

High-Poly Heads In Blender

By Knightlyish

Have you ever tried to make your character's head high-poly? Then, you've likely looked at other tutorials, and know that you must delete the shapekeys. Blender can't triangulate meshes with shapekeys, and if you don't triangulate your mesh, TexTools won't accept it.

This has obvious drawbacks. As you likely already know, if you use any facial options, these won't be reflected if you delete the shapekeys. Your character can wind up looking unlike themselves, even if you put in the extra work to re-sculpt their facial features.

There's a better way, though. This tutorial will show you how to keep your character's facial shape while creating a high-poly head suitable for sculpting or using as-is. This works for NPCs as well, both unique and otherwise.

Disclaimer

I make no claims that this is the professional way to do things, nor that it's foolproof. I'm simply a person seeking to share the knowledge that I learned through experimentation that isn't already available in some other form. This tutorial is also provided as-is. If you encounter issues, look to the internet.

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Unlike some projects, a high-poly head can be made loosely in steps. So, here is my general workflow:

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However, I step out of this workflow where necessary. Don't be afraid to do so.

Getting Started

This guide assumes you've already created an empty scene in Blender and imported your head mesh, and that you've written down which facial options your character is using. If you haven't done so, please do so now.

1. Creating and Deleting Mix Shapekeys

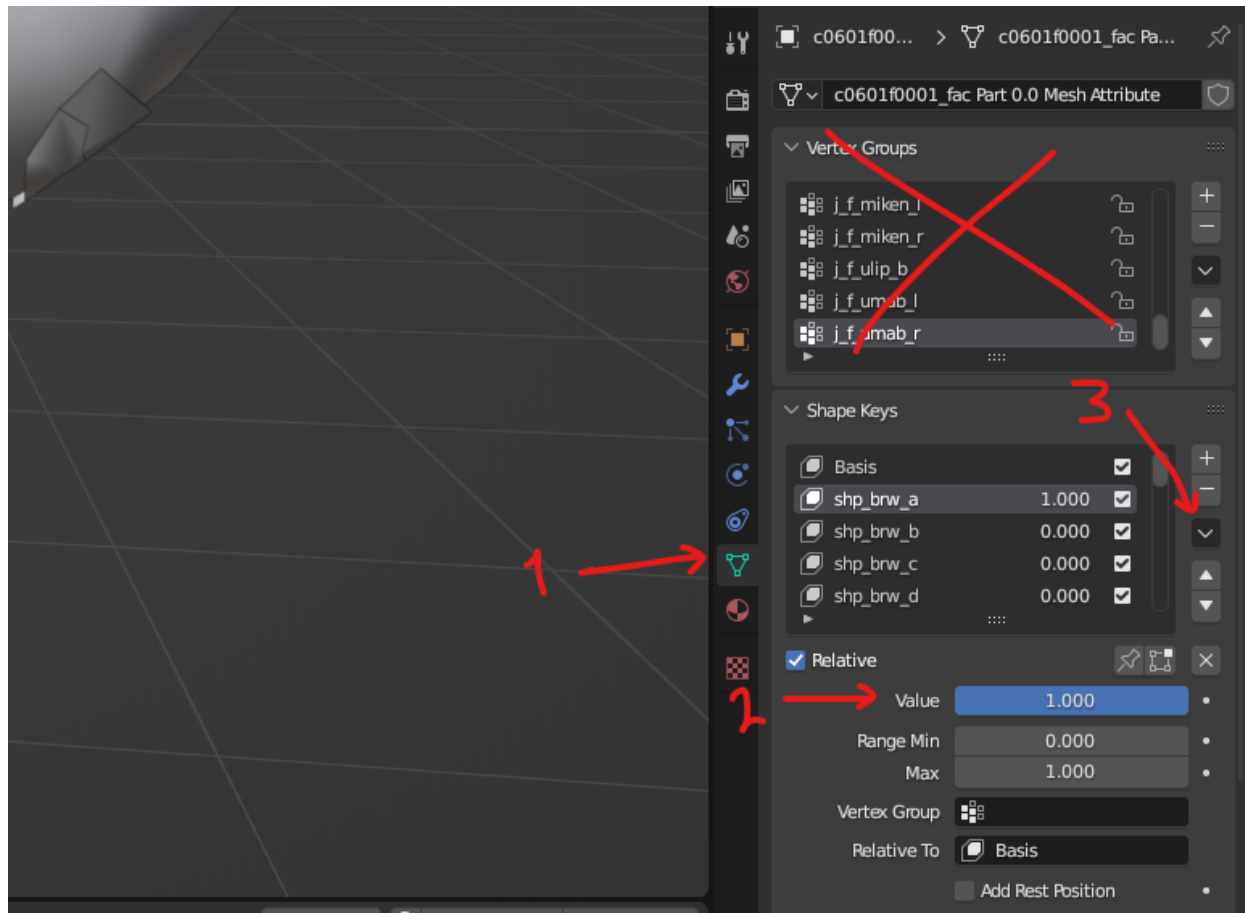
Before we start preserving your character's facial appearance, you need to know what, exactly, you are doing. I'll go through it briefly before we begin.

