# Substance Painter Notes

Baking

- Good for locking in the texture
    - TextureSet Settings → Bake textures
    - Output size cannot be changed later after baking

Painting

- Good to start off with a **Fill Layer**
    - Doesn't let you paint on the object BUT gives a good base color to start off with

*Make sure features like Metal or Roughness are turned off so that you're not painting with that information*

- You can then add layers to paint on additional colors and details
- **Fill tool** allows you to fill in actual polygons or UV's → can help speed up blocking in color while avoiding painting other things on accident
- Paint layers can be added into the fill layers

Using Masks

- Gives the user a lot of control with their painting
- You can make a fill layer with a certain color, apply a black mask on it, and then paint the color on where you want it to show with white
    - Gives you lots of control, especially with the fill layer because then you can change the color however you want without having to repaint it all
- You can add lighting with masks by using generate maps (grayscale conversion)
    - Choose which channel you want for where you want the light to be
    - You can edit the settings to make certain parts have more intense lighting and less intense
        - Different channels (red, green and blue channels) hit the model with light at different points
- Grouping with masks allows you to paint on the object without bleeding through to other parts of the model

Using More Complex Masks

- Generators can be used to help already paint the edges, thus cutting back on time spent painted the edges by hand
    - Maybe start off with edge blur → adjust contrast and intensity as you see fit

- Then do mask builder to build on that → *play with the settings

- Grayscale conversion can help control the intensity of the generators in certain areas
- Any further details can be painted in (woo!)

# Texturing Tutorial w/ Flexible Workflow

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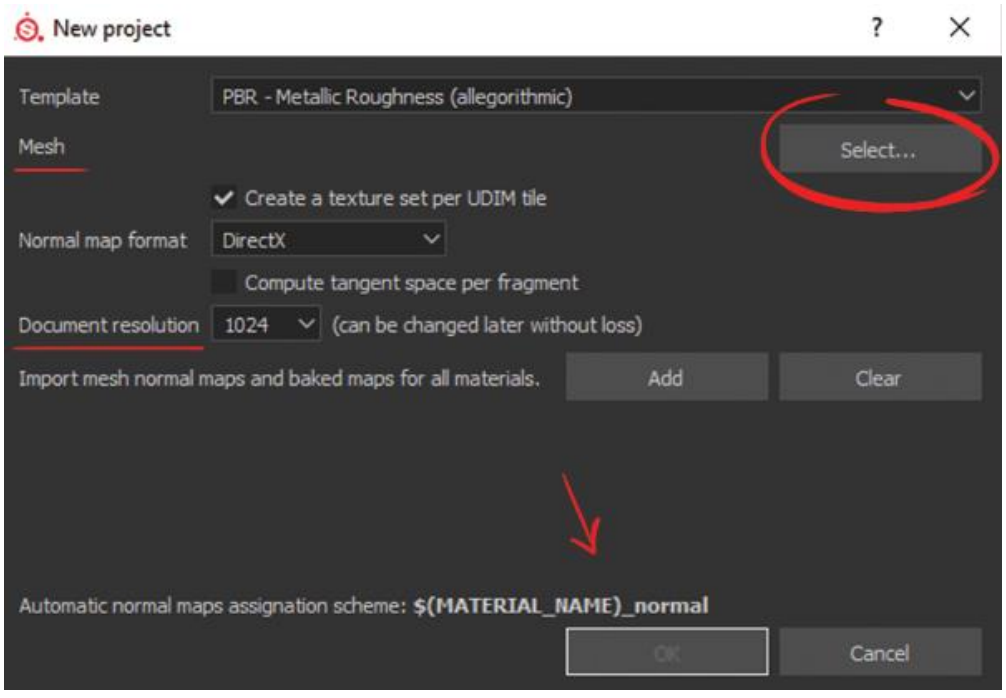
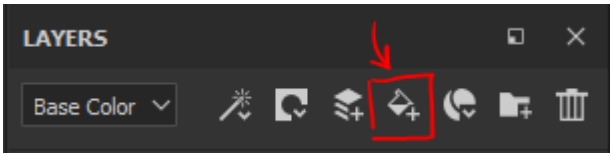
## Setting up your project

1. Open Substance Painter
2. Bring model into Substance
    a. File → New…
    b. Beside Mesh → Select…
    c. Select your FBX file
    d. Edit document resolution if need be → We like to texture w/ 2048 resolution to paint a high-quality version; can be sized down once exported




## Starting to use Fill Layers

1. In the material drop down on the right-hand corner of the viewport, change from **Material** to **Base Color**
    a. This allows us to texture while seeing the model's true color
2. In your layers section
    a. Delete Layer 1
    b. Click on the paint bucket tool to create a fill layer
        i. Will fill model with a grey color by default




    c. Change color to your desired base color based on your concept
        i. Right click in viewport to bring up the fill layer settings
        ii. Click on the color rectangle under Base Color to change the hue
    d. Rename layer to "Base color"

Having a base color to work off of helps with seeing how the colors will work together. The next fill layer we make will act as a rough light pass.

