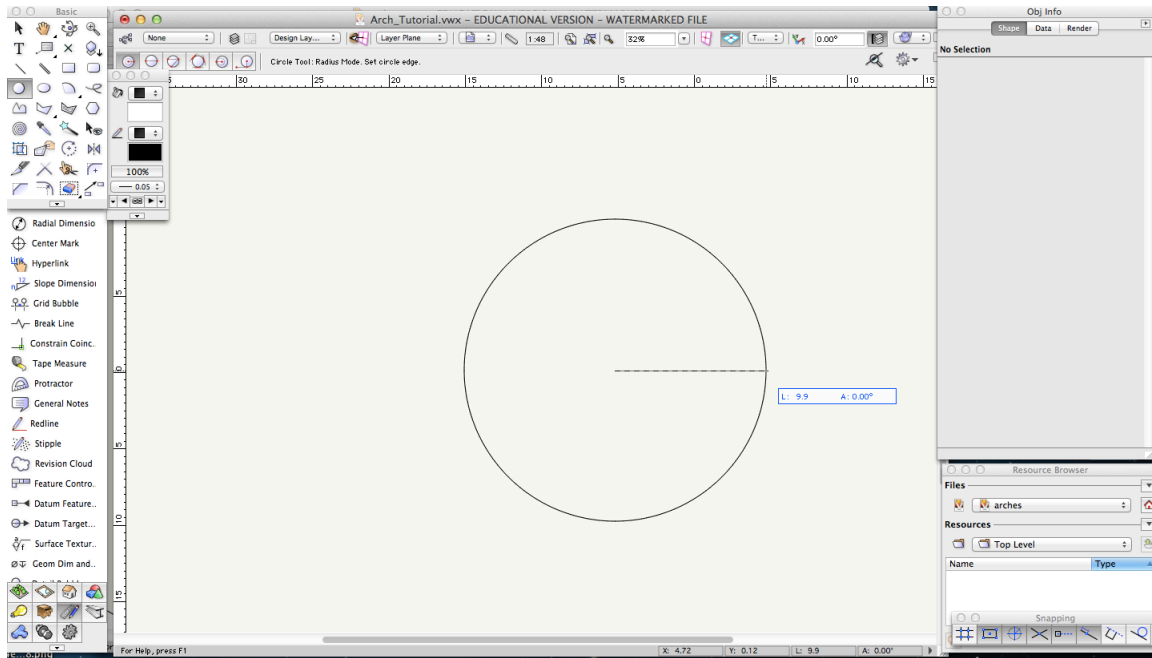
4. The new circle may obscure the line you drew earlier. If this is the case, select the line and go to "Modify > Send > Send to Back." The line will now be visible.
5. Repeat step three to create another circle. Draw the radius of this circle in the opposite direction from the first (right to left). Repeat step four to send circle to back. You will now have two overlapping circles, where they share the original line across the radius of each.
