

## Drawing an Umbrella using Bezier Curves in CS3 Fireworks

“**Bezier Curves**” are the mathematical means of making nice smooth and balanced curves in most computer graphics programs. **They can be extremely annoying and difficult to use for complete beginners.**

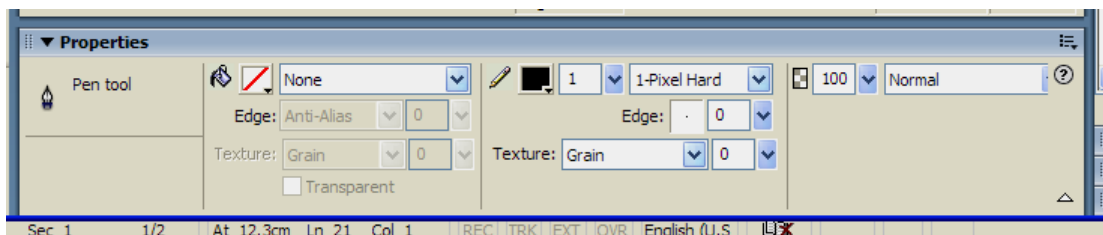
The things to remember are as follows:

- Control-Z can always step backwards to undo mistakes
- Hold down the Shift Key to draw straight lines with the Pen Tool, and constrict the angles of pointy lines to be 45 and 90 degrees.
- It is important to hold down the mouse button and not let it go until we have finished dragging and stretching and bending our curved section.
- The Control Key is held down, while we move and click in a vacant area to deselect and release us from curve shape adjusting mode.

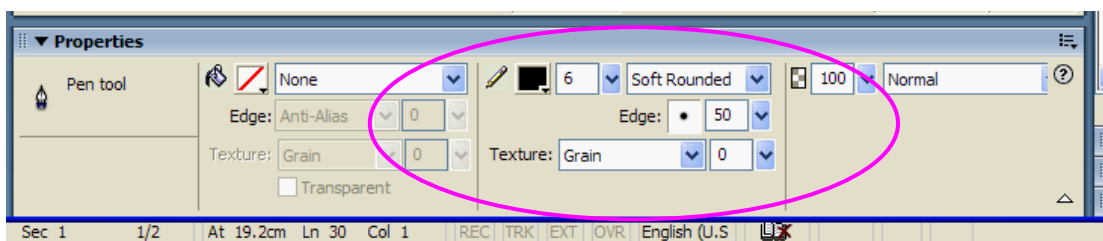


First of all turn on some Grid Line squares to help us with drawing by doing: View > Grid > Show Grid . *(Repeat this sequence at any time to turn the grid off again).*

Now go to the Vector Tools group and click to activate the Pen Tool. We need to set up our pen tip to be thick and soft rounded in the properties inspector before we commence drawing. Eg. When we first open a new fireworks document, set the canvas to white, (size to 1024x768), and select the vector Pen Tool, the pen tool will probably be set up like this:



We need to change “1-Pixel Hard” by clicking its down arrow and doing : Basic > Soft Rounded . We also need to make the pen tip bigger by setting the “1” next to the black pencil color, to be “6”. We should then have :



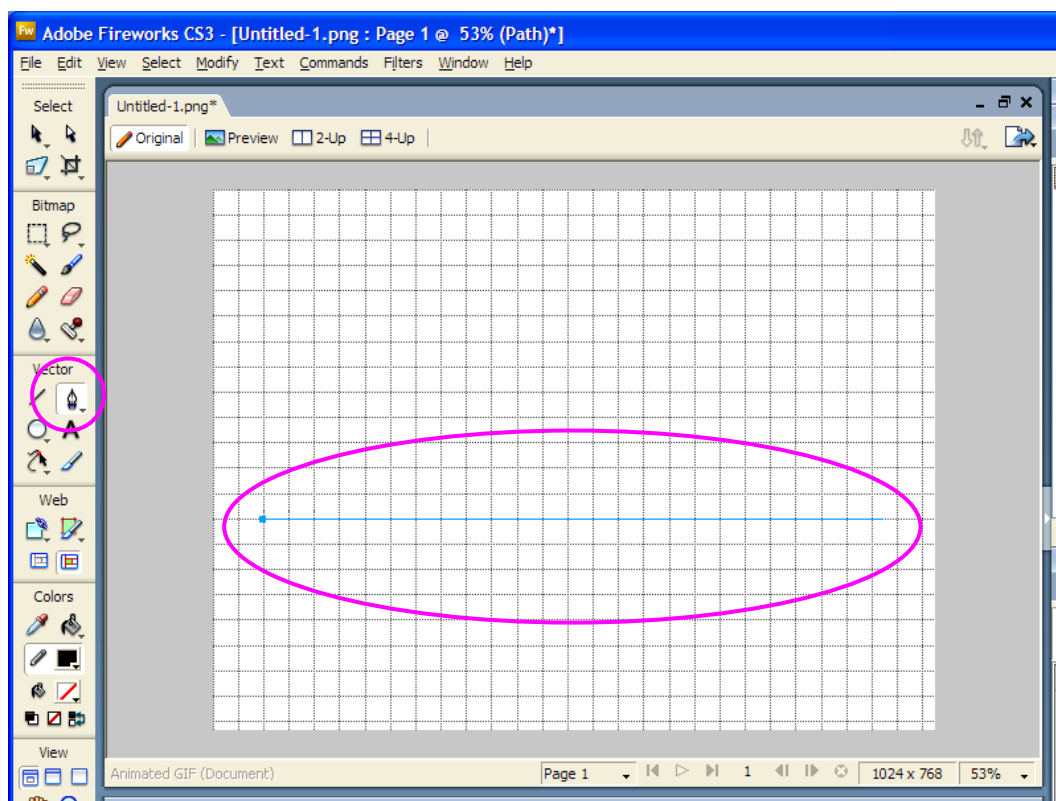
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The first thing we will draw is the top of the umbrella by clicking to make two points while holding down the shift key to get them to be straight.