Shapekeys are the toggleable changes to the mesh that you can choose in-game in the eyes, eyebrows, cheek/jaw, nose and mouth sections. You can edit them directly in Blender, but we're not going to do that today. Instead we're going to "bake" them into the mesh.

We do this instead because shapekeys are incompatible with triangulation, and therefore, with high-poly heads. In the past, doing this would cause all player characters and NPCs who use the same head mesh to wear your head, but Penumbra allows us to assign mods with one character only, so there's no need to worry about that anymore. Our first and foremost concern is preserving your face's shape.

Mix shapekeys are a shapekey containing the data from every shapekey you have enabled when you create them. When you delete them last (after all others) it bakes this combined shape into your mesh. This is what we'll be doing today.

Select your face part, then open the *Object Data Properties* tab (1st arrow), choose the relevant shapekeys, then set their *Value* to 1.000 (2nd arrow). Remember, the first chooseable shape is the default. Shape A is actually the 2nd choice. Ignore the *Vertex Groups* box entirely.



Once you have set the values of all the relevant shapekeys to one, hit the dropdown arrow (3rd arrow in the above image) and choose *New Shape From Mix*. Then, scroll back up to *Basis*, select it, and delete every shapekey, deleting the mix shapekey you just made last. You should see that after you delete it, your mesh keeps its shape.

NPCs may not have shapekeys, especially if they're unique. If they don't, you can obviously skip this part.

Do this for every part of your mesh. If you don't, you may encounter clipping because the cosmetic options don't match your face's shape. When you've done this, proceed to the next step.

2. Joining and Merging the Head and Ears

You may be wondering... why do I have to merge the head and ears? Why can't I just proceed straight to the rest of the guide?

The head and ears come in two parts, and you can only sculpt one part at a time. This can cause gaps, clipping, and seams. During the subdivision process, you can wind up with these

issues as well, especially if you smooth your mesh, which we will be doing. These are time-consuming issues to fix, so it's best to avoid them.

