Posing in ZBrush

Hello! This is a guide to posing a blockout mesh in ZBrush. There are 2 main methods that I personally like to use (but there are many others out there), and they both require the same setup.

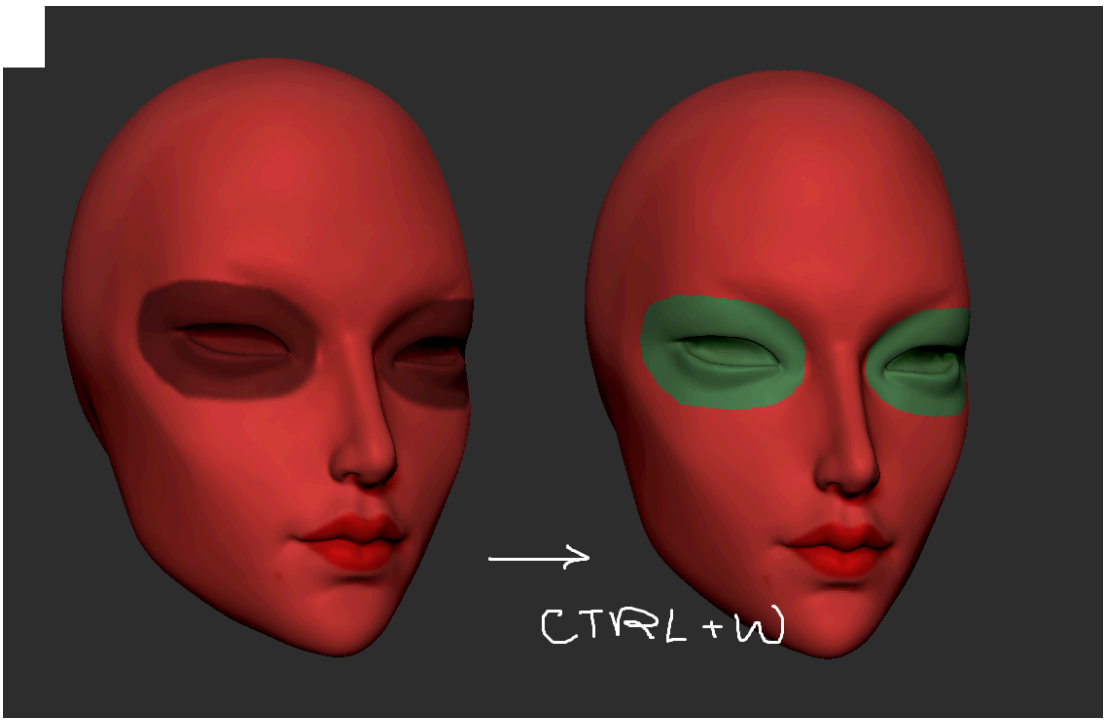
Both methods use the Transpose Master plugin built into ZBrush, found in Zplugin → Transpose Master.

