

# 3D CHARACTER DESIGN

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## CONTENTS

Contents .....	1
Character background: .....	2
Inspirations: .....	2
colour design: .....	4
Character concepts: .....	4
3D sculpting process .....	6
Uv unwrapping: .....	17
Exporting too unreal: .....	18
References .....	19

## CHARACTER BACKGROUND:

**Name:** no. 10

**Height:** 6ft 4

**Weight:** 200lbs

**Backstory:** the year is 2040. poverty and war have rampaged the world. most of the planet is inhabitable because of the nuclear war between the leader of a foreign country and president of the United States of America. A brave scientist has developed super solders to fight in the battle and bring peace to the world. Project no.10 was genetically engineered to be better at everything then any normal human and with the help of his armour he is used to Control and eliminate any threats. Him and his team of super solders protect the streets and do whatever it takes to bring piece back to the country.

## INSPIRATIONS:

From the initial idea of my character, I wanted to make a muscular character who was filled with rage through fighting in the wars. I didn't know how I could make this character, so I looked for inspiration and took inspiration form a couple key characters.

One of my main inspirations was master chief from halo. The look and background of the character is like mine, so I used him as a big inspiration for the background and look of the character.



For the look of my character, I took inspiration from multiple sources. One of these sources was again master chief from halo but also the Arkham knight from batman Arkham knight. The slim design of the armour and how it is in world practical.



Another big inspiration for my character was the Mandalorian. As an outcast of his people and a loner I felt this would be similar to my character and would be a perfect place to start when thinking of ideas.



When trying to think of the look for my character I looked at images of the tesla cyber truck. This cars design inspired me with the look of the characters armour with the simplistic and narrowed plating on the car I thought I could perfectly work this into my character and come up with armour that would look similar.

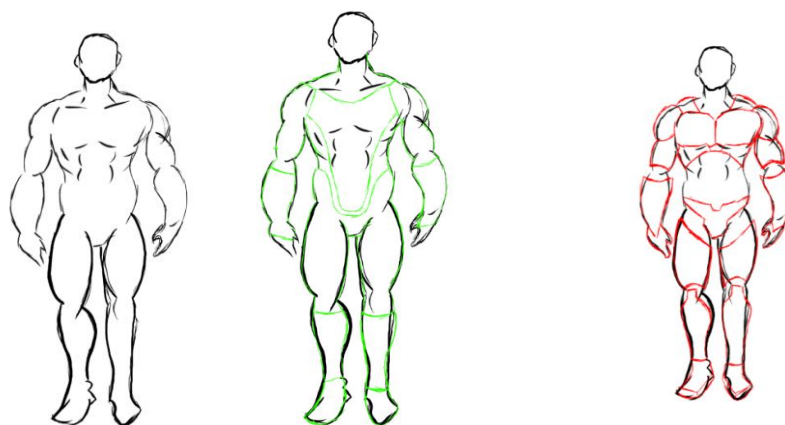


### COLOUR DESIGN:

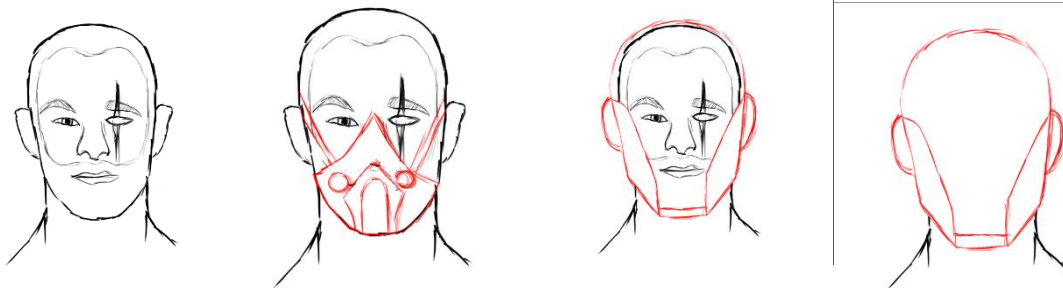
For my character I wanted to choose my colours very carefully. I wanted to use shades of brown on my character to give of an earth like tone to the character and make him look more rugged. To contrast this however I wanted the armour to be a metallic like material like the Mandalorian armour in the Mandalorian, I wanted to do something like this as it looks good and gives it a simplistic look. This also relates back to the design of my characters armour being like the cyber truck. For the visor and the logo in the chest I wanted to go for a bright red colour and red has connotations of anger and rage and the symbol would act as a target for his enemies to focus on, so they don't aim for the weaker points in the armour like the joints.