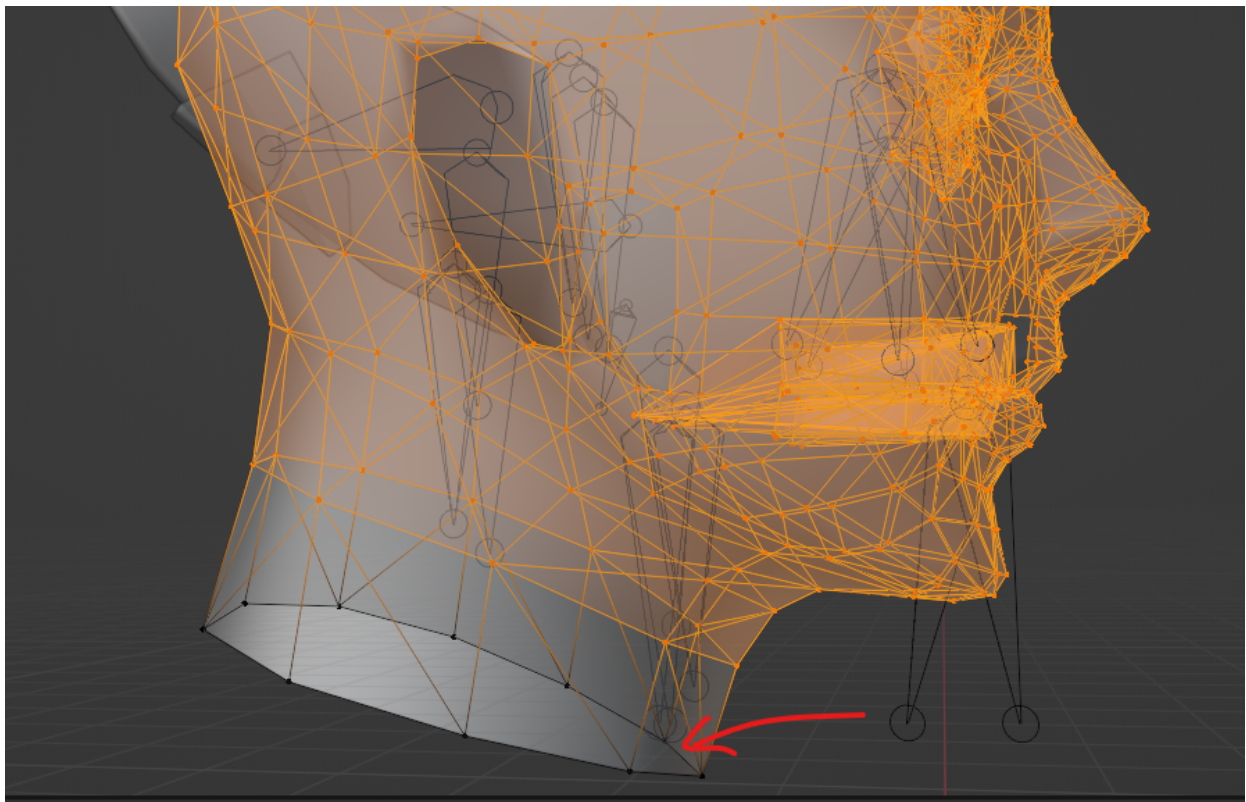
In *Object Mode*, select your head part(s) and ears, then move your cursor into the viewport and hit **CTRL+J** to join them together. Then, go into *Edit Mode*. Select everything with **A**, then hit **M** and choose *By Distance*. This will weld all your head's seams together.

If you plan to edit your head's UV map, open the little box that appears in the bottom left when you merge and choose *Sharp Edges*.

3. Selecting and Subdividing

The process of making something higher-poly by adding more vertices is known as subdividing. Before we do it, however, we need to make sure we select everything except our mesh's neck. If we edit these vertices at all, it will result in a neck seam.

You want your selection to look something like the picture below. You may wish to leave off an extra "rung" around the neck, but you don't always have to. If you're anxious about accidentally editing this area, then select just what I've left unselected here and hit **H** to hide them. Later, you can hit **ALT+H** to unhide them.