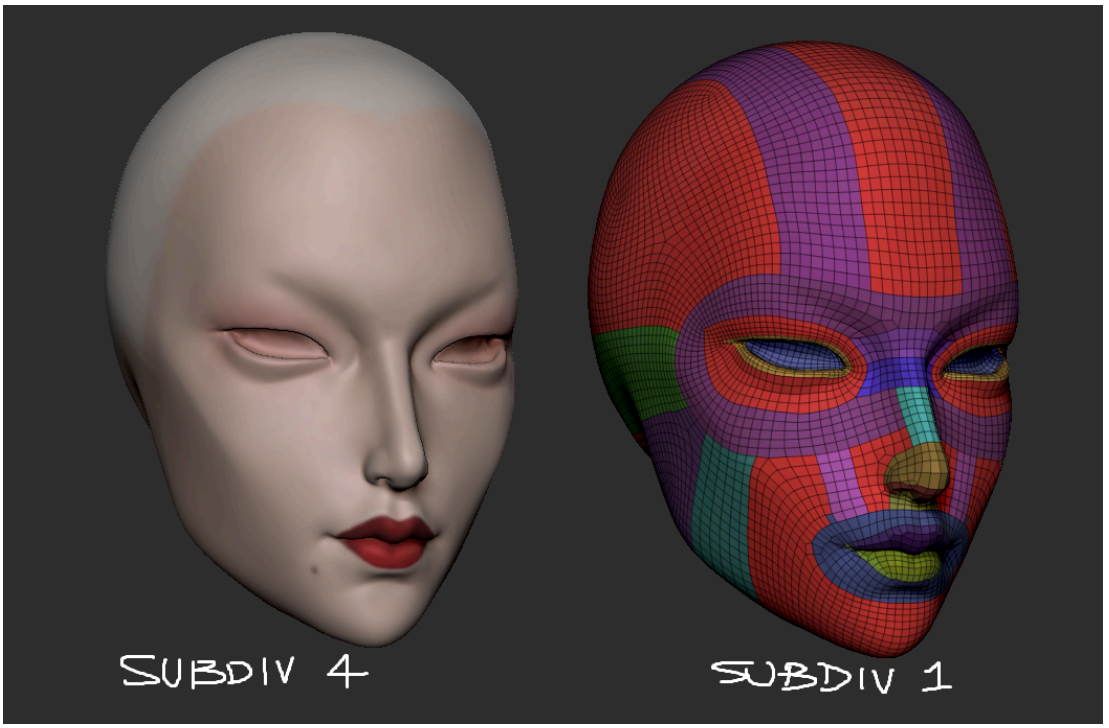
Setup

Note: TransposeMaster is very finicky and often crashes with high-poly models. We need to set up our mesh so that it's lightweight, and with a plan to repair the mesh later (if all fails).

1. If working with a highpoly mesh, create subdivision levels for any meshes that might be too high-poly.
    a. For example, on the head, I was working with dynamesh and didn't have any "lowest subdiv". So, I masked key deformation loops with MaskLasso, then CTRL+W to set the mask to a new polygroup.
    b. Continue for all wanted deformation loops on the face.
    c. Then, ZRemesh with 'KeepGroups' on, target polygon count ~10k
    d. Subdivide back up to match the previous dynamesh polygon count and Project History for your dynamesh. You now have subdiv levels!

    Small caveat: For meshes that aren't moving much, you may not need to do this. E.g. my hair was 60k dynamesh and it wasn't a problem because it was rotating with the head (no extra deformations).

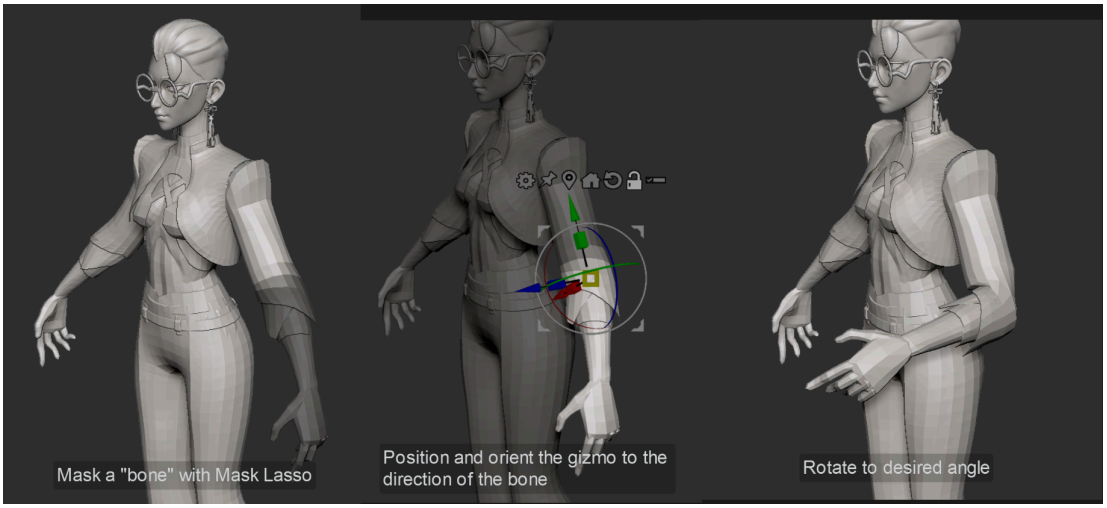




2. UV your mesh. This is to save us later down the line if TransposeMaster messes up our vertex order (we will use Transfer Attributes in Maya to fix). This is found in ZPlugin → UVMaster → Unwrap All. You can choose whether to unwrap with symmetry or polygroups; it doesn't matter at this stage.
3. Save as ZTool for backup. Tool → Save As → Character_PoseReady

Method 1: All in ZBrush

This method keeps the mesh in ZBrush and can be faster if you don't want to import in or out.