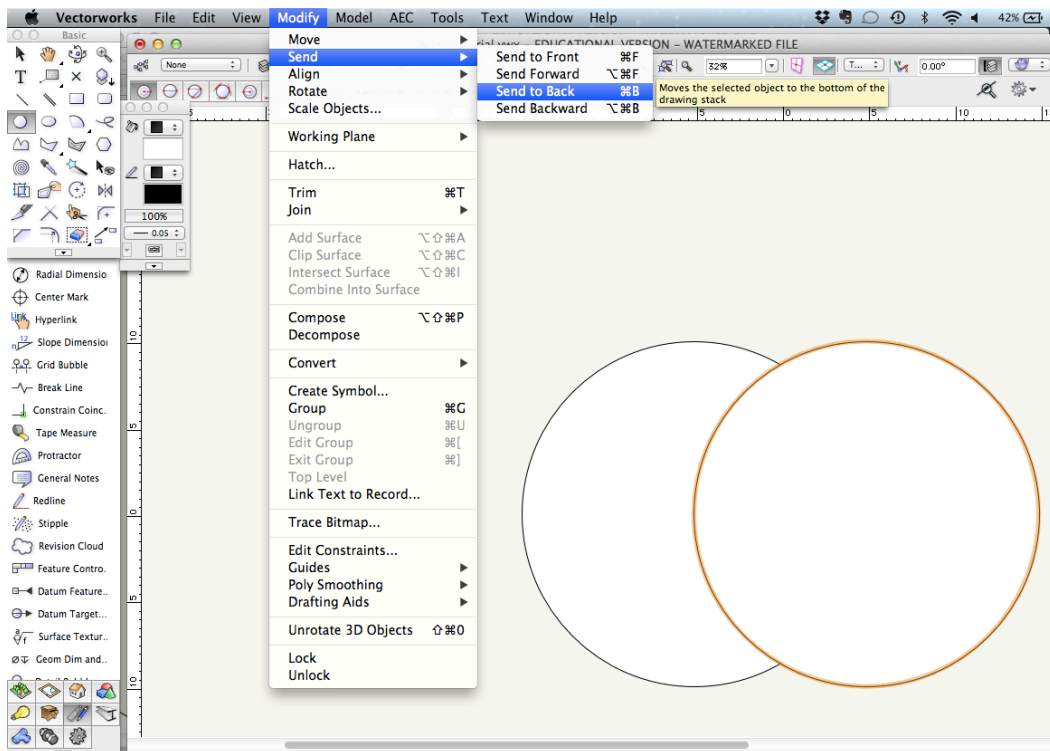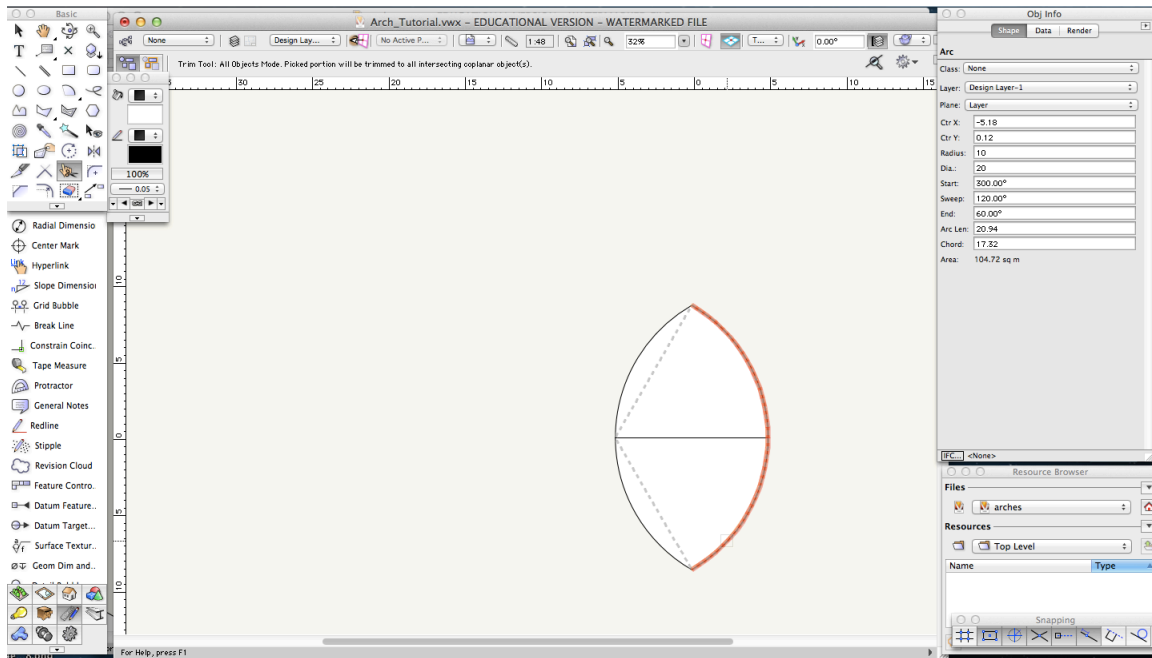
6. Select the "Trim" tool from the "Basic Tools" palette. Click on the outer ring of each circle to delete these segments. If you delete a portion unintentionally, hit "Command+Z" to undo.