Eg. Select the Pen Tool, left mouse click the first dot, and then release mouse button and move across to the desired location for the second point.

*When moving across to the right, it is very important not to click the left mouse button. If we do accidentally click the mouse, it will go out of drawing mode, and into Bezier Curve double ended adjusting mode. If this happens, then Control-Z undo everything and start again.*

As we move across the page, press down the shift key on the keyboard to make the light blue line a perfectly horizontal straight line. Do not click the mouse to make the second point yet.

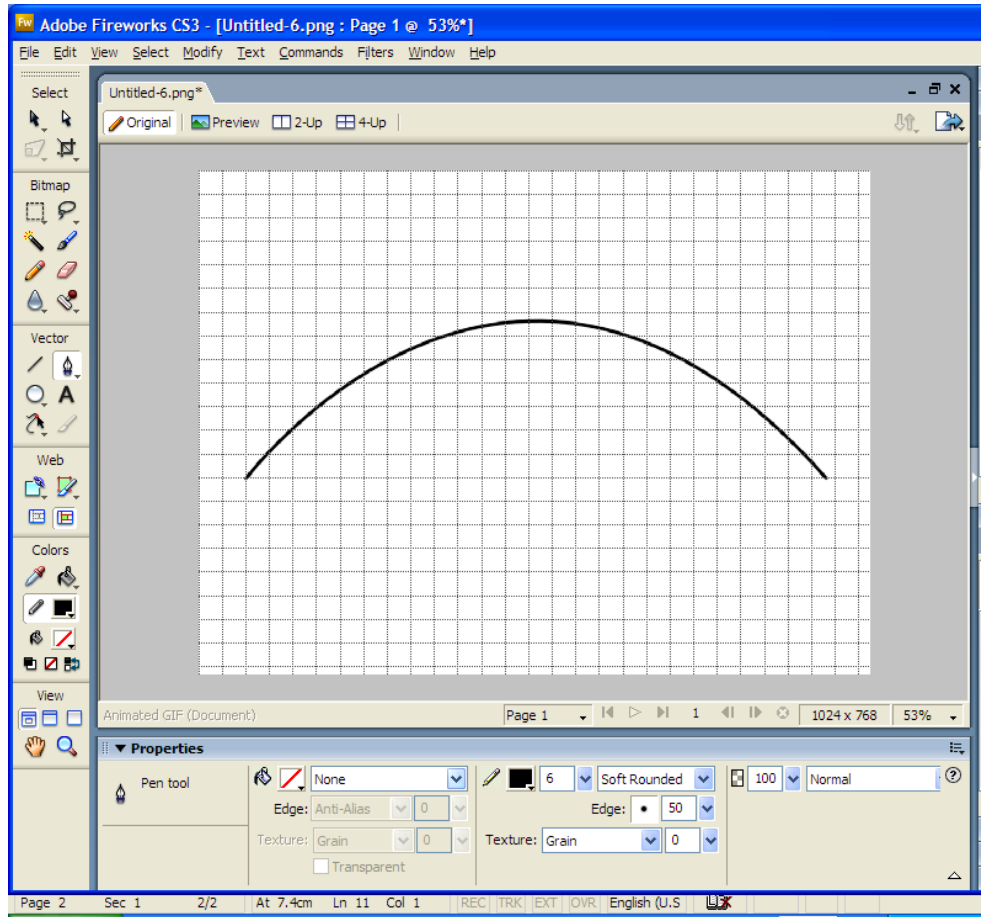


When we click the second point we must not release the left mouse button, but keep it pressed down and drag down to the right hand corner to make the evenly balanced curved umbrella shape. We have to keep dragging the mouse well beyond the document edge, and then release to make the even shaped curve shown further below.

Remember if things go wrong, so simply Control-Z backwards to undo and start again.

The other tricky part is that when the curve is the right shape, then click the left mouse button. To now get out of Bezier Curve mode, press Control on the keyboard, and click away anywhere but on the umbrella line. Alternatively, we can let go of the mouse entirely and press Control-D to deselect the Pen tool.

