

## 3D Items Part 3 – Hair Guide

### Wogrim's Epic Guide to Creating Hair with Blender and KK Modding Tools

#### Before Reading This Guide

Read the Studio Item and Accessory guides first. You don't need to worry about the self-animated items, just unskinned and skinned (Hair is usually skinned and given dynamic bones).

#### What Are We Making?

We will make Hair and Accessory Hair, but the process is pretty much the same as Accessories because Hair is attached to the head's **cf\_J\_FaceUp\_ty** bone in the same way that an Accessory is attached to its parent. I will show the basic process first, then we will look at some of the "features" of Hair and/or Accessory Hair:

- hair color pickers
- built-in hair accessories
- hair gloss (AKA hair shine)
- FK posable in Studio (Hair only)
- \_low version (Hair only)
- adjustable length (Front Hair and Accessory Hair only)
- movable/resizable (Accessory Hair only)
- ability for a character to have different hair styles with different outfits (Accessory Hair only)

As you might guess, these may influence your decision for whether you make your item as Hair or as Accessory Hair.

If you follow this guide with your own items, you will be remaking them a few times. Don't worry, you'll get faster, especially because there's certain parts you won't have to redo each time, like the list file.

#### Define Accessory Hair

The most simple way to make an Accessory be used as hair is to make an Accessory that looks like hair. This type of Accessory gets no Hair features. This is not Accessory Hair.

The game has its own way of making an Accessory which includes hair (used by the swimcap), which is to put hair meshes in the Accessory MB under `rendHair` instead of `rendNormal`. This just gives these hair meshes one of the Hair color picker colors; still no hair gloss or other Hair features. This is not Accessory Hair.

Accessory Hair is an Accessory which has both the Accessory MB and the Hair MB (**ChaCustomHairComponent**), which allows the Accessory to use most Hair features (assuming the mod user has the `KK_HairAccessoryCustomizer` plugin).

You may see these called "hair accessories" but I don't like that term because I think of "hair accessories" as Accessories that go in the hair, such as all the game's Accessories in the hair group (ribbons, hair pins, etc), and the accessories built into some of the Hairs (hair ties, ribbons, etc).

## Preparing Blender: Hair Version

Creating Hair in Blender used to be done with a special **head re-location** in SB3U before exporting the head mesh, which moved the head down such that the Hair attachment point was at the origin. This lets you create Hair on the spot with minimal extra work, and any game Hair you export and bring into Blender shows up in the right location with no extra work. But I don't know an easy way to move the body to the correct location when you do this (you may want the body for reference to create shoulder-length hair, waist-length hair, etc).

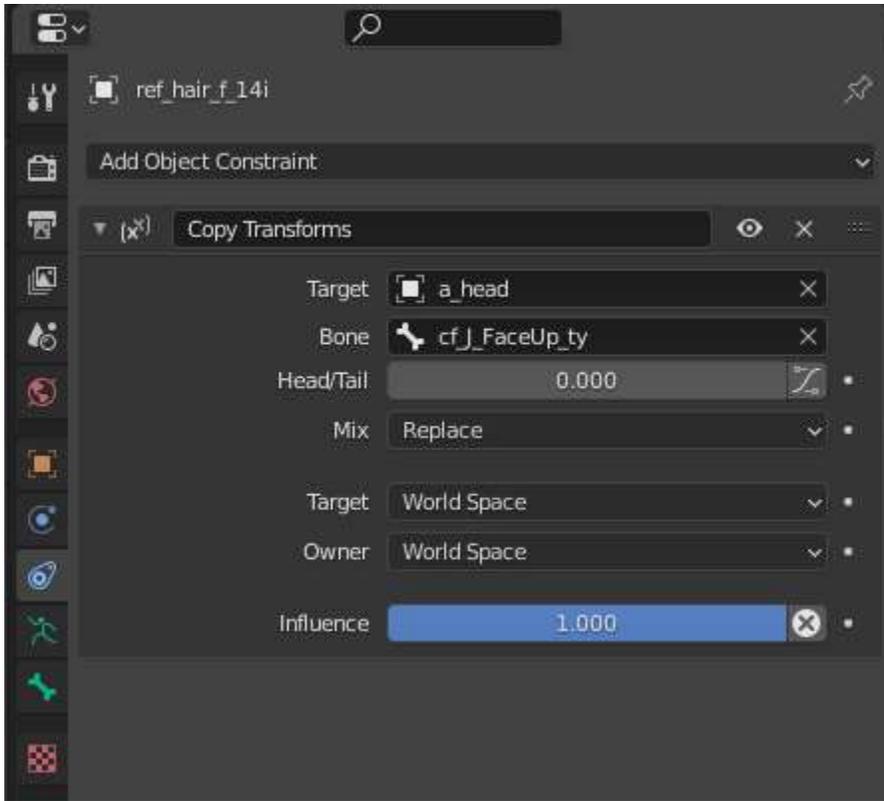
So instead, setup a Blender project for Hair and Accessory Hair almost the same as in my Accessory guide. The differences are:

- you don't need to worry about the body bones unless you are making Accessory Hair that is attached to the body
- you should bring in at least one game Front Hair and Back Hair for reference if you want your item to line up properly with game Hair pieces
- you should bring in a hair gloss texture for making sure Hair Gloss is good (will show how to use it later)

Here I've got the body and head in, and some game Hairs which are still on the ground but scaled to 1,1,1. They still have a 90 degree X rotation that I am not touching.



Throw a Copy Transforms on the Hair armatures to attach them to cf\_J\_FaceUp\_ty.



So now the Hair should be in the right location. I changed the body and face material so it is easier to distinguish hair meshes.

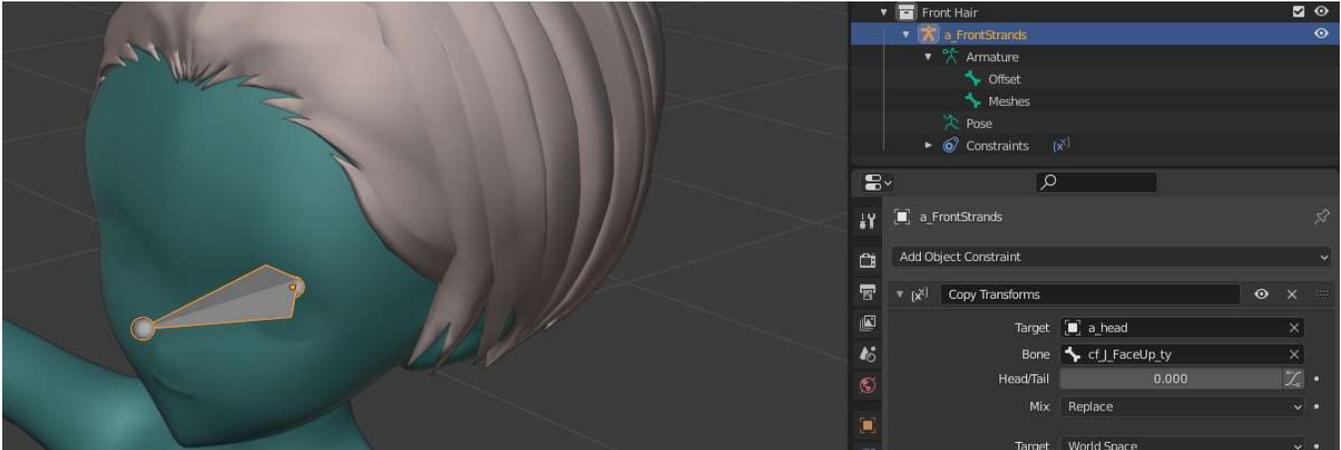


### Preparing KK Modding Tools: Hair Version

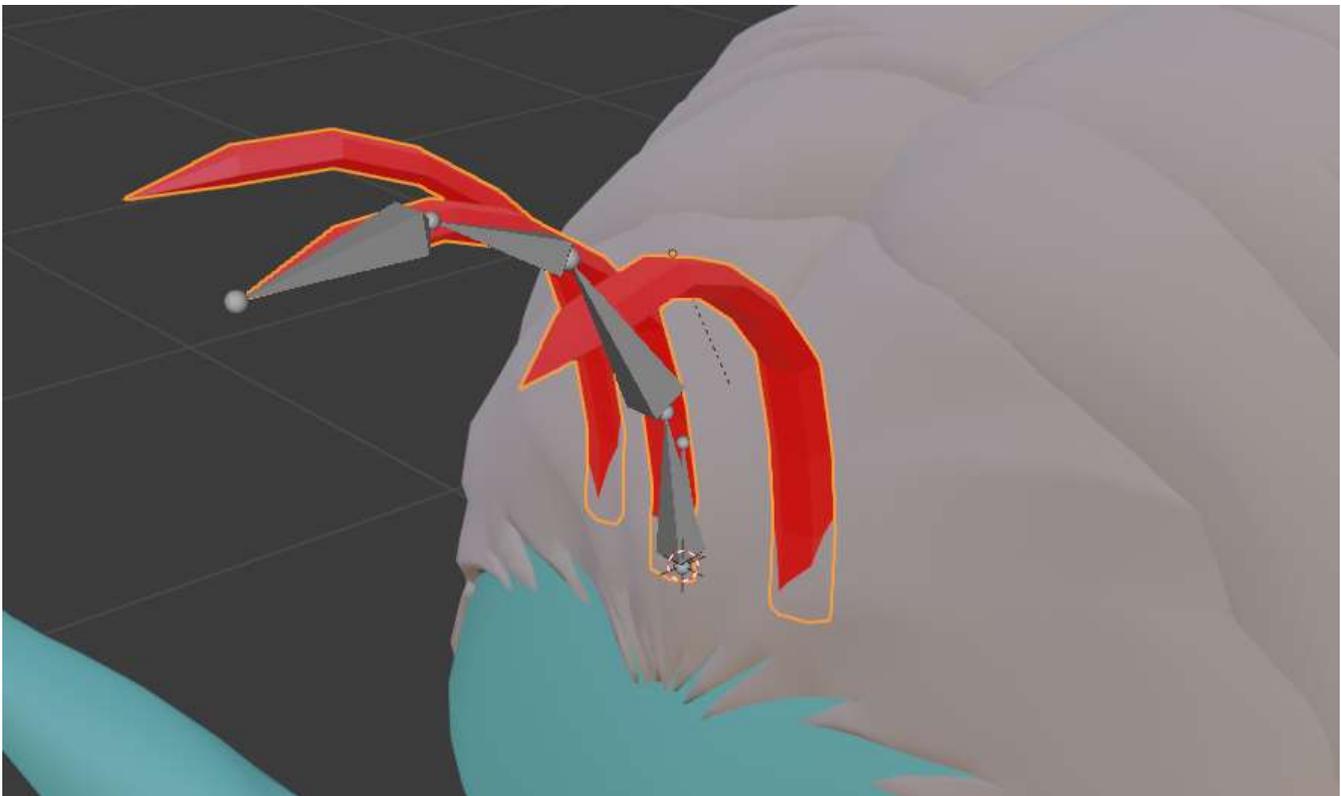
KK Modding Tools doesn't have a Hair example to look at or copy, but there is an Accessory Hair example.

## Hair: Blender

Let's make some Hair. I will make some Front Hair on-location, like how I made the tail on-location in the Accessory guide. So I start by making an armature and a hierarchy, but Hair doesn't use N\_move so I'll make the hierarchy a little different; just an Offset bone for moving the whole thing later if I want, and a Meshes bone that will be the parent of any meshes.



I hid the reference Front Hair as well, and did the Copy Transforms on cf\_J\_FaceUp\_ty to get things in the right place before I start modeling. Then created these big exaggerated strands of hair, which might make more sense as Accessory Hair but don't worry about that part.

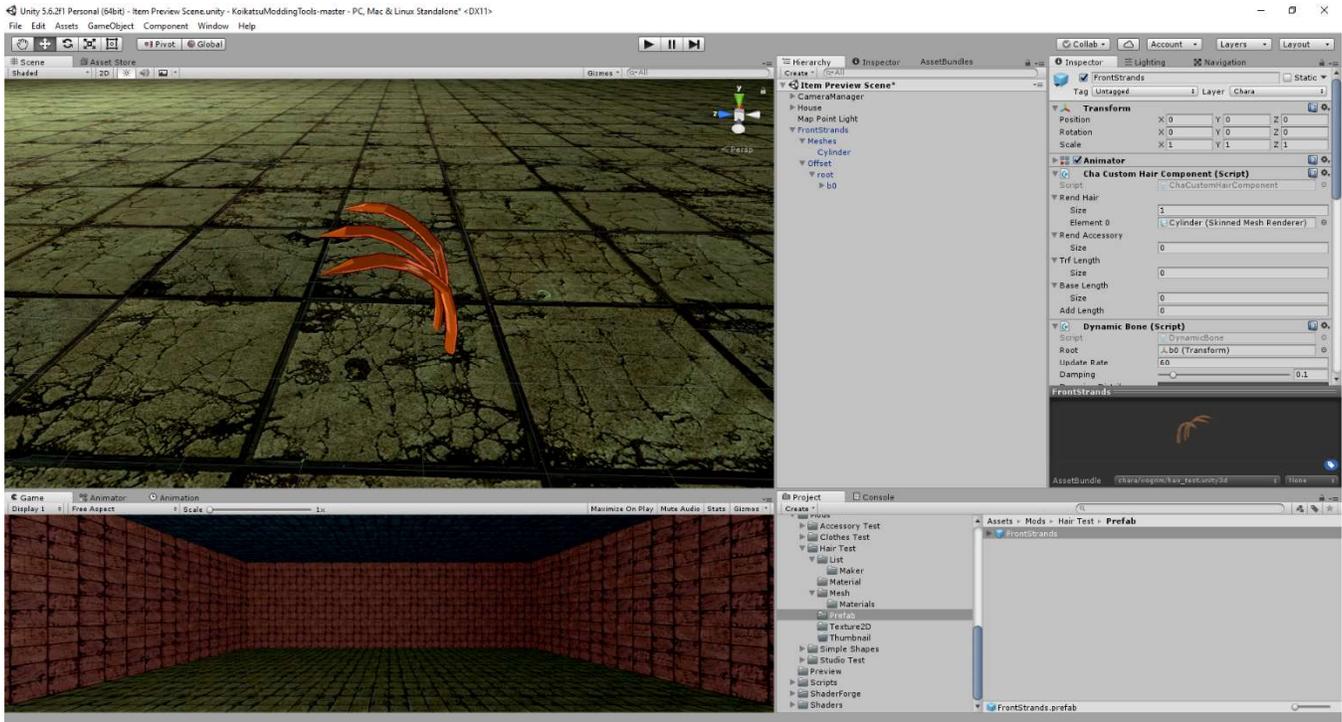


This is just a simple UV unwrap and solid red color mask, and a quick rigging and skinning. Don't spend a bunch of time on UV unwrap and color mask yet (or any other textures), there are tips on that later, along with other Hair stuff. So when you're ready, disable the Copy Transforms on the armature and export FBX just like an accessory.

## Hair: Unity

For now, make it just like a skinned Accessory but a couple changes:

- use **Shader Forge/main\_hair** shader, or **Shader Forge/main\_hair\_front** if it may cover eyes (which will allow eyes to be drawn in front of hair if enabled in game settings)
- use the Hair MB (ChaCustomHairComponent) instead of the Accessory MB, put mesh in rendHair, don't touch other fields
- make the appropriate list file and entry for your Hair type (Front Hair for me)



You may notice KK Modding Tools automatically sets your material color to game's default hair colors, and puts a hair gloss in there for preview. Or you might not see the hair gloss. For now, don't worry about it.

## Hair: Result

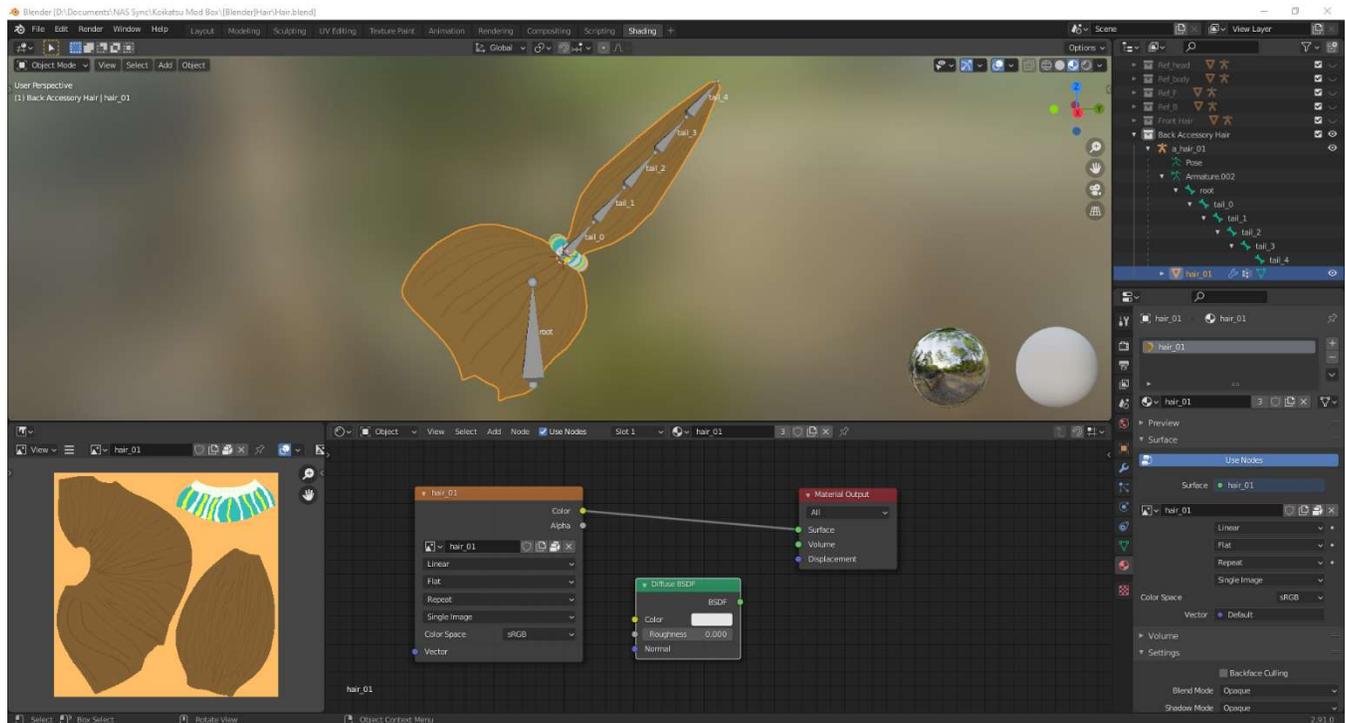
So you should now have Hair. It should have main hair color, and hair gloss if it showed up in KK Modding Tools. We'll improve it later.