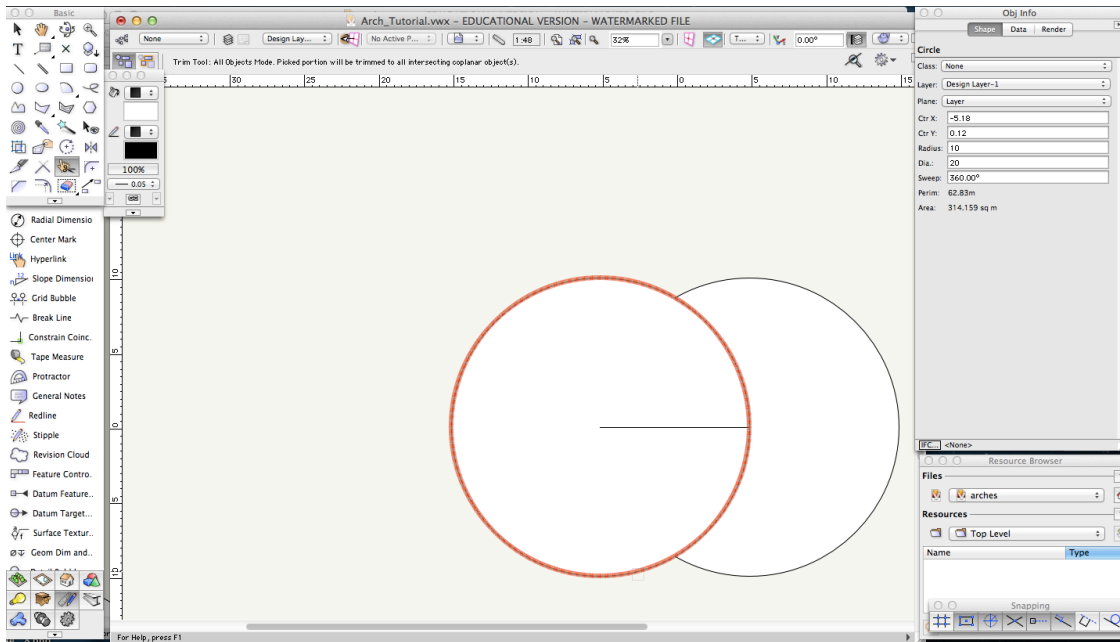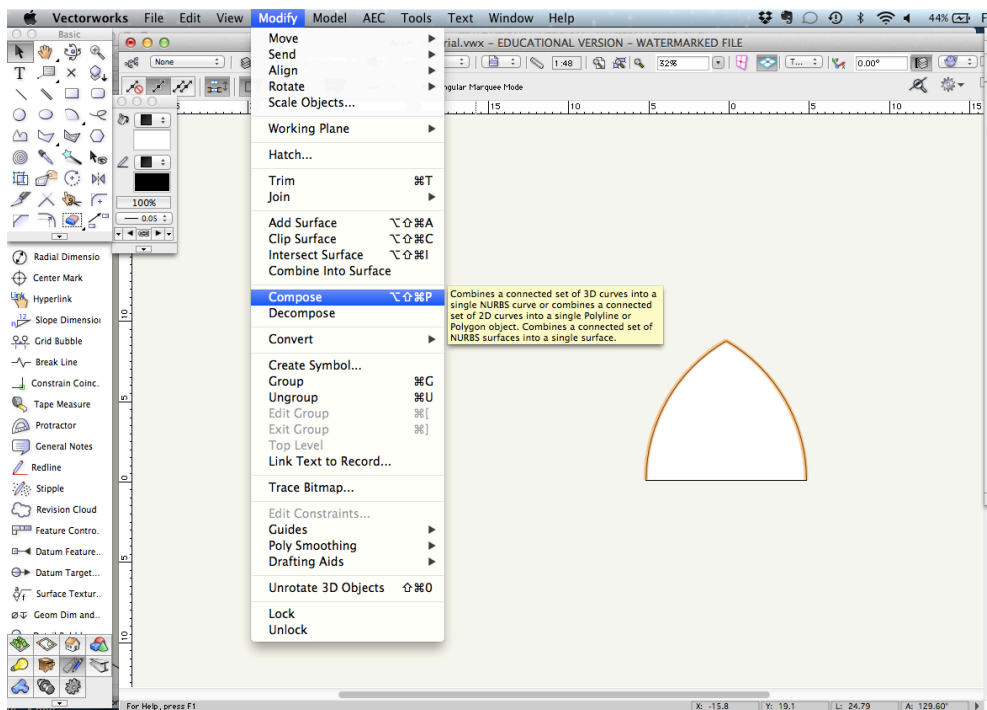

7. Repeat this action on the right circle.
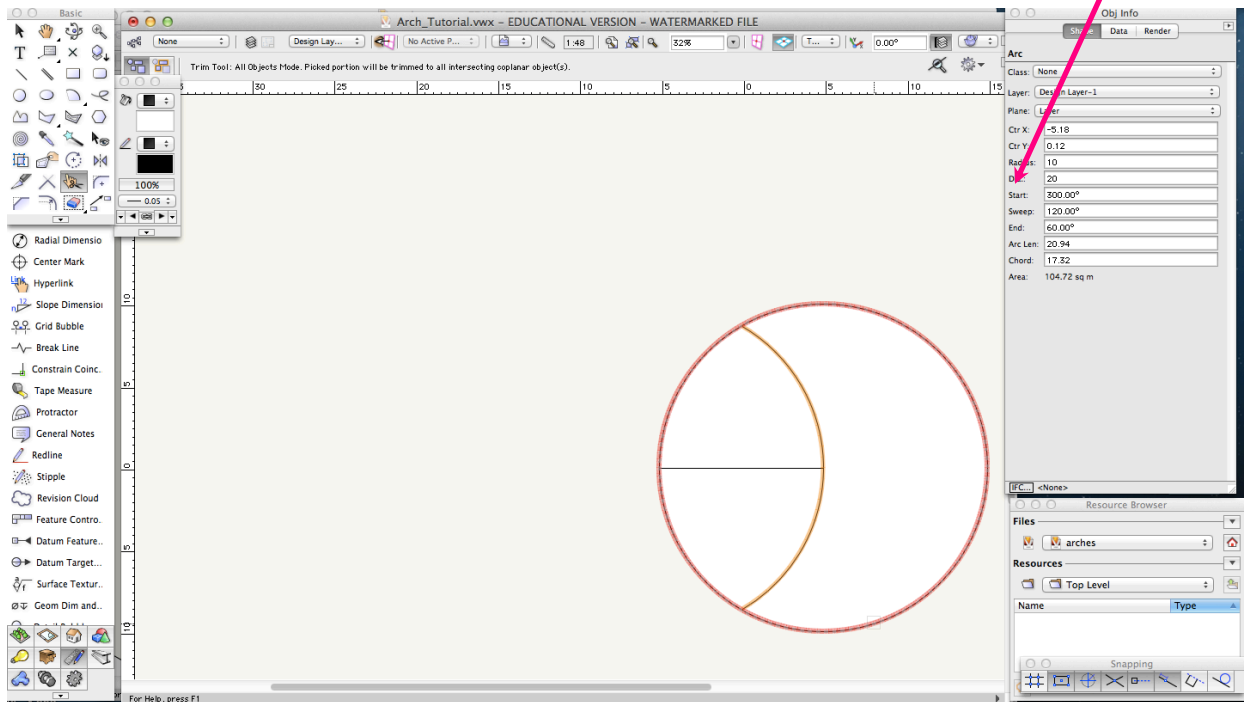
8. Now use the "Trim" tool to remove the segments below the horizontal line.

9. You should now be left with two arcs. While holding down the shift key, select both arcs and go to "Modify > Compose." This will convert your arcs into a single polyline. The "Object Info" palette will indicate this.