1. Go to ZPlugin → TransposeMaster and click TPose Mesh. The software will now combine your mesh at the lowest subdivision level.
    a. If you haven't selected 'Grps' the meshes will be autogrouped (turn it on if you want to preserve existing polygroups).
    b. You can also select 'Layer' for the posed mesh to be attached to a layer. I like to do this when I'm further down the line, but for early tests I usually leave it off.
2. Mask and rotate. Tip: I usually start from the hip rotation to find the balance of and key line of gesture in the character - reference REALLY helps here. Then is the torso, head and lastly the arms. There might be some breakage here, but we can fix it in the higher subdivisions - this is just to get a basic idea.
   See video on how I do this:
   TransposeMaster_Posing.mp4
   

   VERY IMPORTANT: DO NOT CHANGE THE TOPOLOGY! TPose Master works by checking the vertex order of your APose mesh and remapping it to your posed mesh. Changing the vertex count will make it come up with an error message (check bug fixing section), and we'll need to start again x_x
3. Once you're happy with your pose, save a backup. Go to Tool → Export and save as an obj file → Character_TPose
4. Then, go to ZPlugin → Transpose Master → TPose | SubT. Your posed mesh will now remap to the lowest subdiv on your APose! Reprojecting all your higher subdivisions.
5. Fixing the mesh >.> Any bits that are overlapping, stretched, twisted, you can now amend by adding extra loops or smoothing out.

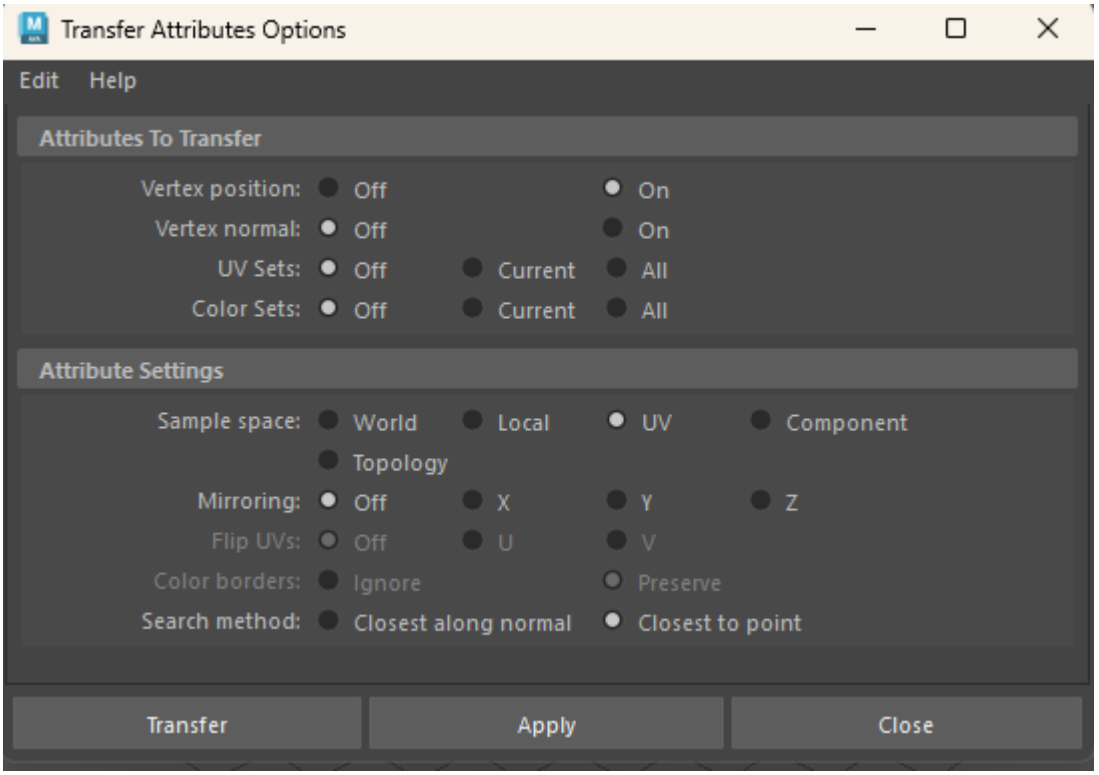
Method 2: Using a Rig

You will need Maya! (sorry I have no idea how to do this in Blender)

1. Go to ZPlugin → TransposeMaster and click TPose Mesh. The software will now combine your mesh at the lowest subdivision level.

    a. If you haven't selected 'Grps' the meshes will be autogrouped (turn it on if you want to preserve existing polygroups).
    b. You can also select 'Layer' for the posed mesh to be attached to a layer. I like to do this when I'm further down the line, but for early tests I usually leave it off.
2. Export your TPose mesh by going to Tool → Export and export as obj → Character_TPose
3. Auto-rig your character; you can use whatever you prefer, AdvancedSkeleton, Blender etc - but for a lightweight, quick option, I use Mixamo.
4. Import to Mixamo and run auto-rig alignment. Export with basic rig.
5. Pose as you usually would by rotating bones and shifting weight.
6. Once you're happy with your pose, save a backup. Export → obj → Character_Posed
7. Import your Character_TPose mesh into the Maya scene, it should have the same UVs as your Character_Posed mesh.
8. **Order matters!** Select your posed mesh, then your TPose mesh, then go to Mesh → Transfer Attributes → Options Box with these settings:

9. Both meshes should now have the same pose! Awesome, delete history and let's export the Character_TPose mesh as obj



10. Reopen ZBrush to the TPose mesh and Import your new *posed* TPose mesh on top of it. It should replace the file.
11. Then, go to ZPlugin → Transpose Master → TPose | SubT. Your posed mesh will now remap to the lowest subdiv on your APose! Reprojecting all your higher subdivisions.