## Accessory Hair: Blender

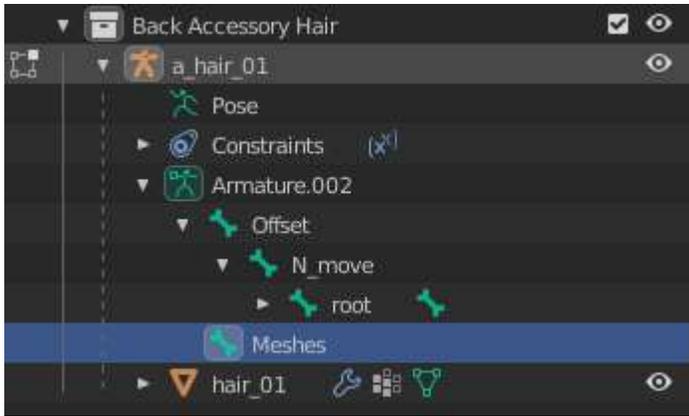
Accessory Hair is nothing new in Blender. You're just making an Accessory that uses an appropriate parent in the head's skeleton. All the candidates are children of the Hair attachment point, cf\_J\_FaceUp\_ty, so it doesn't really matter which one you choose. **a\_n\_headside** is the closest to it, so that's what I like to go with. If you're converting a Hair to an Accessory Hair, that requires the least movement to get it back to its original location.

This time around I'm going to pretend I'm porting this hair I made. If you're actually porting hair, make sure you fix any import scaling and rotation on the armature first.

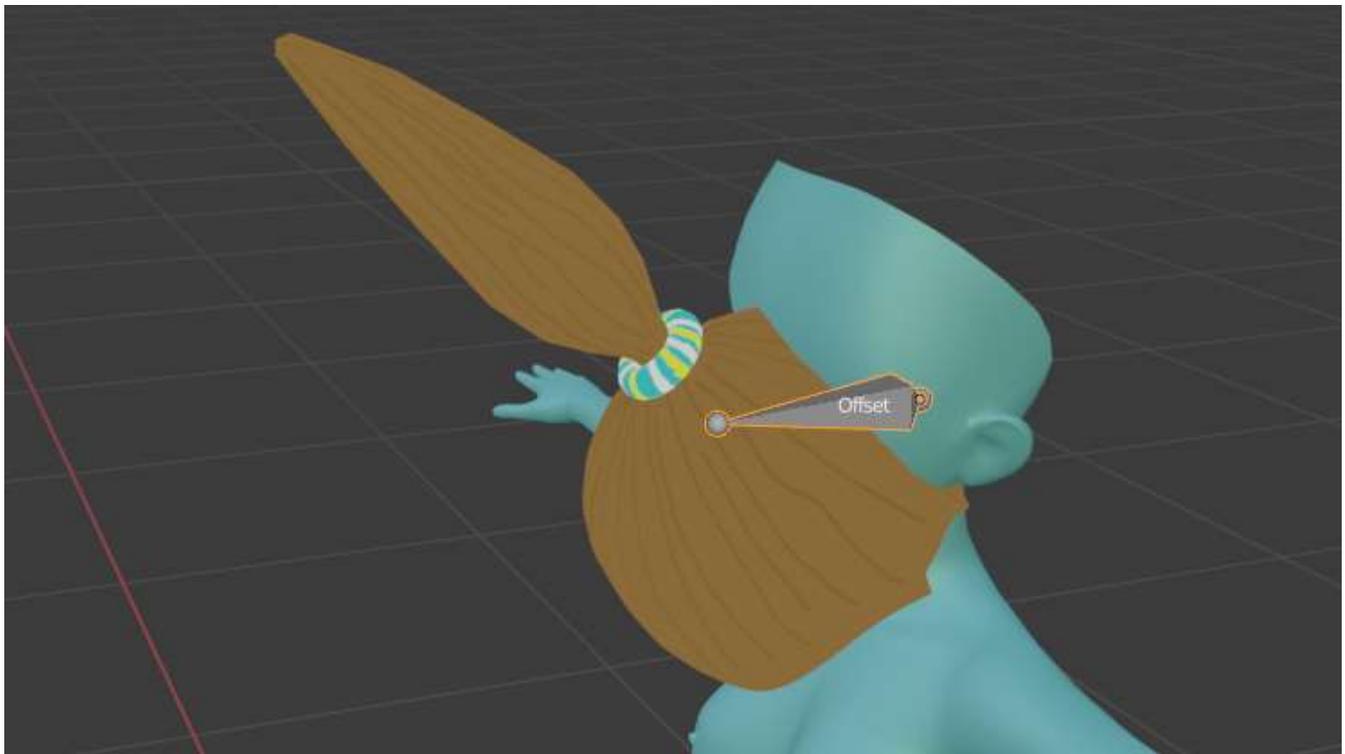


So you can see, this hair is all one mesh, including the built-in accessory, and it uses only this one texture. I set up the material to have the image go straight to the output, which is good for texture painting without any shadowing to confuse you. When you want to see it with shadowing, you put it through a shader node. Anyhow, I'm going to make this first into a low-effort Accessory Hair, then show how to improve it.

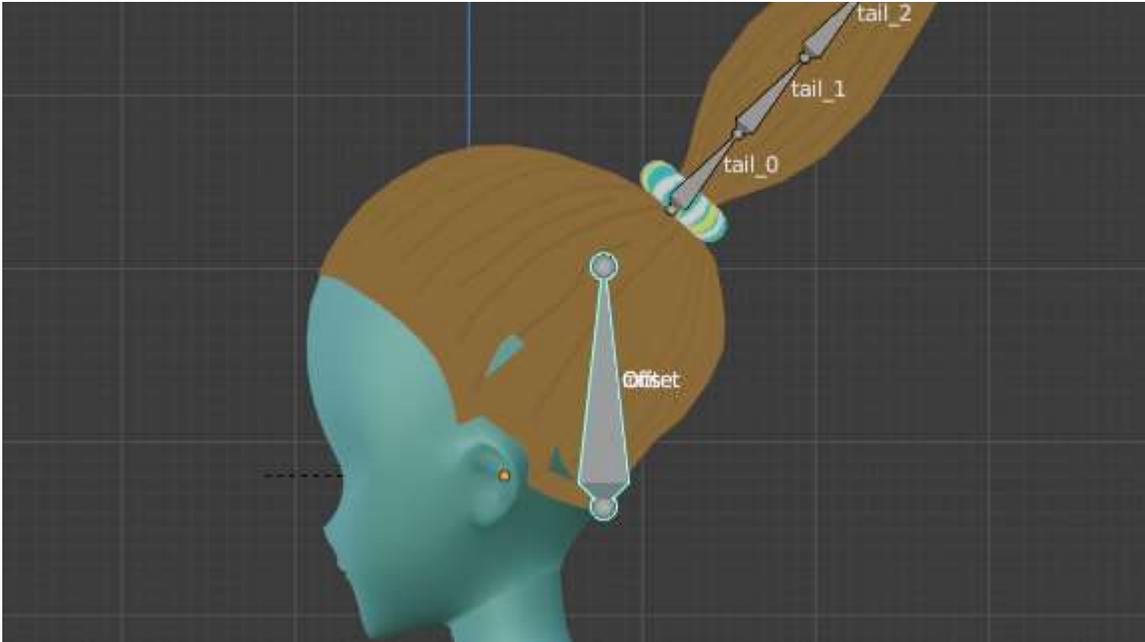
So the main thing I need to do in Blender is change the armature to have an Accessory hierarchy. First thing, creating Offset, N\_move, and Meshes, and parenting the mesh to Meshes. Notice I did NOT make Meshes the child of N\_move this time around, because it was giving problems when moving Offset.



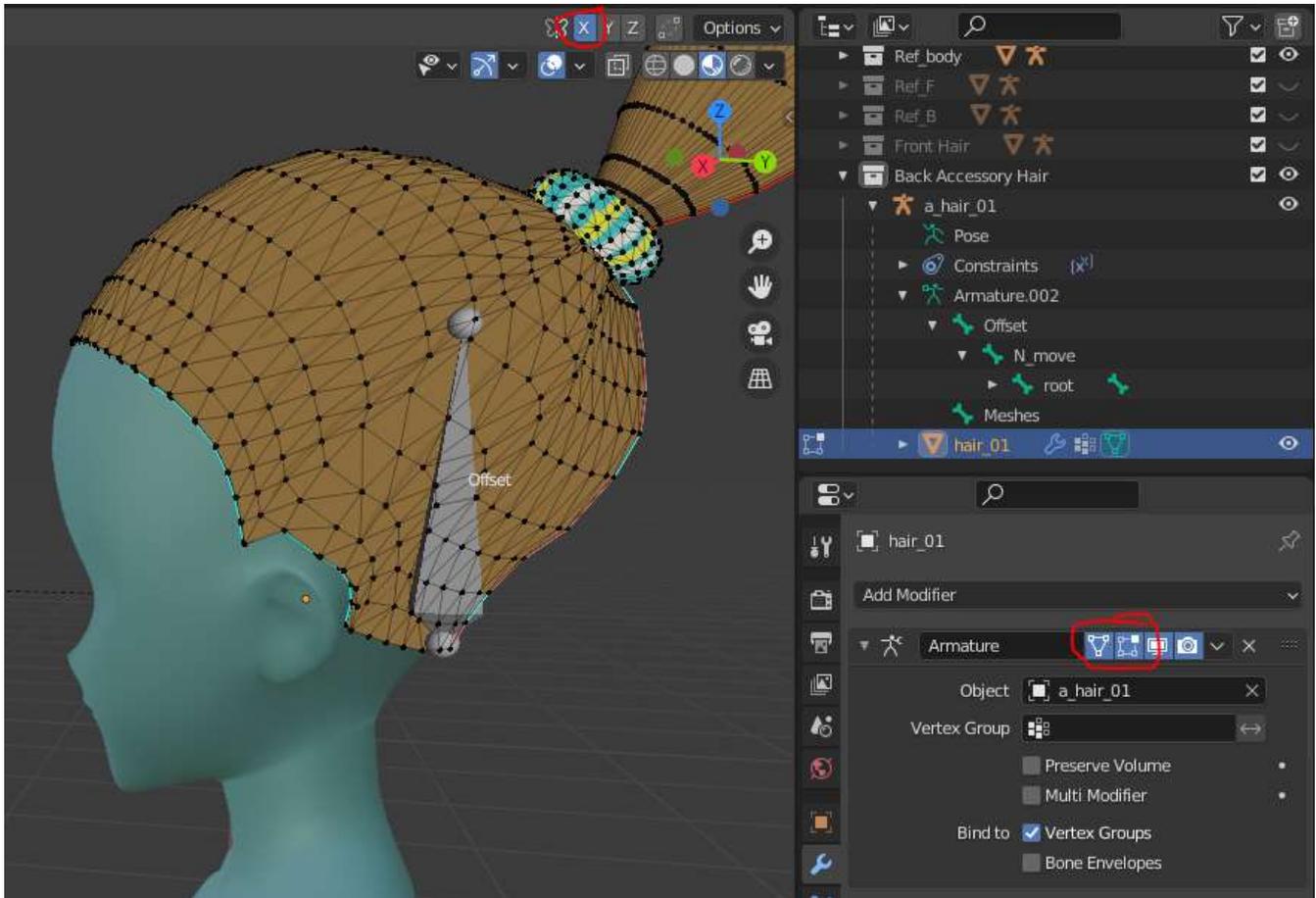
Then put Copy Transforms on the armature. The hair probably won't be quite where you want it by default.



So move/rotate Offset in Pose mode till you get the hair in the right position. If your hierarchy has the mesh under Offset, the mesh will no longer line up with the bones, so make sure it still looks right.



You might scale it so it fits better, but keep in mind it can cause you problems later unless you apply the scaling. In my case I decided to just pull a few mesh vertices out till it stopped clipping. If you want to do it this way, I recommend you have X symmetry on, and you need to have these other things enabled for the mesh to be at the pose location when you're editing it:

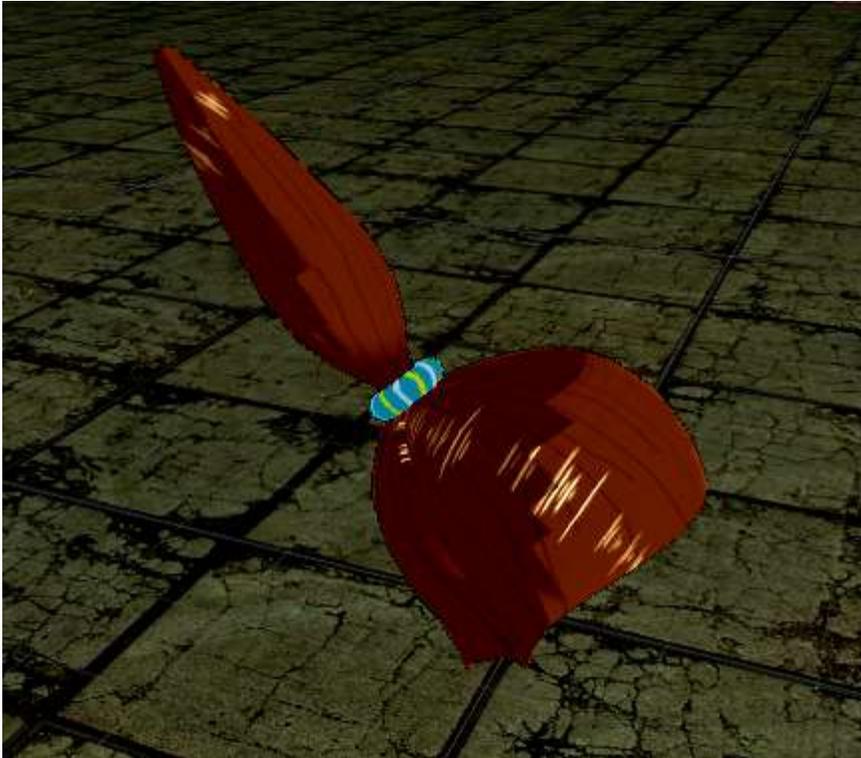


I thought I'd have to do an apply pose as rest pose thing to lock the Offset in place, but I tried finishing the item without doing that and it seems fine, maybe because the game doesn't move Offset. So just disable the Copy Transforms and export. But if it's annoying you later (like if you go to edit bones, it won't be posed on the head anymore), you might decide to come back and apply pose as rest pose (apply armature modifier first, re-add armature modifier after, like I did to "bake" the curve into the tail in the Accessory guide).

## Accessory Hair: Unity

Import, and do the same things as Hair except:

- item also has the Accessory MB; mesh must be in rendNormal or else there are in-game errors that prevent the item from fully functioning, such as dynamic bones won't work
- Accessory MB must have the useColor boxes checked to be colorable (not needed in this example)
- In this example, material doesn't have a color mask this time around, just maintex (note: saturation filter will change how it looks)
- item goes in an Accessory list file (typically head accessory category)



Again, you may or may not get a badly-placed hair gloss. It could even show up on the accessory, because that part is currently considered hair. Don't worry about it.

### Accessory Hair: Result

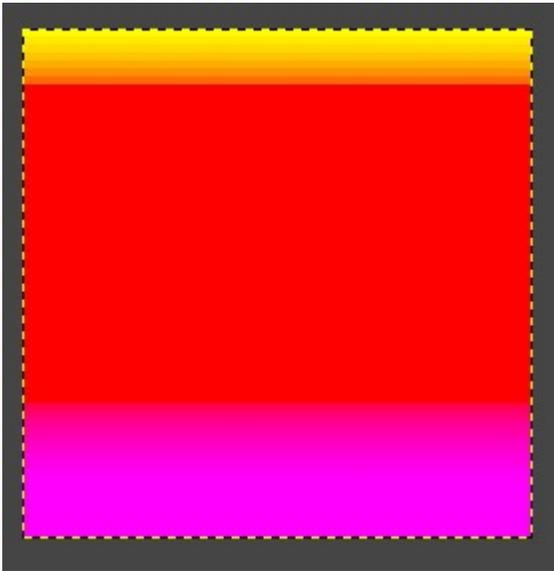
So you should have semi-functional Accessory Hair now. Of course, at this point it's barely any different from a skinned Accessory, so we're going to start improving it, first by using Hair color picker colors.



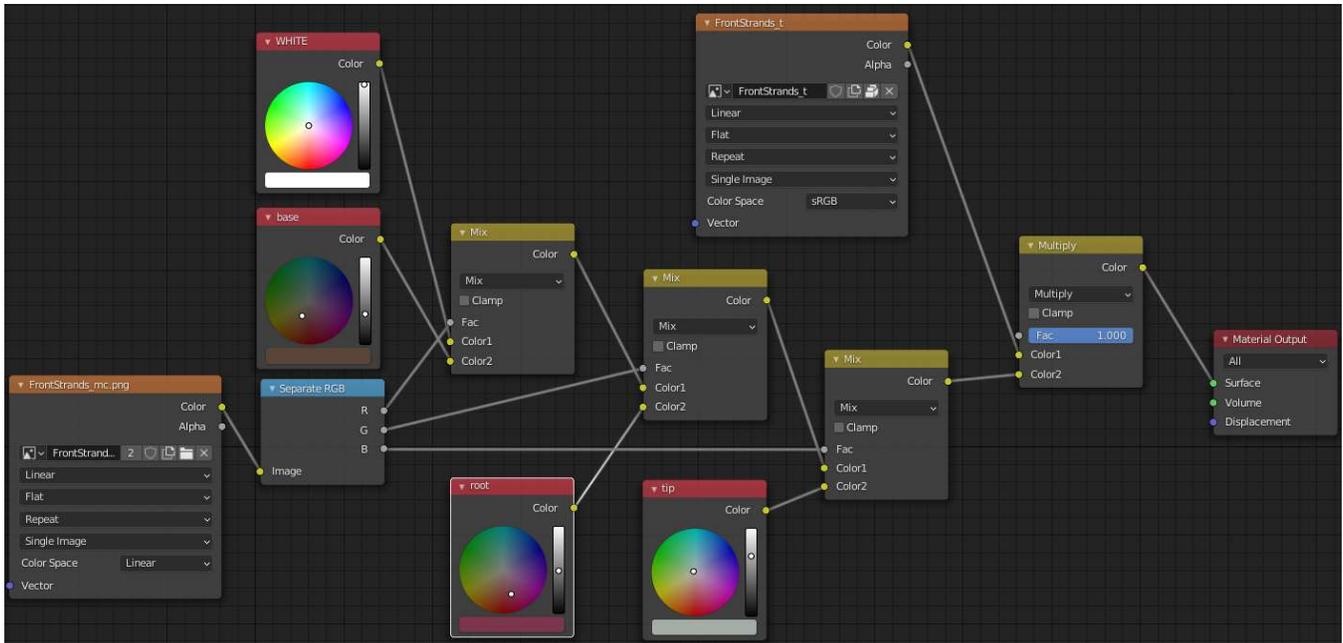
## Hair Color Pickers

You probably already know that Hair allows for separate base, root, and tip colors, which are red, yellow, and magenta on the color mask. But I've seen a bunch of hairs that aren't colorable, which is disappointing, so I wanted to show some hair coloring.