10. With the polyline selected, go to "Modify > Convert > Convert to NURBS." This will convert the shape from a polyline to NURBS. NURBS will allow the molding profiles to be extruded along a finished arch.
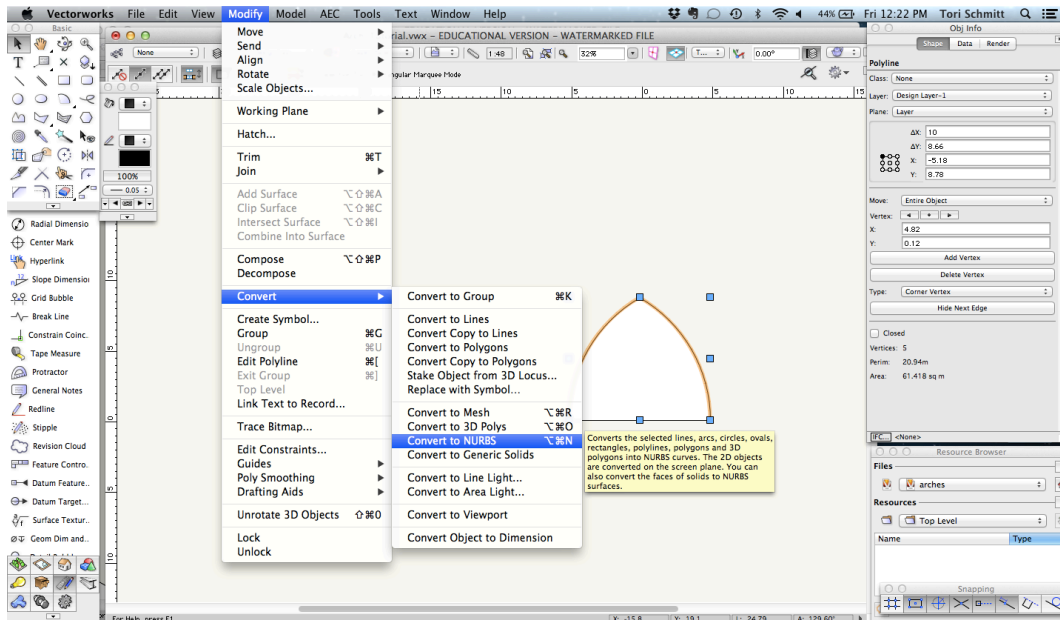
11. You may now delete the line you created in step 2 to indicate the arch span. We will now create the vertical sides of the arch. Select the "Line" tool from the "Basic Tools" palette and click at the left end of the NURBS Curve (Arch). Hit the tab key and enter 10m for the length of the line. Click to place the line.
