

Tiling with Fireworks MX

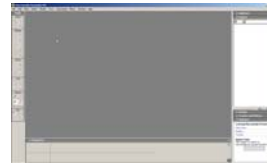
Setting up:

1:

From your desktop:

General > Macromedia > Fireworks

If you get a pop-up window, close it - when this pop-up has been closed, **your screen should look like this:**



2:

File > New



3:

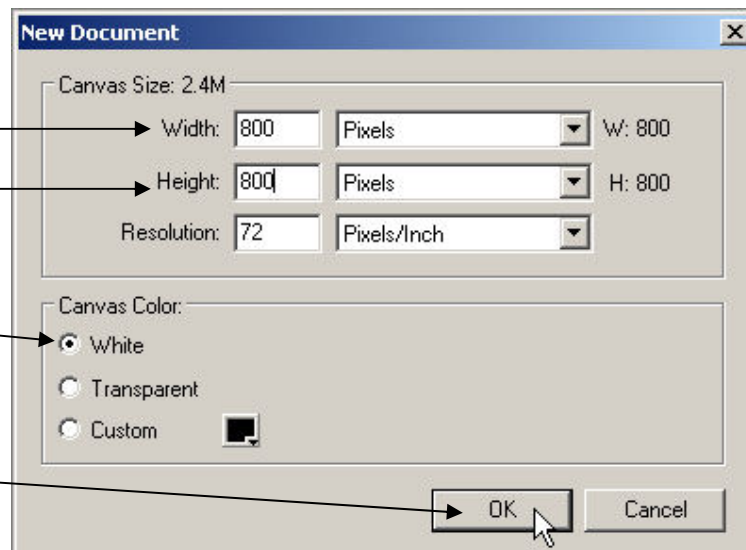
Set up your canvas (new document)

Width: 800 (pixels)

Height: 800 (pixels)

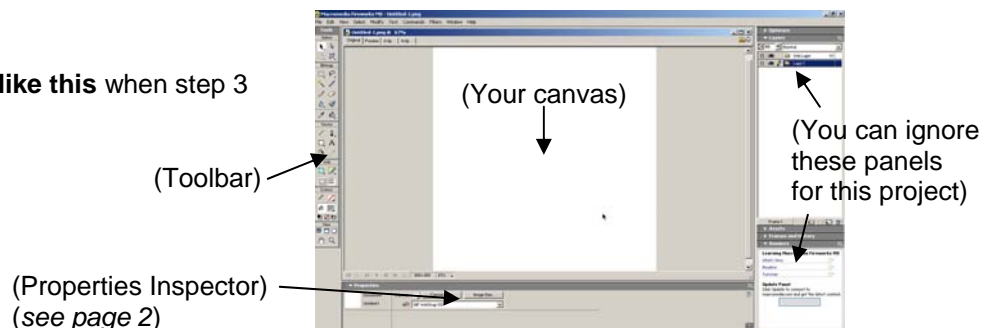
Canvas Color: White

Click **"OK"** when these settings done.

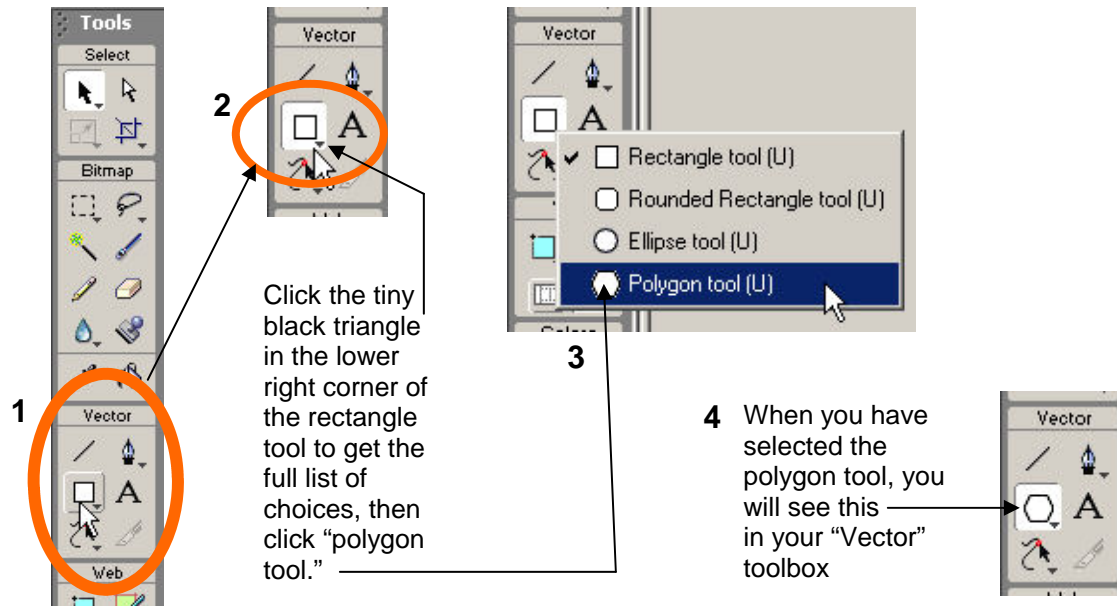


4:

Your screen will look like this when step 3 has been completed.