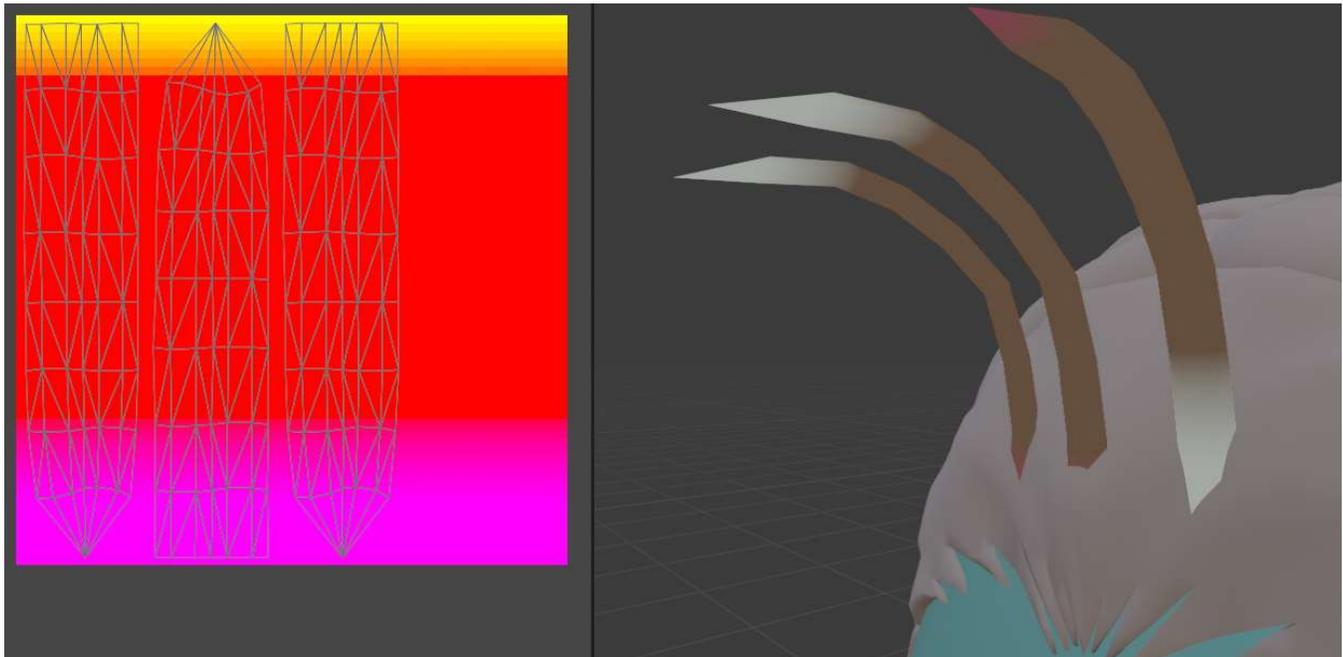
If you are making your own hair, you might want to create your color mask BEFORE you UV unwrap. This is because you can easily put down gradients in GIMP, and then UV unwrap the hair on those gradients for very smooth transitions for root and tip colors. Make sure you are making a linear image, and using linear gradient tool. So here's a color mask for my Front Hair:



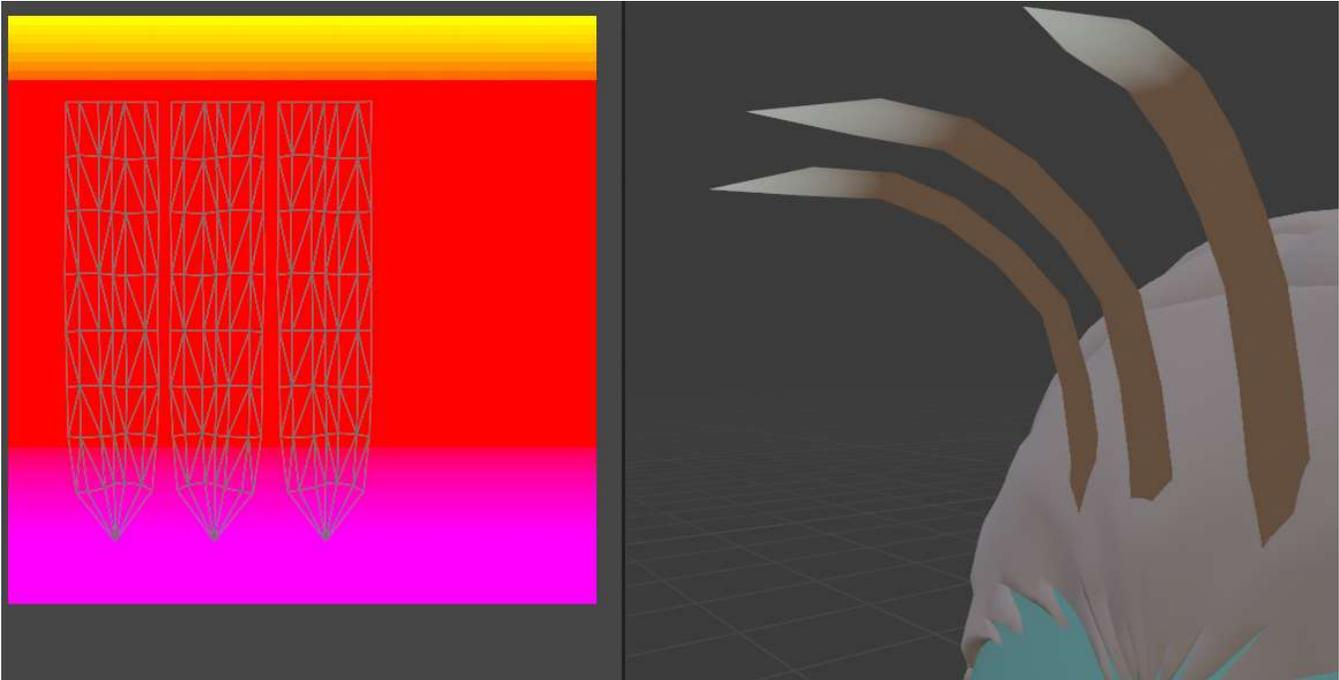
It's up to you how big or small the hair root and tip areas are. In general, something similar to existing hairs so that you can mix them nicely is recommended. So the next problem you might run into is how do you see in Blender how the color mask is going to look, for UV unwrapping your hair onto it. You can just put the color mask directly on the item, but the gradients can be misleading for how the colors will end up being mixed. So what you can do is use Blender's node system to calculate color mixes. Here's how I think the game mixes color picker colors and the MainTex (which usually isn't used for hair):



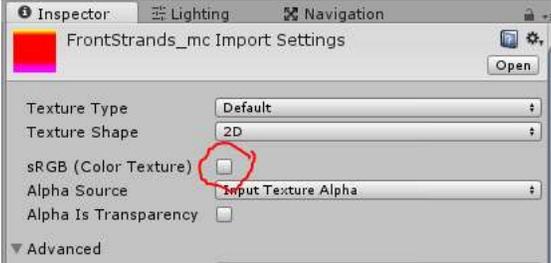
(I chose colors similar to game's default hair colors, but you can change them to whatever). So with the UVs I had, this is how my new color mask looks:



So clearly I need to flip the UVs of that one hair strand, but I'm also going to adjust a bit more as well. I happen to know the game's Back Hair that I'm pairing this with doesn't have root colors at that part of the mesh, so I'm actually going to not use root colors on here. But if your other hair does have root colors in that area, you should probably set it up in Blender so you can match them nicely.



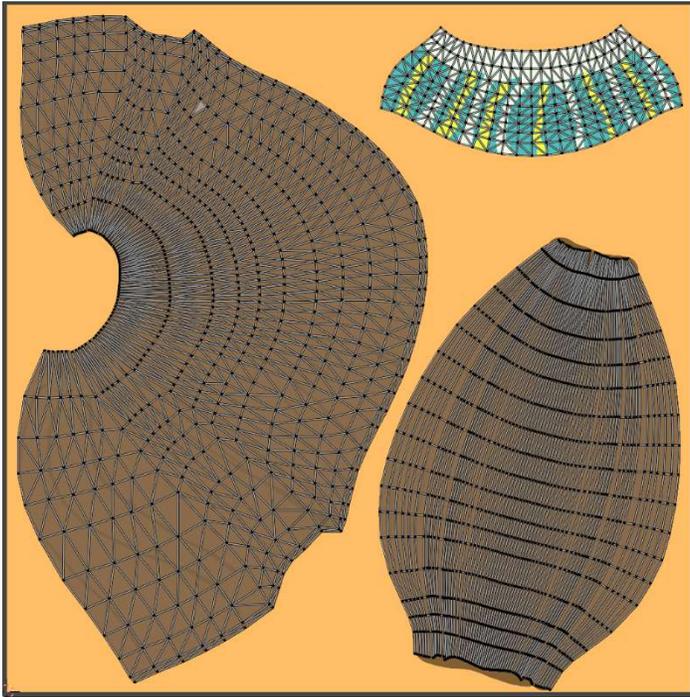
So remake the item, and make sure you tell Unity the new color mask is not gamma.



Should be good.



With the Accessory Hair, I don't really want to re-UV the whole thing for the color mask, so I'll hand paint the root and tip parts, but first I want to fix the MainTex.



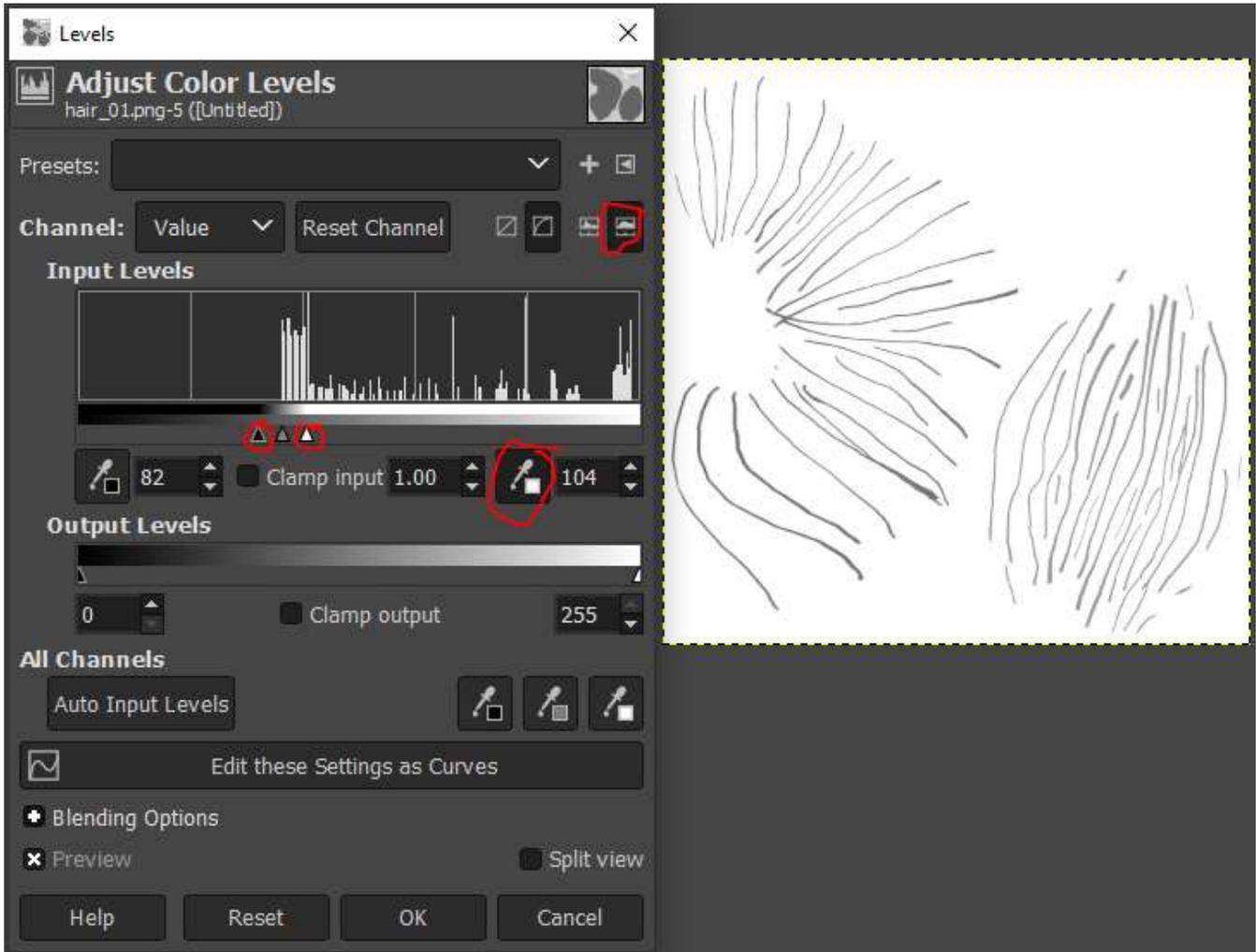
I'm still leaving the built-in hair accessory alone, but I want the rest of the MainTex to be white. But there's some lines on there that I want to convert to texture shadows, so I'm going to make it a detail mask first. So I imported the MainTex into GIMP and started with Colors->Desaturate->Desaturate to convert to grayscale.



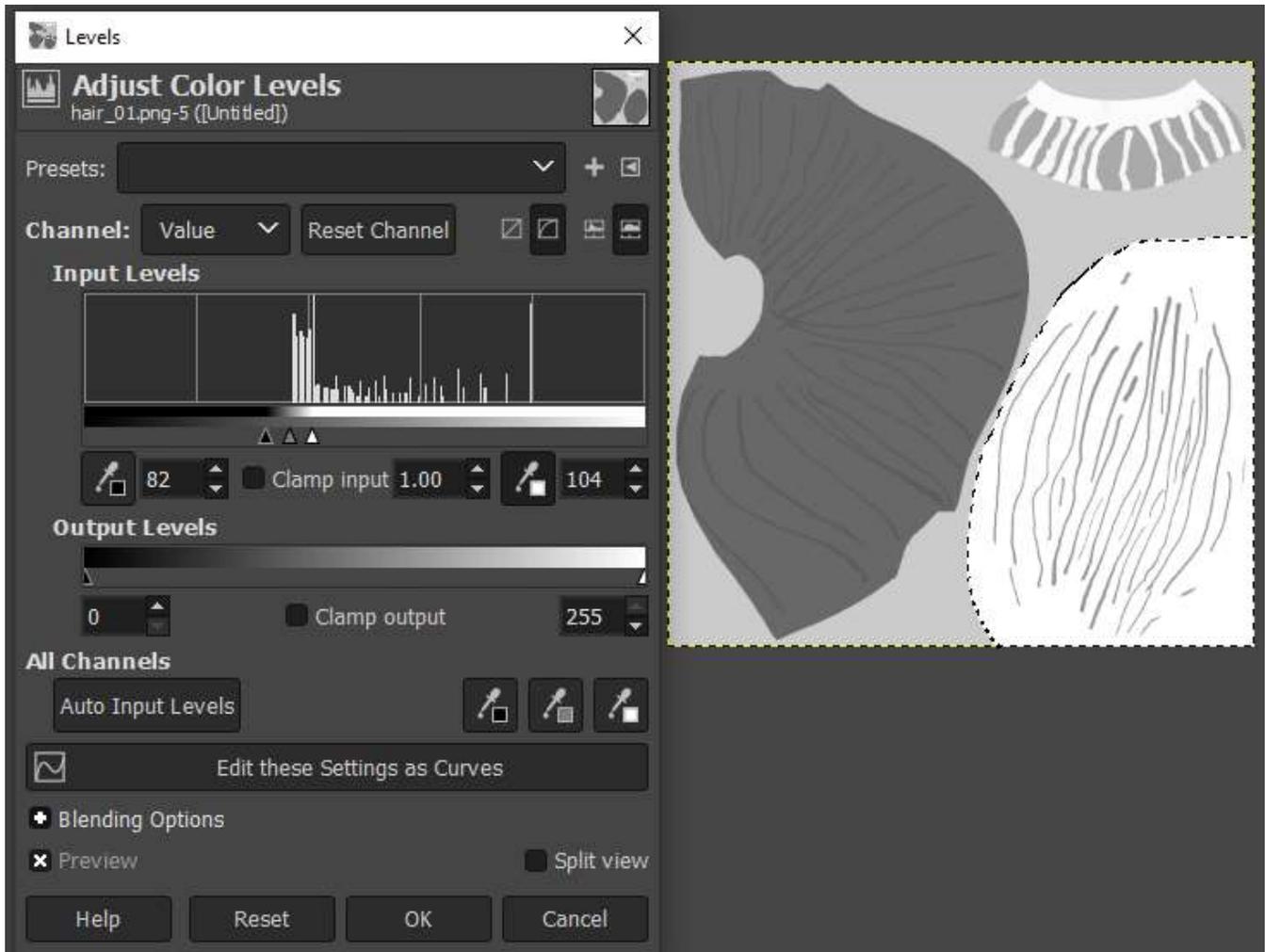
Then use Colors->Levels and adjust input levels so that the shadows are easy to see and everything else is white.

Steps:

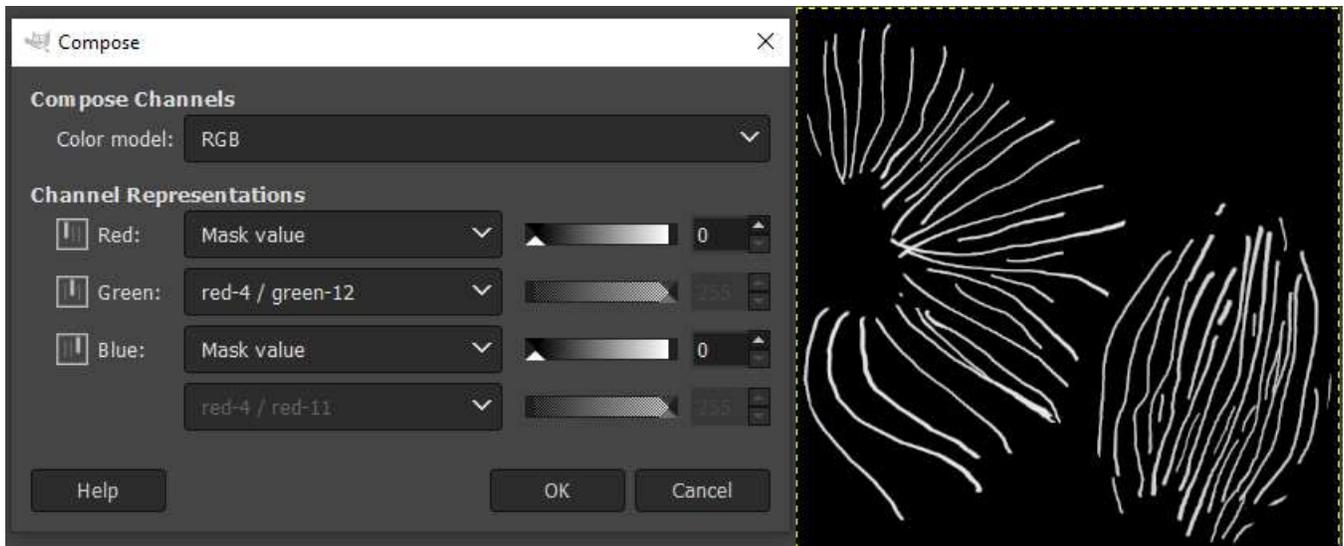
1. set histogram to logarithmic so you can better see where main colors in your image are
2. drag the white triangle to where everything but the texture shadows is white, or use the eye dropper to select the darkest part that isn't shadow and it'll move the white triangle for you
3. drag the black triangle if needed to see the texture shadows better



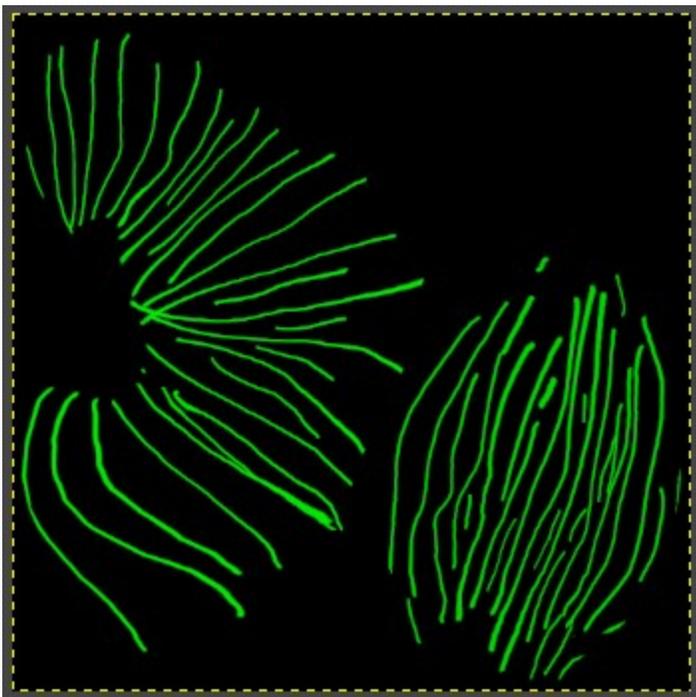
If you are trying to convert a more complicated MainTex, such as there different-colored areas so the shadow brightness is different, you can do this on selected areas instead of the whole image at once.



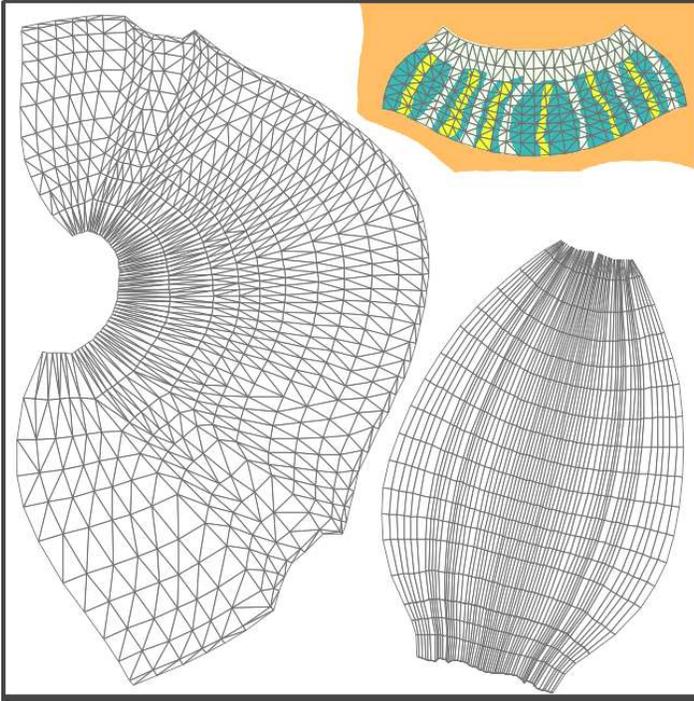
So next do Colors->Linear Invert, and we just need to make it green. There's certainly other ways to do this, but I do Colors->Components->Decompose, to RGB as layers. Then Colors->Components->Compose, and set the red and blue channels to 0.



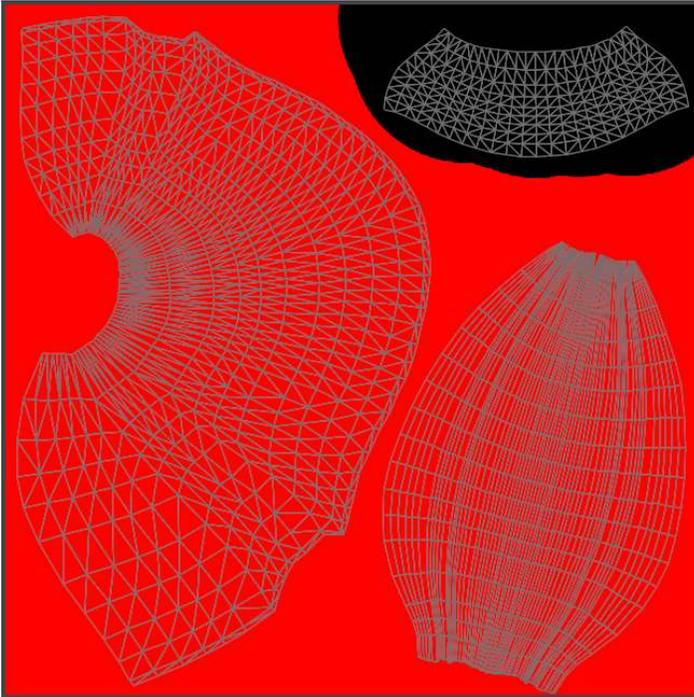
So now you should have a good detail mask.



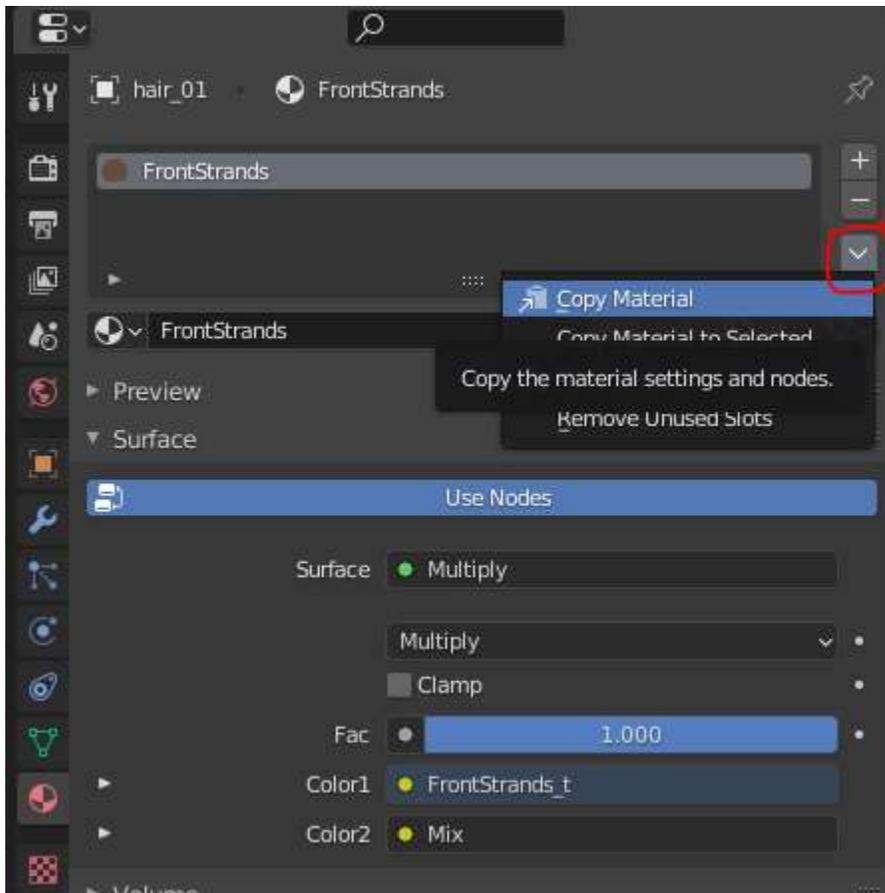
So now I can make the MainTex white except for the built-in hair accessory. But I do this on a copy just in case I ever want the original for some reason.



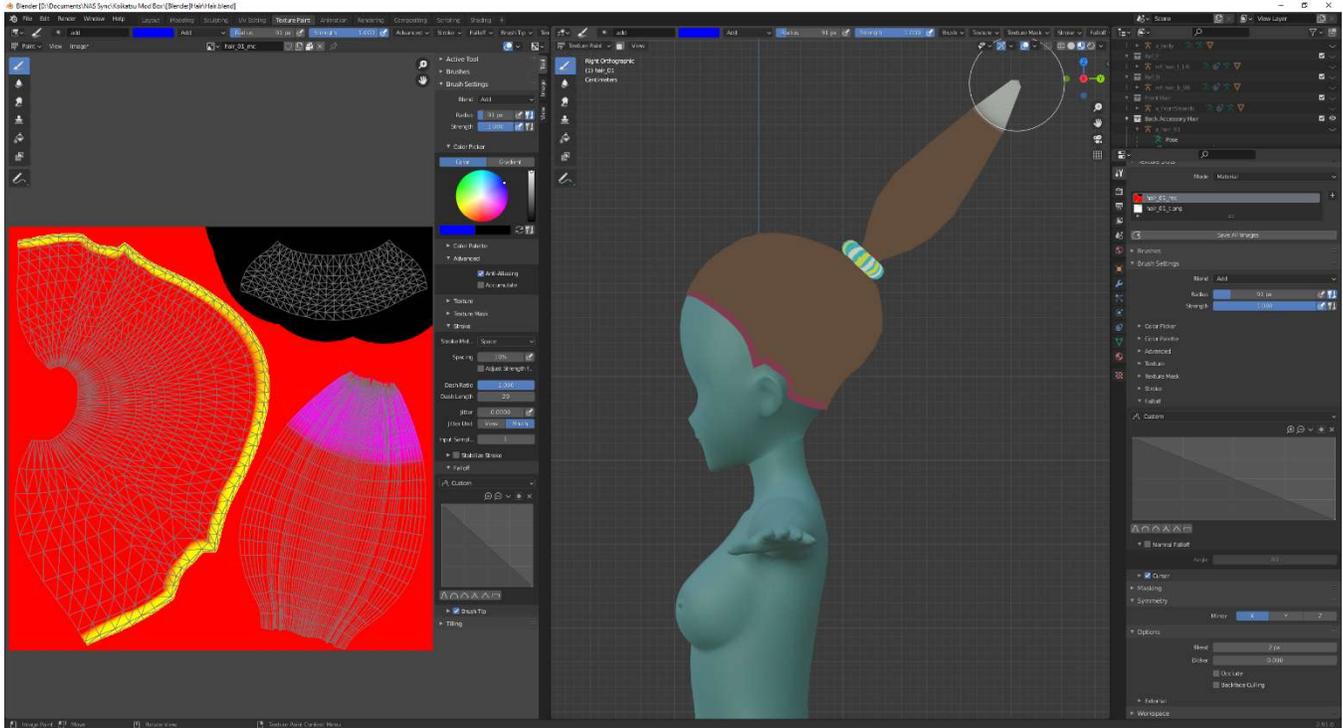
And I can create a color mask, with Black where the built-in hair accessory is.



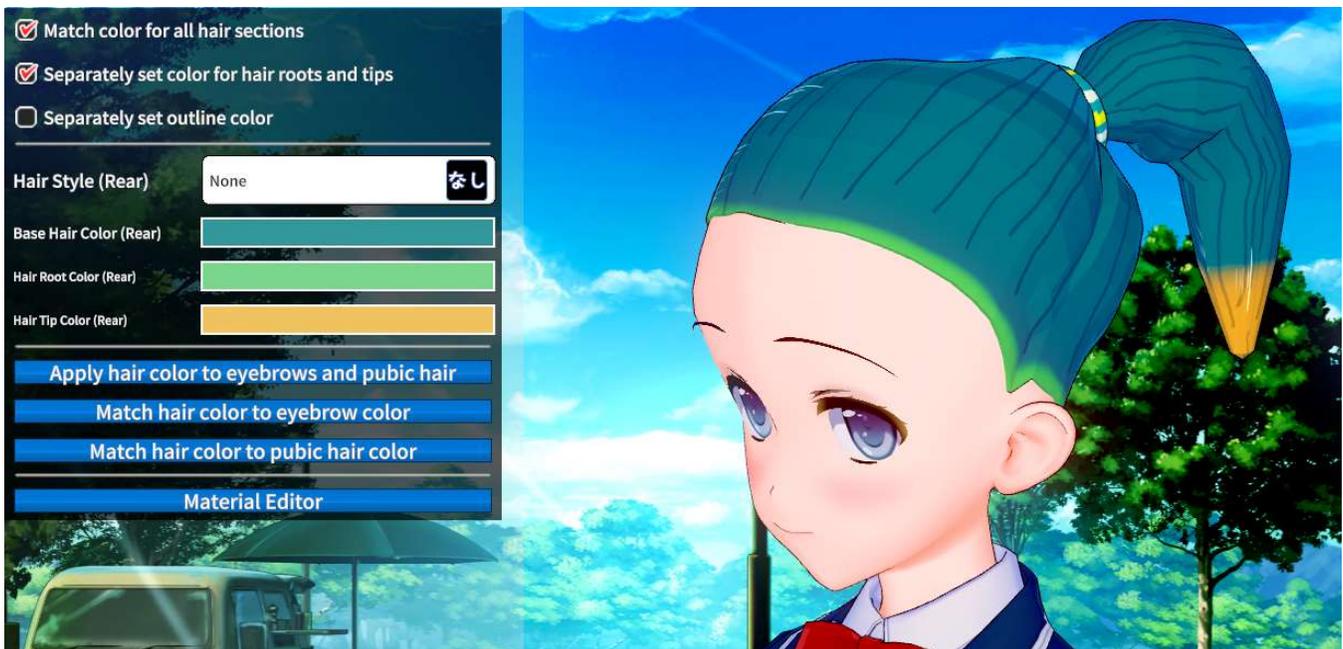
I copy the Blender material for the Hair I made earlier, with all the nodes, and paste it into the Accessory Hair's material.



Be sure to change the textures in the nodes. I didn't make anything for the detail mask, don't think it's important. You should be ready to texture paint the color mask (or you could paint on the left if you like that better). Make sure you are painting to the right texture. I like using the add brush to add green to make yellow, add blue to make magenta. Look through brush settings to find what works best for you.



Then remake the item with the new textures, and make sure you have the useColor boxes checked on the Accessory MB. You should now have a colorable Accessory Hair (except for the built-in hair accessory).



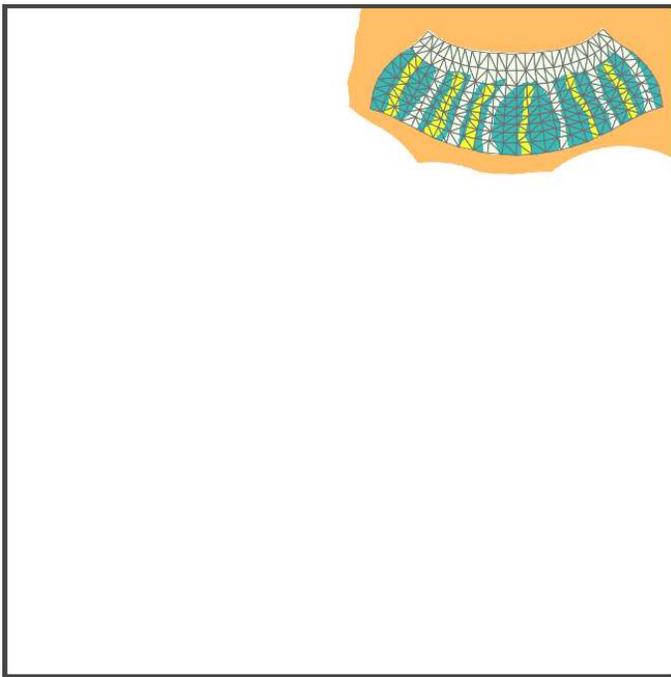
## Built-In Hair Accessories

Built-in hair accessories are things like hair ties and ribbons which are part of the hairstyle. You can separately attach an Accessory to the head and make it look like it is a static part of the hairstyle, but if you want something that moves with the hair's dynamic bones, a built-in hair accessory is the primary option. To be able to give it the 4th color picker color (instead of same colors as hair), it needs to be a separate mesh from the hair parts, and use a separate material with an Accessory shader; it will only be given the special hair accessory color picker color to its red color mask channel. The mesh goes in the Hair MB's `rendAccessory` section.

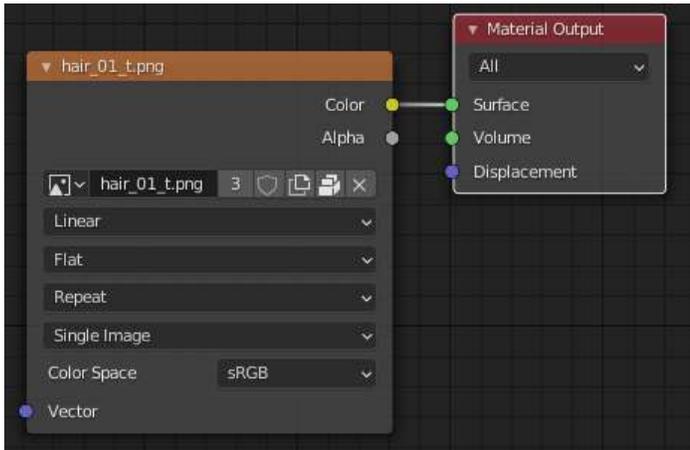
If you must have more color picker colors on your built-in hair accessory, your options are:

- (as Accessory Hair) have the part of the built-in hair accessory use the same material as the hair, and use regular Accessory color pickers instead of hair color pickers; use hair root/tip colors on the accessory
- make it a separate Accessory; mod user gets the AAAPK plugin, which lets them attach an Accessory to any bone they want (so they attach it to a bone in the hair, but doesn't work well if the spot they want to attach it to has weights for multiple bones)

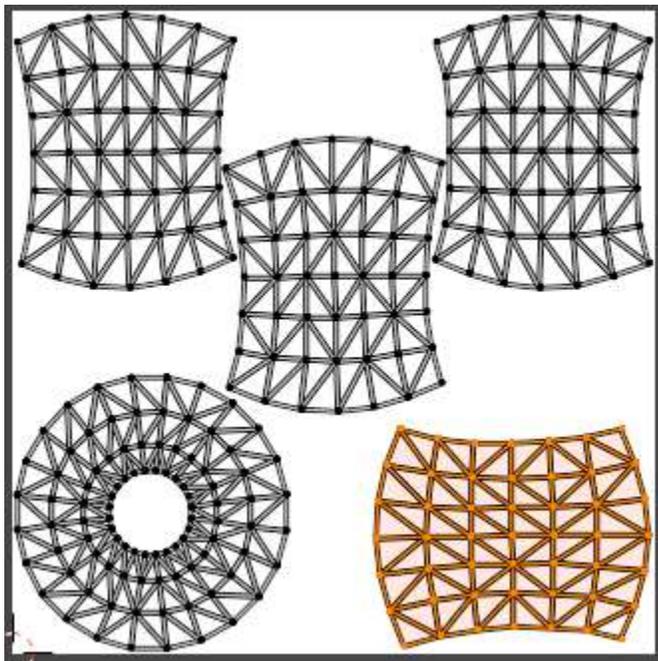
For my Accessory Hair, I will just make the turquoise part colorable. The first step is to select the accessory part of the mesh in Edit mode and do a `Mesh->Separate->Selection`. This puts it in a separate mesh, but it's still parented properly, still has its bone weights, etc. Then I created a new Blender material for it and copied the hair material so it's got all those color mixing nodes. But now I have a problem, which is that my built-in hair accessory still uses the same `MainTex` and color mask as the hair, and it's using less than a quarter of that texture space; this wasteful for your graphics card.



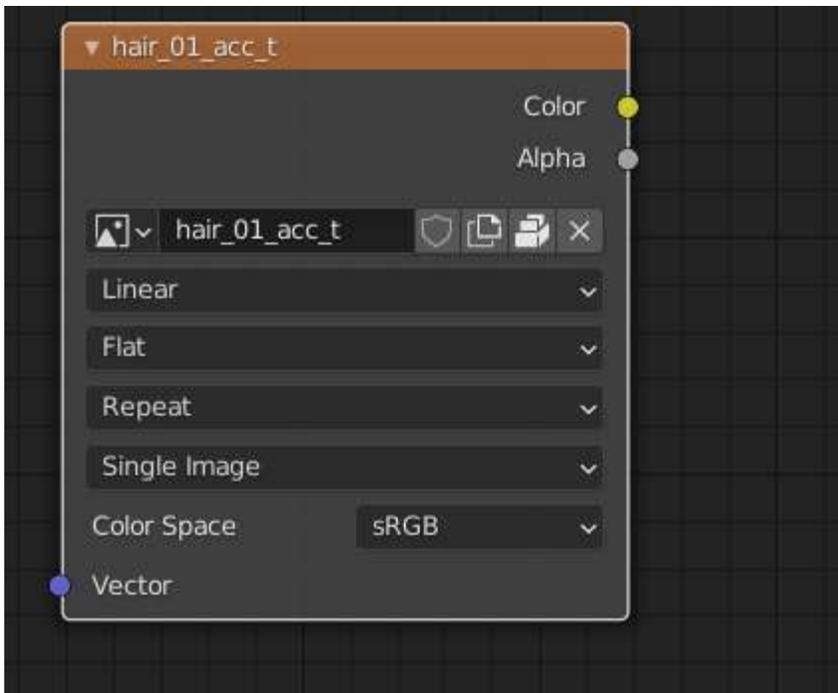
There are ways you can crop your textures and re-scale the UVs so that they still line up perfectly, but I'm going to do something cooler and more useful for other situations, like if the UVs are scattered all over or you need to re-UV something to make it work with some other texture. I am going to bake the maintex onto a new image using new UVs for the accessory. If your item has a normal map this method will probably destroy it if your new UVs are a different shape or rotation: use with care. So I duplicate the accessory mesh, and give the new one a new material that ONLY puts the above MainTex directly on the mesh.



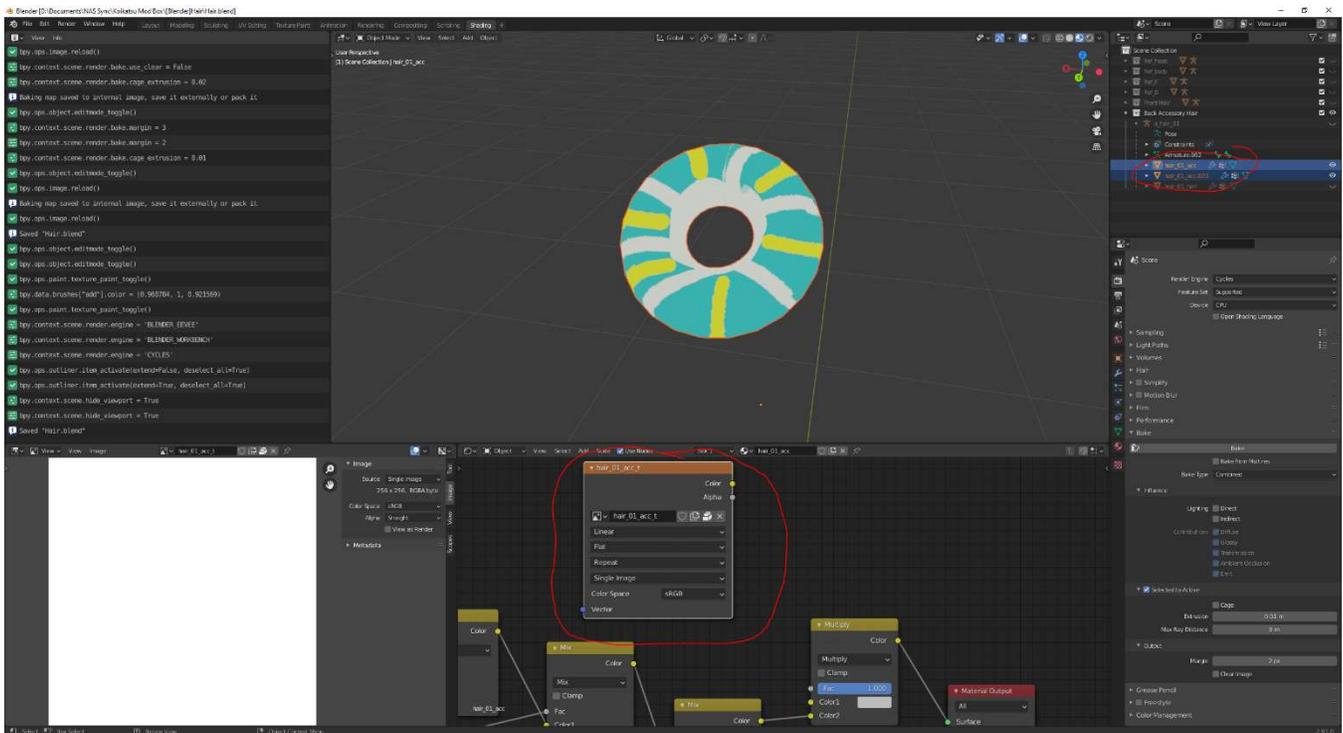
Then I create a new, smaller (256x256) white MainTex for the accessory, put it in the right slot on the original mesh's material, and do a new UV unwrap that makes better use of the texture space (I made it totally different for demonstration purposes; it can be the same shape). This makes it look funny on the mesh because it's still going by the color mask, but that will be changed later.



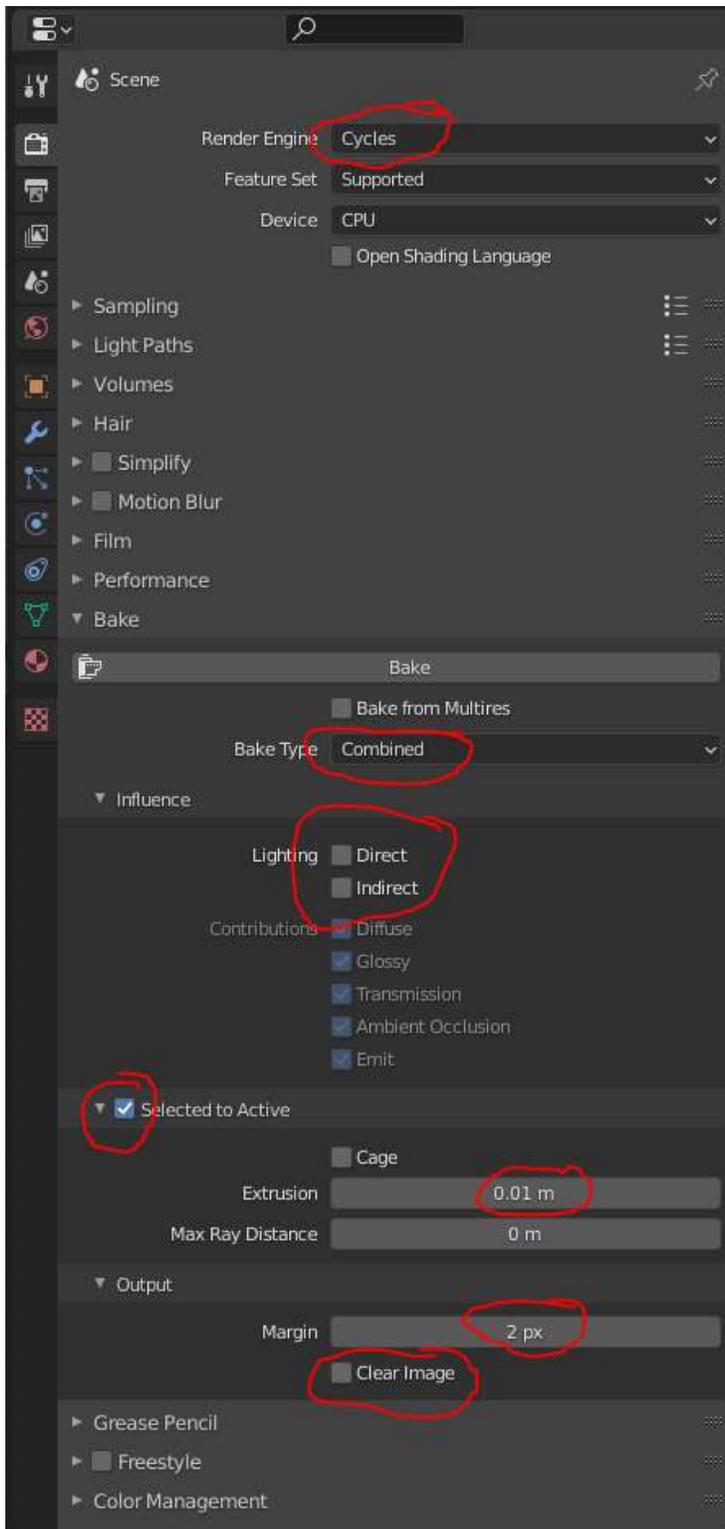
You need to disconnect the target texture node on the original's material or you will get an error for this process, so do that.



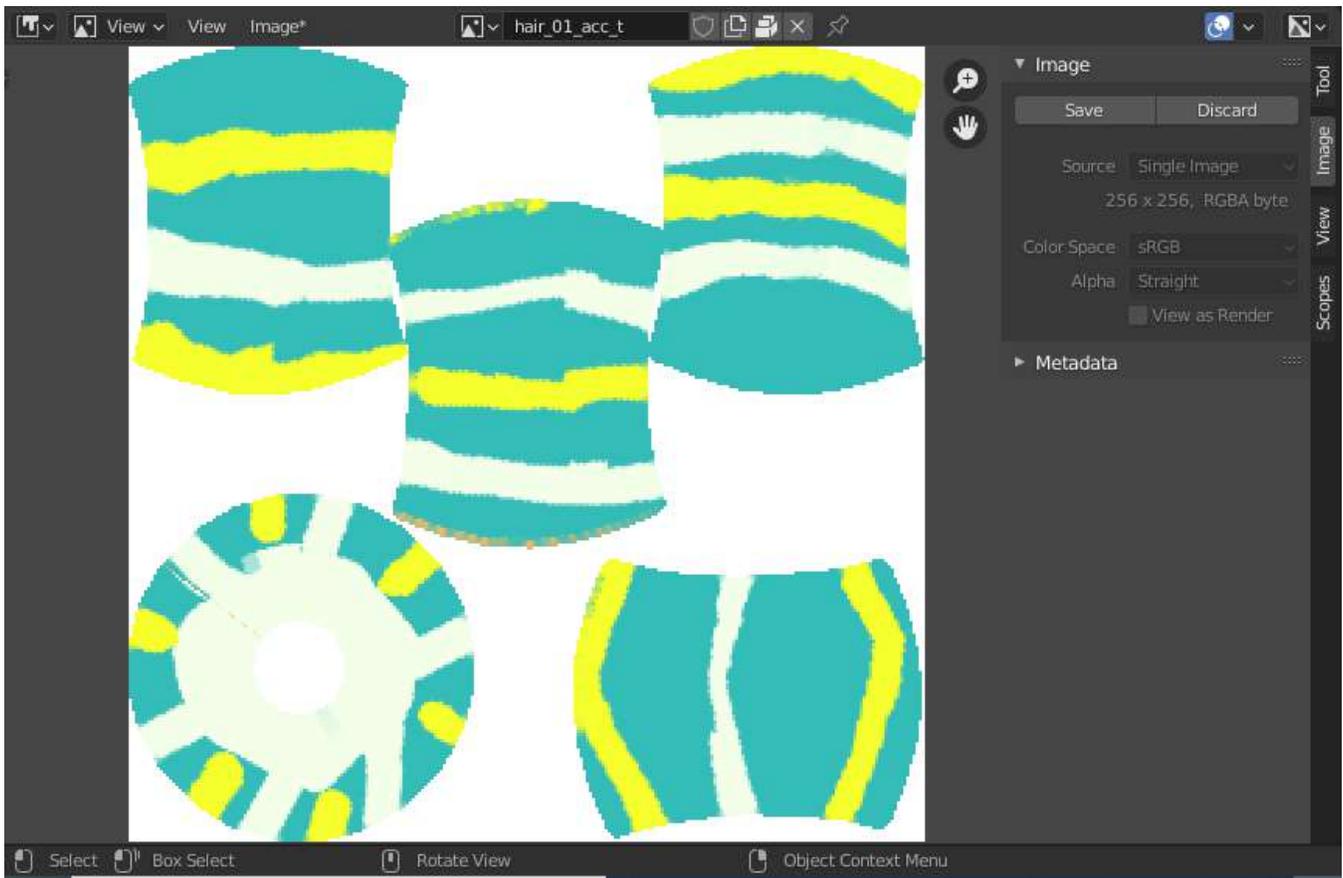
Hide everything but the new and original mesh, and in Object Mode, select the new mesh then ctrl+select the old mesh in the Outliner, while in a Shading workspace. Select that target texture node. Also show that target image in the Image Editor so you can see it as soon as it changes.



Then in the Render tab of Properties, set up settings for baking the texture. This is how we set up for the selected texture to be given color from the other object (which is why it only puts the texture on itself with no lighting/shading stuff). You might play with Extrusion and Margin if you get bad results.



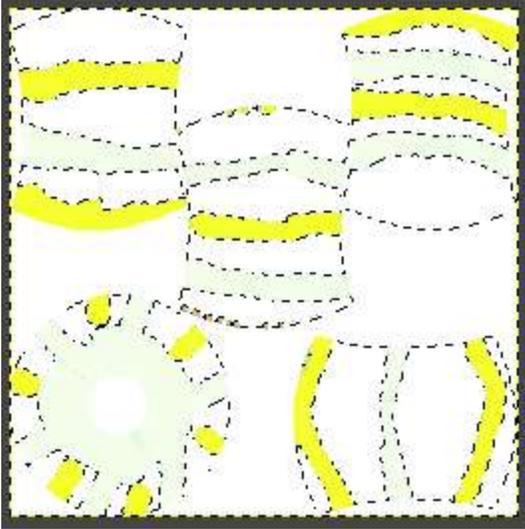
So hit Bake when you've set all the settings, and hopefully it transferred nicely (Save the image). If not, Discard (basically undoes the bake) and try to figure out what went wrong. So here's the new MainTex for my built-in accessory.



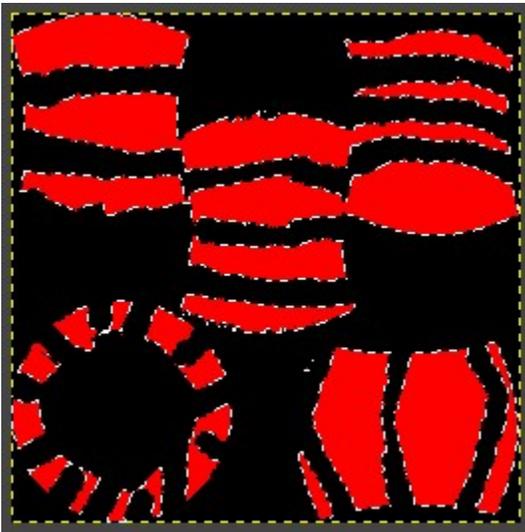
You can also set your newly baked texture directly out on the material, and toggle hide/show on both versions of your item to see how well the texture was transferred. Here's the how the accessory looked with the original UVs and MainTex, compared to new UVs and MainTex:



There's a very slight difference, probably from different size and rotation of the pixels (relative to the UVs), nothing that you'd notice without comparing them close-up and side by side like this. Remember, we saved a lot of texture space going from 1024x1024 to 256x256. So now that these UVs are fixed, export the new MainTex and bring it to GIMP for making the color mask.



I just did a select by color to select all the turquoise areas, and bucket filled white. Then made a black and red color mask with the same selection area. You could pretty it up if you notice areas that look bad (there's some slight tinge of the turquoise on the edges of these areas remaining in the MainTex).



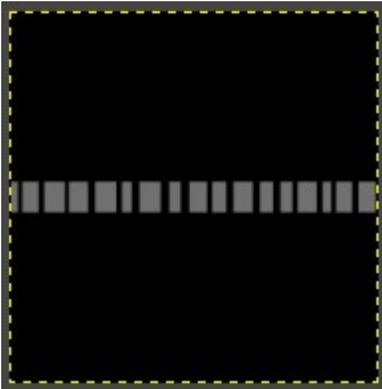
So now a rebuild of the item. The MainTex was removed from the hair material because it was only still there for the accessory. A new material with the new accessory textures was made, and applied to the new accessory mesh. The accessory mesh was added to the Hair MB's rendAccessory field.



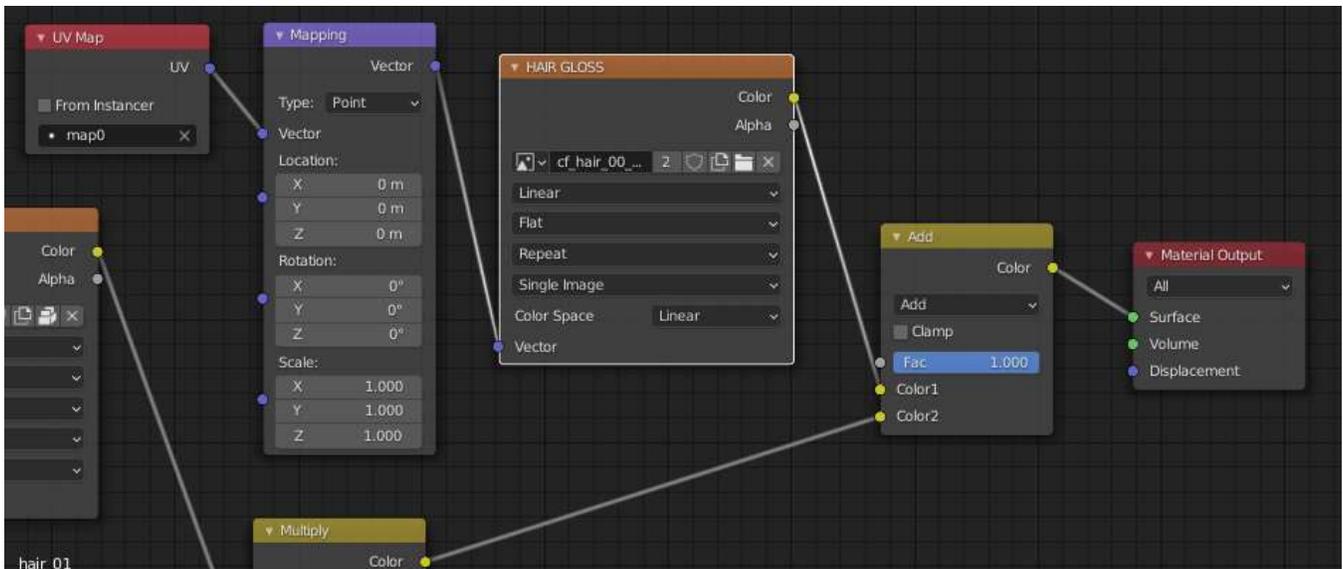
So now I've finally got a standard 1-color built-in hair accessory (but most of the work was re-doing the UVs). Be sure to re-test the other features to make sure you didn't break something in the process.

## Hair Gloss (AKA Hair Shine)

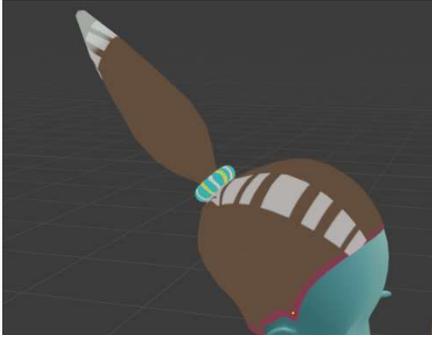
You probably know that hair gloss gets applied applied on hair based on UVs (like most textures). Does this mean we need to redo the hair UVs (and with it, textures) so that it lines up with the hair gloss texture? Not exactly. The hair gloss actually gets applied to the second set of UVs (if there is one), so we will do a UV unwrap for the parts of the mesh we want to have the hair gloss on it. But first we'll set up Blender to show the hair gloss so we know where to unwrap the hair. It's up to you which hair gloss texture to use, I will use this one.



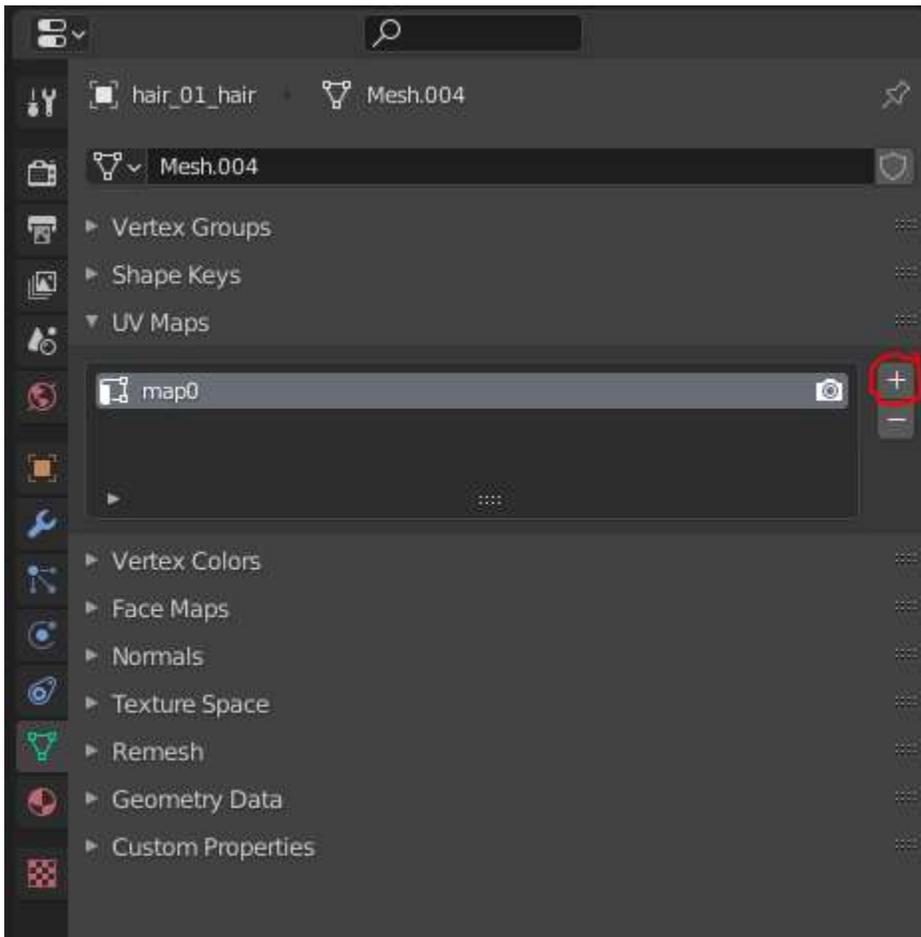
So to get the hair gloss to show in Blender, you need to add some nodes on the hair material to add in the color of the hair gloss texture. There's other ways you might do this, but here's how I've done it. The Mapping node lets you change tiling stuff for the texture, just like you can in Unity/ME. The item only has one UV map right now, so we will change it later when we create it.



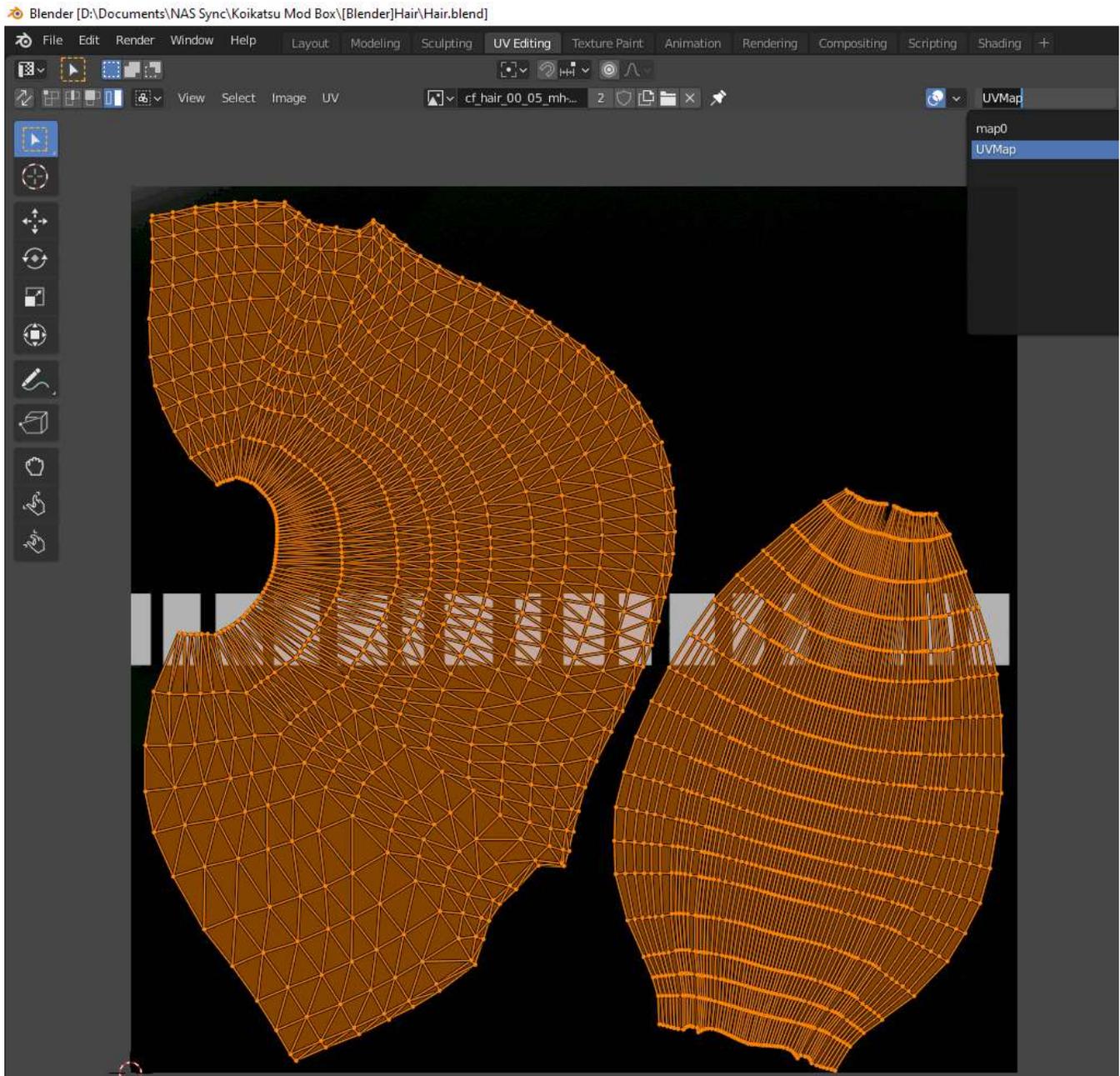
So for now, the hair gloss shows in the same spot it does in-game.



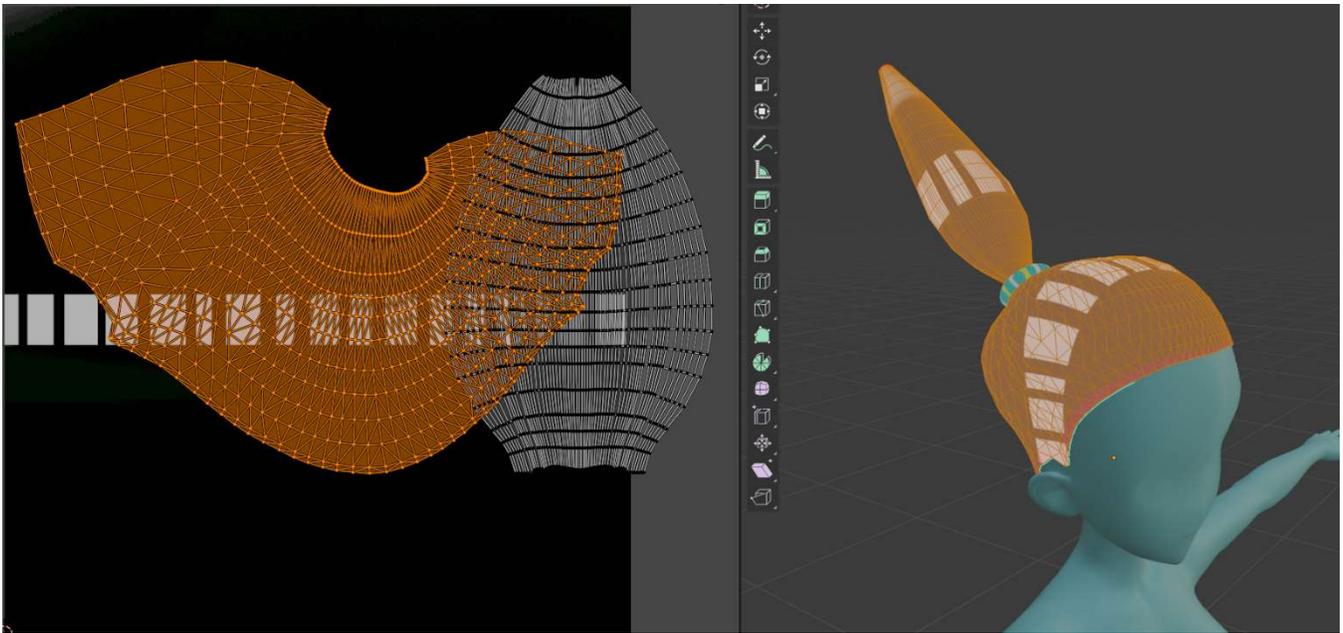
But we need to put it on a different set of UVs, so go to the mesh's Object Data Properties and add a UV map.



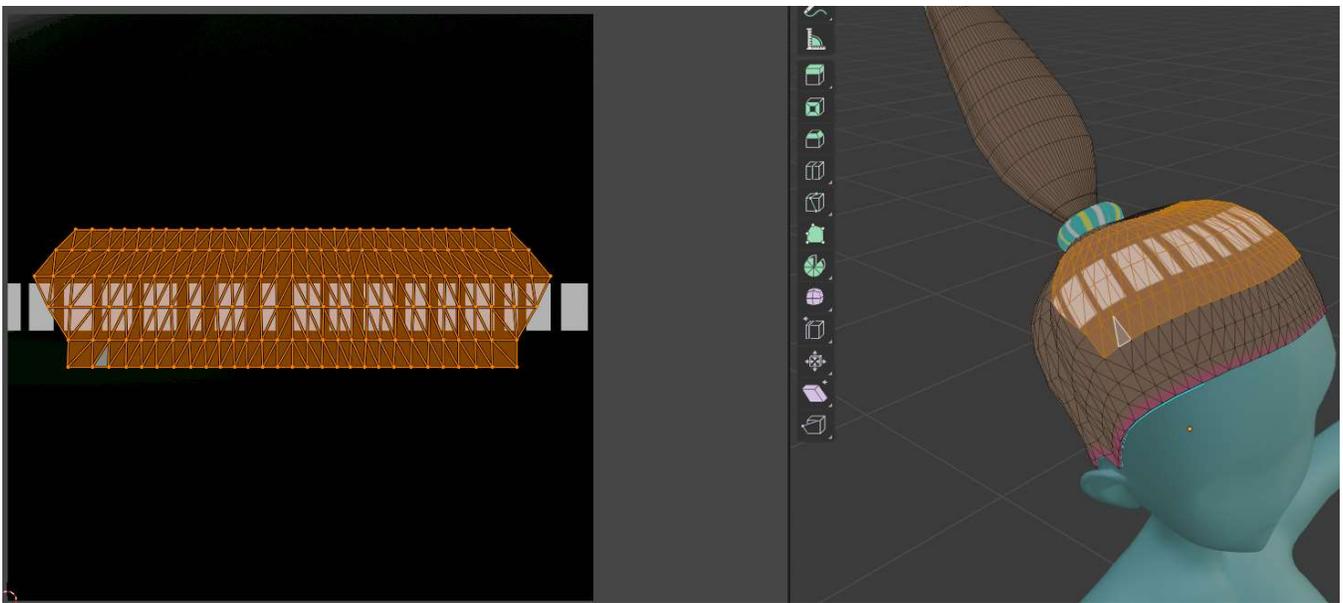
I don't know if there's any reason to rename them. But now you can go back and set the material's UV Map node to the new UV map. Then go into UV editing, on top of the hair gloss texture. Make sure you're editing the new UV map.



You can just move stuff around, and you should see only the hair gloss texture move on the model because it's the only texture that uses these UVs. It is fine to overlap them, or they can go off the side of the image and the tiling will make the hair gloss still cover them.



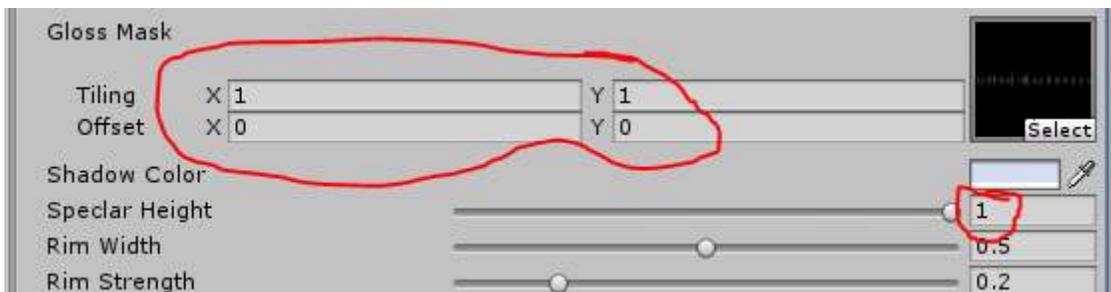
But you may have trouble getting the hair gloss to have the look you want without redoing the UV unwrap completely. I don't know if it's possible to literally not have the whole hair unwrapped, but what you can do is with your cursor in the corner and the pivot point set to the cursor, scale all the UVs to zero. Then select just the faces of your hair that you want unwrapped, and unwrap those. Move/Rotate/Scale as needed to get the hair gloss exactly where you want.



In case someone wants change the hair gloss tiling a bit with ME, it's good to have extra faces above and below the line. Anyways, rebuild the item in Unity and you should see the specular in the right spot, but it might look crooked.



This is something to do with Specular Height when it is less than 1 (which is how you get the slightly-moving hair gloss). You're probably supposed to mirror the UVs so it goes up on both sides instead of up on one side and down on the other. I'm just going to leave my Specular Height at 1. Also, if for some reason you want to tweak the tiling of the hair gloss in the same way it's done in ME, you can do it on the material, but I recommend you get it where you're happy via the UV unwrap.



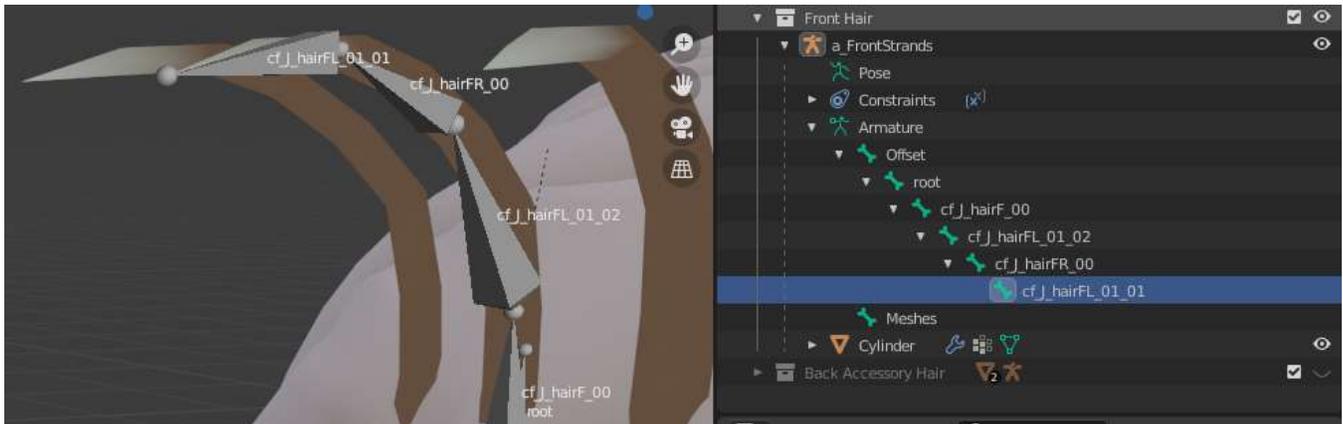
That's it for hair gloss. I'm not going to do it for my Front Hair.



## FK Posable in Studio (Hair Only)

For hair to use game's FK system in Studio, hair must use specific bone names that the game has registered (you don't make a bone list like for Studio Items). The names for these bones are found at **abdata/studio/info/00.unity3d** under the **Bone\_00** asset. They seem to be grouped for front, back, and side hairs (and other stuff for posing a body), so make sure you pick the right ones for the type of Hair you're making. It apparently breaks Studio if multiple items on a character use one of these bone names, and they must not be used in Accessory Hair.

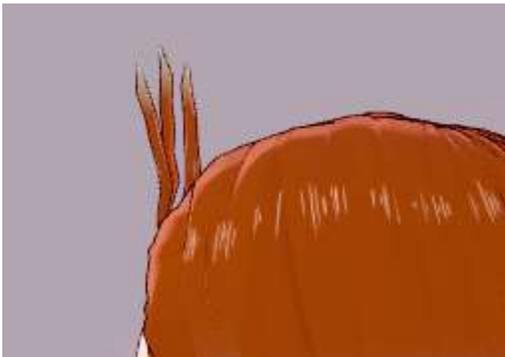
So to make my Front Hair posable, I have given the bones some new bone names.



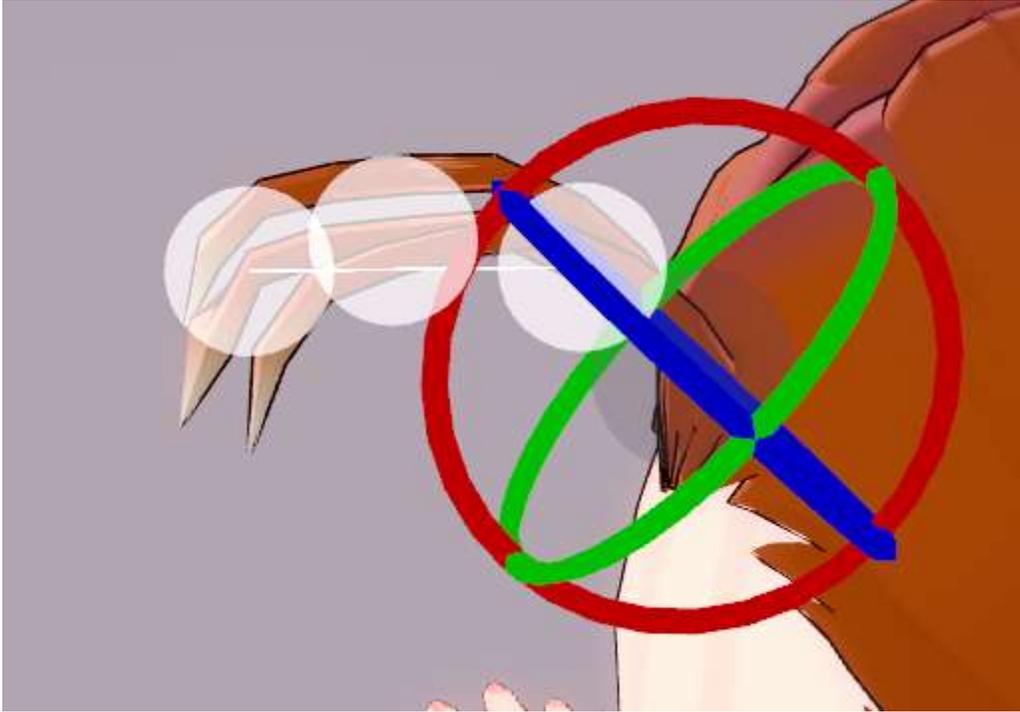
Why did I pick this crazy combination of bone names? Just to show that you can mix and match them if you need to, like if you have a 15-bone long chain (I haven't actually tried this, assuming it will work). You're just limited on the total number of bones. So, build the item; nothing else changes. Save it on a character in Maker.



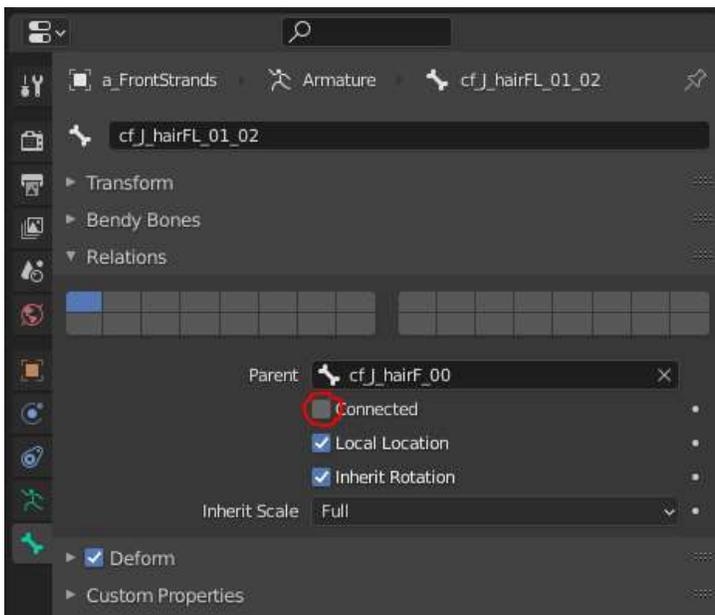
Then load up Studio. But there's something wrong with the bone rotations.



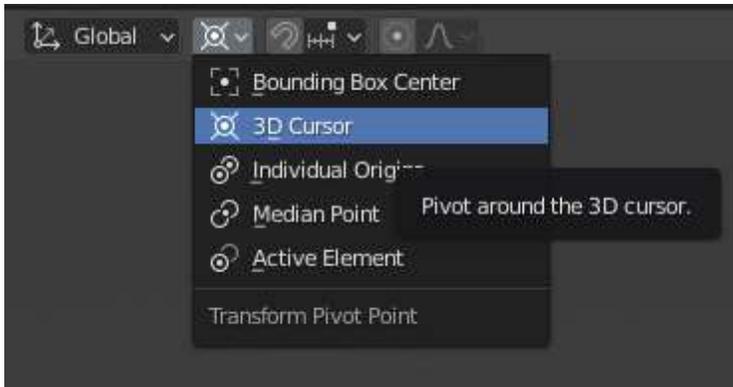
But they are FK posable.



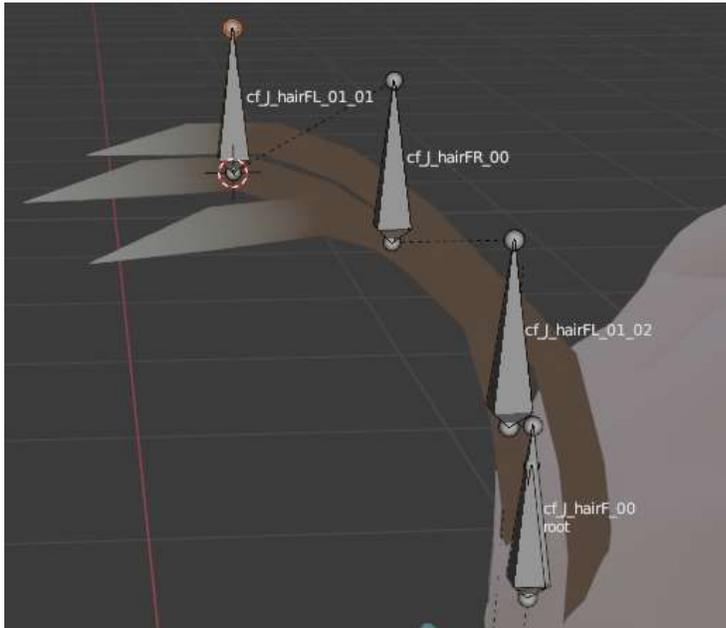
As far as I've been able to figure out, it's something where the game says "oh let me straighten out these crooked bones for you". The fix I found is to make the bones (just the FK ones) vertical in Blender. So first you need to go through each of these bones and make them not Connected to their parent, or the rotation part will cause problems.



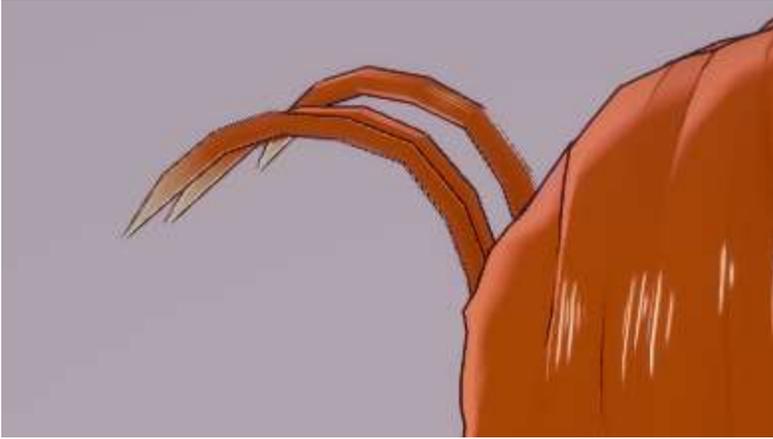
Then make them all perfectly vertical with no roll in Edit mode. There might be some better way to do this, but here's what I did: first make sure you are using Global transformation, and have cursor as the pivot point.



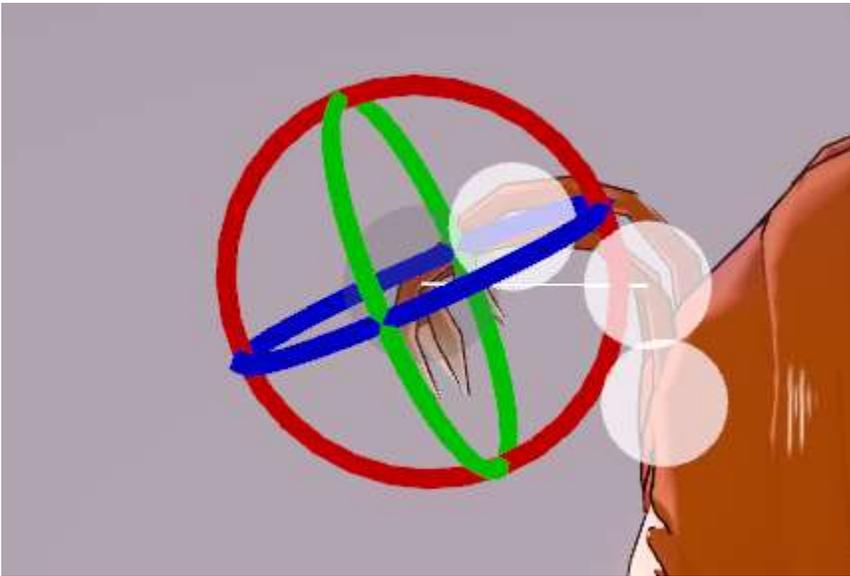
Then for each bone, select the head (base) of the bone, Shift+S=>Cursor to Selected. Then select the tail of the bone, and scaled (S) on X/Y plane (Shift+Z) to zero (0). This moves the tail of the bone to perfect vertical alignment with the head. If you have any upside-down bones, move (G) the tail straight up (Z). I don't think the resulting size of the bone matters. The bones should be like this when you're done:



Remake the item. You can go straight into Studio and load up the same character, but for final testing you should check everything starting from Maker and making a new character with the item. Bones aren't funky anymore.



FK still works.



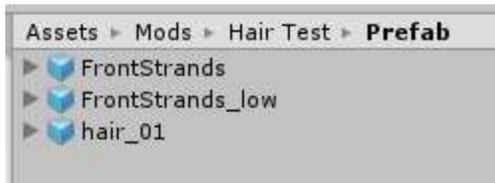
### \_low Version (Hair Only)

Accessories do not use a \_low version, so Accessory Hair does not either. But Hair does. For this reason, Hair is a little extra work to fully make (but not as much as clothes). \_low Hair usually uses the same mesh, just a separate material with lower resolution textures (512x512 max) and the **Shader Forge/main\_hair\_low** shader (for built-in hair accessories, Shader Forge/main\_item\_low). The \_low version is assigned to the AB, but not recorded in the list file. The naming of the following parts of the \_low version should be exactly the same but end in "\_low":

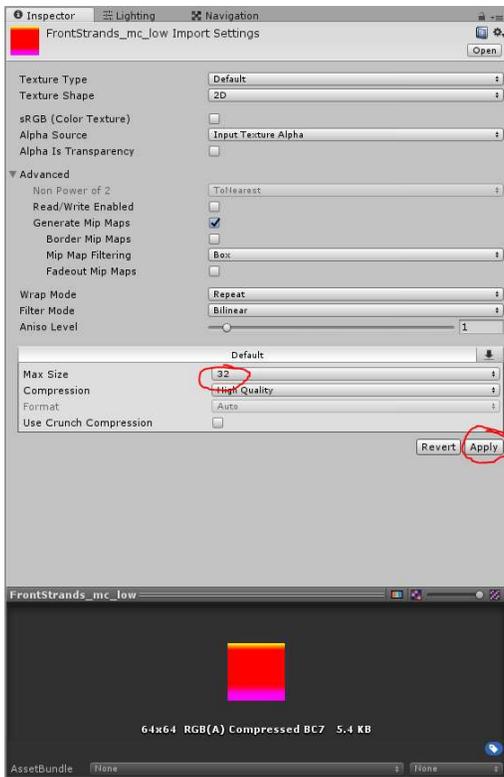
- the prefab name
- material name
- texture names

To properly test your \_low Hair, you need to create a character with your item (color it) in Maker, then transfer her into your school in Story Mode, then find her (use F4 menu). Make sure you have Force High Poly plugin off. If your item does not show or has the wrong colors, there's something to fix.

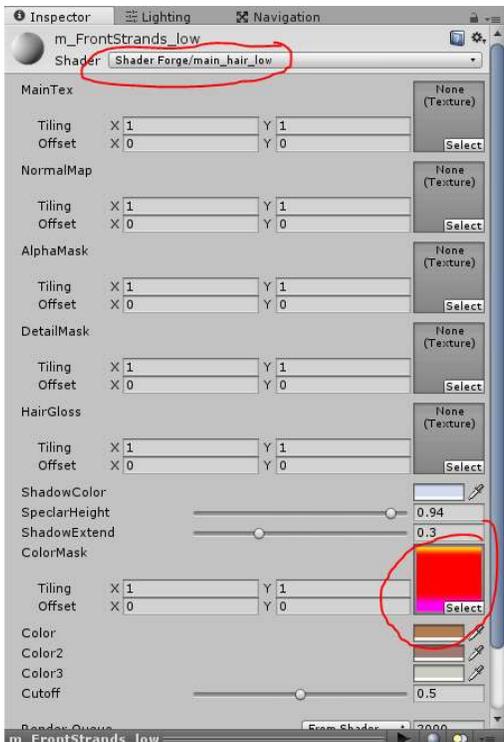
So I duplicated the item's prefab, and renamed the new one FrontStrands\_low.



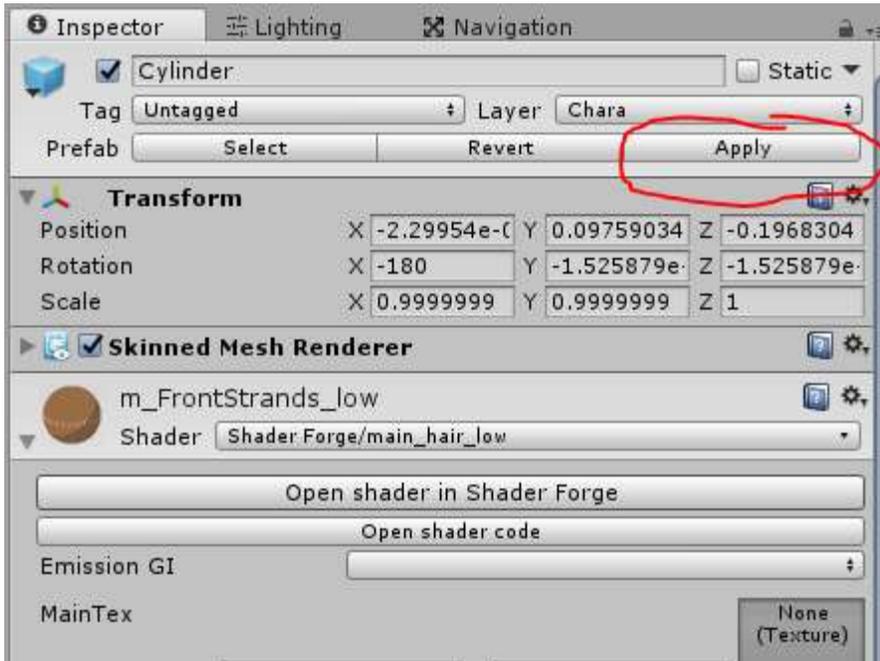
It is automatically assigned to the same AB as the original. The MBs automatically reference the duplicate's stuff, so they don't need to be changed. But what you do need to do is import lower resolution versions of your textures or duplicate them and make them smaller via import settings max size. Mine was 64x64, so made \_low version 32.



Duplicate the material and change it to the \_low shader, and change to the \_low textures.



Make a prefab instance of the \_low prefab, drag the \_low material onto the mesh's GameObject, then Apply the changes to the prefab and delete the prefab instance.



Rebuild the AB and Zipmod, then test it as described earlier.

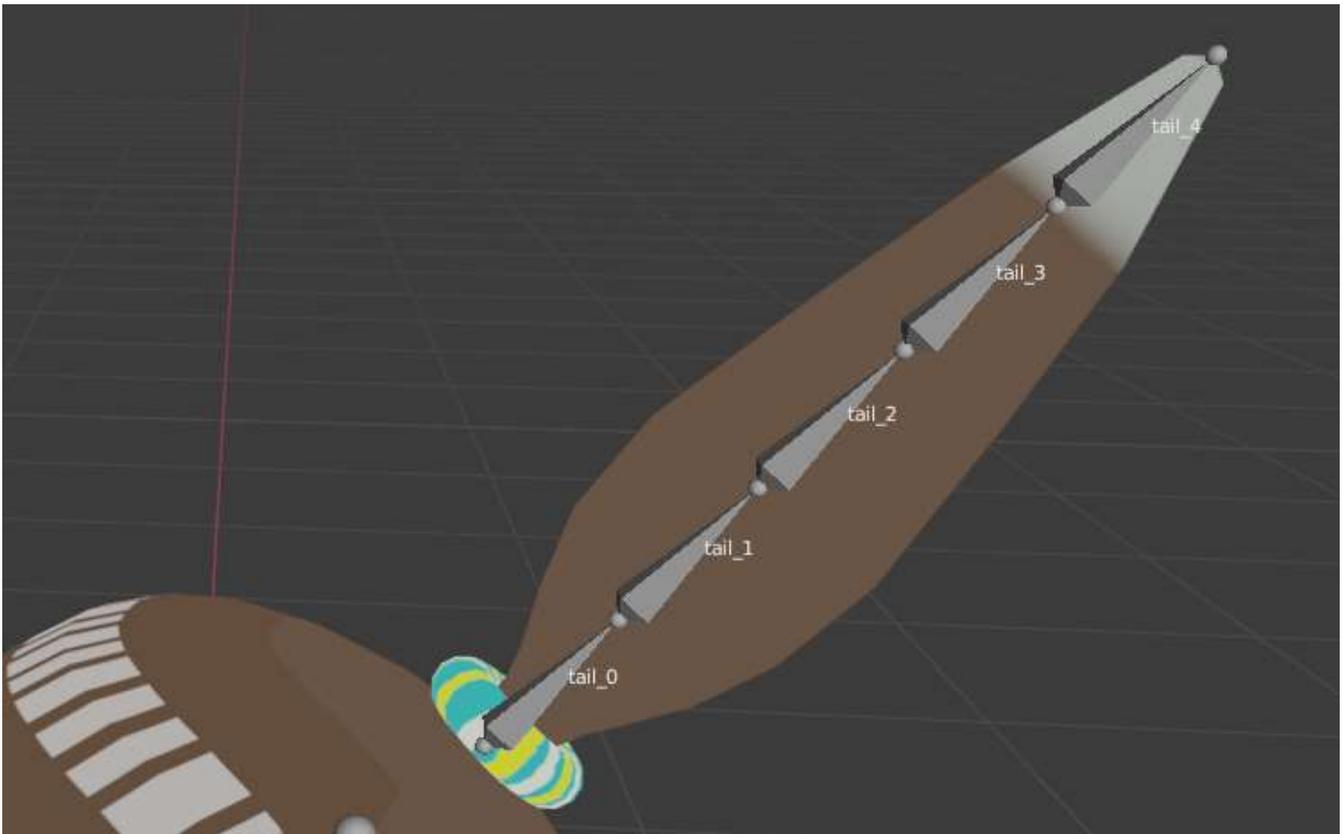


### Adjustable Length (Front Hair and Accessory Hair Only)

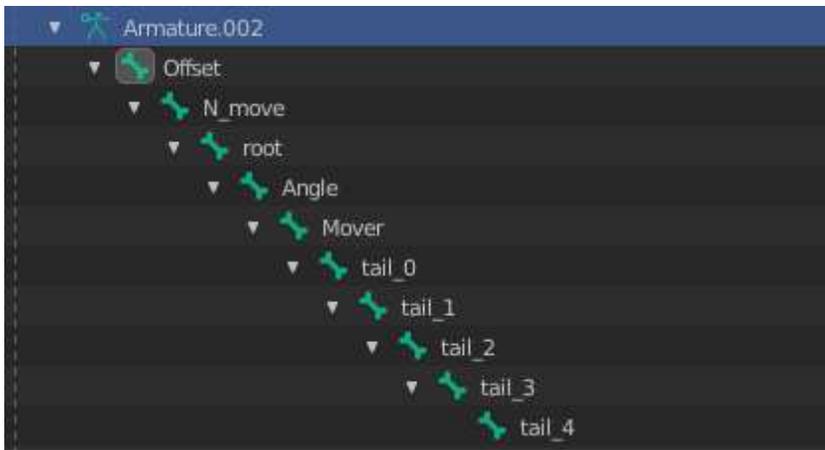
You can make items with adjustable length, like the game's Front Hair. Note that this moves bones, which in turn stretches the mesh and the textures with it, so you should only do it in small amounts or make your item in a way where it won't look noticeably stretched. Specifically, it moves bones on their local Y position (in Unity coordinates). So if bones are in line with each other like my Accessory Hair, it basically is the the same as lengthening the previous bone. But when bones are not in line with each other like my Front Hair, it might go at an angle that you don't want. You can work around this problem by inserting an extra bone as the parent.

The real limiting factor for how you are able to lengthen your hair is that DynamicBone has priority over the adjustable length; the bone will not move if it is in a dynamic bone chain. For this reason you'll see the adjustable part of the hair pretty much always right before the dynamic bones.

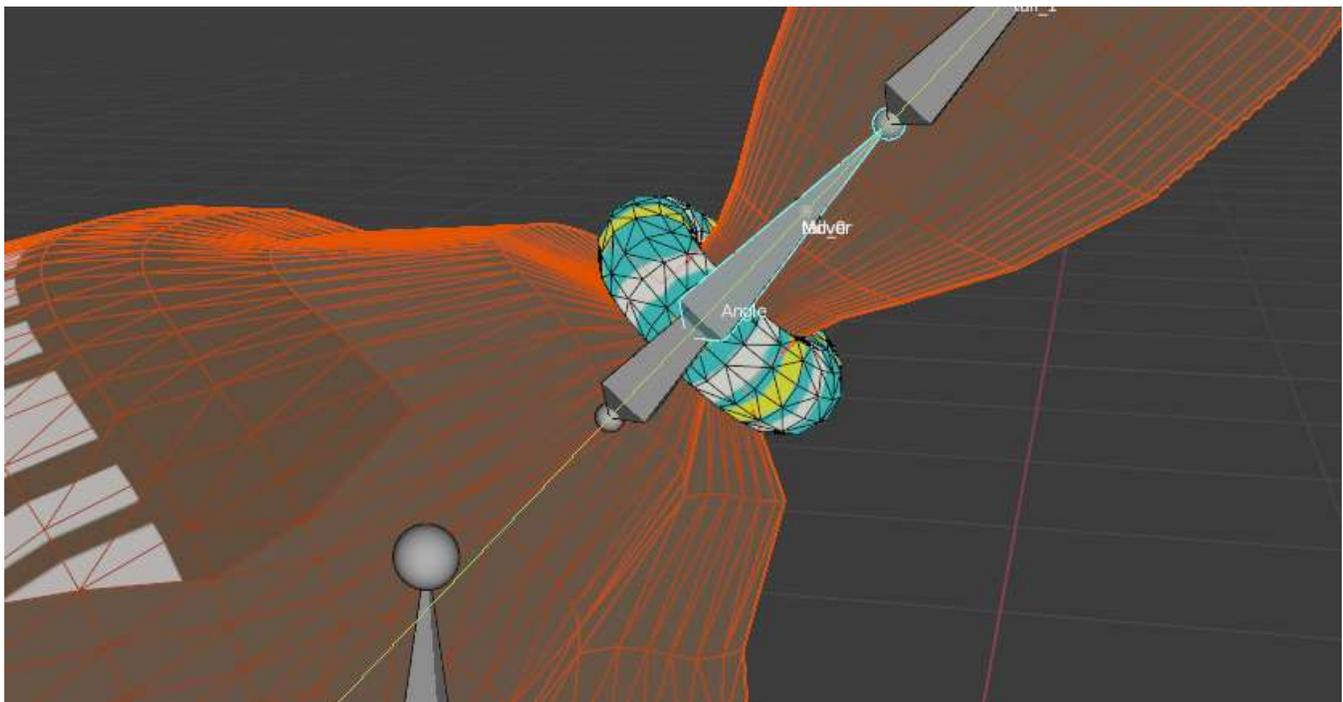
Neither of my hairs are very good for adjustable length. The Front Hair I like how the whole thing moves and don't want to change that. I'd like to be able to make the ponytail of the Accessory Hair longer, but it can't be done without taking dynamic bone off at least one of the bones. Instead I will make it so you can pull tail\_0 out a little farther from the head.



So to do this, but still have tail\_0 be a dynamic bone, I need to insert a bone to be its parent and move that instead. And that parent needs its parent rotated the way I want it to move. I could rotate my root bone for that part, but I'll just make another bone. So I duplicated tail\_0 twice, and called one of the bones Angle and the other Mover. Then fix the parenting.

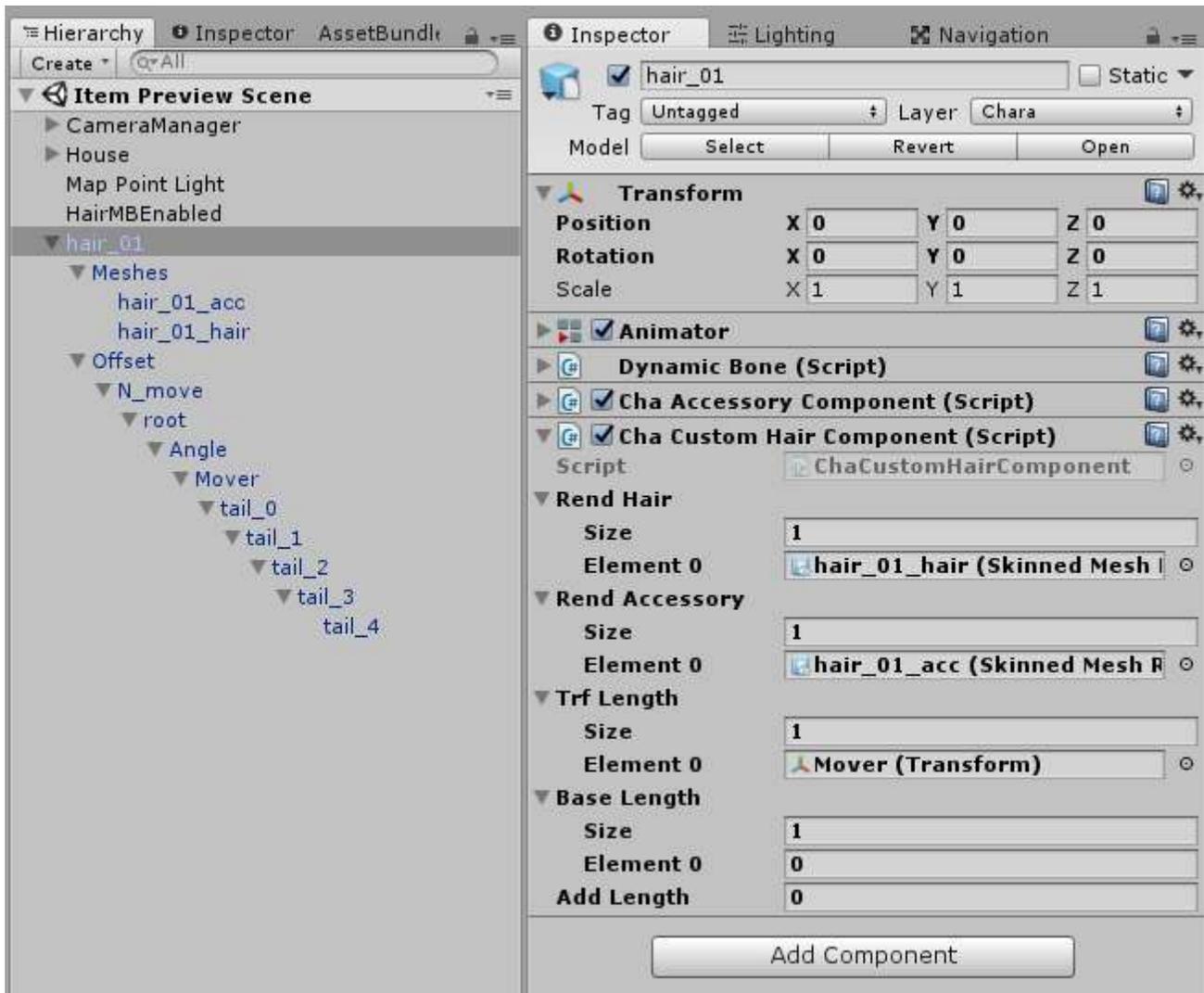


You can move your new bone in Pose mode on the local Y axis for a preview of how it affects things. I turned on the wireframe overlay to have a better idea of how it will stretch the mesh.

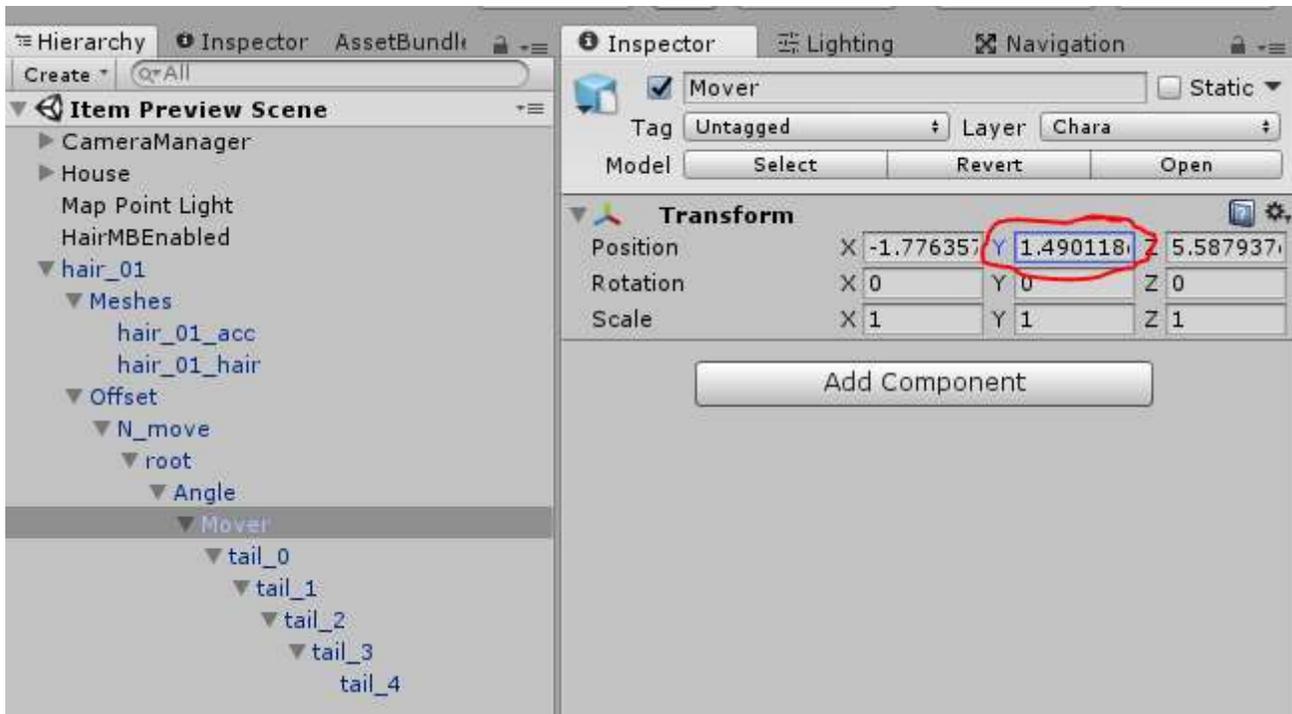


You may decide you want to change the angle: do it in Edit mode. Or you might change the weight painting. There is no need to do weight painting for the new bones; in my example it is the same as adjusting weight painting for root and tail\_0.

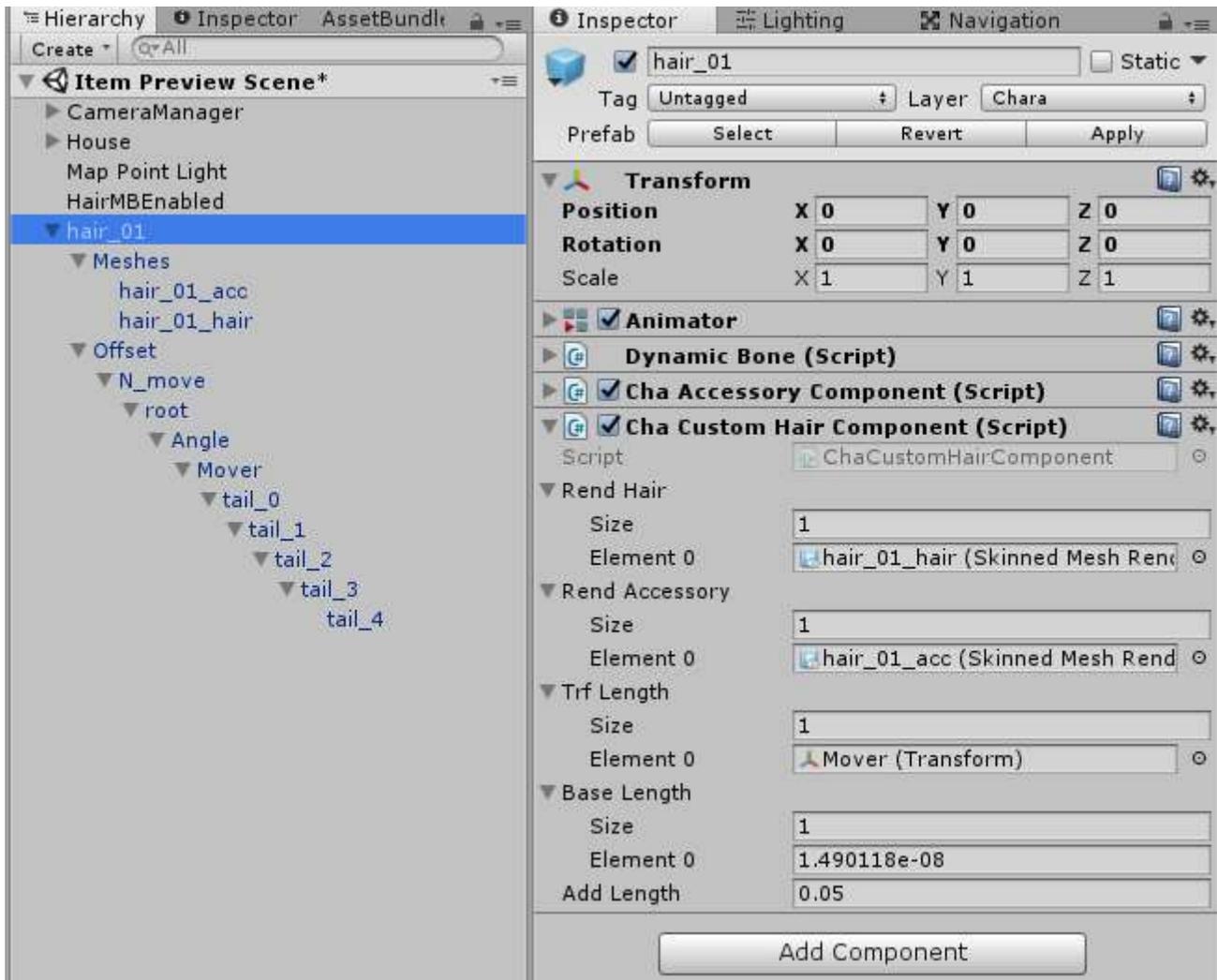
So when you're happy with it, start remaking your item. On the Hair MB set the size of trfLength to the number of Mover bones you're using, and then drag them in from the Hierarchy. Also make baseLength the same size.



The values for baseLength need to be the corresponding local Y positions of those bones, so go to each one in the hierarchy and copy the Y position.



The last thing to do is decide how much you want your Mover bone(s) to grow (maximum, based on slider in Maker). If you don't have any scaling on your bones, 0.01 seems to be 1 cm. So if I put 0.05, it will move 5 cm at maximum slider. Keep in mind this a player customization option, so it is fine to make it farther than what you think will look good. If whoever is using your mod doesn't like it that long, they won't make it that long.



One more thing: at the time of making this guide, there is an issue in KK Modding Tools where you can get a null reference error that disables your MB. The only thing I've seen this cause to not work is adjustable-length hair. This checkbox is empty if the MB is disabled:



But part of the problem is you may not have the checkbox so you can't even tell if your MB is disabled. The experimental fixed version is currently posted in #mod-modelling. I think you can also get it working if you directly copy the Hair MB from one of the examples (and don't do anything that causes the error), but I didn't specifically test that.

But anyways, finish making your item. Here's how mine looks at 0, 50, and 100 Length. It would probably look better at a lower angle and with some smoother weight painting.