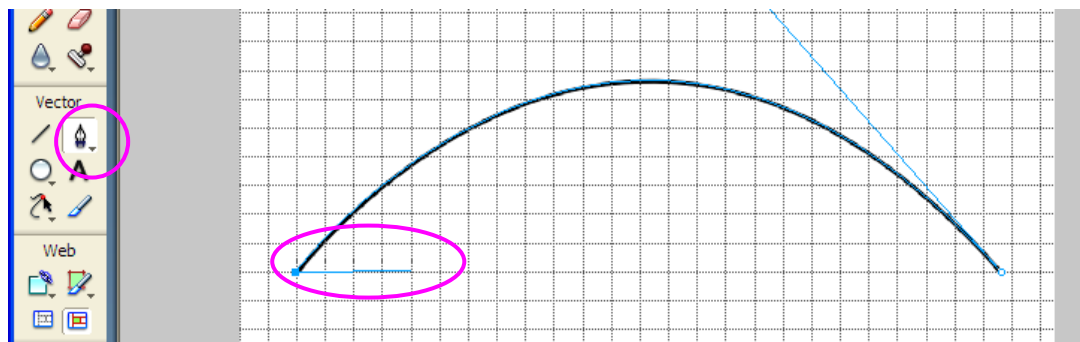
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The next step is to draw the bottom section of the umbrella, as several equally spaced Bezier Curves, drawn one at a time. ( *Unfortunately, there does not seem to be an easy way to subselect our first mini curve, and cut and paste it across the page* ). Anyway, we need plenty of practice drawing curves.

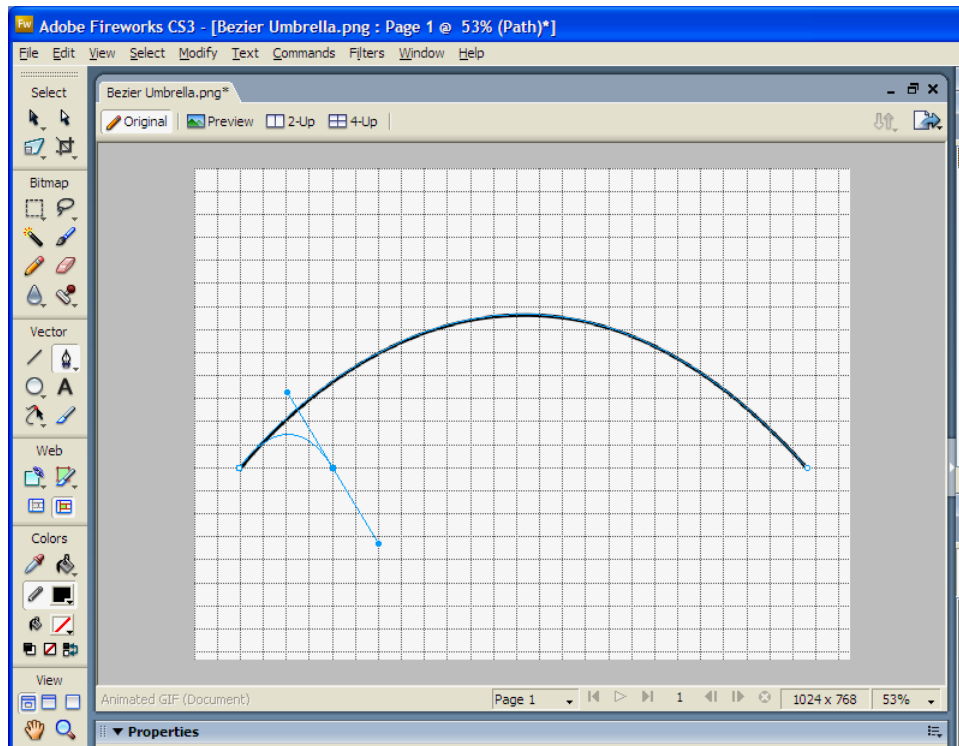
Because our Umbrella, has around 24 grid squares across the bottom, we will make each umbrella mini curve four squares wide, and thus have 6 of them in total.

To draw the first mini curve, we use the exact same technique as we just used to make the top of the umbrella. Have the Pen Tool selected, click on the left hand corner of the umbrella top, and then go 4 squares to the right:



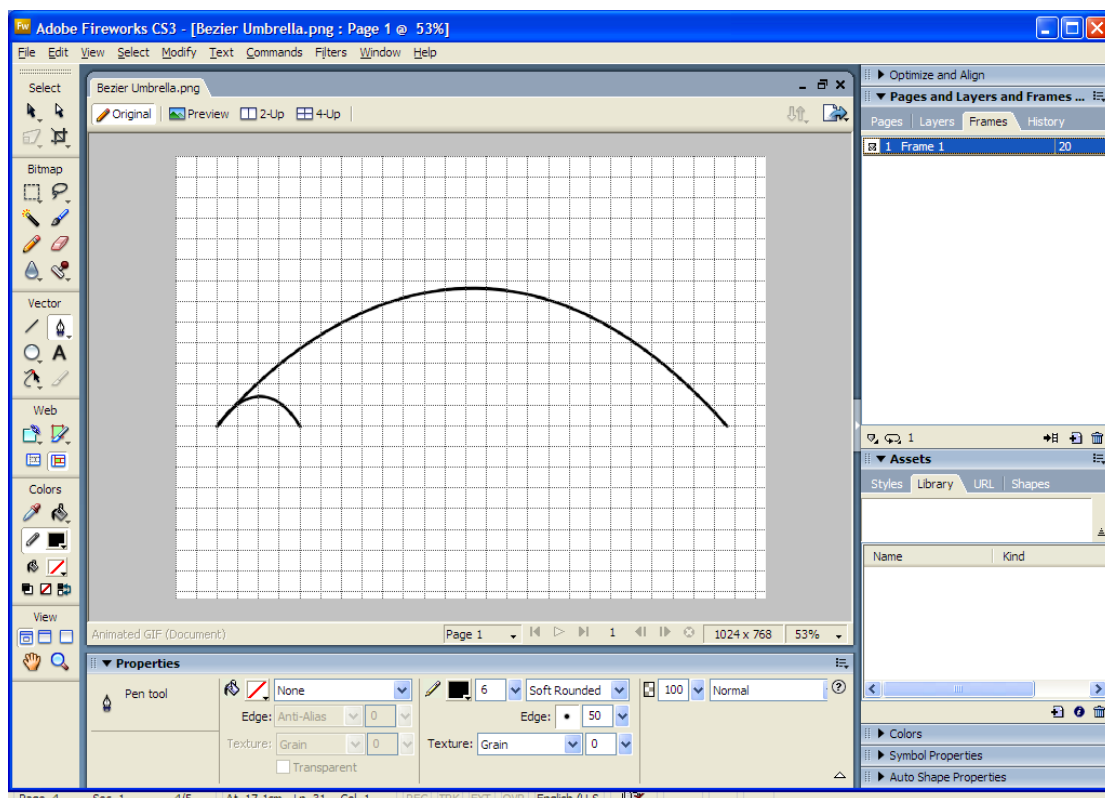
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Now click the left mouse button, and hold the button down, while dragging the mouse down to the right like this:



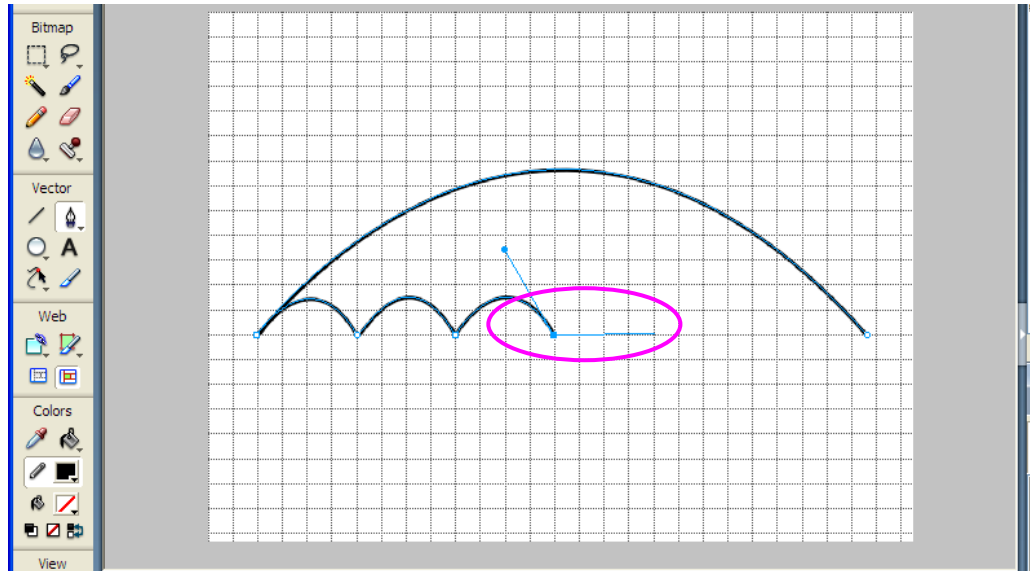
Note that we have tried to centre the top of the curve at 2 squares across, and made it 1.5 squares high, to help us make identical curves along side it.

We then release the mouse button, and then hold down Control and click away from the curve to exit from Bezier mode:



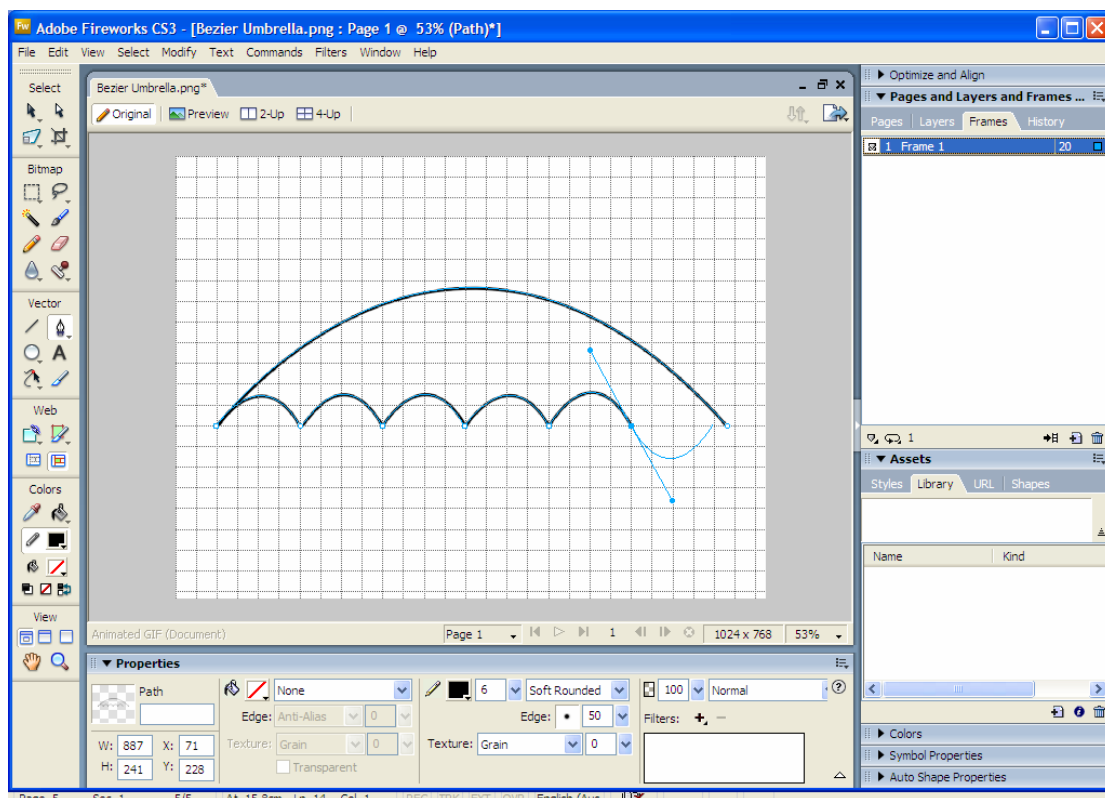
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We now go to the end of the mini curve, and draw another mini curve connected to it. We do this exactly the same way as we drew the first mini curve. Do not worry about the Bezier adjuster that appears to the left, just click where we last finished, unclick, and move across to the right 4 squares each time :