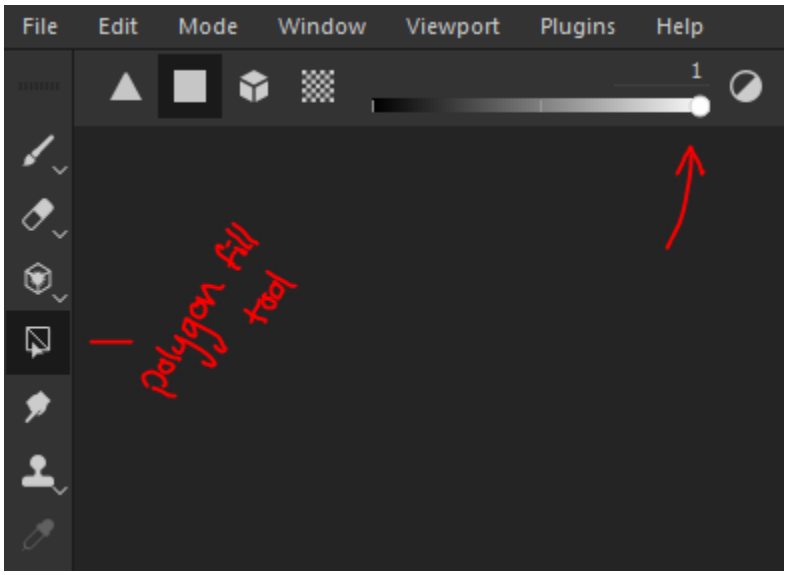
**Masking your Fill Layer**

1. Add another fill layer and mask it
    a. Click on the paint bucket tool to create a fill layer
    b. Right click on fill layer → add black mask

Adding a black mask will make your fill layer disappear but now we are going to choose which polygons we want to be seen with this layer using the polygon fill tool.

2. Select your polygon fill tool
    a. Go to the top left-hand corner of the application
    b. Click on a square with a mouse cursor hovering over it
        i. You will automatically see a red wireframe wrapping around your model
    c. Make sure that the color is pure white

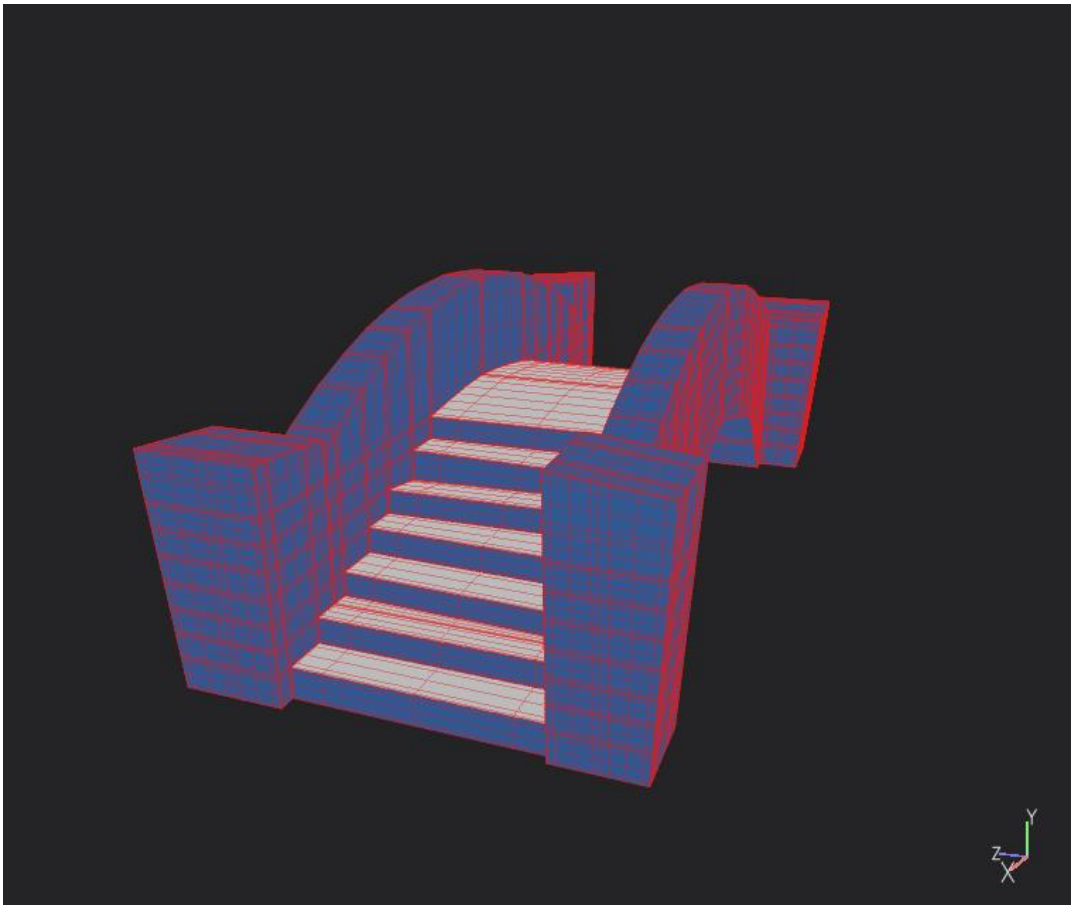
i. The darker the shade, the less you will see the color you are trying to unmask