### CHARACTER CONCEPTS:

**Initial concepts:** To start off with the design of my character I drew up basic human shape and decided where I wanted all the armour and under armour to fit. For the under armour, I was heavily inspired by the look of the tesla bots, so I drew a rough sketch like that. For the main armour however it was inspired by multiple inspirations, and I thought what would make sense and what would be practical as a suit of armour. I settled with these basic shapes and a reference to what I wanted to do later down the line.



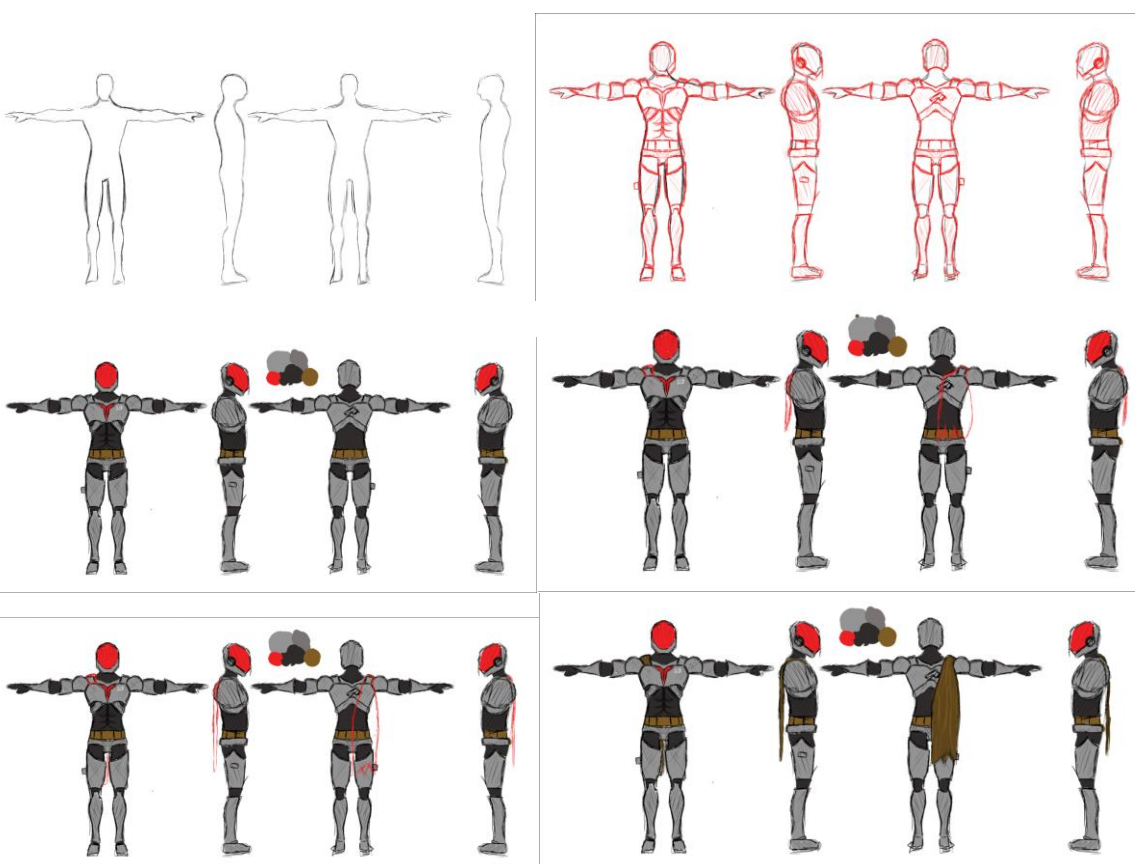
For the helmet I went through a few designs. one of these was a face mask like scorpion from mortal Kombat however I decided to setting with a mask that covers the full face to add more protection to the wearer and

