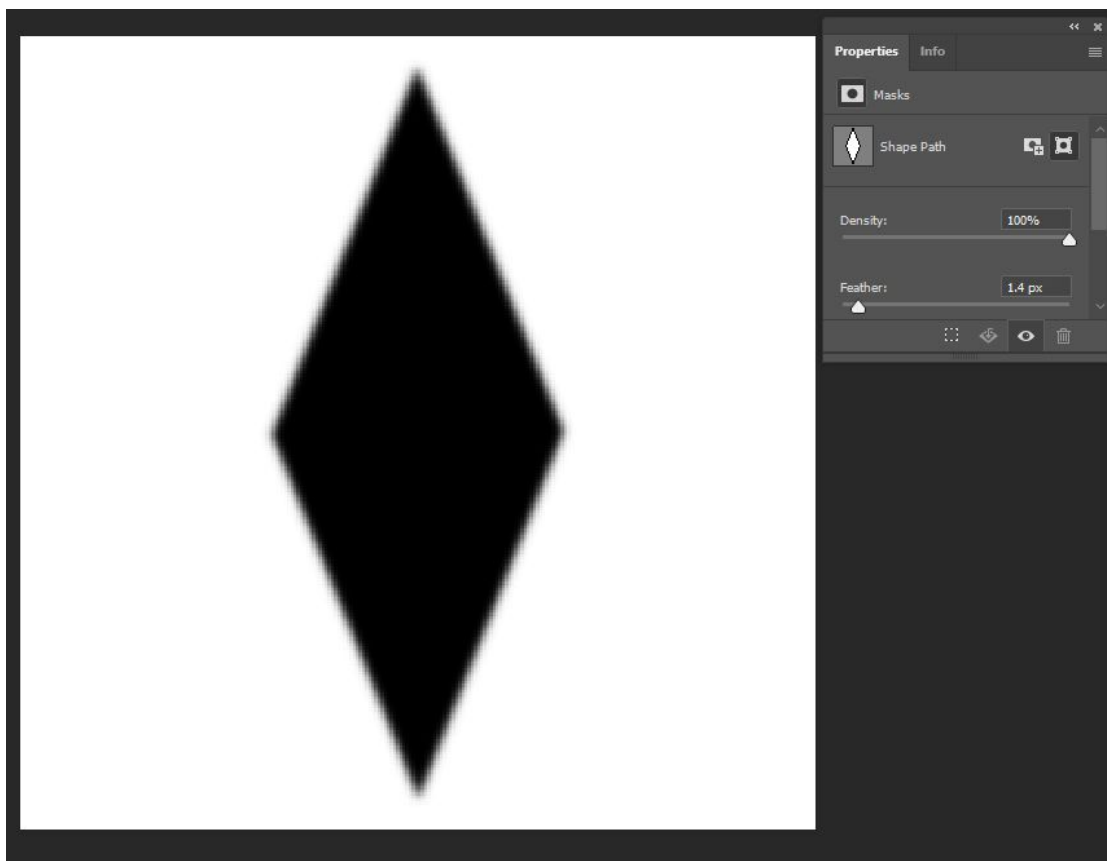


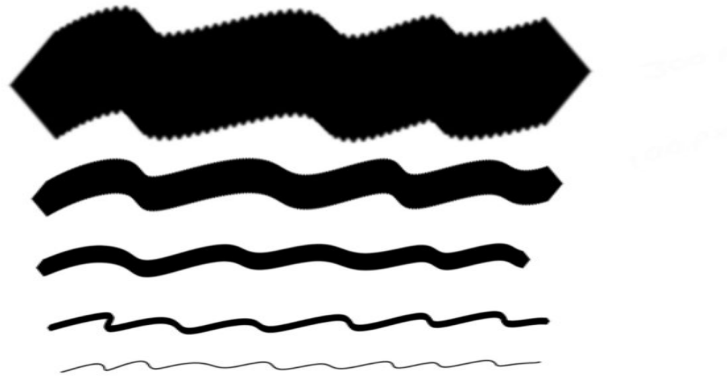
Creating a Custom Brush for Use in Photoshop and Substance Painter

FOR USE IN PHOTOSHOP:

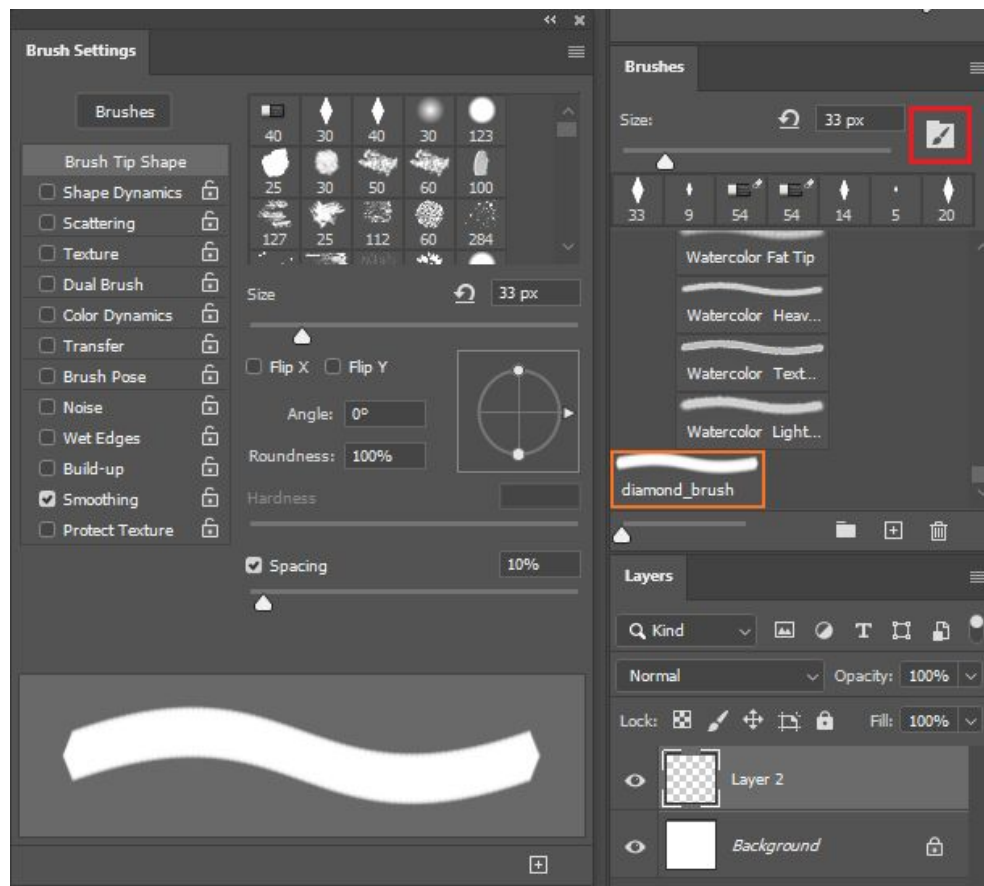
1. Create a new document and set your canvas to a square. For brushes I typically go small to avoid excessive memory usage and lag; to make our custom stylized leaf brush I used a size of 256 x 256 px with a 72 ppi resolution. In Photoshop you can make your brush shape up to 2500 x 2500.
2. Define the shape you want your brush tip to have. You can use a default brush to draw your brush tip, polygon/custom shape tool, or upload a .png of your choice. Draw the shape and center it, allowing it to take up as much space as you can on the canvas without getting cut off. I used the polygon tool to draw a square with black fill and transformed it to create a diamond. In the properties window for the shape I increased the Feather slightly to blur the edges.



3. Select Edit > Define Brush Preset to name and save your brush tip shape. At this point, you can select your brush preset in the Brushes panel to test it.