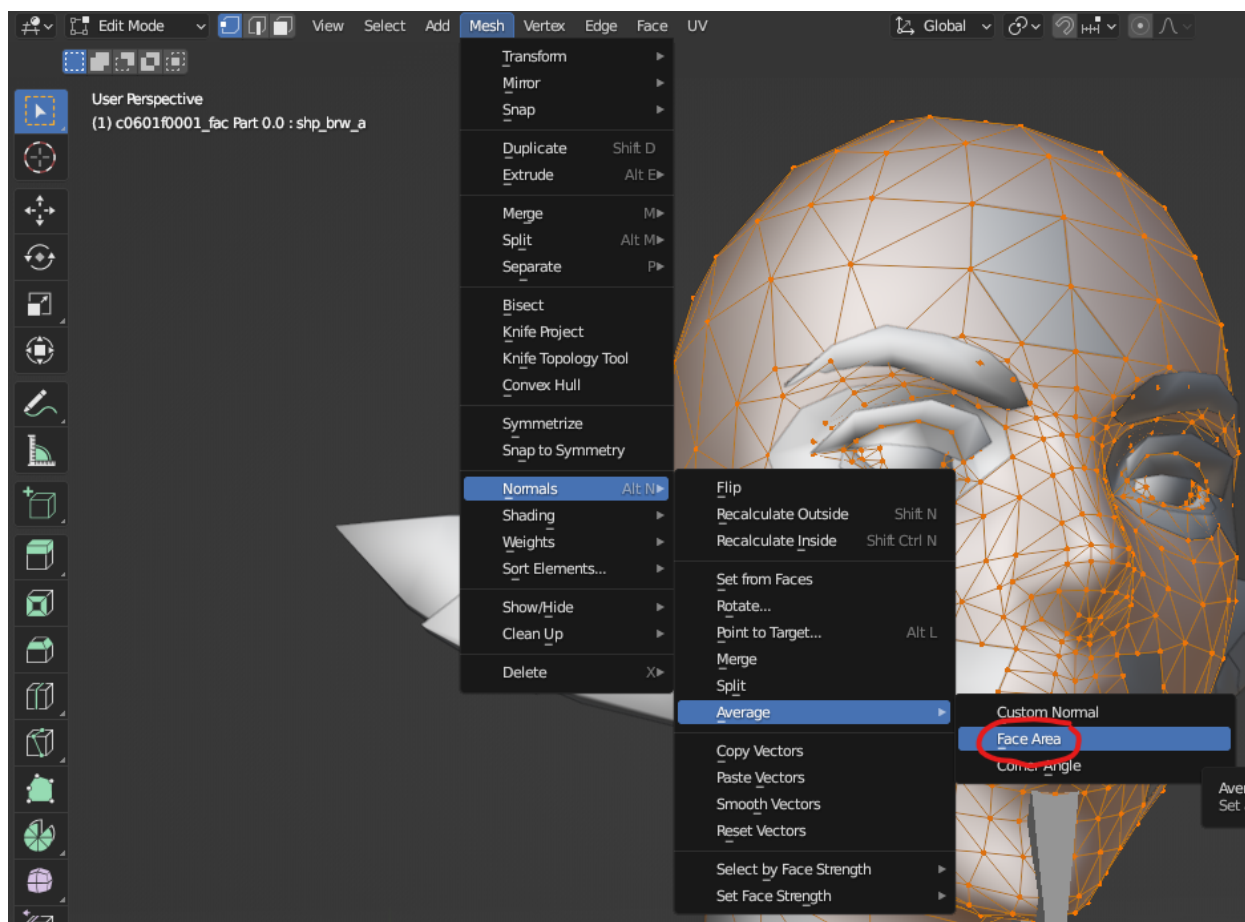
Once you have your vertices selected properly, *Right Click* in the viewport and choose *Subdivide*. I suggest only doing this once in most cases. If you subdivide more, you might have issues with weird clusters of edges around your selection.

Now, *Right Click* again and choose *Smooth Vertices*. In the little box that appears in the bottom left, set the *Smoothing* no higher than 250.00. This will help smooth out some of the jagged areas of the subdivided mesh, but in most cases, you'll also need to go over certain places in *Sculpt Mode* with the *Smooth* tool at a low Strength in order to make your mesh completely smooth.

Please note that in the following screenshots, I'm using an unsubdivided head. I was too lazy to write and follow along with my own tutorial, but don't worry about it. The process is the same regardless of whether my example looks like yours.

4. Fixing Normals

Subdividing fucks with your normals—or your meshes shading—90% of the time. So with your selection still in place, go to the *Mesh* dropdown at the top of the viewport, choose *Normals*, then *Average*, then *Face Area*. This will smooth your normals.



Do not use *Set From Faces*! This will cause a noticeable normal seam around the edge of your selection in some cases. If *Face Area* isn't enough, try smoothing your mesh in *Sculpt Mode*.