Use the Tool Bar to get a Polygon Tool:



Use the Properties Inspector to get a Particular Polygon:

Our goal:

- A regular hexagon
- Blue interior
- Blue border (hard edge)

The Properties Inspector is at the bottom of the screen

Inside color - click the square to get the palette choices

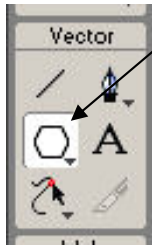
Border color - click the square to get the palette choices

Border style - click the "down arrow" to get the choices (Pencil > 1 pixel Hard)

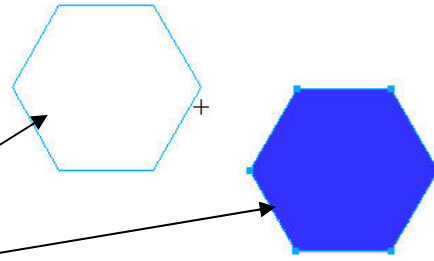
No. of Sides - click the "down arrow" to get the slider, then move it to get "6" (hexagon)



Draw One Hexagon:

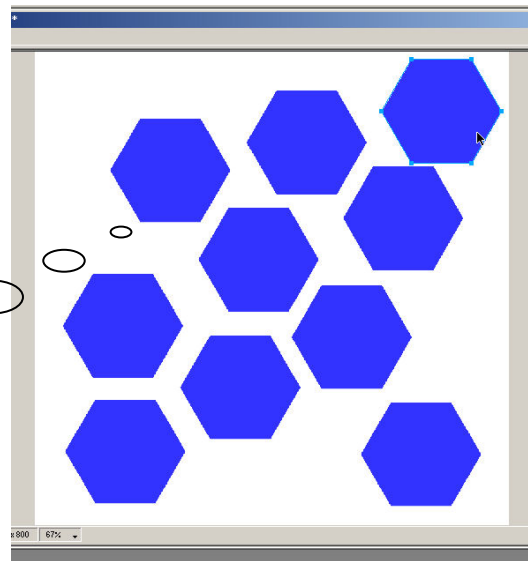


1. Click the polygon tool if not already selected;
2. **Hold down the SHIFT key** (this will give you a regular hexagon);
3. Move onto your canvas, and use click-drag to make a hexagon the size you want;
4. Let go of the mouse & shift key to get the completed hexagon.

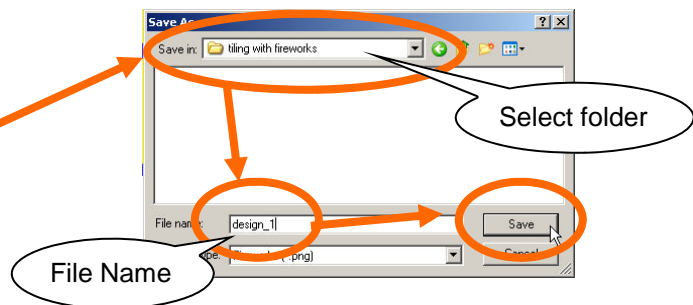
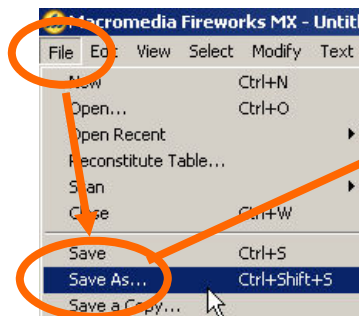


Make a Bunch of Hexagons:

1. Click your hexagon
2. **Hold down the ALT key;**
3. Drag and you'll get an "instant clone";
4. Repeat until you have 10-12 hexagons.



Save What You've Done So Far:



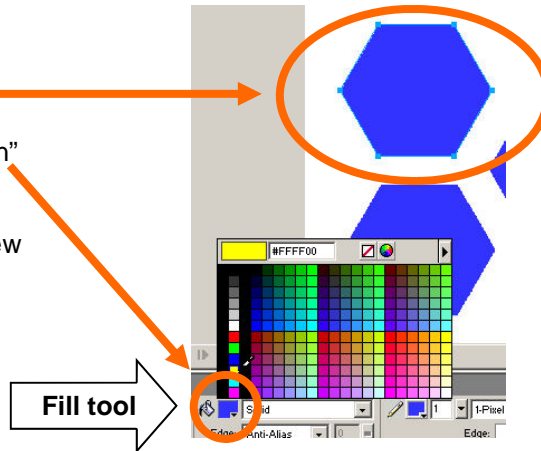
Now you have done "Save As...", you can do a "Quick Save" any other time you want to save:

- **Hold down the "CTRL" key,**
 - **Click "S"**
- or File > Save (NOT "Save As...")**



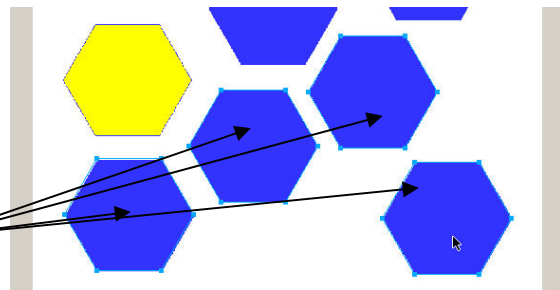
Change Hexagon Colours:

1. Click one hexagon;
2. Click the fill tool ("Paint Can" icon beside it);
3. Click the dropper on the new color you want

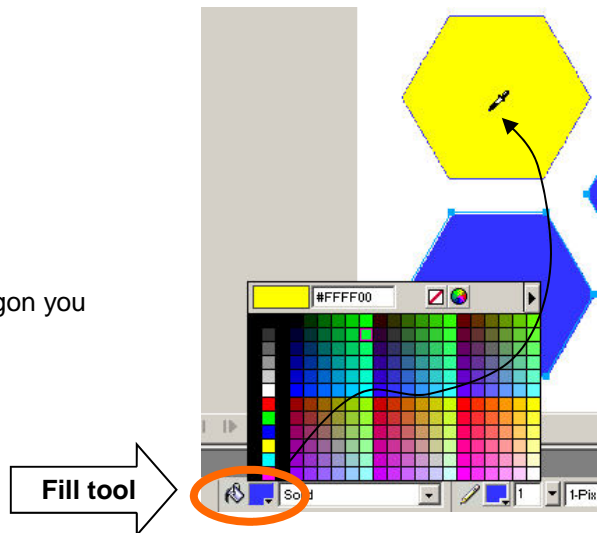


To change several hexagons to this same color (to get an exact match):

4. Hold down the **SHIFT** key;
5. Click **all** of the hexagons you want to change;



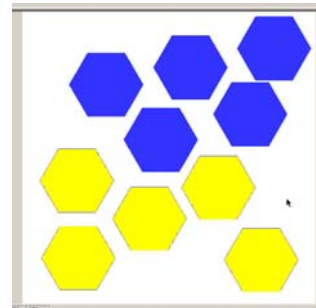
6. Click the fill tool;
7. Drag the dropper on top of the hexagon you already re-colored then click.



Your canvas now shows some hexagons colored with one color and others with a different color.



Remember to save!



Doing the Tiling:

1:
Use your mouse to drag one hexagon close to another

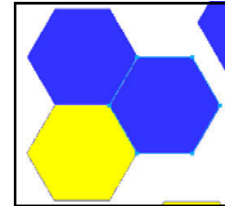
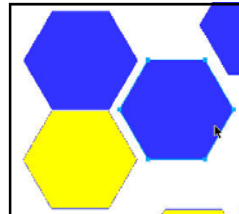


2:
Use the arrow keys on your keyboard to nudge the selected hexagon into the exact place needed

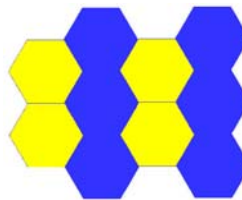


Click another hexagon, and move it in two steps like the first:

1. Drag close to where you want it with the mouse;
2. Then use the arrow keys to nudge it to fit exactly where you want it.



Here's a partly-complete tiling



Once you're comfortable with these "tool skills", work out answers to these tiling problems:

- Tile the plane with regular hexagons, like the example above. What is the FEWEST number of colors needed to color the tiled hexagons so that no two contiguous hexagons (ones that touch along their edges) have the same colors?
- Besides regular hexagons, what other regular polygons tile the plane by themselves only, leaving no gaps?
- Which combinations of two regular polygons can tile the plane? (Hint: Start with a regular octagon, then tile. You will get gaps. What regular polygon could be used to fill the gaps?) Besides regular octagons and xxxxxx, what other two-shape combinations (regular polygons) can tile the plane?
- Are there combinations of 3, 4, or 5 regular polygons that tile the plane?
- Can you tile the plane with 2 similar polygons? (For example, a large square and a small square—the small square being exactly half the dimensions of the larger square; try other polygons as well.)
- What non-regular polygons can tile the plane?

Project idea:

1. Save each of your completed polygon tilings as an image with a different file name;
2. When finished these problems, publish them to a print or electronic format that shows your results and contains what you have written to explain the problems and your solutions. (e.g. produce a booklet with "MS Publisher", do a "slide show" with Windows Movie Maker or Corel Presentations, or use a web page format).