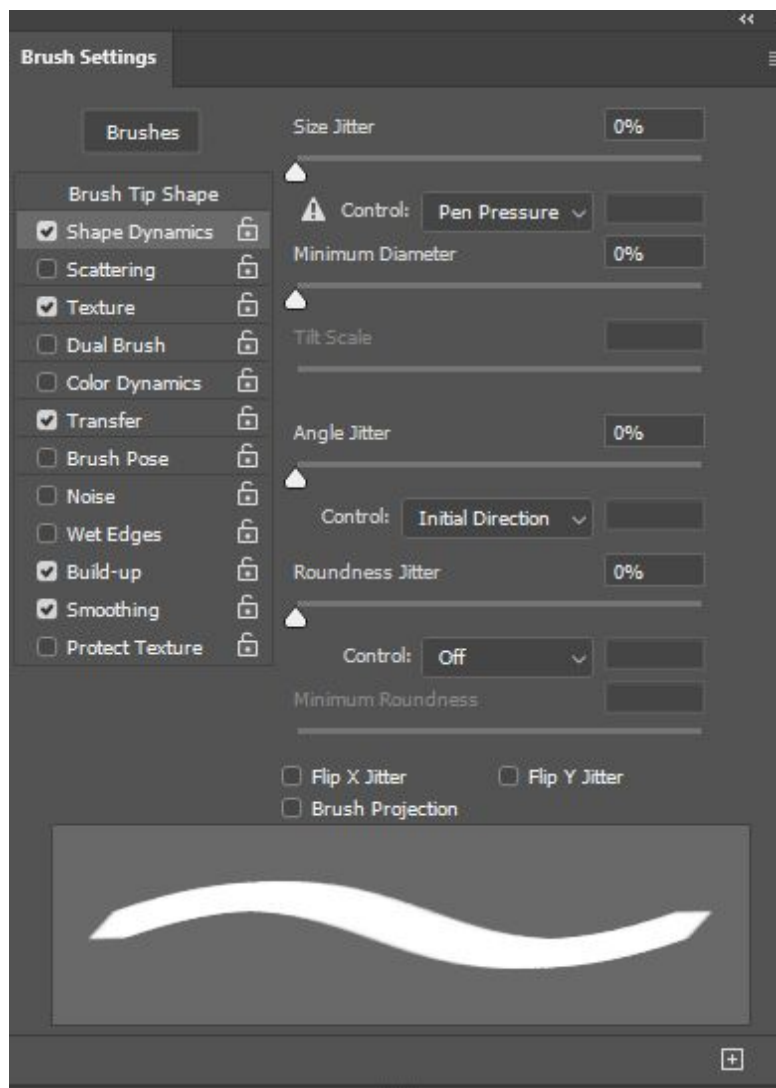
4. With your brush tip selected, access the Brush Settings by clicking on the folder icon in the Brushes panel. Here you will be able to adjust various properties that will determine how the brush behaves:



Brush Tip Shape: Adjust the default size, angle at which the tip shape lies, roundness, and amount of spacing of the shape in a stroke. I changed the angle to 90 and lowered the spacing to 3%, which resulted in a cleaner edge and a more calligraphic flow to the brush.



Shape Dynamics: Adjust size jitter to control the level of taper of strokes. Angle jitter controls the direction of the stroke.



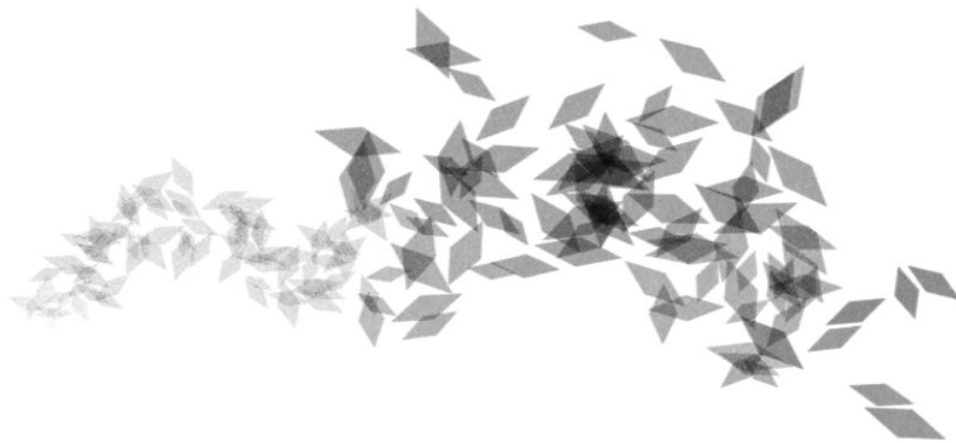
I set the size jitter control to Pen Pressure, which results in a stroke with varied line weight. I set the angle jitter control to Initial Direction, which angles the tip shape towards the direction you draw a stroke in, and is useful for line flow and consistency.