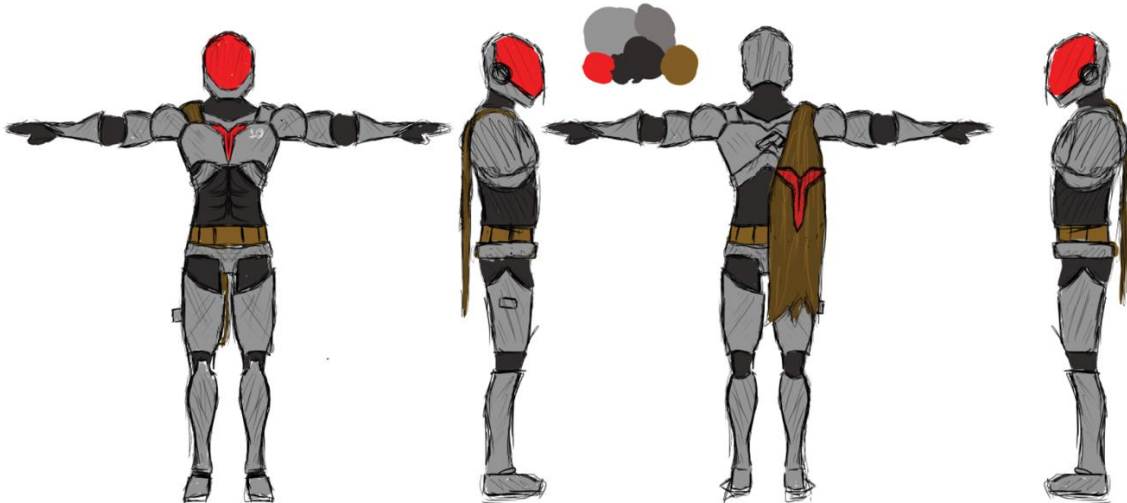


For the final design of the character, I wanted to draw a basic human figure from multiple angles so it would be easier for me when I start modelling to visualise the character.

I started with an outline of a person and slowly built up what I wanted for the armour. I did a basic outline in red so I could see what I had drawn. I filled in the character with the neutral colours I have chosen before and made the visor and logo red to make them stand out.

I thought the back looked very bare, so I decided to give my character a cape. I believed this would help my character look a lot better and when creating the cape, I would have more to talk about.

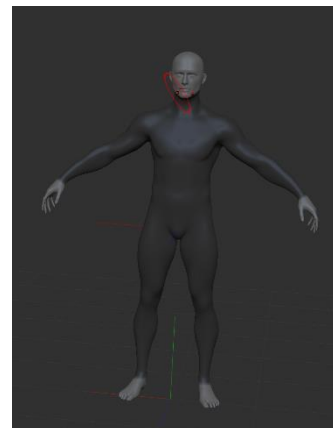
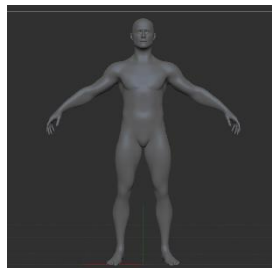




### 3D SCULPTING PROCESS

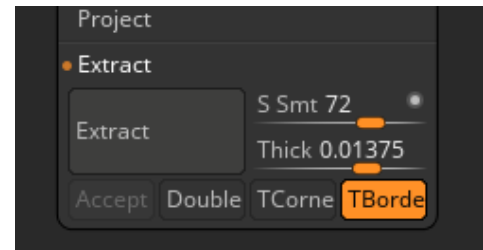
For all the modelling techniques I used I read about in the beginner's guide to ZBrush.

**armour modelling:** To start off with the 3D sculpting process I used the default male as a base model for what I wanted to put the armour on. To start off with I masked out the area I wanted to add the under armour so then I would be able to extract this piece to make it thicker.