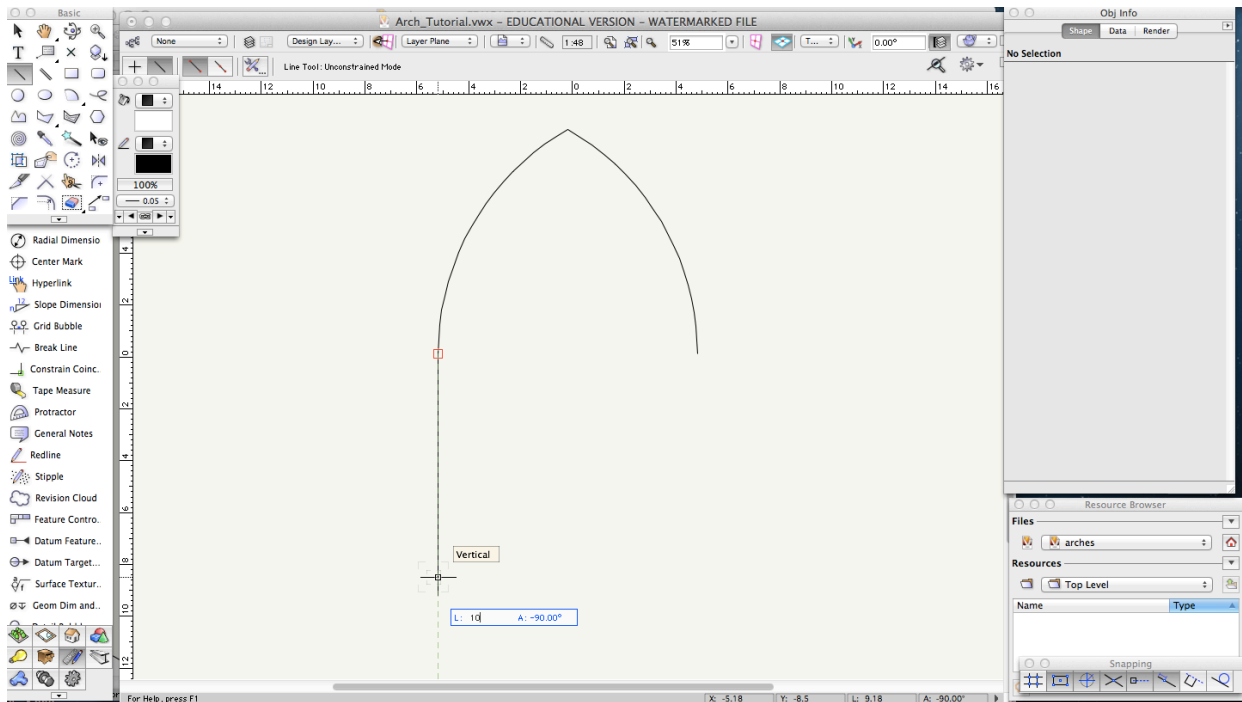
12. Repeat the previous step to create the right side of the arch.
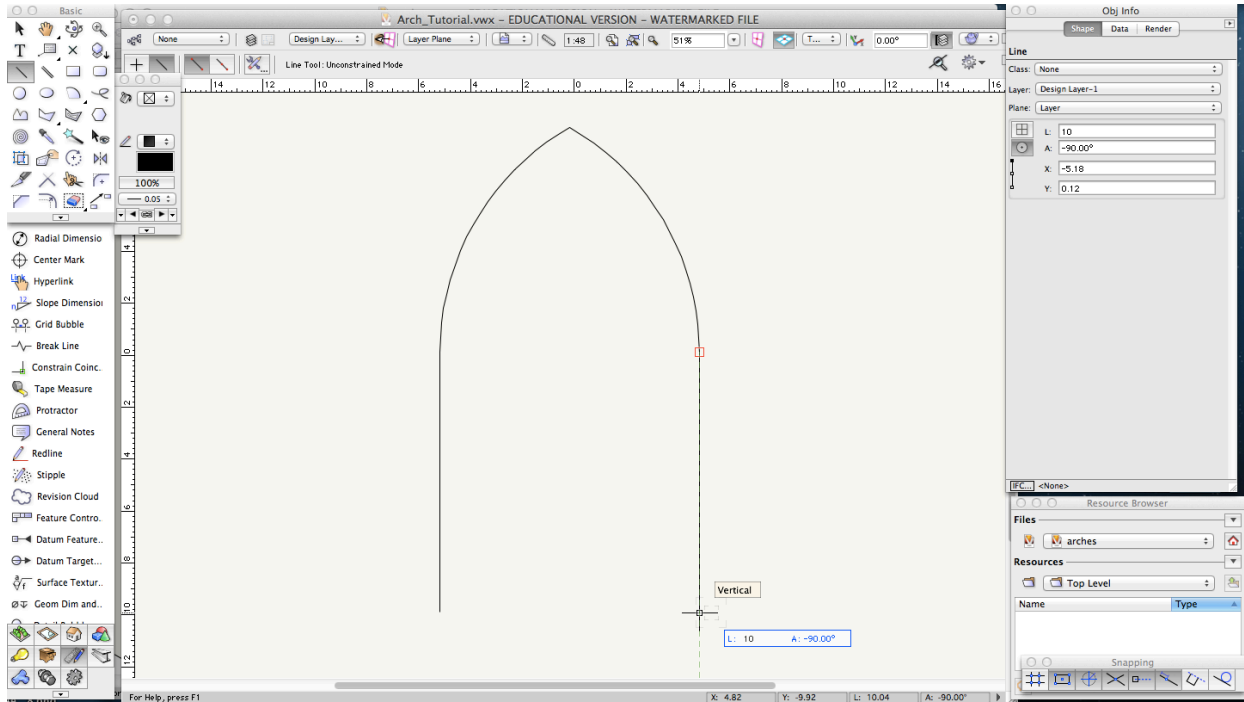
13. Each of the vertical lines you have created now needs to be converted to NURBS. Select one of the lines and go to "Modify > Convert > Convert to NURBS." Repeat this