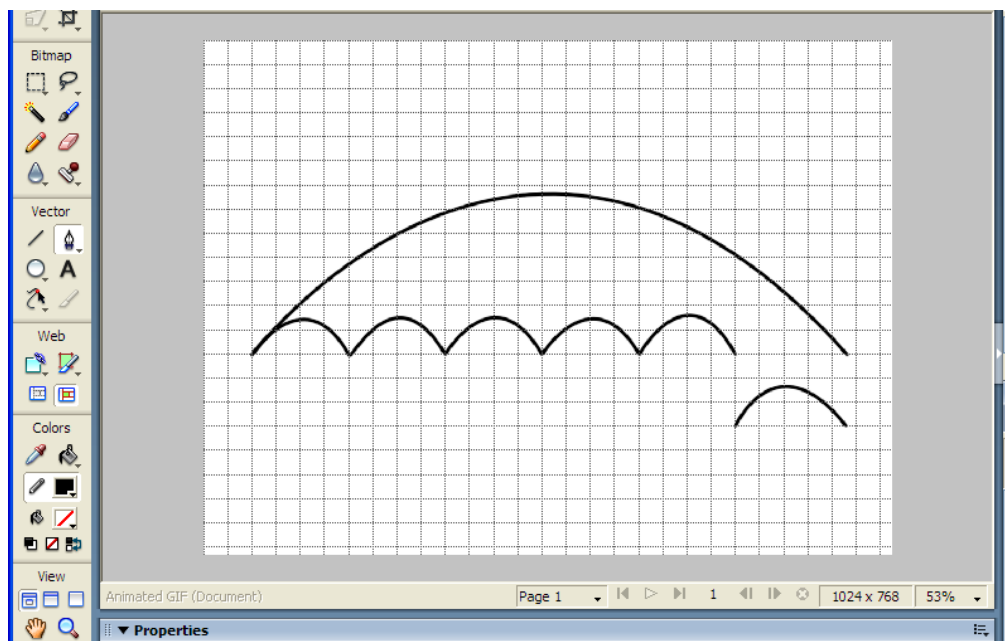
Then left click, hold mouse button down, and move diagonally down to the right to make the next mini curve.

DRAWING THE LAST MINI CURVE IS A PROBLEM. For some reason the Bezier curve generator wants to make a downwards curve rather than a straight line, and does even worse distortions when we try to join onto the end of the umbrella top :