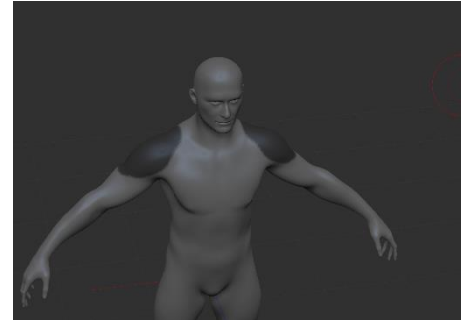


To extract you need to simply select a part of the model you would like to extract and with the extract feature you can make the extracted part thicker. This is a technique I used often in this process.

I used this technique as it is an easy way to create armour pieces and full body suits using the geometry of the area selected.

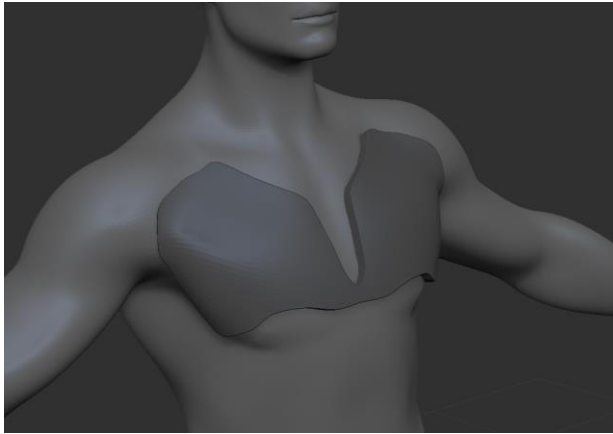


After I made the under-armour layer of the suit, I wanted to start to build up some armour pieces. I started off with the shoulders which I used the same technique as before with the under armour and masked the shoulders so I could extract them. I did not like the initial look of the shoulder plates so using a combination of both the move brush and the latten I got the plates to a position where I felt it looked good and wouldn't interfere with any joint movement.



The next area I wanted to focus on was the chest pieces as I knew this would be the most intricate piece of the armour and there were lots of layers to it. Yet again I used similar techniques as I have used before with the shoulders but for this, I knew I wanted to add a logo in the middle of the chest, so I left some space to be able to add this later. Moving this extract with the move tool at the top I moved it a little away from the mesh as I knew the under armour would be in the way and would hide most of this piece.

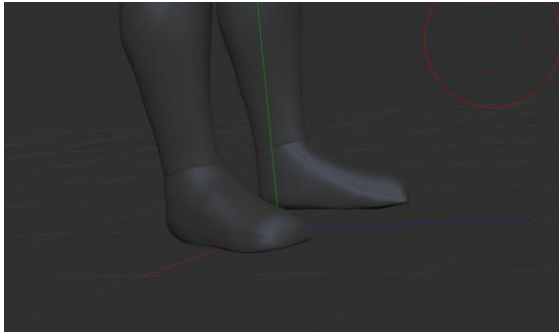




For the rest of the armour, I simply used the same technique as I have used for all the other armour however with the rest of the armour, I did not want it to be as thick as the chest plate as I knew that would be the thickest area. I started from the top to bottom building each piece of armour and then moving to with the move brush and flattening out some imperfections with the platen or polish tool.

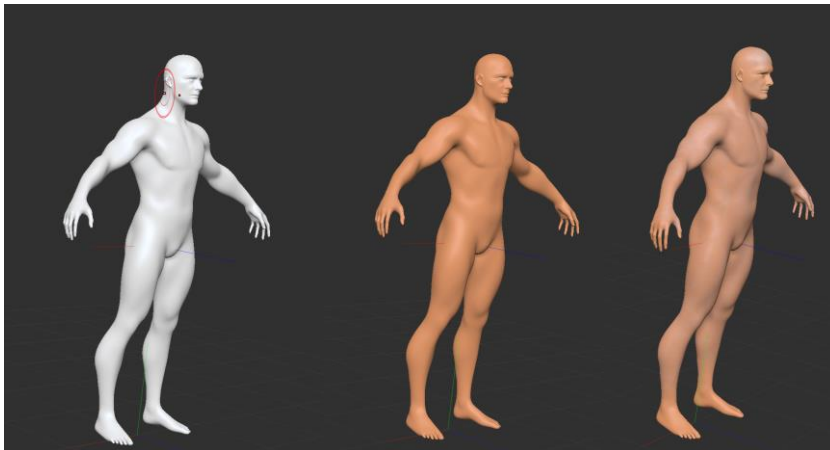


On the armour I wanted to make some places for the character to holster a weapon, so I simply appended a rectangle into the scene and attached that to the characters upper right thigh. I also made a late design choice to add laser blades that would protrude for the characters upper wrist. To make this I used the same Ideas with the weapon holster but curved the edges.