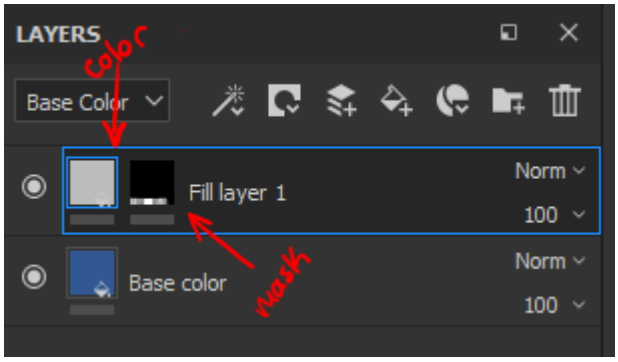

Note: Make sure you do this while having your black mask selected. To select it, just click on the black square in the layer.

3. Select the polygons you wish to see
    a. Since we are doing a rough light pass, we want to select the polygons where the atmospheric light would hit, keeping in mind that we want the model's textured lighting to work wherever it is placed in the scene.
    b. Click on the polygons you want to unmask
        i. You can click on the model itself or the UV's
        ii. On the UV's, you are able to drag your mouse and select your polygons without grabbing any on accident
        iii. If you click on something you didn't want to unmask, change the polygon fill tool color to black and click it to mask it again. You could also undo using Ctrl + Z

Your model might look something like this now…



4. Adjust color to desired hue
    a. Click on the grey box next to the mask box on your masked fill layer
    b. Right click in viewport to bring up the material settings
    c. Click on the color rectangle under Base Color to change the hue

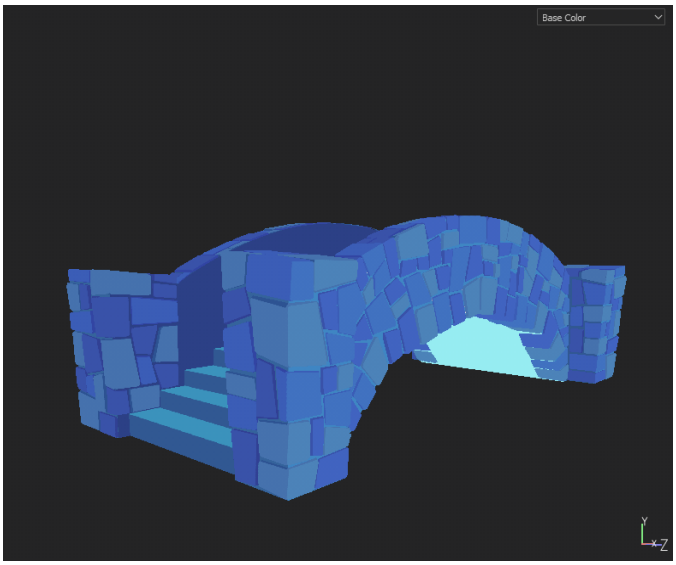



Note: I like changing the color of the fill layer **after** everything has been masked the way I want it; the default grey helps set apart what is masked and what isn't

5. Rename layer to Rough light

Now that we have blocked in the base color and the rough light, we want to now do a rough shadow pass. We will be following the same exact steps done for the light so we will continue off after the shadow has been done ~

In this next image, I unhid the rest of the stones placed on the bridge and went ahead and blocked the base colors and shadows in.




Even without having any lighting, the different shades used give the model dimension and the illusion that it is lit.

**Don't like a color? Change it!**

1. Click on the layer with the color you want to change
2. Adjust color
    a. Right click in viewport to bring up the fill layer settings
    b. Click on the color rectangle under Base Color to change the hue

Being able to change colors around so easily allows the object you're texturing to be very flexible when it comes to changes. This next section will explain how the fill layers and masks also make it easier for one to paint.

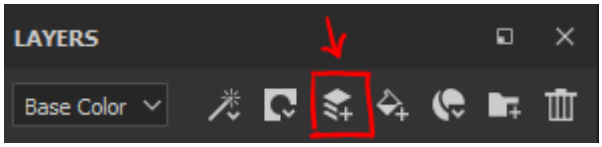
**Painting your layers**

1. Click on the layer with the base color you want to start painting on
2. Make a paint layer
    a. Right-click on your fill layer → Add paint
3. Start painting right on the model or its UV's

Since the fill layers are masked, the paint won't spill onto other pieces of the object that aren't unmasked. Therefore, the texture artist can work with ease knowing that their paint isn't painting over anything else.

**Adding details**

- ➢ Details can be added by creating another paint layer in the same fill layer
- ➢ In my workflow, I usually save the details for last. They usually involve painting over multiple layers so in this case, the masks interrupt that from happening. In order to fix that:
    1. Create layer above all other layers
        a. In your layers window, click on the icon that looks like stacked paper




    2. Paint details on that layer