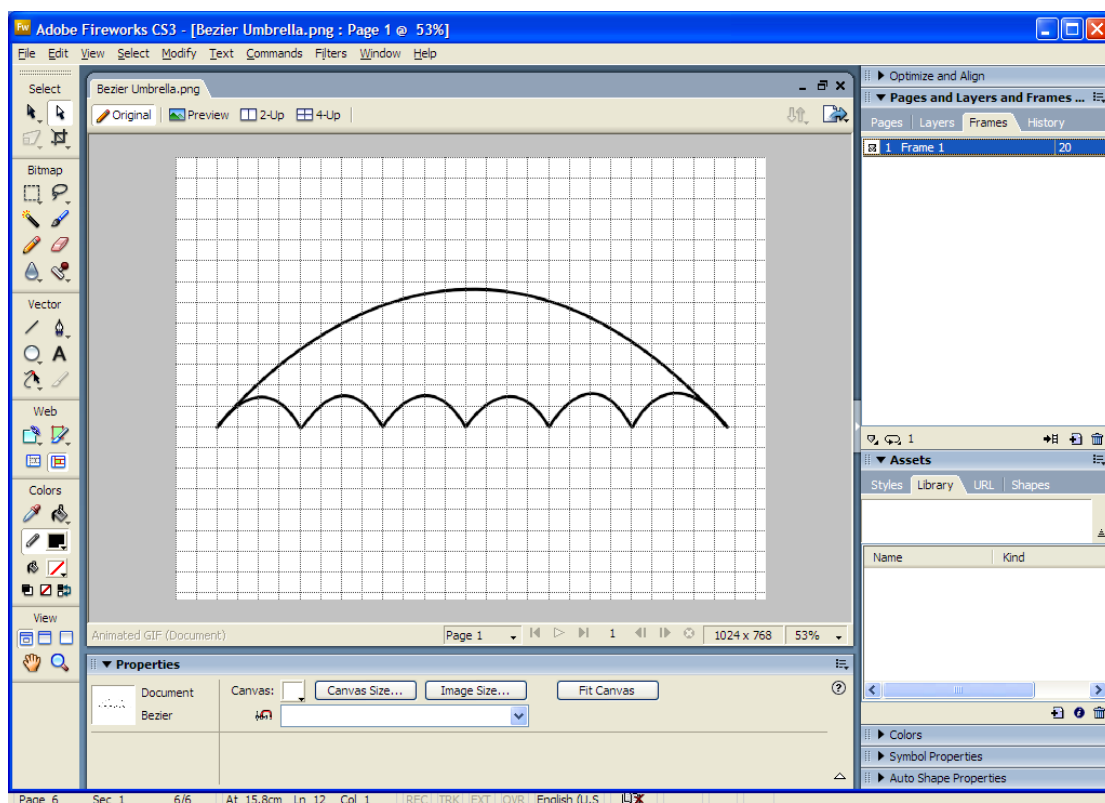


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The way around this is to draw the last curve as a separate item under the umbrella like this: ( also because our umbrella top was not perfect, we have to go 4 and a half squares across ) :

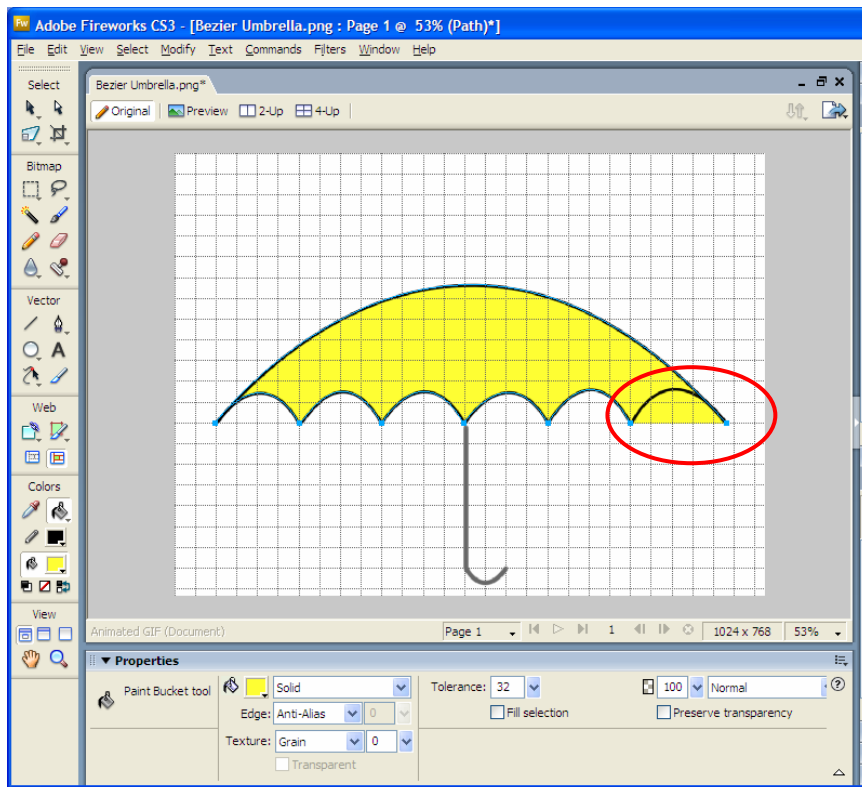


We then change from the Pen Tool, to the white subselect arrow up at the top right hand corner of the tools panel. We can left click the last umbrella mini curve with the mouse, hold down the button, and move it up into position. We use Control-D to deselect the item when finished, and should have this:



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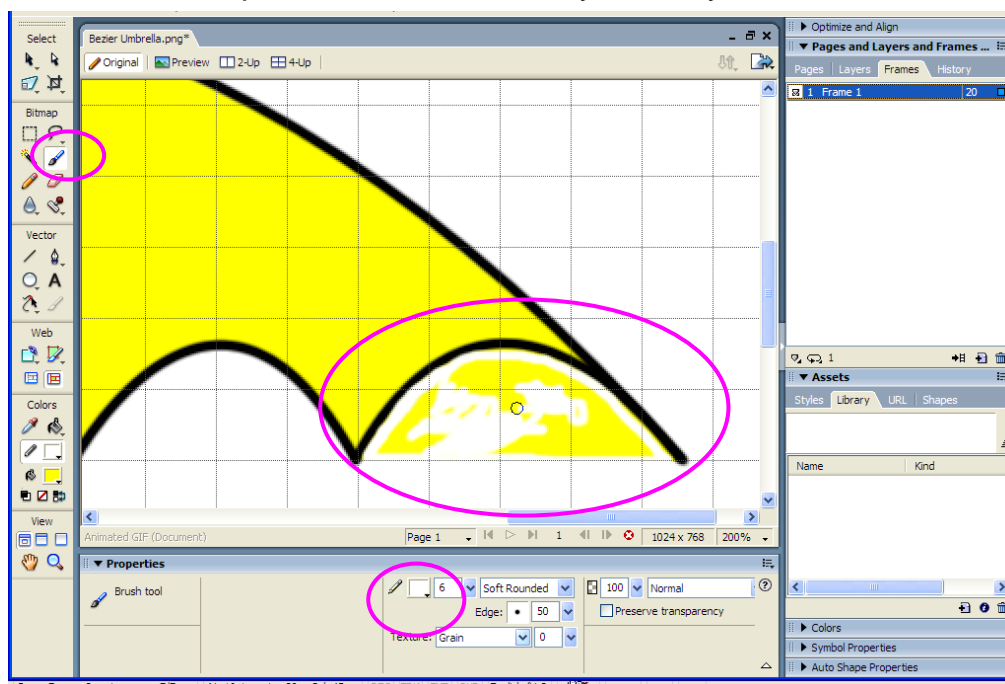
We can then set the Pen Tool to a thicker numbered tip, and make a handle for our umbrella. However, if we then use the Paint Bucket tool to colour in our umbrella, we run into a bit of a problem like this:



This happens because the separate curve we built and moved into place is not actually connected to the other curves. It seems we cannot use just the subselect tool, with Shift key, and join the last curve onto the others.

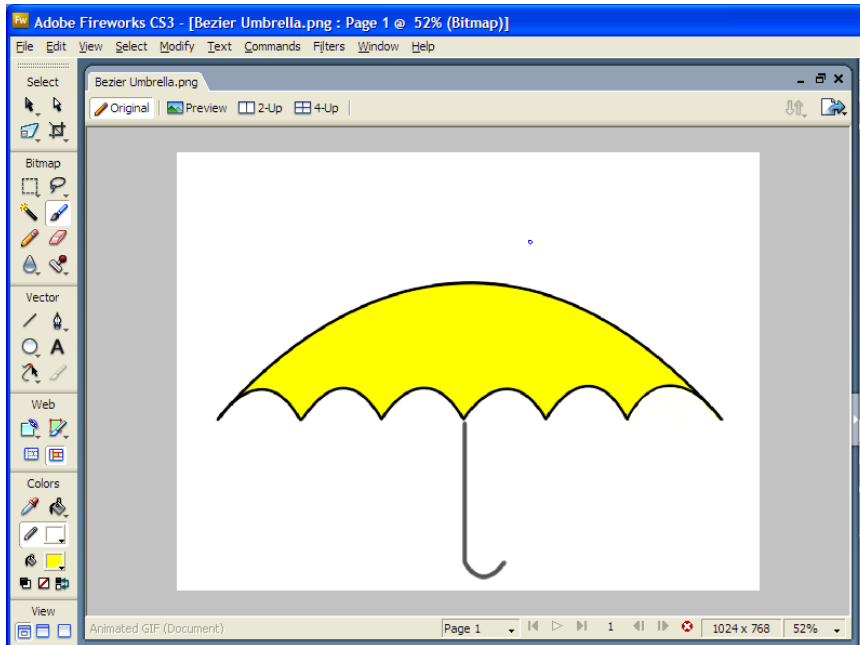
**( We can actually use "Modify > Combine Paths > Join" to overcome this problem – See Appendix 1 near the end of this document ).**

An alternative method is to right hand corner magnify the object up about 200%, and then paint brush the area very carefully to be white like this:



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Use Control-Z to backout any slips, and when finished do View > Fit Selection to get back to normal screen mode. Also do View > Grid > Show Grid to remove the gridlines.

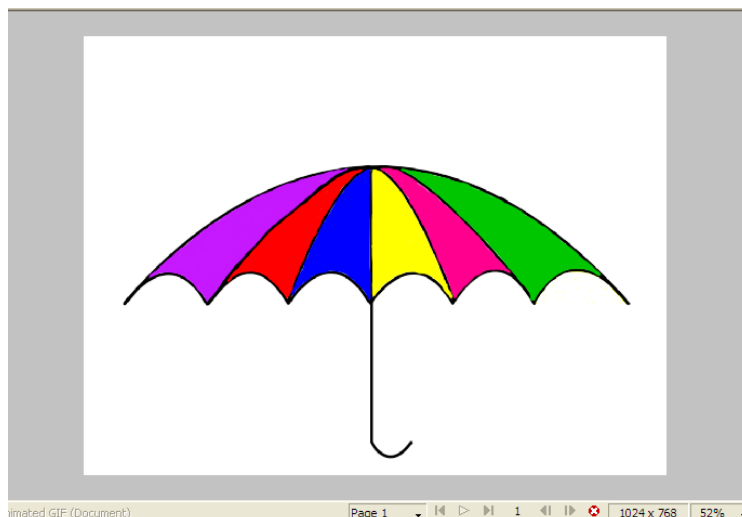


**Save the picture into your work folder, and show it to your instructor so they can note down that you have completed this task.**

*For more of a challenge, modify the umbrella to have extra panels that are all different colors by adding additional Bezier Curves to the object.*

It is quite challenging drawing the panels in, and sometimes we have to draw them not connected, and then move them into position and adjust their size.