For the boots I used another technique. I modelled the shine pads the same way I modelled the rest of the armour but for the footwear I used a dynameshed shear that I flattened out to cover the feet and moved the object appropriately to make it appear like boots. I then attached this to the rest of the boot to make it all one piece.

**Character modelling:** I wanted to colour the skin and add some features to my character. I wanted to do this as the helmet I was planning on making would be slightly transparent and even the character would always have their helmet on I still wanted to show a little of what is under the mask. I started off by making the skin a pale colour coloured the skin and using the brush alpha 22 I add patches to the skin to make it look more realistic

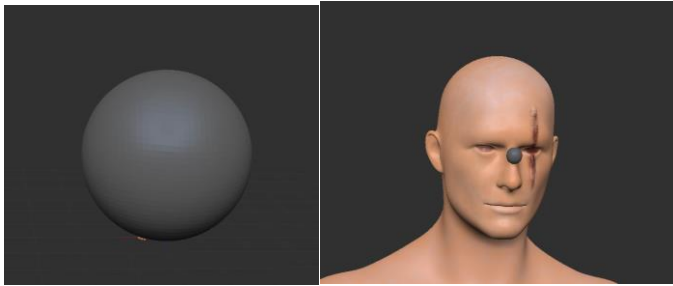


To add more character storytelling and to show my character has got a past I wanted to add a scare going over the characters eye and across his face. To make the bumps for the scare I used the standard tool to elevate the scare and using alpha 22 brush and giving it a red colour, I made a scare.

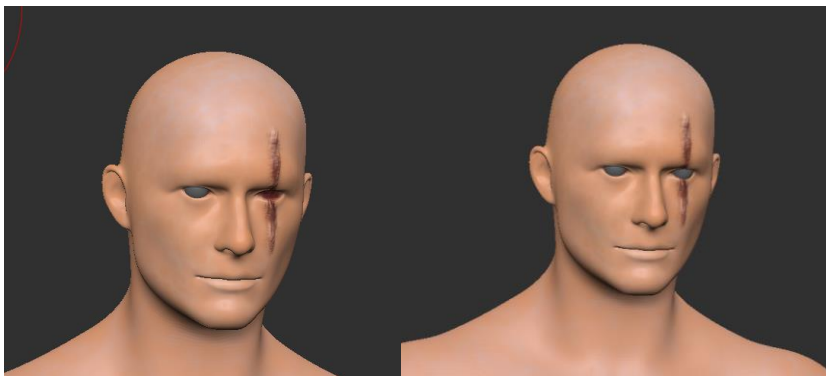


I wanted to add eyes to my character and to do this I used simple steps.

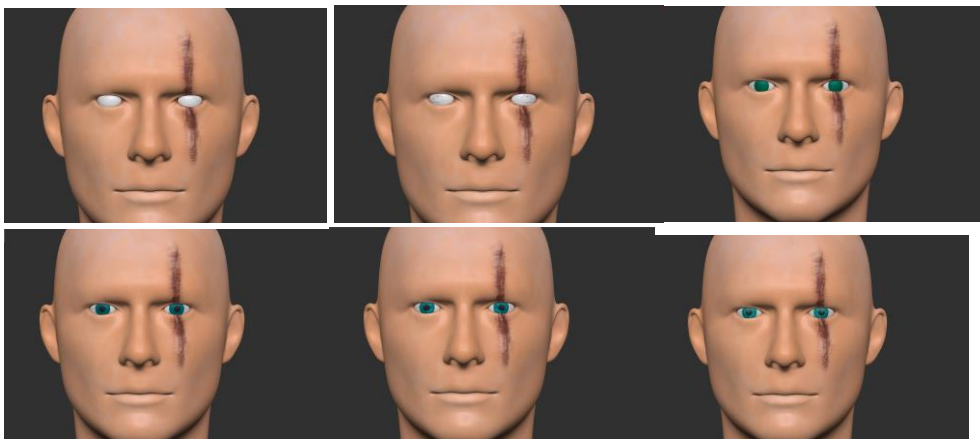
First, I started with adding a big sphere to my scene. I then had to move this into a position that I wanted it in.