action on the other line. To verify, check the "Object Info" palette under "Data" says "NURBS Curve."
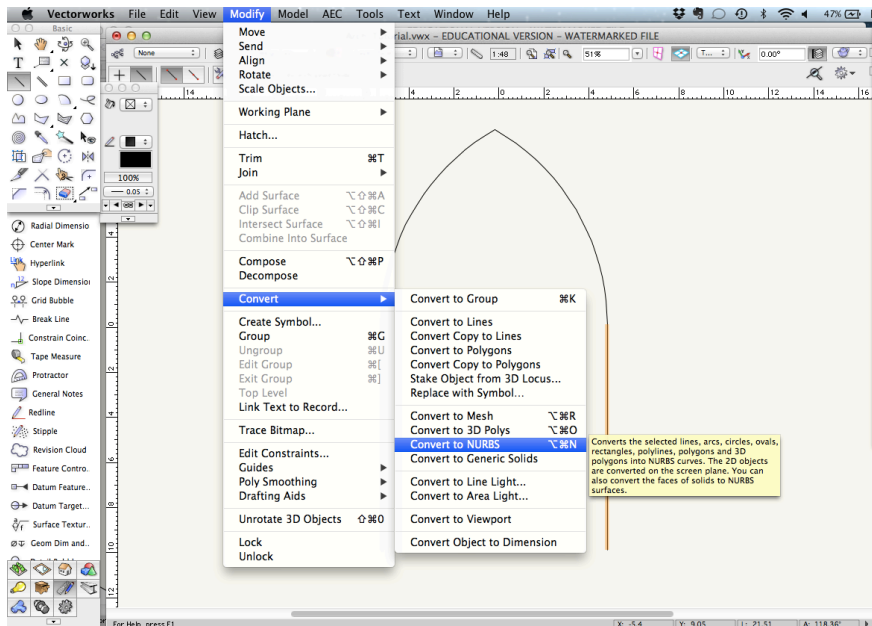
14. Select all objects in your document (hold down the Command + Shift keys while selecting) and go to Modify > Compose. This will compose your NURBS Curves into a single object.