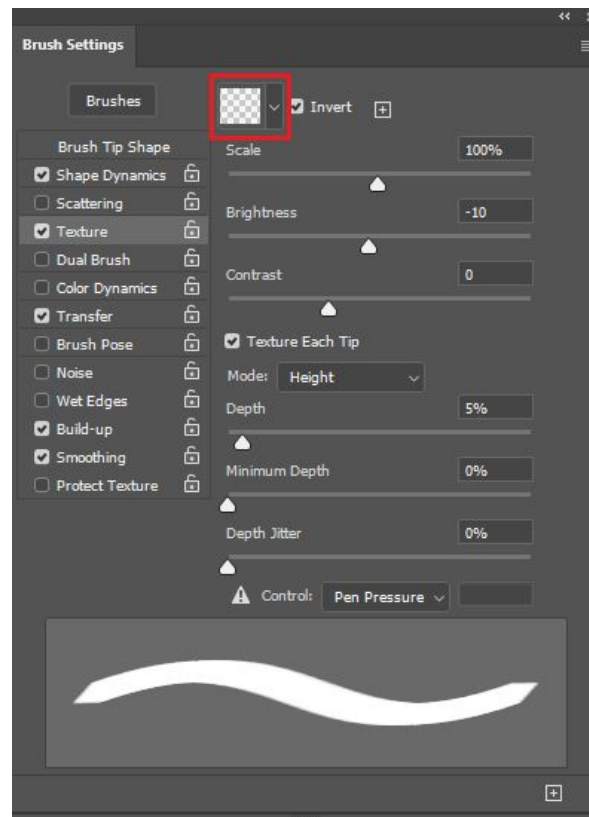
This also adds randomness when stippling, which comes in handy for simulating random patches of texture, like foliage.



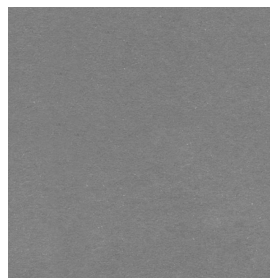
Scattering: Finer control over amount of shape distribution, concentration, and frequency. Lowering spacing and adjusting scatter parameters is necessary for stamp and object brushes, such as those for foliage clumps or trails. However, because our leaf brush is meant to be multi-purpose as both a foliage brush, liner, and paint brush, I did not utilize scattering. Here is an example of what this brush would look like with increased scatter, count, and jitter:



Texture: Adjust the texture overlay, level of detail, and grittiness of your strokes. This setting is important, especially when working with a painterly style.



Sometimes, you want to emulate the look and feel of a traditional medium in your conceptual work and model textures. For our brushes, we wanted the paint strokes to feel natural and impressionistic, so we used various royalty-free paper, canvas, and dirt textures to simulate a gritty tooth on the brush. For the leaf brush, I used this cardboard texture .png.

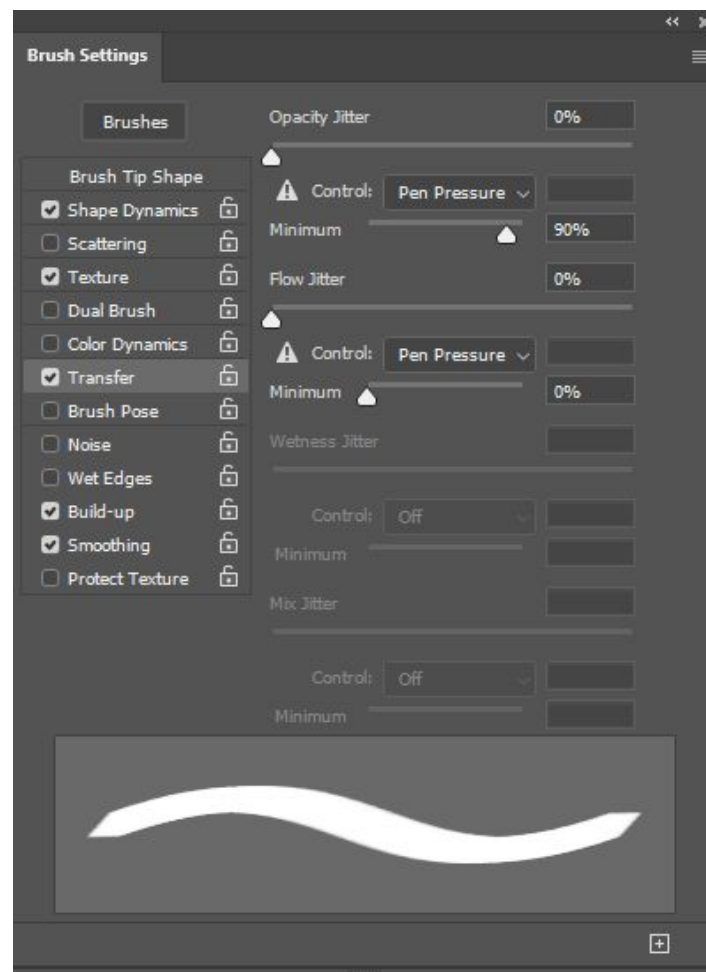


- Open the image in Photoshop. Make sure the chosen texture is transparent and any background layers are hidden.
- Select Edit > Define Pattern. This will save your texture as a pattern, and you can then access it in the dropdown box in your brush's Texture settings.