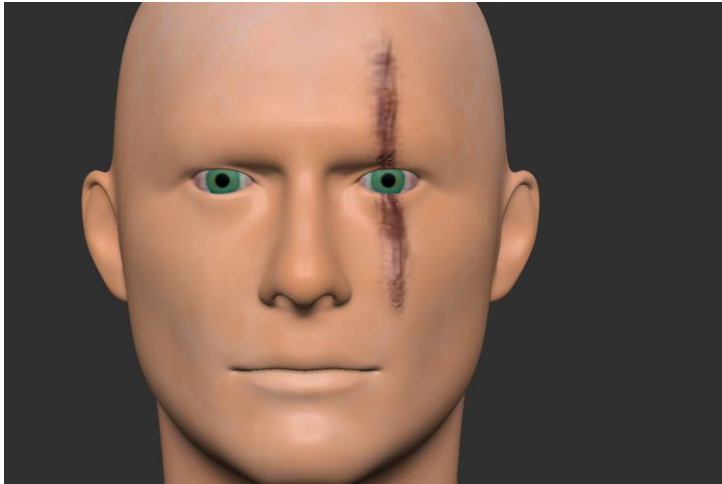


After moving the eye into position, I then mirrored the eye in the x axis to have an eye in both sockets.



After the eyes were in position it was time to colour them. I started out with a base white and slowly started from there. using the same brush, I used for the scare I added some blood vessels to the eye to add more realism and then slowly adding patches of paint here and there I started to make the pupil and the iris.





### ***Cape modelling:***

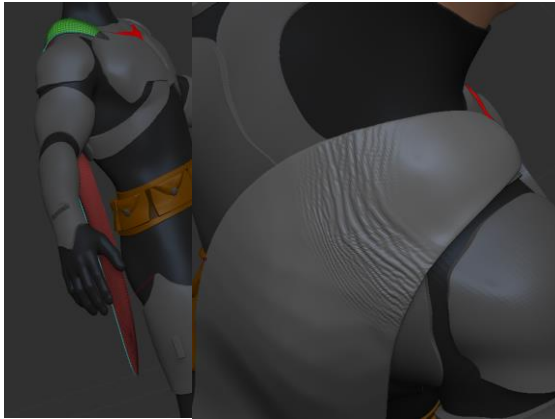
For modelling the cape, I selected where I wanted the cape to attach to the character the same way I made the armour by masking off an area. I then zremeshed this new object and gave it a very low poly count as it would be easier to move.



I removed the underside of the cape as this would interfere with the process of moving the cape and would mess with the topology. Using the move tool, I moved the cape down the body. Using a combination of the move tool and remeshing the cape I was able to make it the length that I wanted to have it at.



I then dynamshed the cape to give it more polygons so then I could edit it further. I started by adding thickness to the came and using the cloth tools in zbrush I added ripples to the cape.



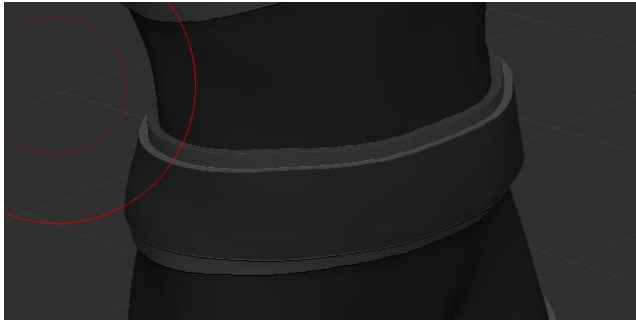
Like the rest of the armour, I coloured it in zbrush so I could have an understanding later down the line of what colour I wanted it to be in substance painter.