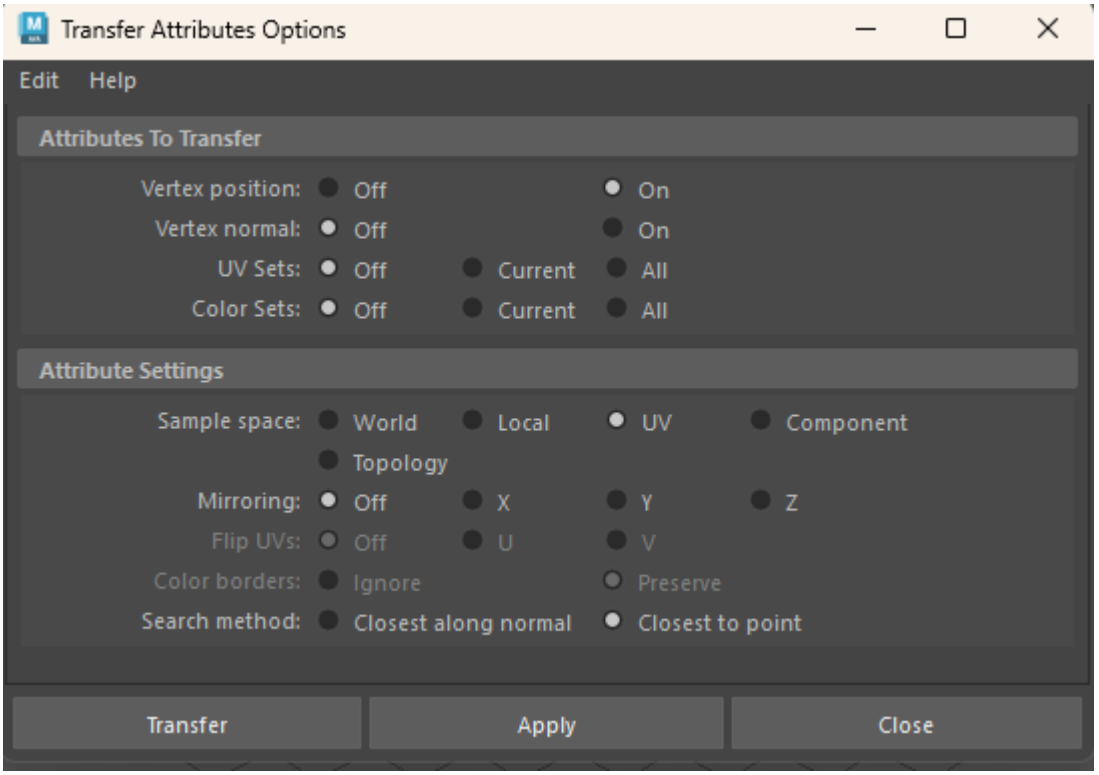
12. Fixing the mesh >.> Any bits that are overlapping, stretched, twisted, you can now amend by adding extra loops or smoothing out.

Bug Fixing: Using TransferAttributes

You will need Maya! (sorry I have no idea how to do this in Blender)

The most common error is a mismatch of vertex points (Error -32). This can be solved with Transfer Attributes and is the reason why we UV the mesh in the beginning! Unfortunately, without this, you will have to return to your original APose mesh and pose again.

1. Export your broken TPose mesh as an obj → Character_TPose_Target
2. Go back to your APose mesh and run another instance of TPose mesh. This should show up in your subtool menu. Export this as an obj → Character_TPose_Valid
3. Import both into Maya, they should share UVs (if not, this will not work).
4. **Order matters!** Select the Character_TPose_Target then the Character_TPose_Valid, then go to Mesh → Transfer Attributes → Options Box with these settings



5. The Character_TPose_Valid mesh should now be in the target pose. Export as obj
6. Go back to ZBrush and ontop of your new, unposed, TPose mesh → reimport Character_TPose_Valid ontop of the existing mesh. It should replace it.
7. Then, go to ZPlugin → Transpose Master → TPose | SubT. This should work!