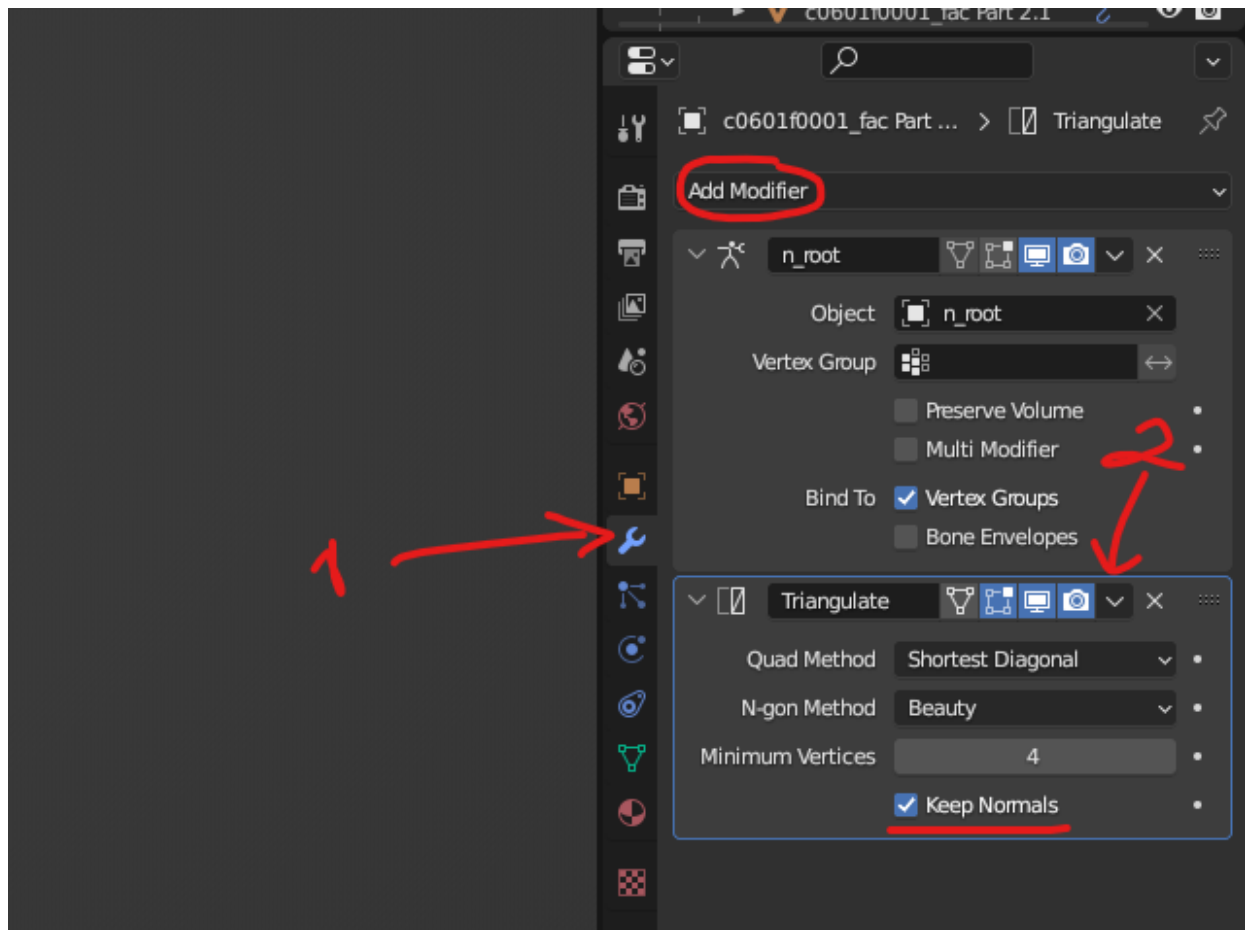
5. Editing Your Mesh

Anyway, this is where you'd usually do your editing... your sculpting, and so on and so forth, before you move on to getting your mesh ready for import into TexTools. I can't cover all this because everyone will want to do something different, but when you're finished, move onto the next step.

6. Triangulating

Remember how I said you need to triangulate your mesh for TexTools to accept it? Well, once you've finished editing, you need to do that.

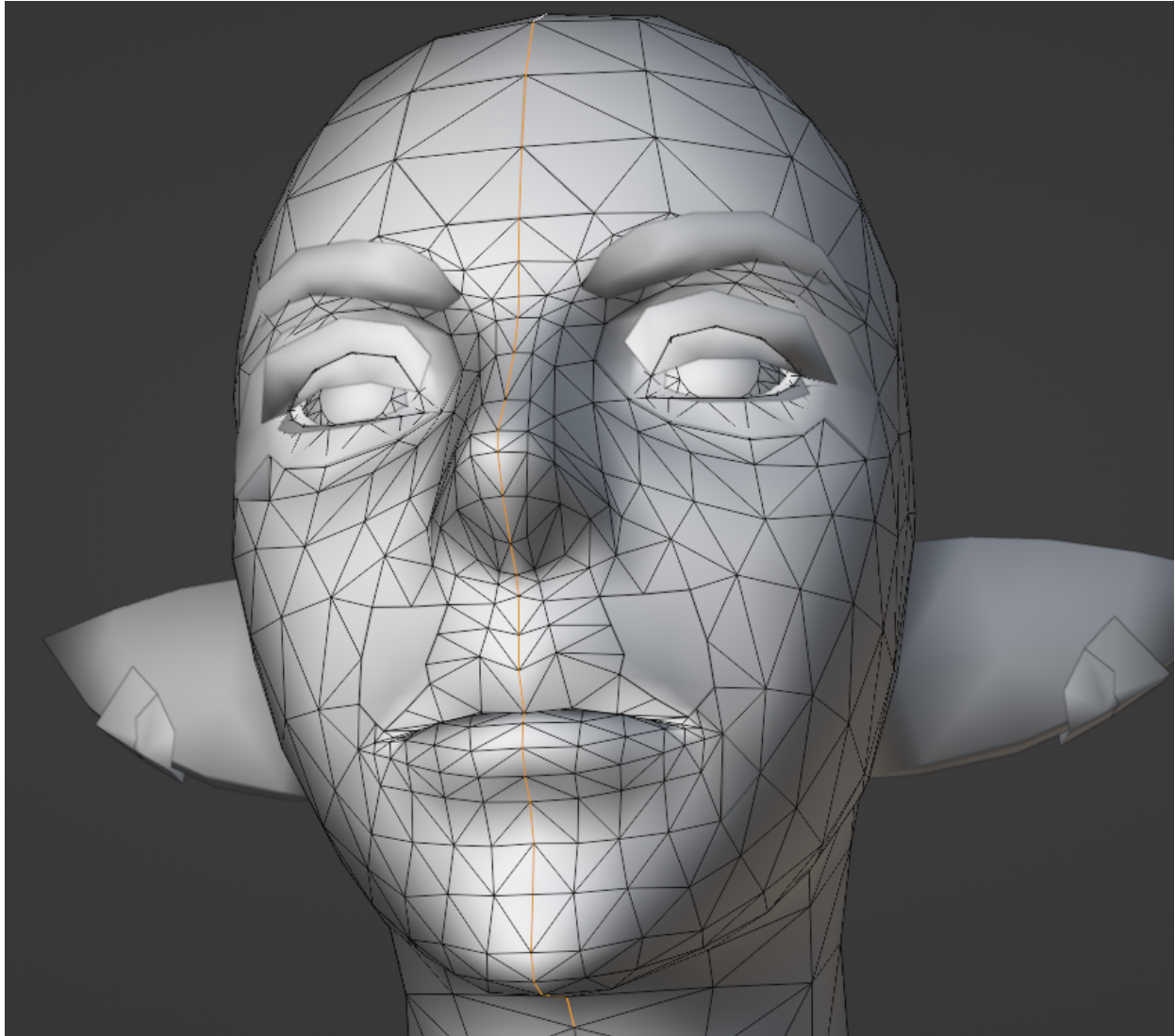
In *Object Mode*, go to the *Modifiers* tab (1st arrow), then choose *Triangulate* from the dropdown (circled). Check *Keep Normals* (underlined), then press on the downward arrow and choose *Apply* (2nd arrow).



7. Reintroducing the Facial Seam

We've joined and merged, but your mesh had a seam down its face for a reason. If you don't have one, there will be a visible groove down the centre of your character's face, so we have to re-rip the vertices.

So, go into *Edit Mode*, choose *Edge Select*, and select the centre seam of your face from the top of the forehead down under the chin, like in the image below.



Once you've done so, hit *V*, and without moving your mouse, click. This will rip the vertices, but leave them in the same spot so there's no gap in your mesh.

Now your mesh is ready for re-import into TexTools. When you do so, make sure to uncheck *Use Original Shape Data* on import, otherwise your character's face will either melt or explode when you get in-game.

Conclusion

These are the absolute basics of making a high-poly head, and I'm sure some people will run into problems. However, I can't provide a fix for every possible thing that might happen.

As I say in every guide that I write, don't be afraid to Google search, so long as you couch it in terms of Blender in general and not FFXIV. Blender is an extremely popular program, and it's likely someone's posted about the same problem you're having.

Thank you for viewing, and good luck!