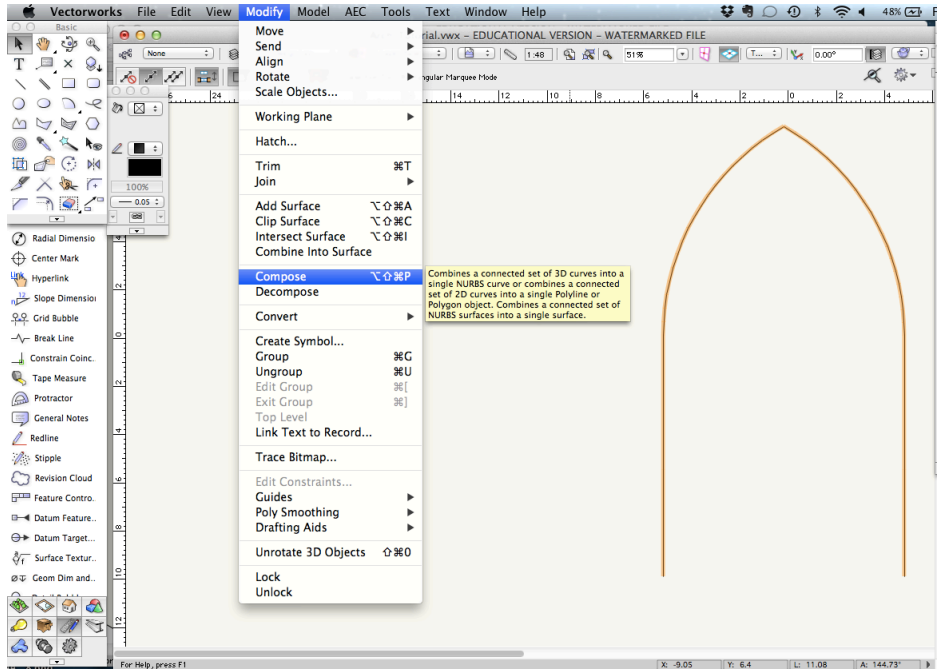
15. You have completed a Tri Arch. The object will be described as a NURBS Curve in the "Object Info" palette.
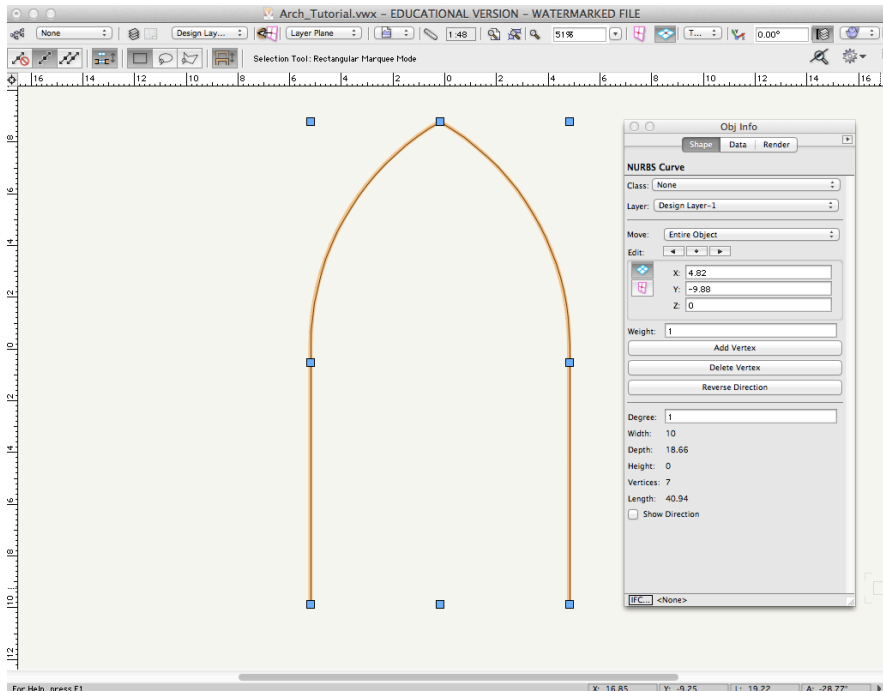
16. Drawing an equilateral triangle within the arch highlights the geometry of the Tri Arch.