Colouring in the panels is also quite tricky, as they have to be painted by using the Paintbrush and the mouse. Use brush size 6 in small strokes, click and then unclick, then do next one etc. By lots of small clicks it is easy to Control-Z undo if a slip happens. Also zoom in about 300% to be able to do detailed work. Use a bigger size 25 brush setting for doing the middle parts of each panel. With a lot of perseverance we end up with this masterpiece of modern art:



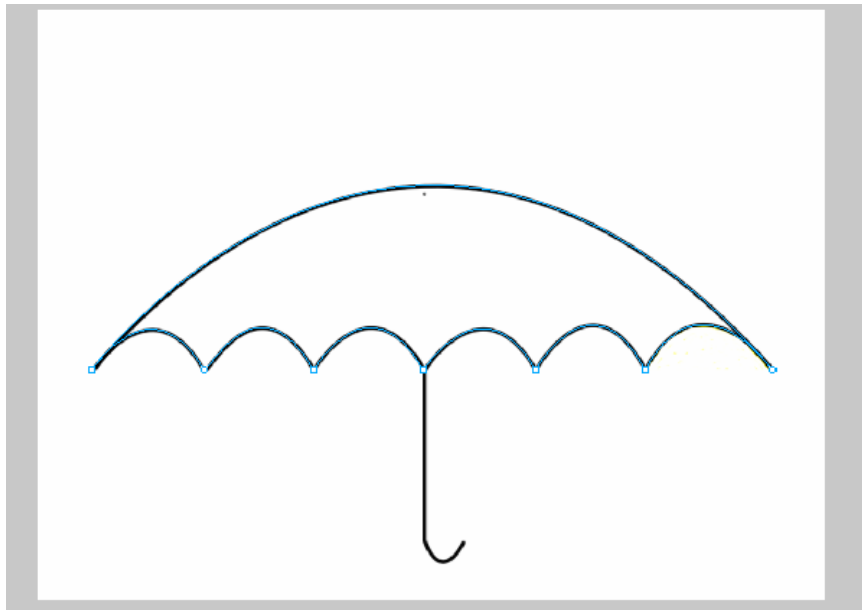


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## Appendix 1 – How to Use “Combine Paths” to Join Items

When we make our basic umbrella, it is made of two main items: the big umbrella, and then the last piece that we drew and moved into position.

We need to carefully use the top right hand tools white arrow to select the small last piece, and then *hold down shift key*, and click to select the large upper portion as well. ( Eg. Just keep shift down and click and light blue highlight select all parts of our umbrella top like this ) :

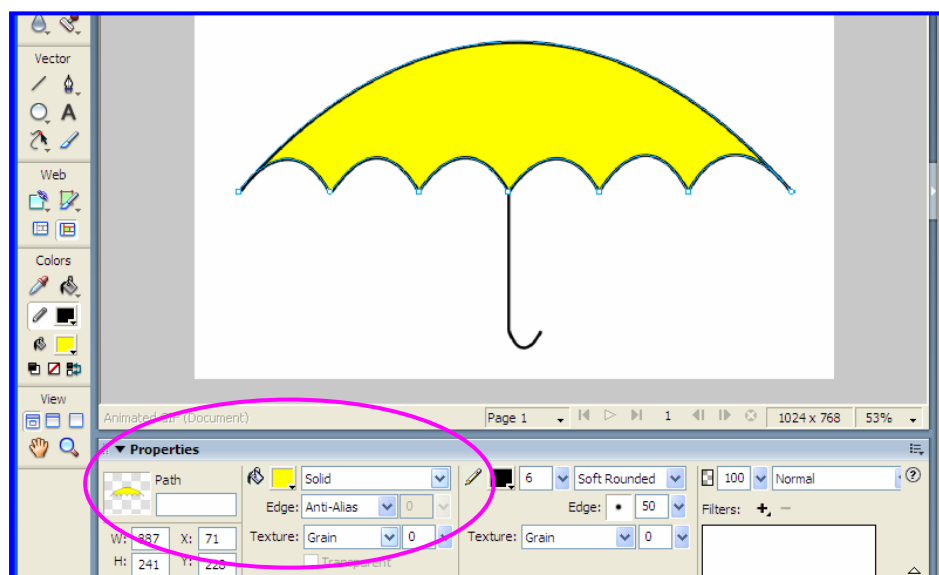


Now we do **Modify > Combine Paths > Join** (or *Ctrl Shift J*)

To join all of the selected “vector paths” into one continuous Vector path.

*(“Vector Path” is a mathematical line or curve drawn with vector tools. It is much sharper and resizable than bitmap lines, because it is mathematical.)*

Now that is one path, we can paint bucket select a colour in the Properties Inspector, and easily, and automatically, colour the umbrella in :



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### Appendix 2 – More Drawings Using the Bezier Pen Tool

*Some other Drawings that can be attempted to learn How to use the Pen Tool, as well as drawing some Bezier Curves are given below.*

Note that the Pen Tool and Bezier Curves are not just a “Fireworks thing”. They are also used in Adobe Illustrator, Adobe Flash .SWF Animations and Games, and many other computer graphics programs.

This first drawing involves using the Pen Tool to make a Straight Lines City Skyscape, as a background to a James Bond 007 Martini Drink.



The next drawings involve using shapes and curves to draw a No Smoking Sign, and a Vase with a Flower in it.