- Then you can alter the texture's size, brightness, and contrast to alter how much of the texture comes through in a stroke.
- I made sure to have 'Texture Each Tip' selected for consistency, and set the mode to Height and control to Pen Pressure so that the level of grittiness is affected by how much I press down when drawing. The result is a much more natural, softer brush which emulates the look of gouache paint or charcoal.



Transfer: Adjust the opacity, flow, and general pigment transfer and layering of your strokes.



- Both opacity and flow jitter settings have been set to Pen Pressure so that we have more control over the amount of stroke layering and blending.
- I set the minimum opacity jitter at a high number because while I do want some variation in opacity to allow for blending, I don't want to over-blend our strokes to better achieve a painterly aesthetic.
- This high value allows the brush texture to come through at many levels of pen pressure.



Low opacity jitter maximum (better suited for smoother, more blended painting):

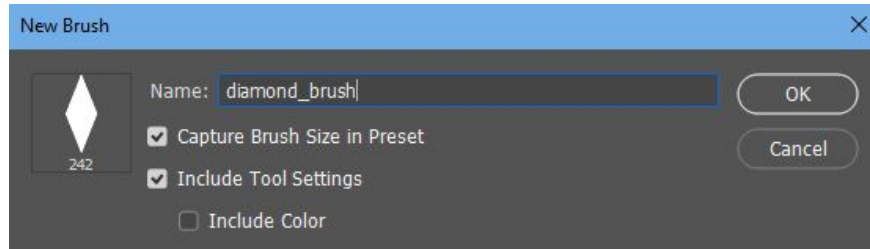


I selected **Build-up** for more range in brush softness and allowed **Smoothing**, which enables a degree of stroke delay to smooth out shaky lines.

This is what the diamond brush looks like with these settings:



5. Click on the lock icon next to all the parameters you wish to maintain.
6. Save your brush settings as a preset by clicking the three lines at the top right of the tab and select New Brush Preset.



Name the brush and check to capture the brush size (make sure you have the brush at a size that you'd like as a default before doing this) and to include your settings.

7. Now your custom brush will appear in the Brushes tab. To export it as an .abr file for use in other programs, make sure your brush is selected and click the three lines at the top right of the tab, then select Export Selected Brushes.

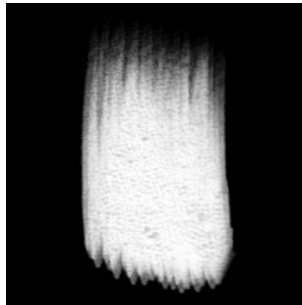
FOR USE IN SUBSTANCE PAINTER:

If you are using a version of Substance Painter that doesn't allow brush transfer from Photoshop:

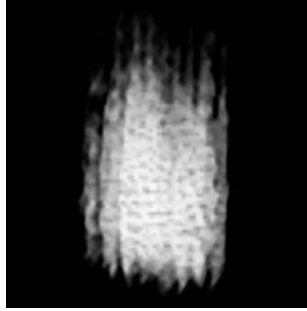
1. Follow step 1 as outlined above. If you want to replicate a brush you already use, draw a stroke (or stipple once) on the canvas using that brush and edit until you achieve a desirable brush tip shape. As before, this should take up as much space on the canvas as it can and be centered. Here is a stroke I drew with our bristle brush:



2. Invert the background and brush layer (or paint bucket fill the background black and add a white color overlay to the layer where you drew the stroke). This allows Substance to read the stroke shape as a paintable alpha.



3. Brush strokes will appear differently in Substance. Depending on your needs, you might need to experiment with brush tip shape and level of contrast. Because we wanted our brush texture to show through at multiple levels of resolution, I increased the contrast of the texture and erased some bristle lines to push the stroke detail when painting our assets.



4. Save this out as a .png
5. In Substance Painter, select File > Import Resources > Add Resources and select your brush .png.
6. Click 'Undefined' and select Alpha
7. Import resources to: Shelf 'shelf' > Import. This will ensure your brush stays in your shelf, even after you close Substance.
8. The brush should now show up in the shelf under Alphas. With the Brush tool selected, you can tweak its settings (many of which are similar to Photoshop's, albeit much more simplified).
9. With our bristle brush, these settings gave the best results for simulating wispy, painterly textures, but ultimately the settings are up to personal preference and texturing approach:



