A1 Documentation: Character Modelling and Sculpting

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Concept development

I knew immediately that I wanted to create a wizard/mage character, with a wide witch hat. I wanted to give him slender limbs and a youthful appearance, with a long scarf.

I sketched a quick design for my character, named Feyn, posed to show his personality. He has a short face, with a cheeky expression and light freckles. He wears a shirt with folded sleeves, tucked into flared shorts. He has pointed boots, a witch hat, and a long scarf.

- Occupation: Magical student
- Eyes: Upturned and dark brown
- Personality: Playful and easygoing, animated and lively. Mischievous, can be dense

- Build: Lean and lithe
- Skin: Periwinkle blue
- Hair: Light blonde, fluffy
- Attire: Casual clothes with a scarf, pointed boots and a witch's hat

His colour palette consists of saturated cooler tones, centering around his pale blue skin tone. With these colours, I decided to make him a magic student, and deviated from my original idea of a forest elf learning magic from nature.

In retrospect I could say his design is based on two characters - Taako from the D&D based podcast The Adventure Zone, and the Breath of the Wild iteration of Link. I was inspired by

Taako's skin tone and hair colour, and my character's build and hairstyle are similar to Link's.
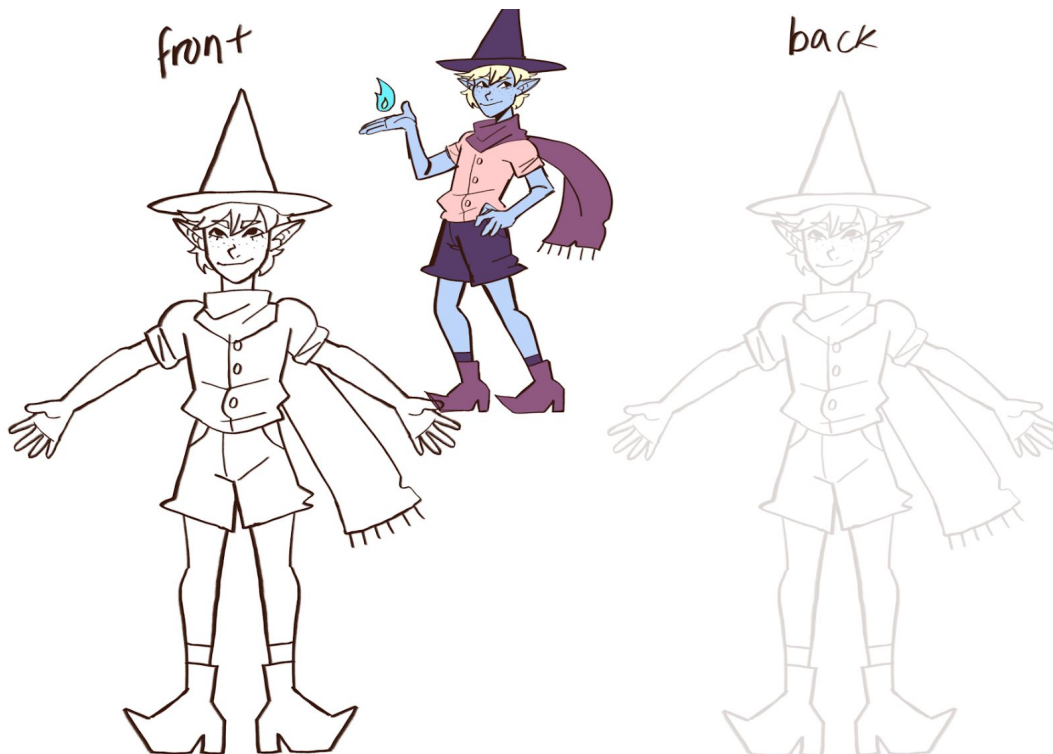

[Taako from The Adventure Zone](#) (graphic novel)   [Breath of the Wild Link](#) (official art)

Model sheets

Before starting my model sheets, I made two small changes to Feyn's design, adding buttons to his top, and dark socks to add extra detail.

For the model sheet itself I simply used my sketch as a reference to draw Feyn in an A pose, duplicating and flipping the lines for his arms and legs.

I used Clip Studio Paint, and used a 'chalky' textured brush, in dark brown.

front   back
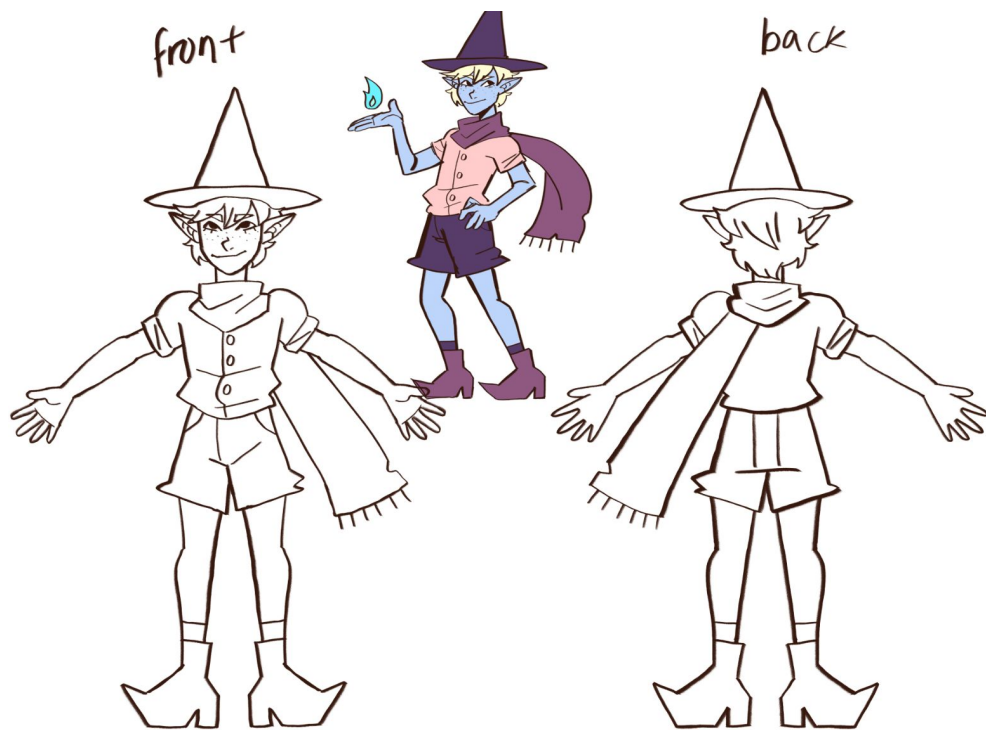
For the back view, I duplicated the lines of the front view and flipped it horizontally, then traced these lines, making changes like the scarf being in the front, and drawing his head of hair. I also reused lines of my arms and legs for the back view.

The side view was the trickiest, but I used the front view's lines as a guide for proportions, and used my prior understanding of anatomy to fill in the rest.

Lastly I filled in my lines with colour, sampled from my sketch, and added a grey background just for better visibility.

Next I made my bare model sheet. I traced over my clothes reference to create this, and filled the lines with his skin colour.

Base mesh
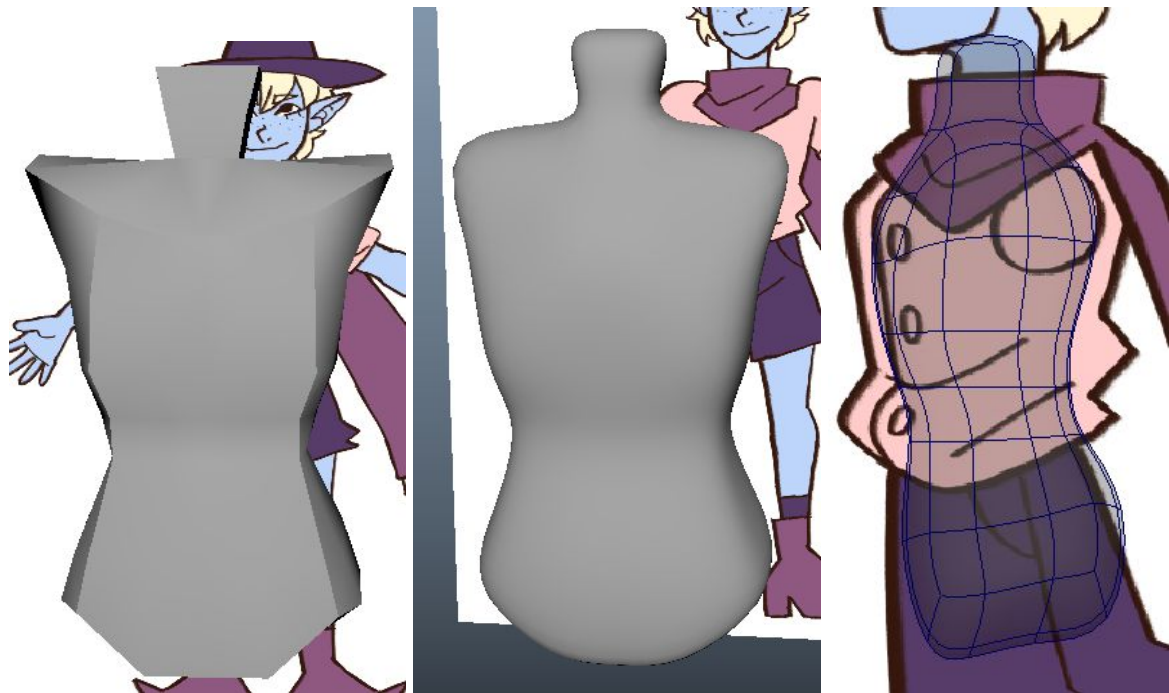
I started with the torso, using my model sheets to create a basic shape, then exaggerating features like the shoulders and the waist. I also extruded a simple neck.

I then made the arm with stylised proportions, giving my character large forearms, and a thin wrist and elbow. For the fingers I used the extrude tool to create 4 rectangles, then shaping and resizing them as needed. The thumb I built off the arm, starting near the wrist.
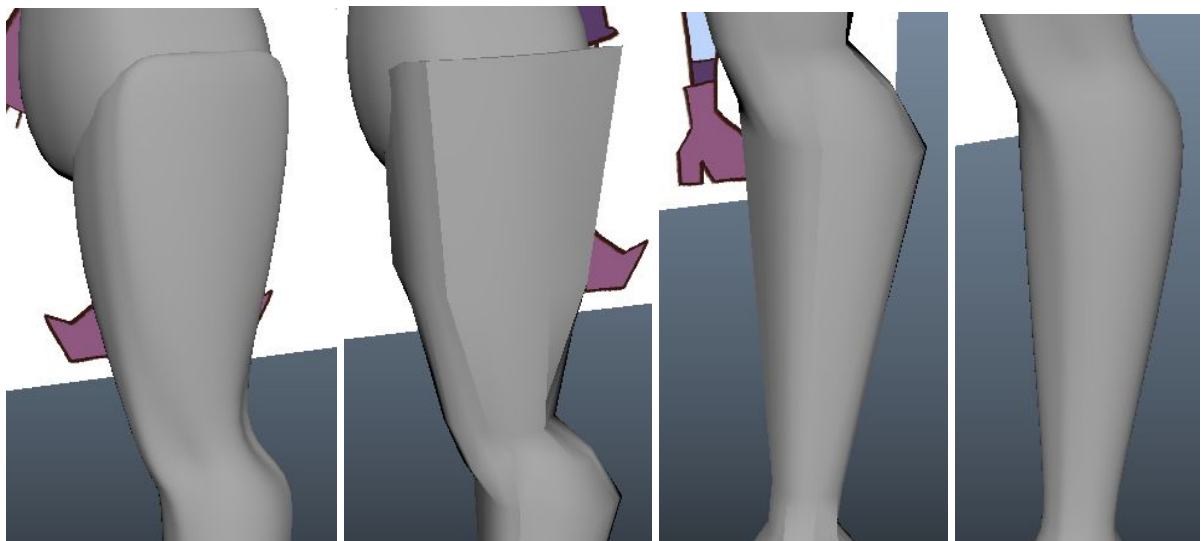

After a failed attempt of extruding the legs from the torso, I made the legs as separate objects, starting with the thigh. I then used the extrude tool to make the lower part of the leg, exaggerating the backwards lean of the leg.
I later went back and created dimension for the knee, and the divots at the back of the knee. I added extra edge loops to round out the leg, and make the calf muscles less severe.
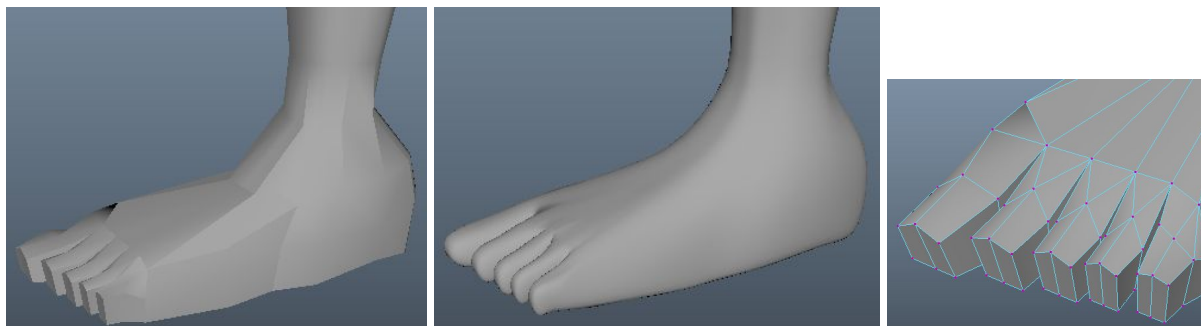

Making the foot was generally easy, extruding from the base of the ankle to make a triangle shape. However adding the toes was a bit harder, so I created 5 separate squares, and shaped them into toes. To connect them I used mesh > combine for the 6 objects (leg + 5 toes), then deleted the inside faces, and used the target weld tool and the merge tool on vertices to join everything together. I also used the multi-cut tool to add extra edges.
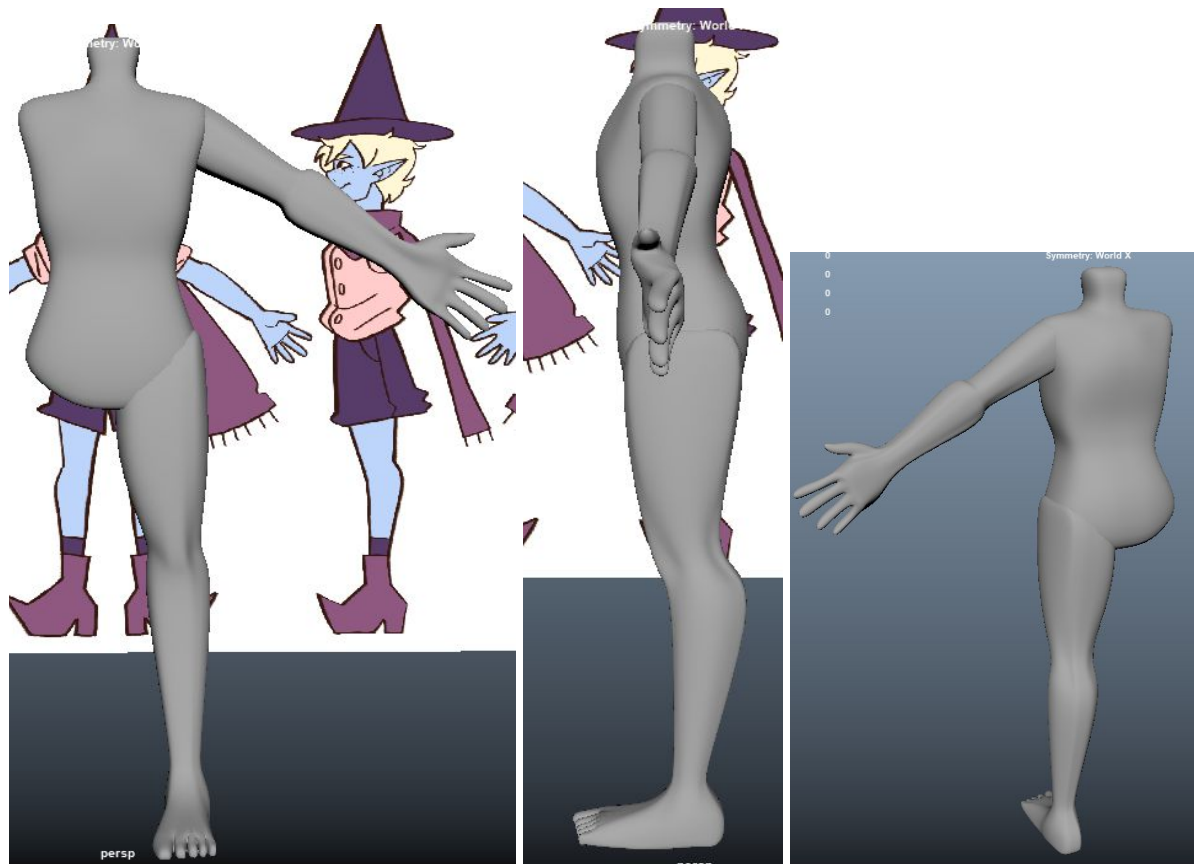
The next step was merging the arm and leg to the torso, to make it one complete mesh. So far I'm generally happy with this model, though I wish that I could've stylised my anatomy a bit more. However when I attempted to exaggerate proportions, I felt it looked too unbalanced.
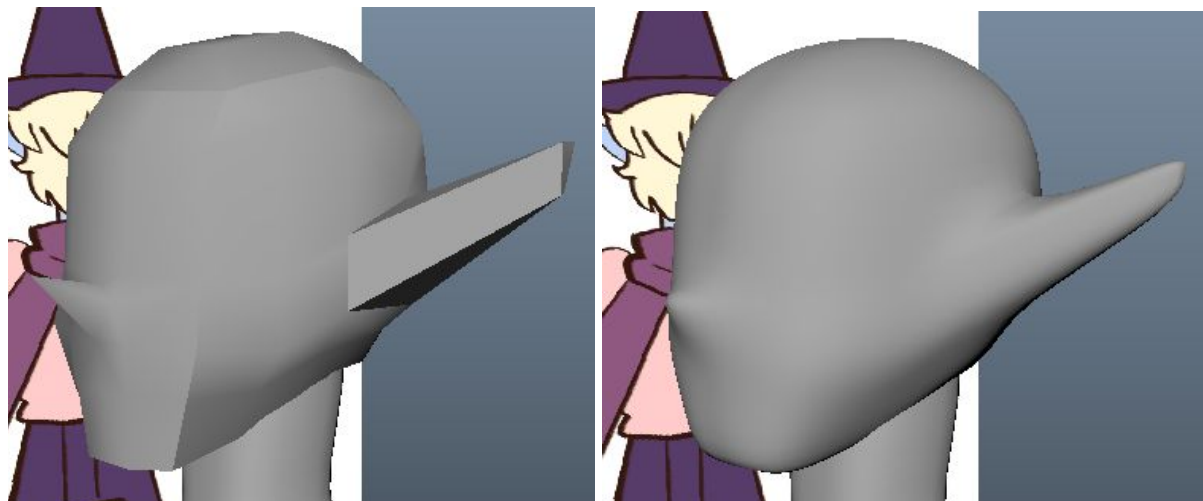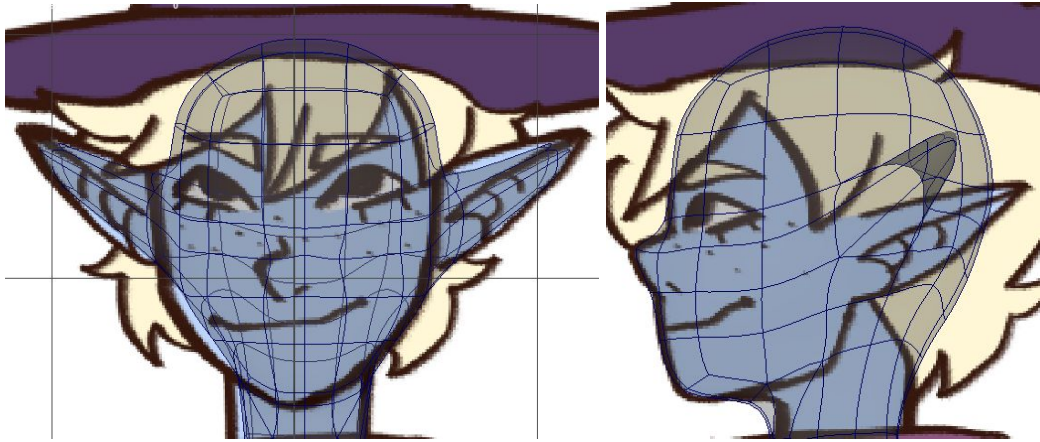
The head started with a cube, with many subdivisions to allow for stretching and rounding. I first matched the head shape of the front view, using extrude to create his ears. I then used the side view to define his side profile, and to create the jawline.
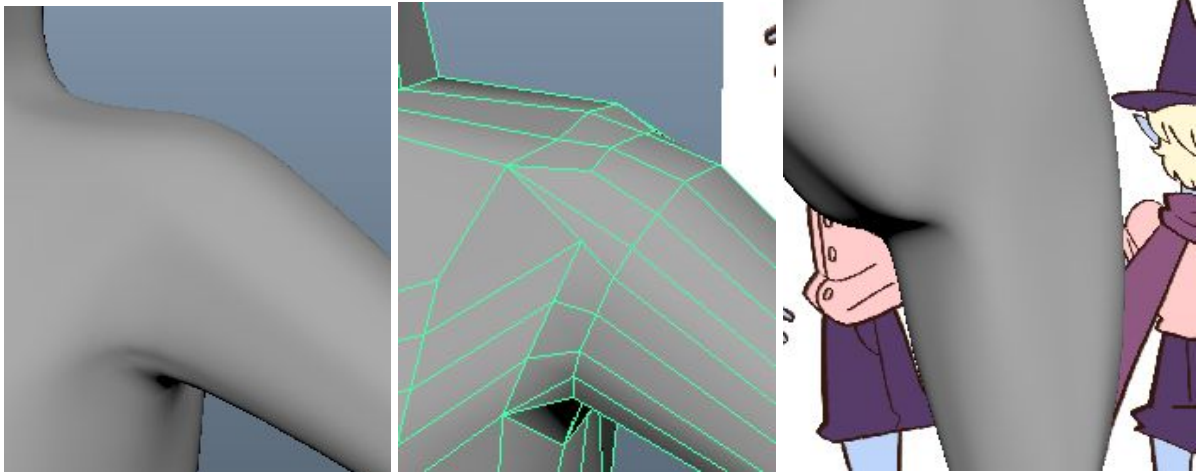
Next I merged all the limbs to the torso, starting with the arm. I used the merge and the target weld tool, using the multi-cut tool to make new vertices to connect the arm to. I also did the same for the leg. This process took a very long time, and required a lot of manual cleanup, and the deletion and creation of edges and vertices.

After merging the head onto the neck, I deleted half the torso to mirror it. However when I mirrored it, the neck had issues where the chin connected to the neck, seen in the 2nd

image. His crotch (3rd image) had issues where the thighs merged together when mirrored, so I knew there was something wrong with the mesh.
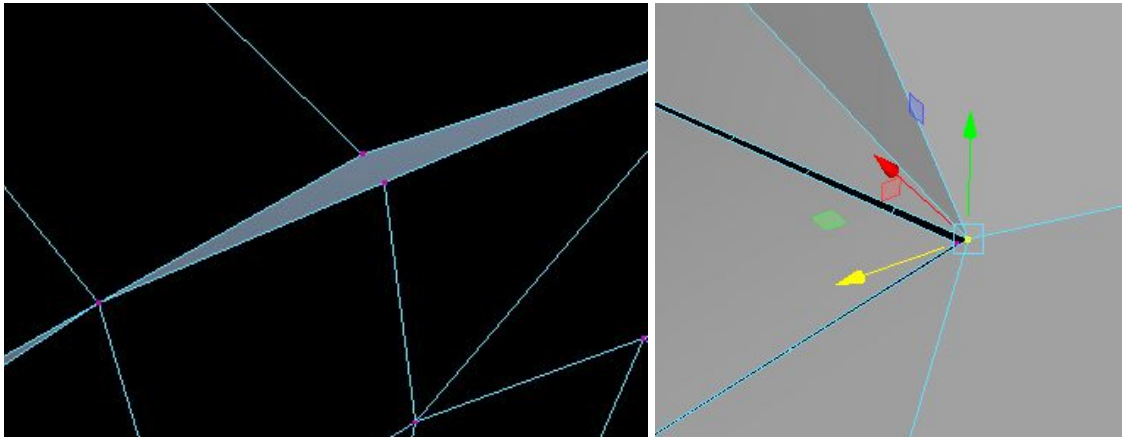

I first used the cleanup tool in an attempt to fix my mesh, but when mirroring still had the same issues I went in manually to test the vertices at every joint again. I first found a gap under the chin, with two holes in the mesh. Next I dragged the vertices around the arm to find many vertices which were overlapping each other. So when I found two on top of each other, I would drag one away slightly, then use the target weld tool to join them again.
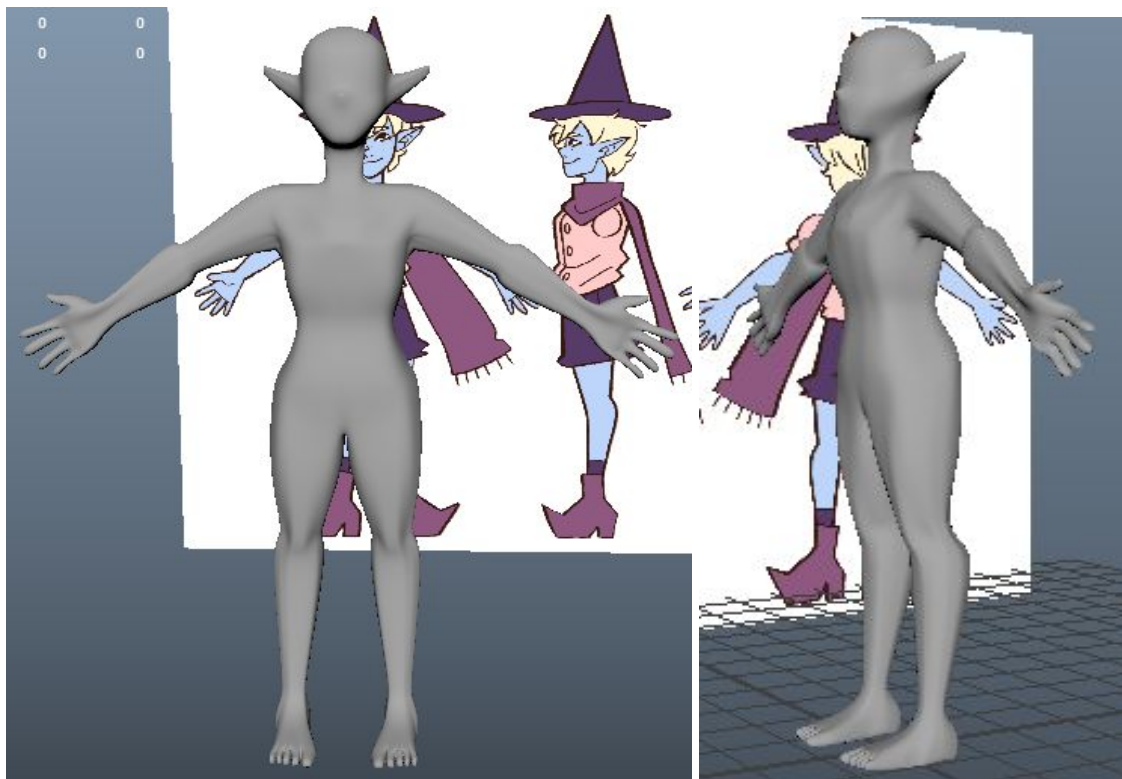
After thorough checking of every joint, I finally mirrored the model to a success! Some areas of his chest and back were strangely jutting out, though every attempt I took to fix this did not work. So after small alterations to his arms and waist the base mesh is done!

Sculpted mesh
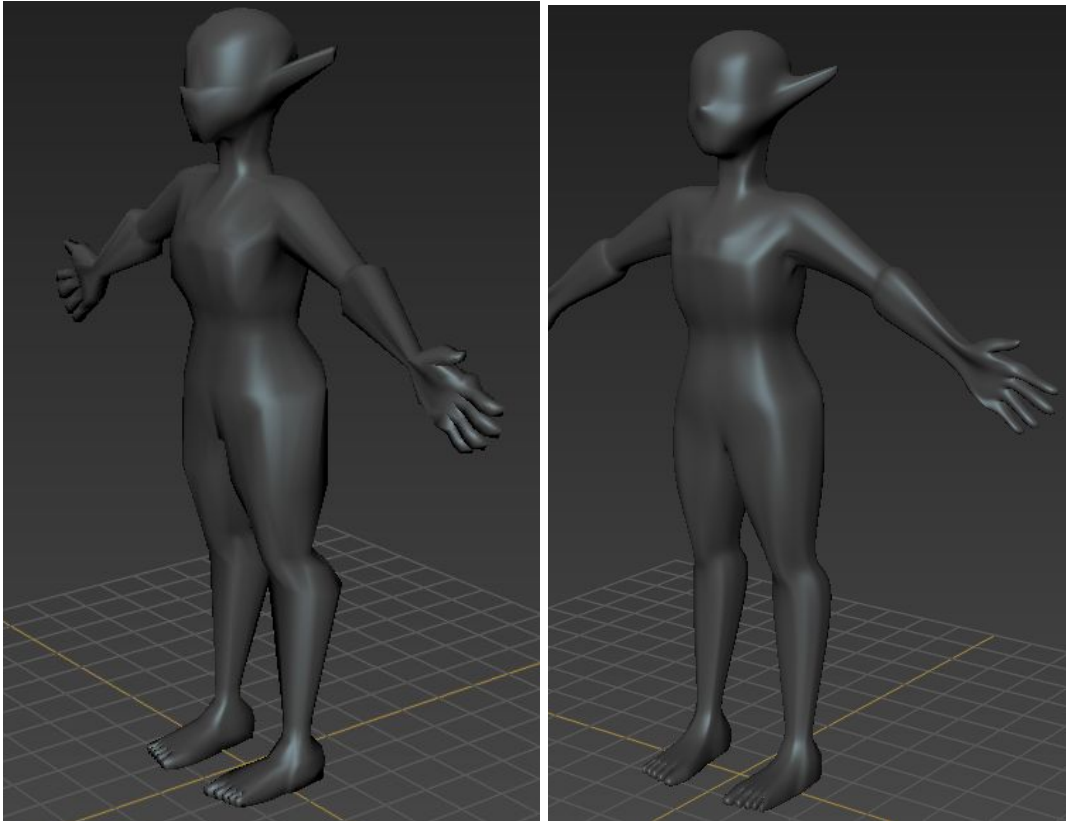
I sent my model into Mudbox after scaling my character by 150 as instructed in the tutorial notes. However I skipped the step about scaling the character in the y-axis by their height, as if I altered the scale to make him taller, my proportions appeared too stretched. I then went to level 3 of subdivisions, as I didn't see much difference between level 3 and 4.
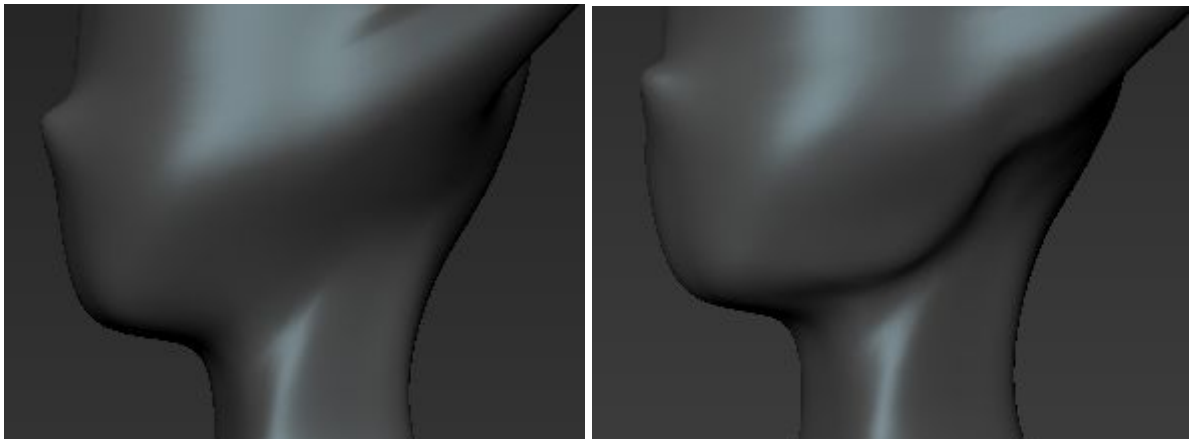

I started by defining his jawline, using sculpt and the smooth tool to add mass, and connect it to the ear, then using the smooth tool to make it less uneven.
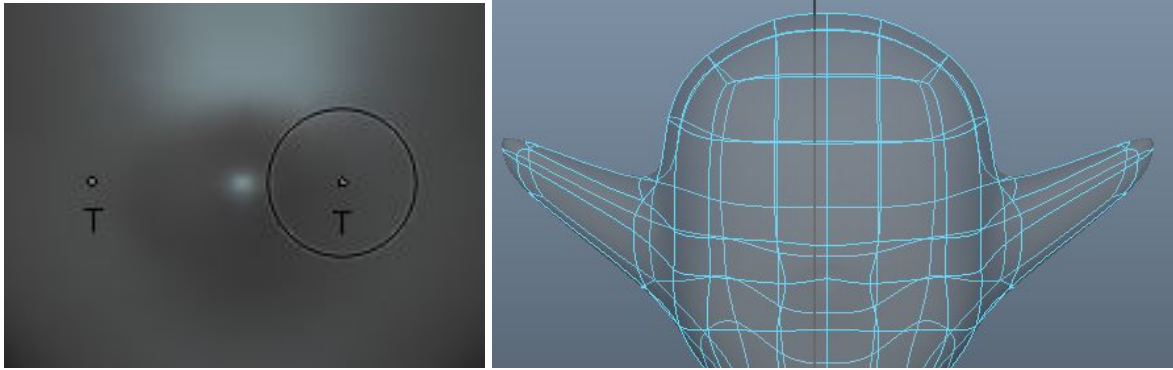
However after this I realised that the symmetry tool was uneven, so I went back to my Maya file and realised that my mesh wasn't centered. I moved it to the centre and sent the object to Mudbox. Now that my mesh is symmetrical, I repeated my jawline sculpting again.
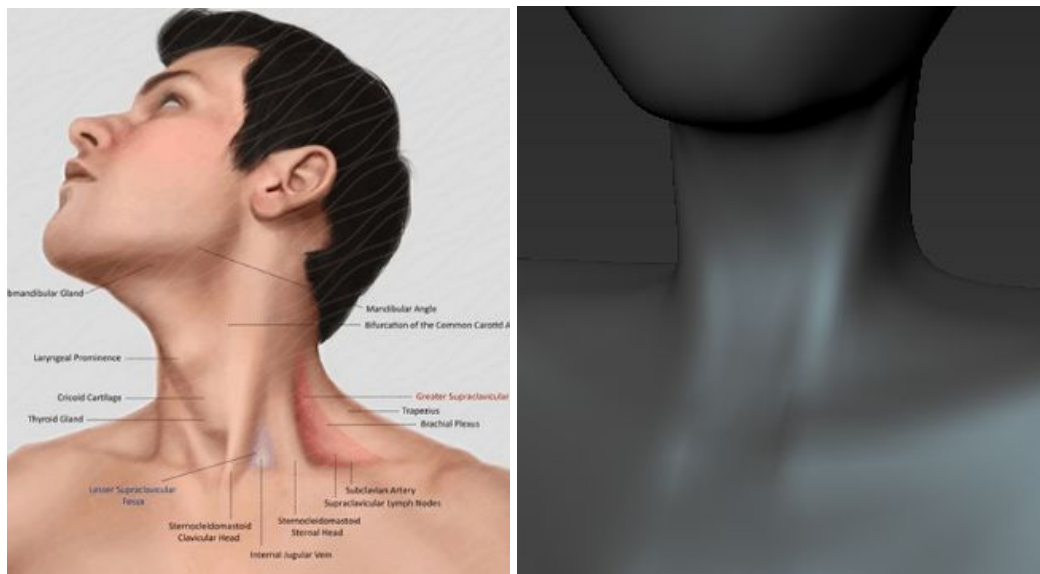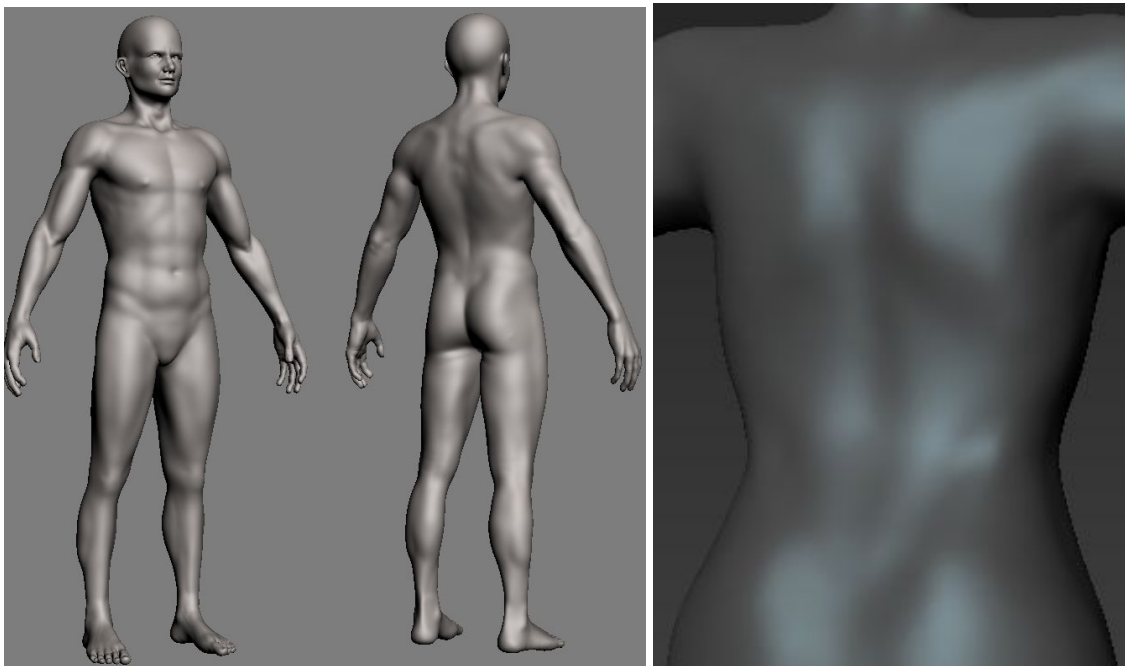

I used this reference image to sculpt his neck, using the smooth tool pretty heavily as I didn't want the neck to appear too muscled and realistic, to fit my own style and to emphasise the youthful nature of my character.
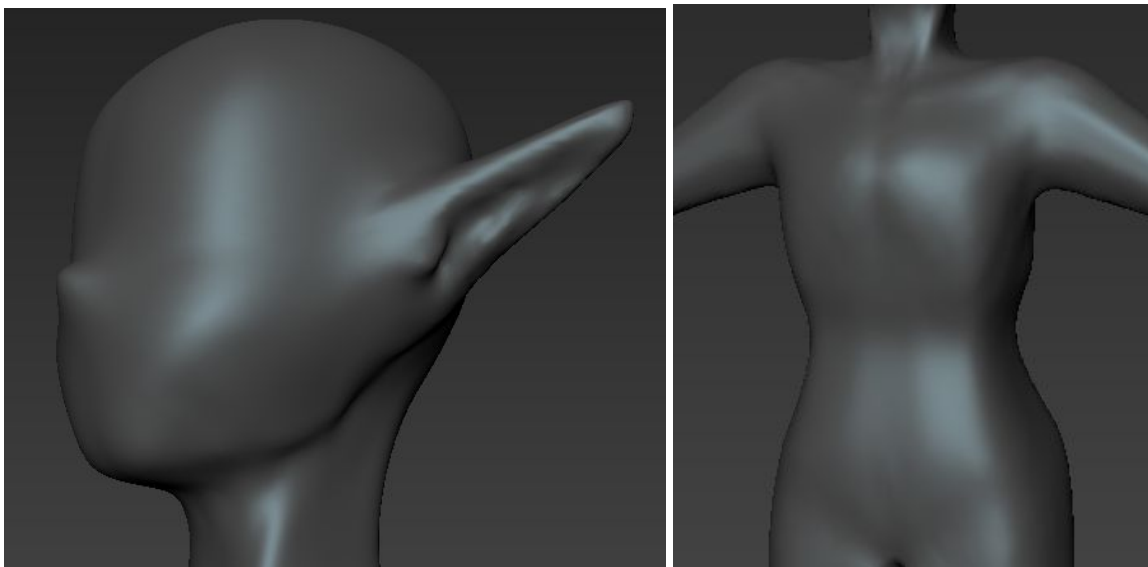
I then sculpted his ear, using the wax and smooth tool to create the indents, as I couldn't use the ear stamp due to his elf ears. I then added mass to his chest, though kept it subtle due to his scrawny build.
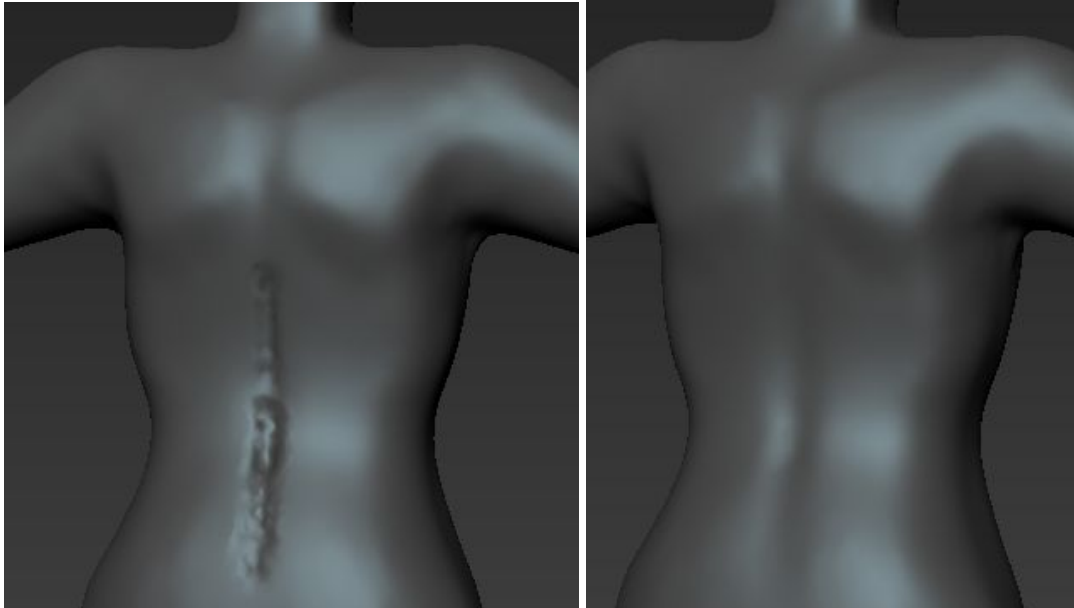

I sculpted his shoulder blades and the dip in his back, using the wax tool to make a harsh line, and the smooth tool to even it out.


Next I used this reference image of a 3d sculpted character to sculpt his back further, as I wasn't happy with my placement of his shoulder blades. I used the reference to bring the shoulder blades down, and make them longer. I carved more dips into his back, using the wax and smooth method again.
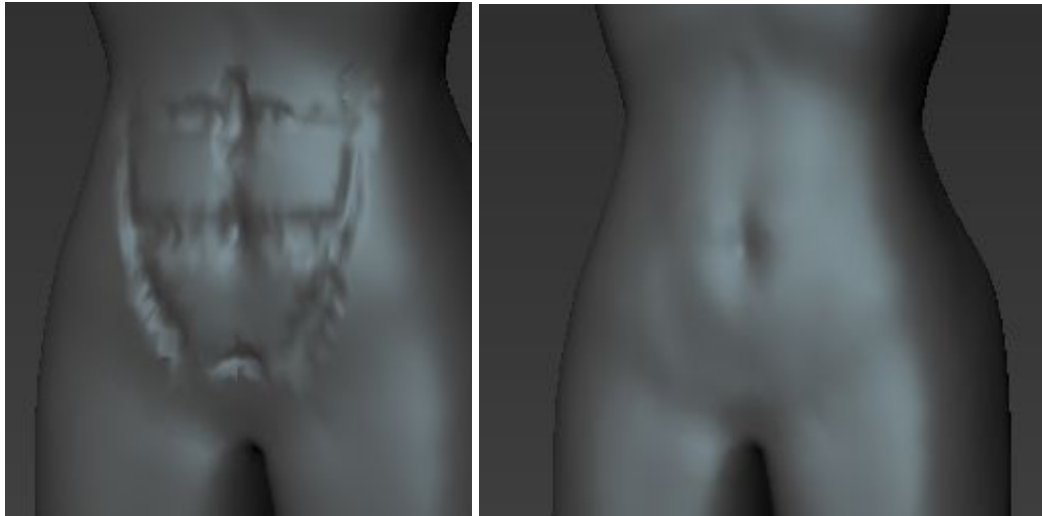
I did the same with his abdomen, using the wax tool to make a belly button, then tracing the lines of the abs before smoothing it out harshly.
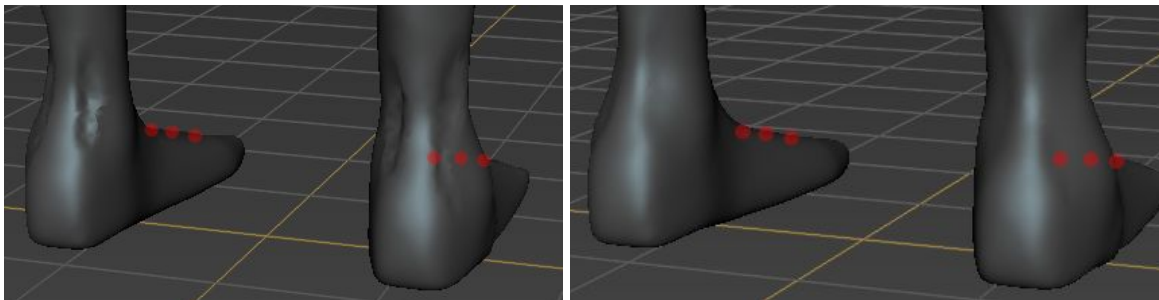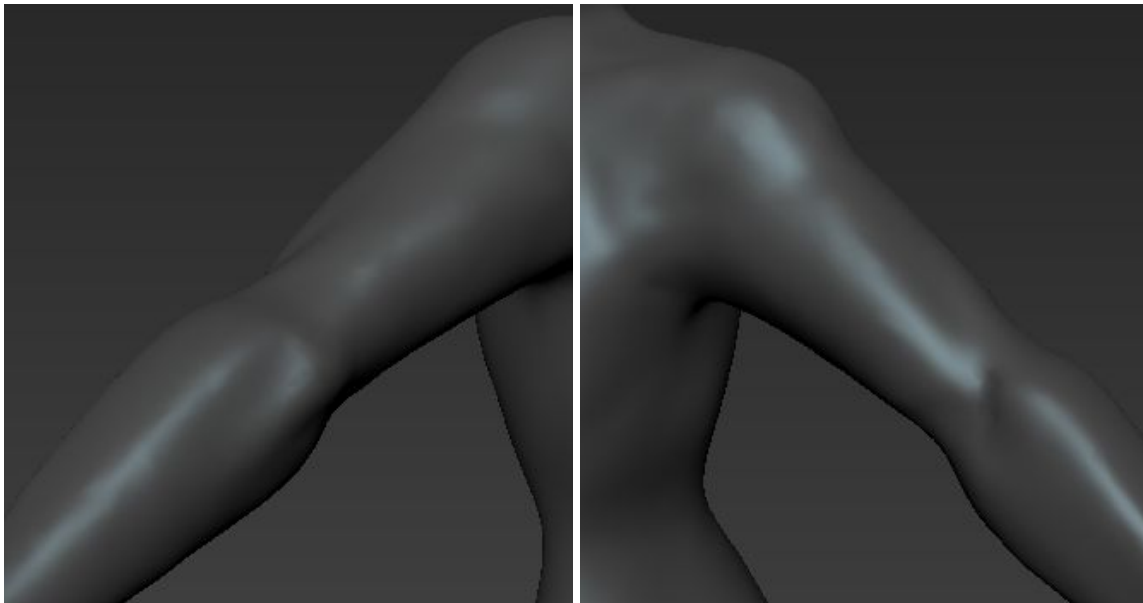

I defined the ankle area, sculpting the ankle bones and the dents near the heel.
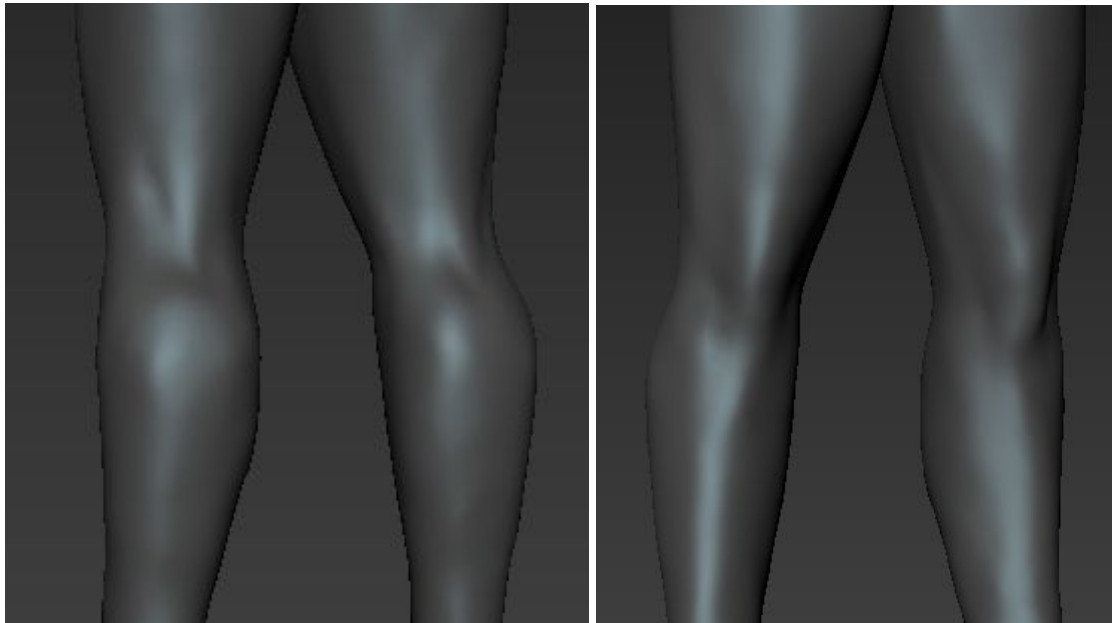
I used the same method to carve into the back of the knee, and define the thigh muscles connecting to the knee. I also added slight mass to the calves, though these are still very subtle in appearance.

I brought out the elbow to protrude further, and sculpted lines around the bicep and shoulder. Lastly I carved into the inside of the elbow a small v, similar to the back of the knee.
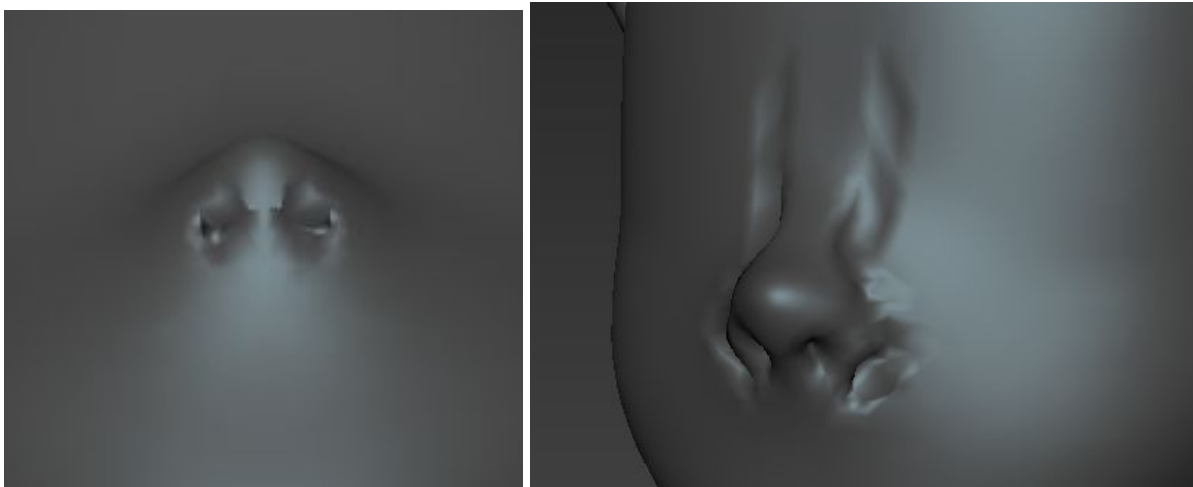
For the face, I began by using the wax tool to create two nostrils, then the smooth tool to shape it. I sculpted the nose to bring it out more, and carved into the sides of the nose bridge to define it.
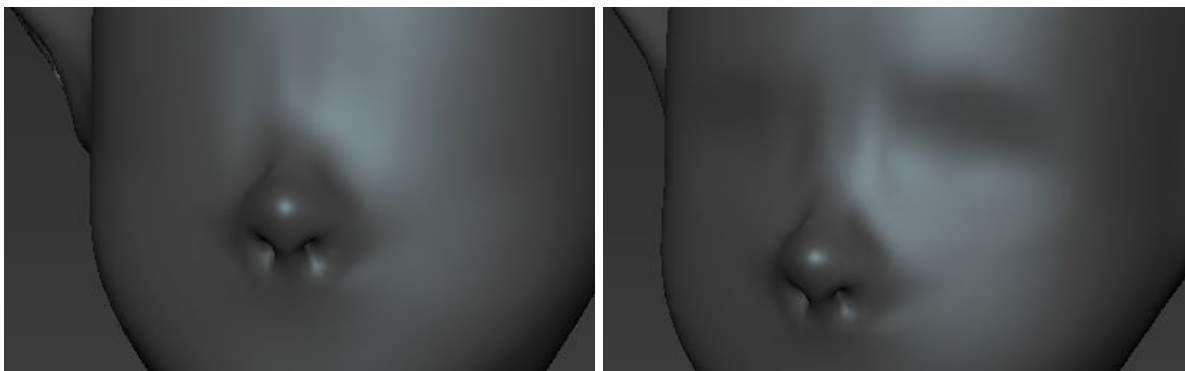

After blending the nose bridge, I used the wax tool to subtly push into the eye sockets.
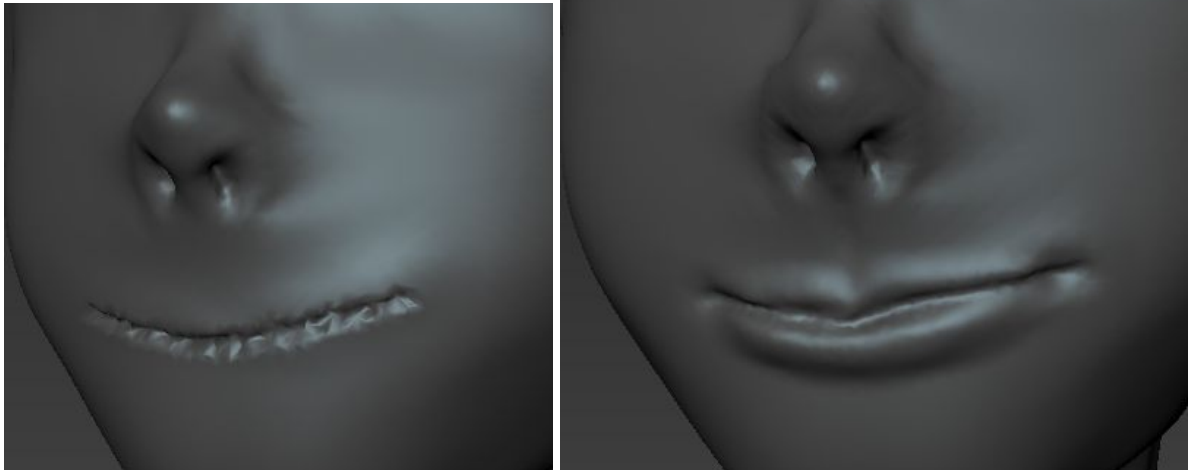
Next I began on the mouth, though when I used the knife tool to cut, the line was jagged and uneven. I tried to alter the stamp spacing and brush sizing, but after it didn't work I used the wax tool on a small brush size. With this I managed to sculpt the lips, also using the smooth and sculpt tool to create the lips.

I also decided to make his mouth asymmetrical, as I felt a one-sided smile conveyed more personality, and matched my sketched design more accurately.
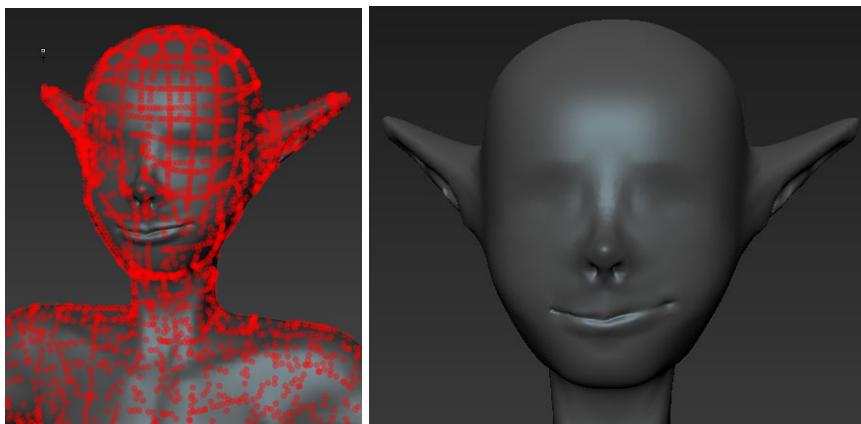

After saving my file, many red dots appeared on my model, which initially gave me a heart attack. I found that they indicated problem areas in my mesh, though when I couldn't find out what the problems were, I just hid the mesh errors and continued modelling, adding more to the nose bridge and brow bone.
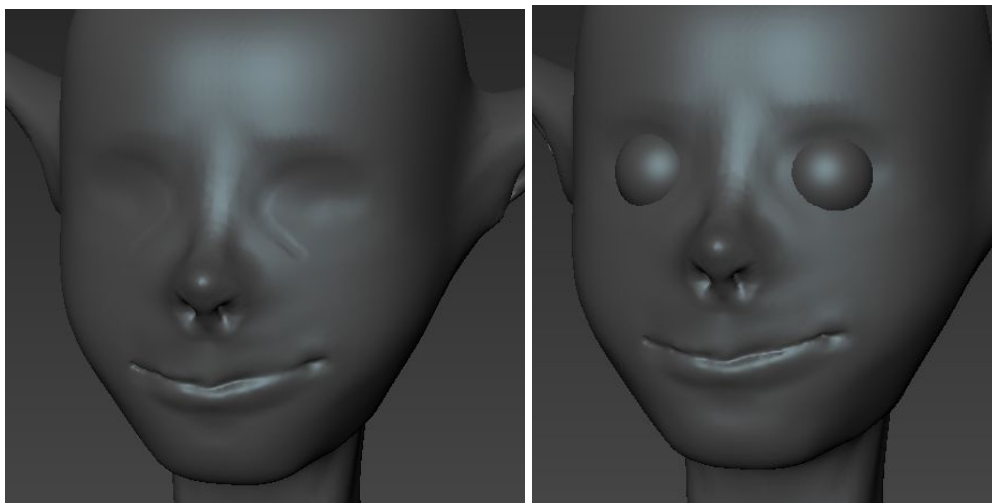
I used the wax and smooth tools to add depth to the eye sockets. Then I created a sphere, scaling it to size, duplicating the object and flipping it across the x-axis to fit the other eye socket. I later made these spheres a bit larger.
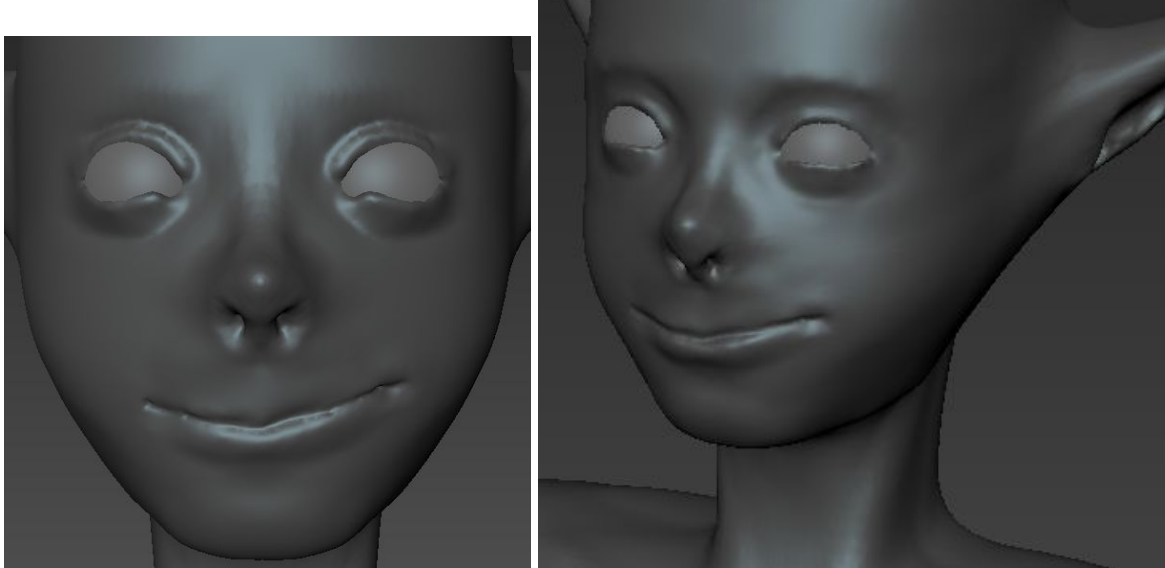

I began sculpting onto the spheres, starting by tracing a vague eye shape with the sculpt tool. I used the sculpt, smooth and wax tool to create his upturned eyes, and to deepen the eye sockets. I also defined the brow bone and nose ridge, making them more prominent for a better side profile.
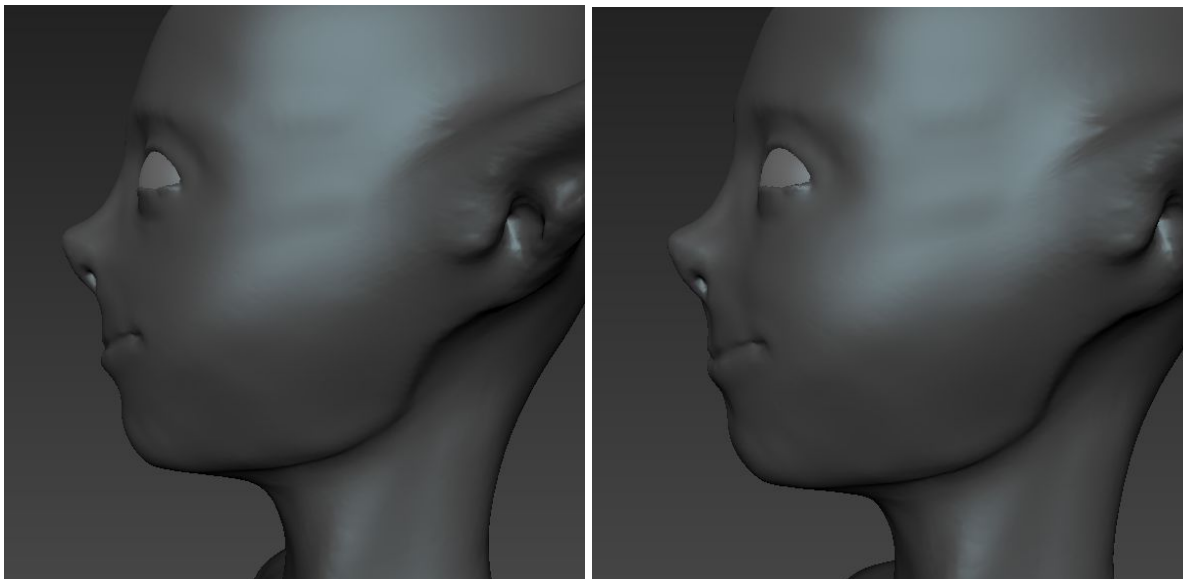
I used the grab tool at a large size to bring the cheek forward, to give it more depth and solve the 'hollowness' of the cheeks in the side profile.

Next I used the wax tool for the inner creases of the eyes, and to outline the nose for a stronger shape. I used the sculpt tool to try and make the upper and lower lash lines more prominent, and used the grab tool to reshape the jaw, bringing it up. I also tweaked the ears further, using the wax and smooth tools to deepen the creases of the ears.
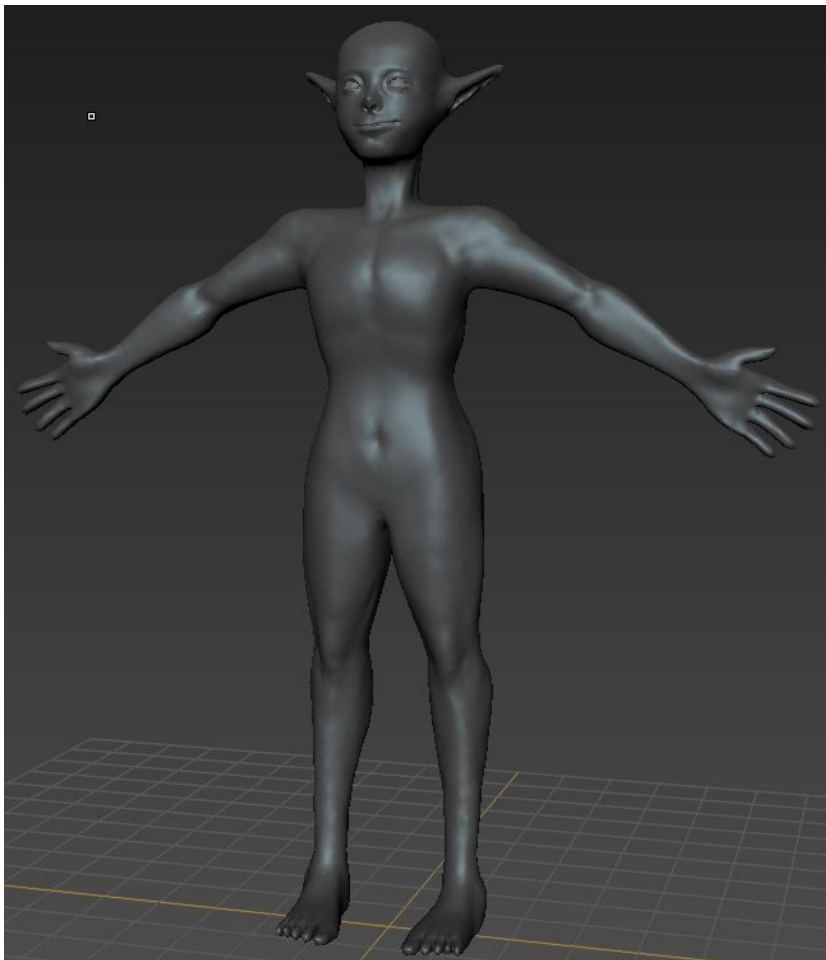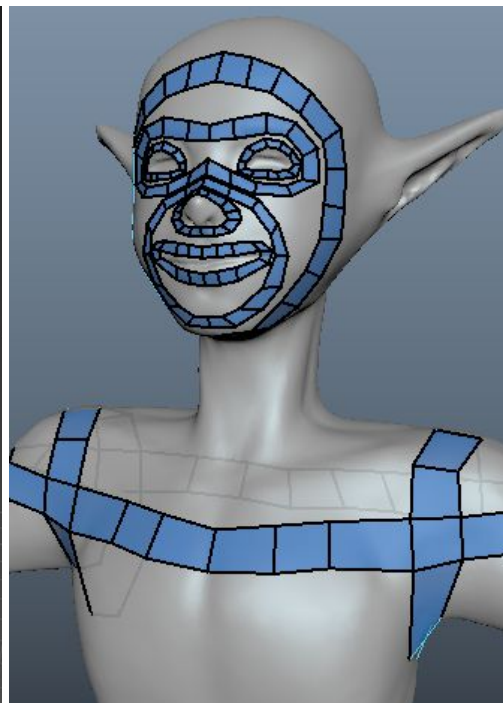

I used the grab tool on the body, making the hips more narrow, bringing the knees down slightly to lengthen the thighs, and to thicken the neck.

Lastly I used the wax tool on the two inner spheres to create the iris.

Retopologised meshes

I first sent the sculpt into Maya, and deleted it after making it into a cache to use as a live surface. I started the retopology by outlining the face, goggles, eyes, muzzle, nose, and mouth. I then outlined the shoulders, once across the chest and the other under the armpit.
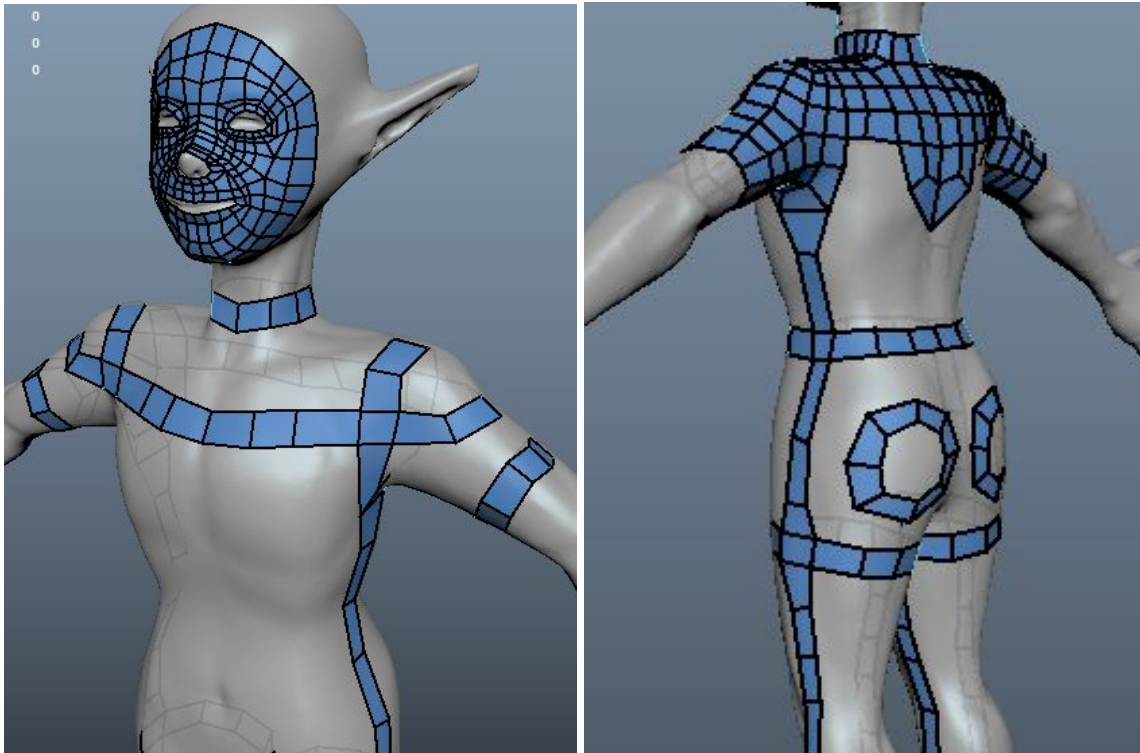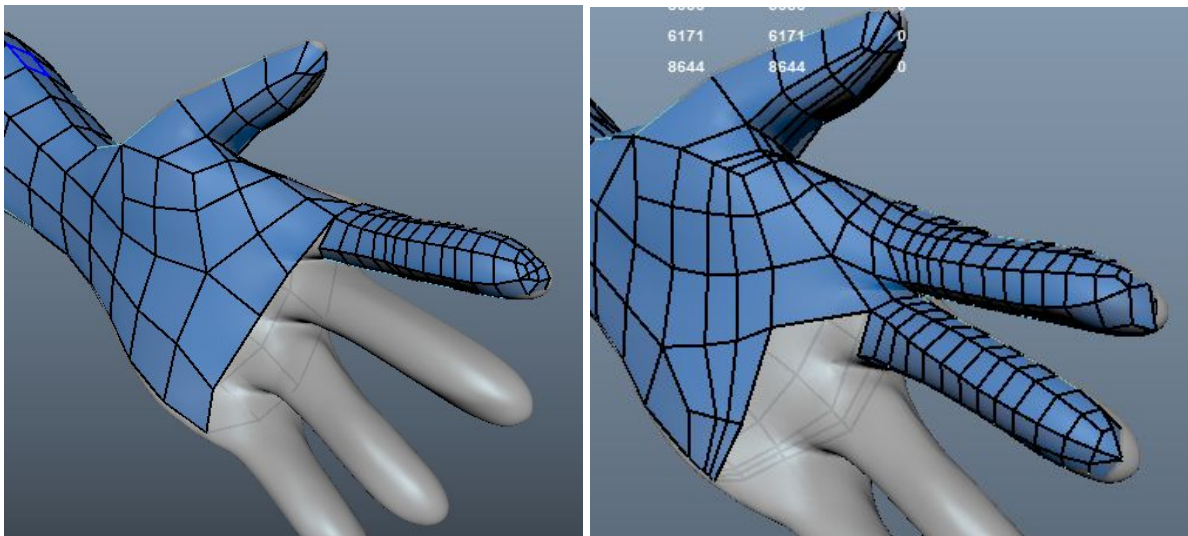
I finished the face by using shift to fill it in, and then made more guidelines.
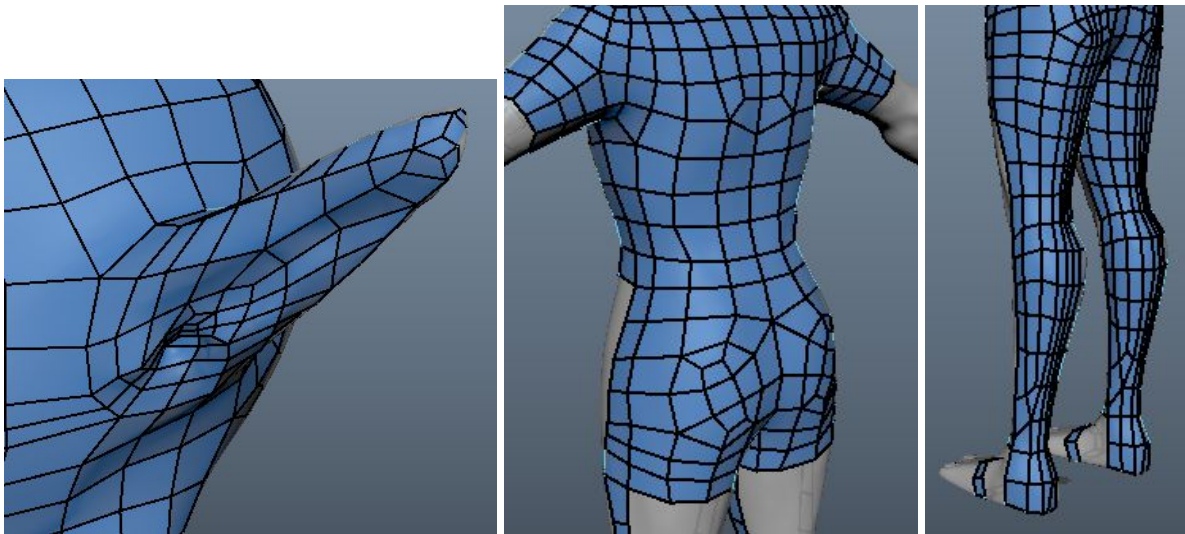
I then filled in the ears, both sides of the torso, and the back of the legs. Next I filled in the front of the legs, until the foot guideline.
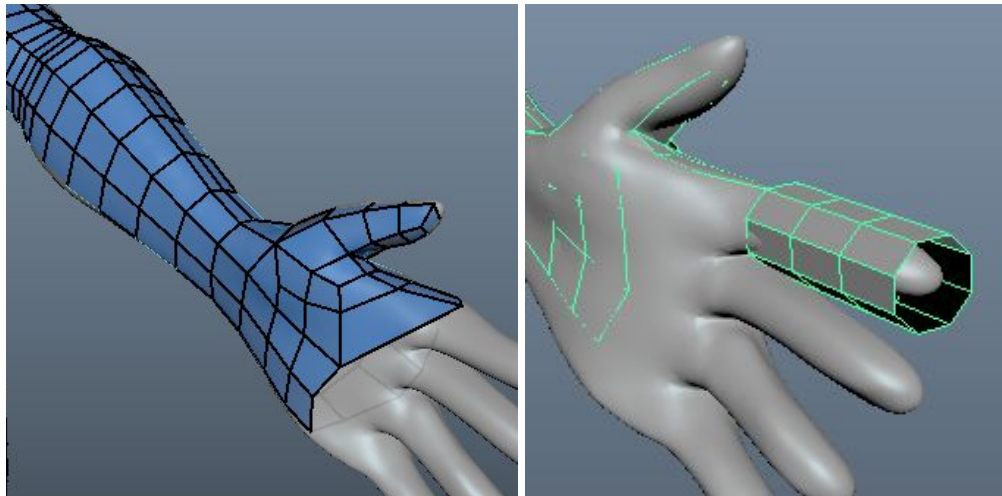
Next I filled in the arms up until the fingers, and attempted to use the cylinder technique as recommended in the tutorial notes.
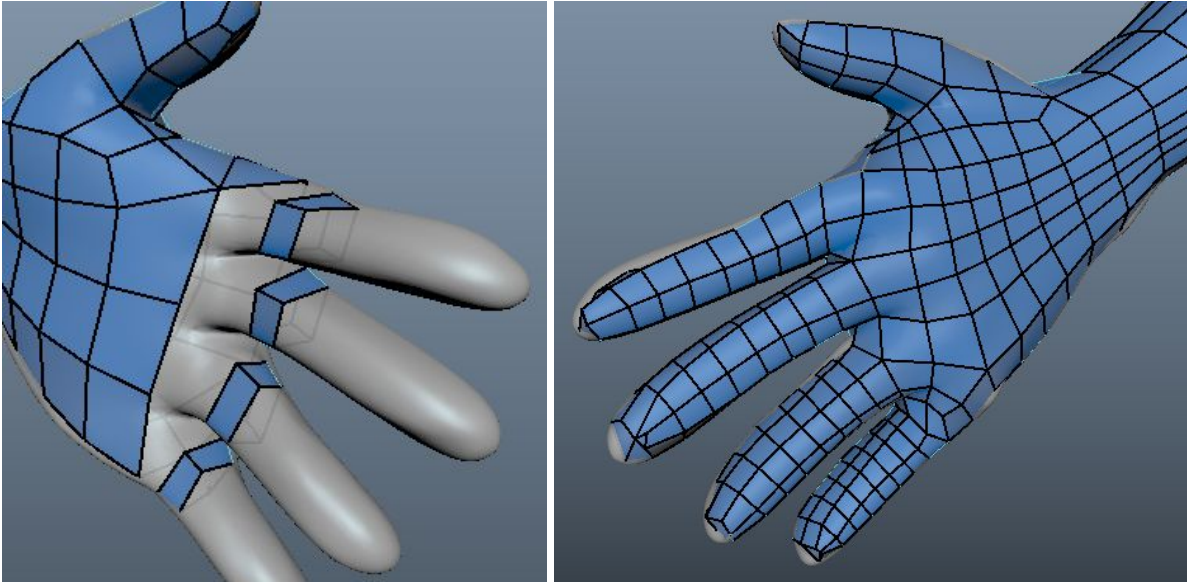

I used the cylinder technique (left image), however this came with issues as the amount of edges didn't match with my mesh, so I made the fingers manually (right image), so a similar result.
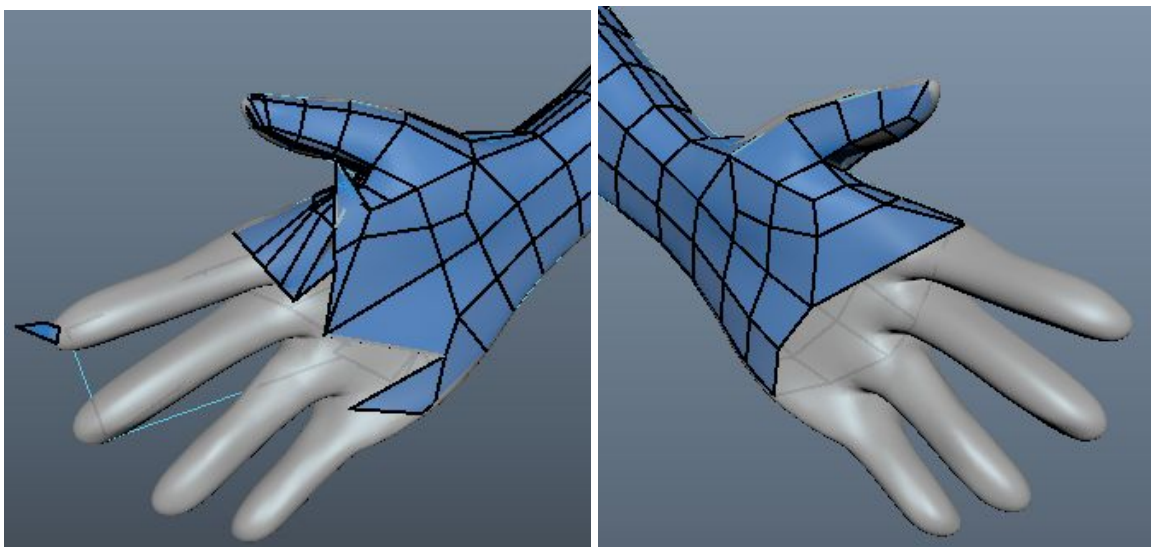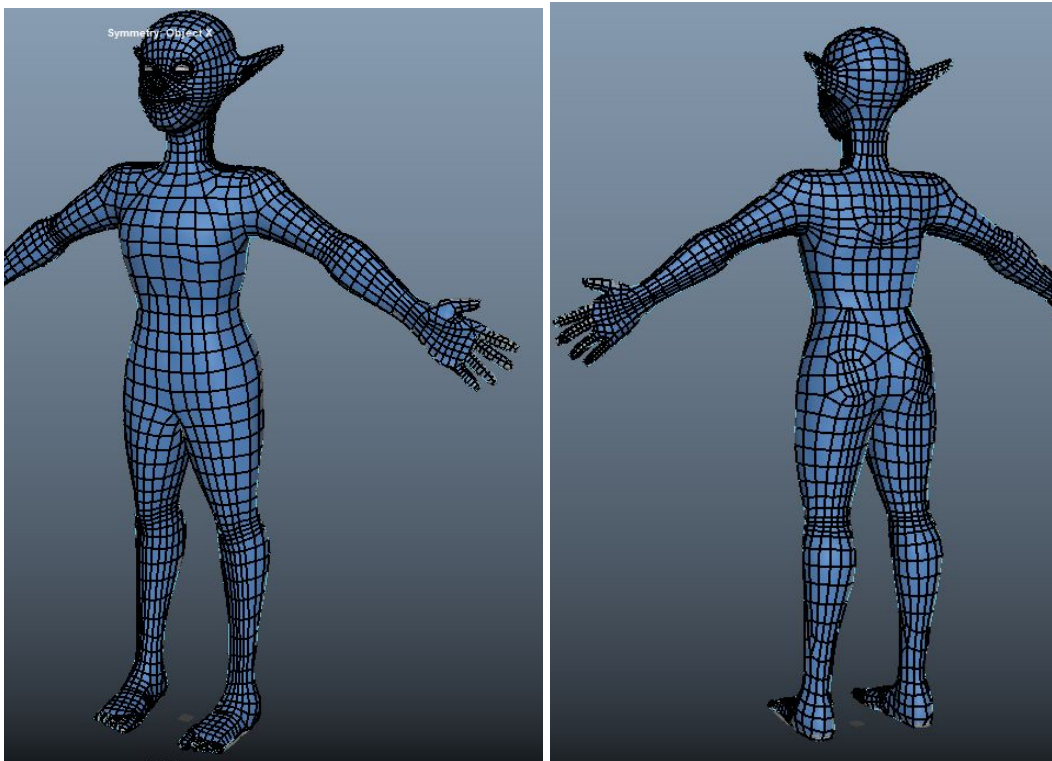
However when I looked at the left hand, the symmetry tool must've failed at some point, so I deleted all the work on the fingers to do it all over again.
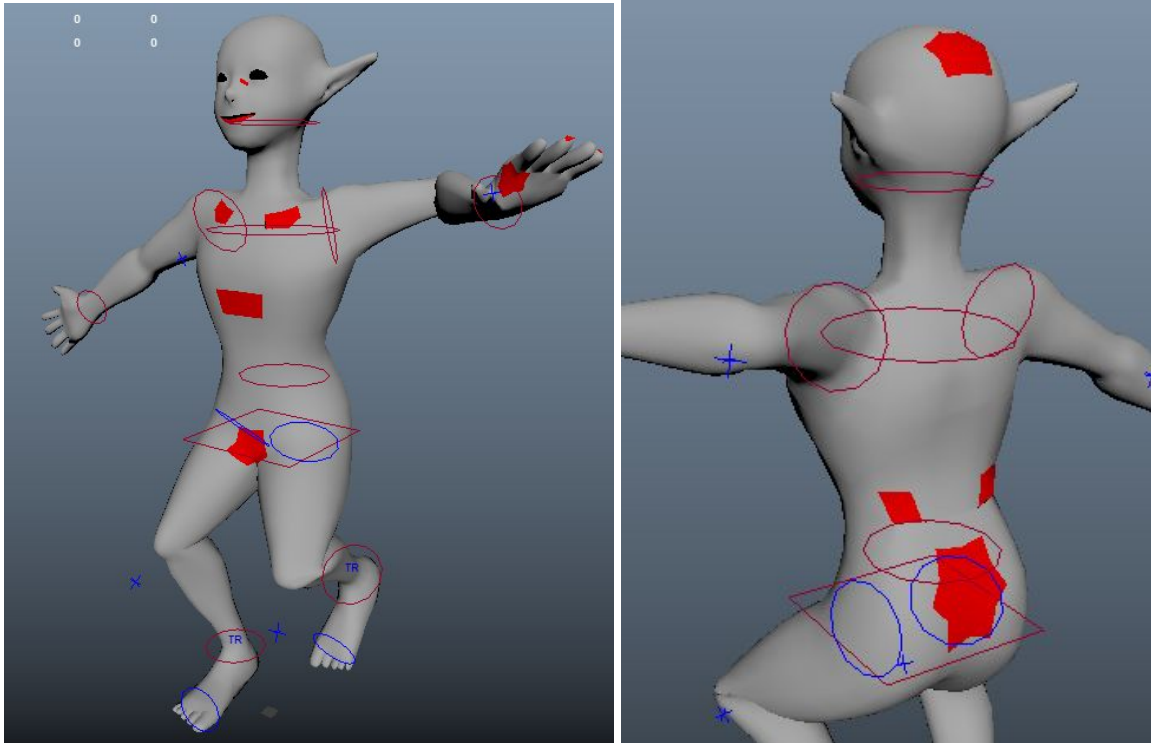

When making the fingers again, this time I gave each finger a square ring to make it easier to build each finger.
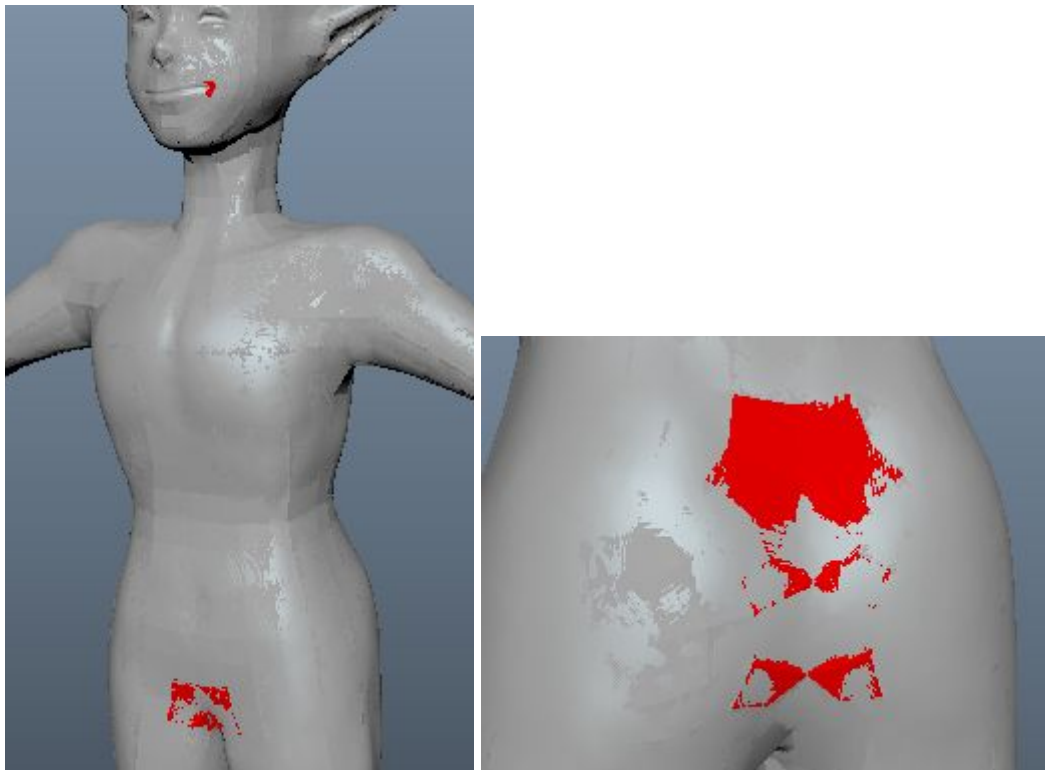

Lastly I made the foot, and the body is done.

Next I received a rigged mesh from my tutor, faces with issues marked in red. I used this rig to fix my retopologised mesh, and to check for any issues with the joints.


I also received this second review of my retopologised mesh, which marked issues in the crotch, back of the butt, and in the corner of the mouth. After fixing these issues my retopologised mesh is complete!
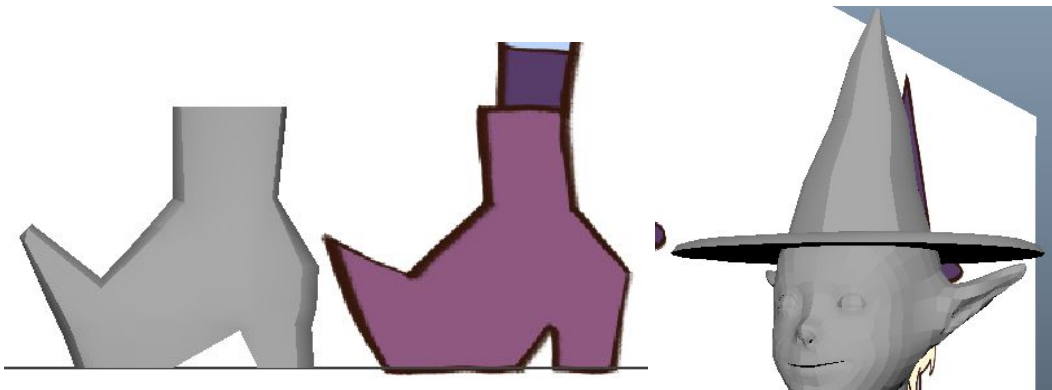
Clothed mesh
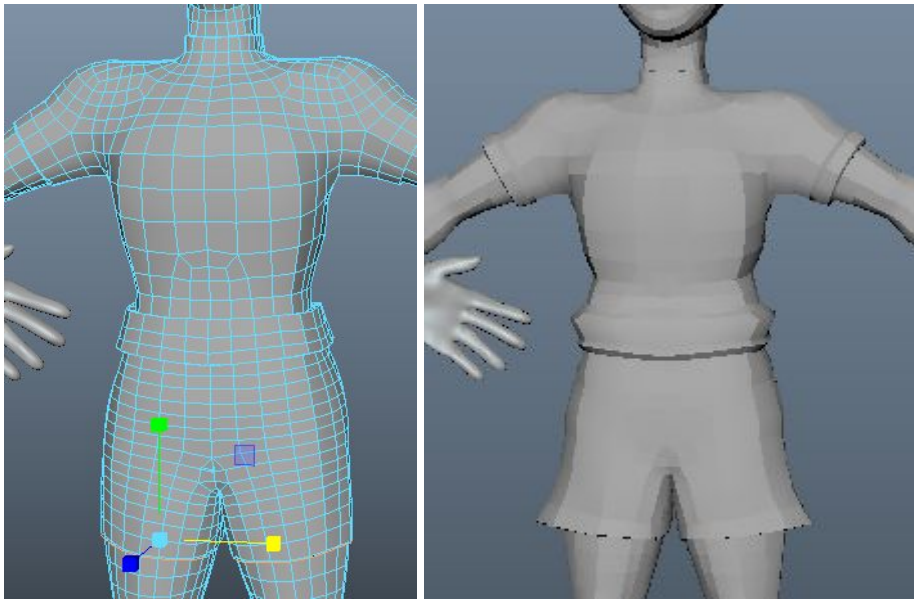
To make the attire I first moved the cache. I extruded the torso, and further on the waist for the tucked in shirt, and on the sleeve cuffs. I made the shorts more pointy using the edges, and moved the edges under the armpit to account for the fabric.
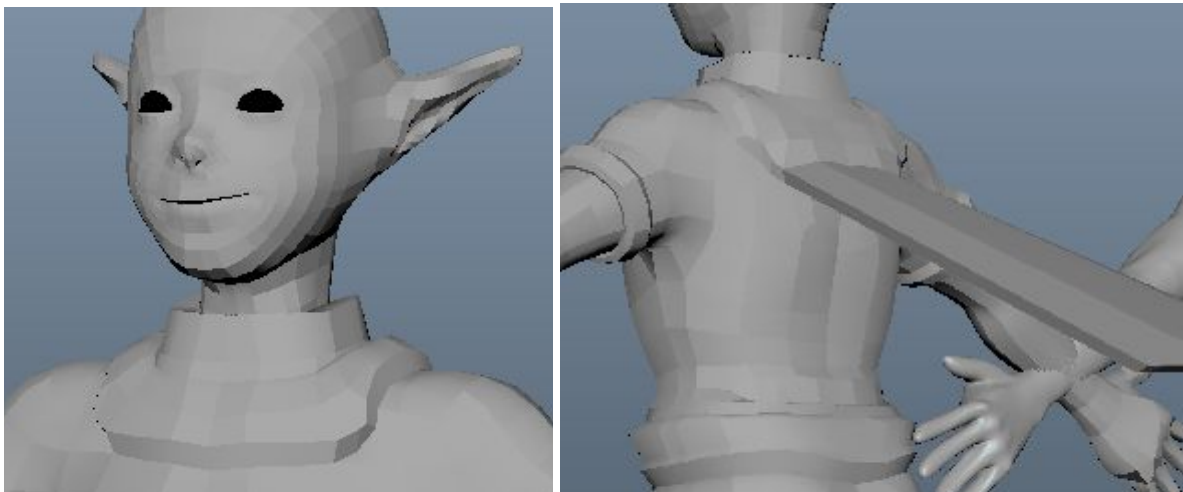

Next I extruded around the neck to make the scarf, and at the back.

I created the boots and hat as separate objects, using my model sheets for the boots, and using an oval flat plane to make the brim of the hat. I used edge loops in the hat to make it slightly asymmetrical.
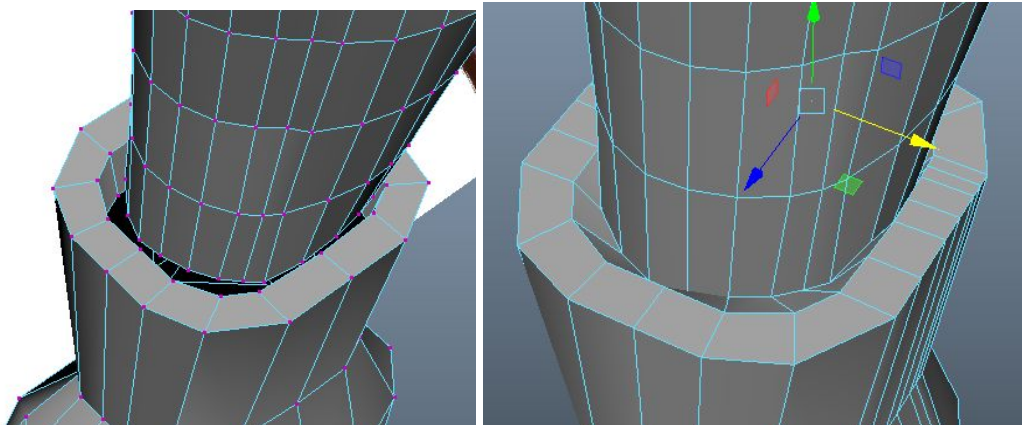
To combine the leg to the boots, I deleted part of the foot and the inner face of the boot, using the merge and target weld tool. I then repeated this for the other foot.
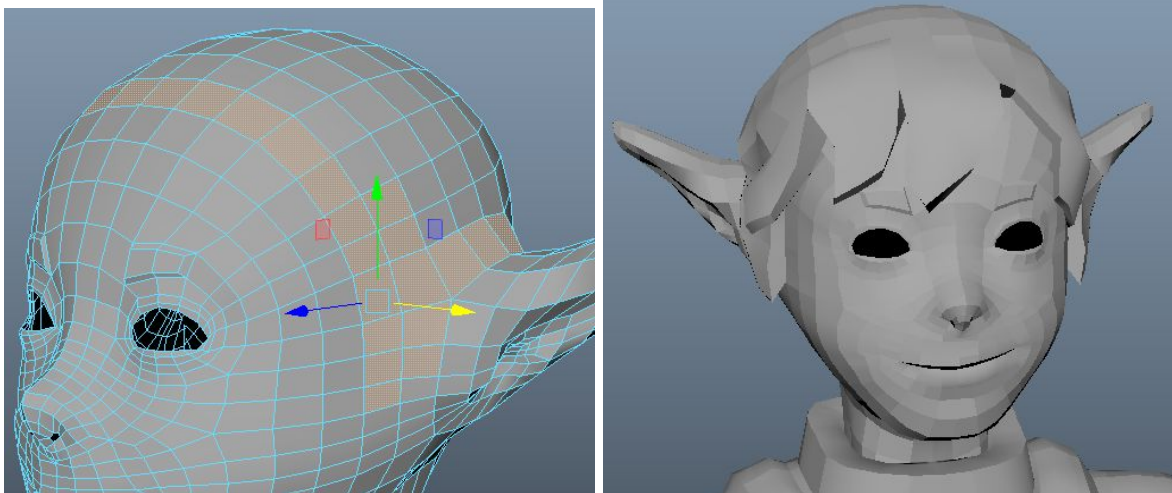

To make the hair I first selected all the faces of a general hairline, and extruded the faces out. I used the faces at the front and extruded these for his fringe, trying to copy my model sheet. I attempted to make some flicks of hair at the back of his head.
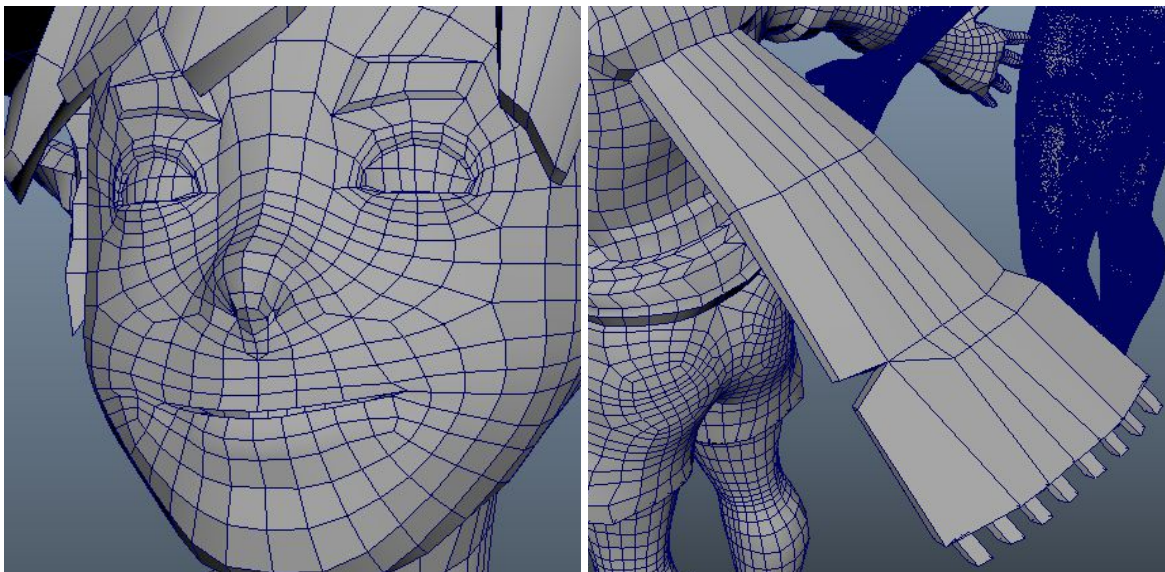

I then filled in the holes of the eyeballs, nostrils, and attempted to make a mouth cavity. Next I added more details to the scarf, making a notch in the scarf, and edge loops to make it asymmetrical. I extruded faces at the bottom to make the scarf fringe. I made the notch by

adding an edge loop, and using merge to make a small triangle. I deleted the faces, and used the bridge and fill hole tools.
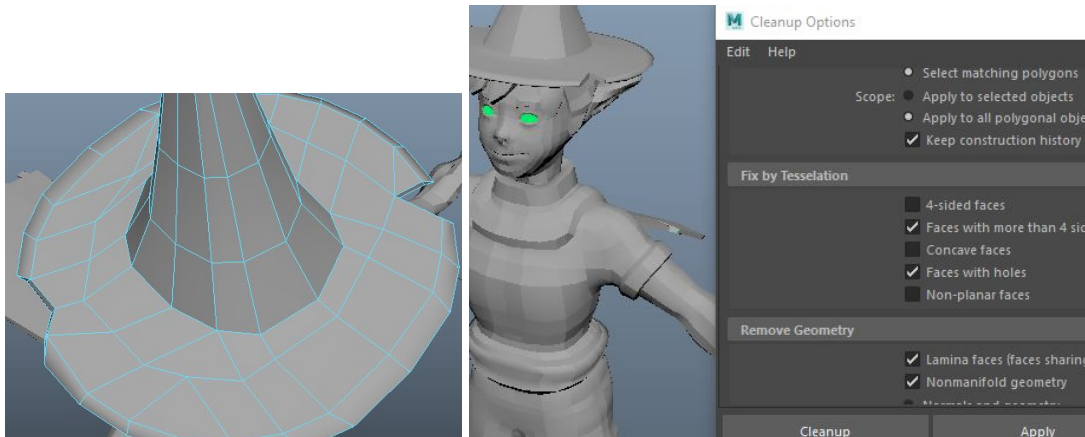
Next I repeated the notch technique for his hat, and rotated it slightly to sit better on his head. I also ran a cleanup, to double check for any issues with the mesh. This showed me a small issue in the crotch, where two vertices were overlapping. I merged the two, and the cleanup returned fine.
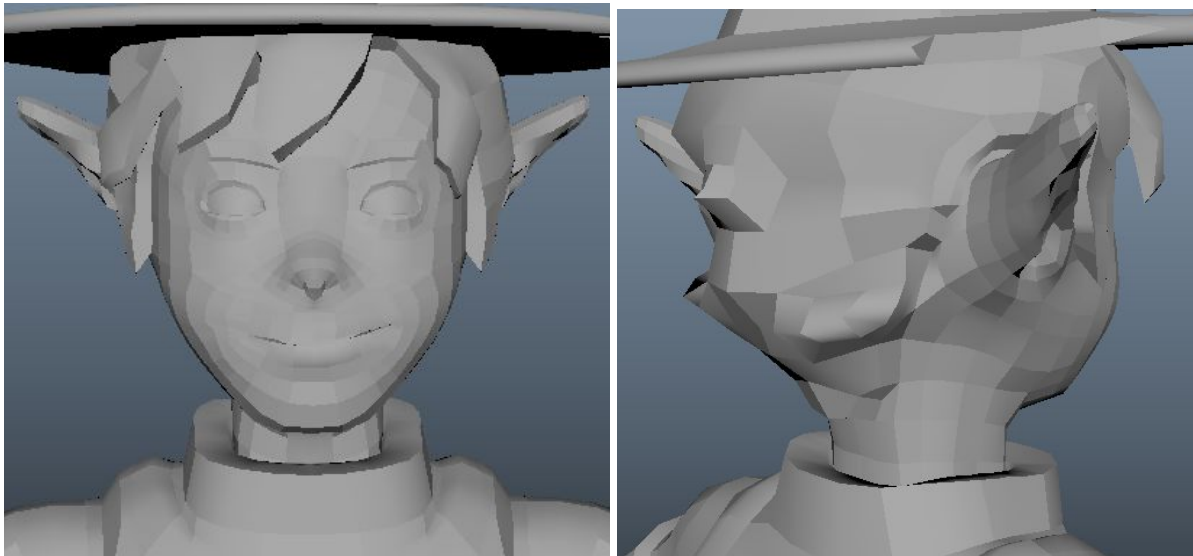
However I was slightly unhappy with his hair, as I wanted it to have more volume, and to look more 'fluffy'. I was suggested the soft selection tool, which I used to puff out the hair above his ears, and at the back of his head.
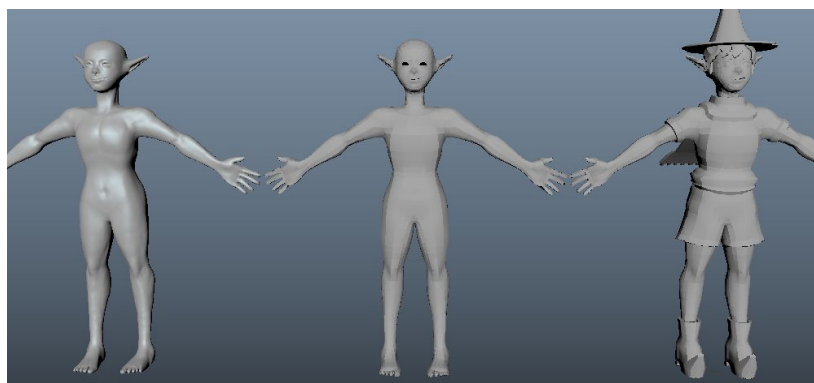
Lastly I lined up my sculpted mesh, base mesh, and clothed mesh, to show visual progression. Feyn's model is now complete!