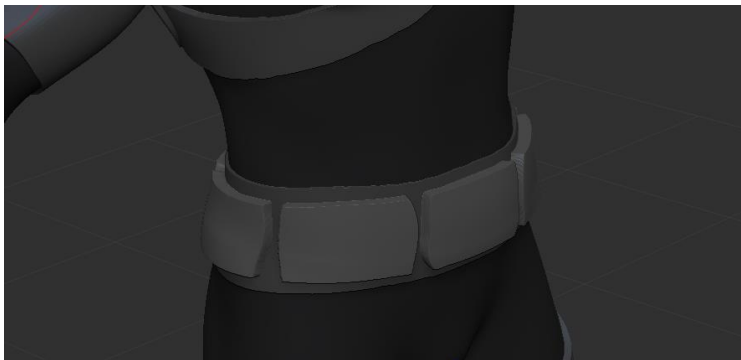
### ***Belt modelling:***

To start the belt for my character I masked out the area on the body where I wanted this belt and extracted that masked area to create the basic look for the belt. I then did a smaller extract on that area. This would be where I made my pouches.

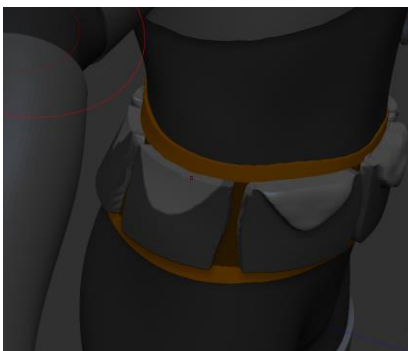




For the first bit of the belt, I moved it into position and resized it accordingly. The second pieces I started to mask off areas where I wanted the pockets to be. I then pushed the unselected areas in to create the shape of pouches.



Then with certain sections selected I brought out the flap of the pouch and then further modelled these with the brushes provided to flatten them out and make them smoother.

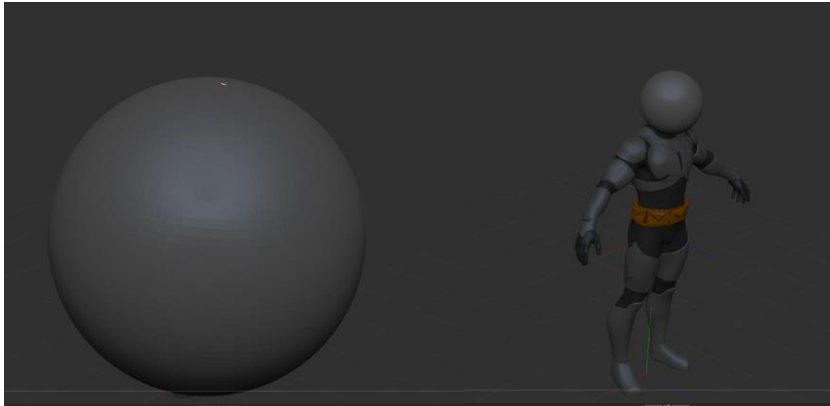


After finishing all the pouches and colouring them using the paint tool. I then added buttons with the imm tool.

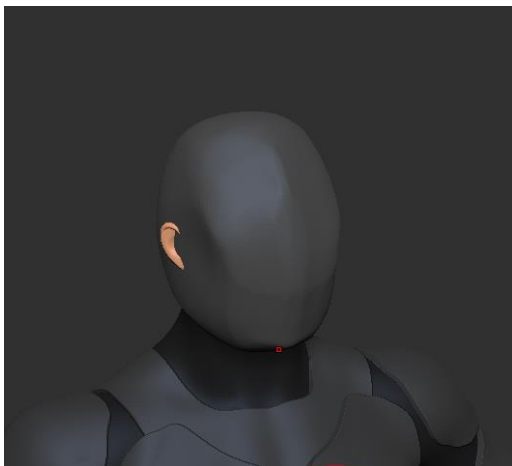


### **Helmet modelling:**

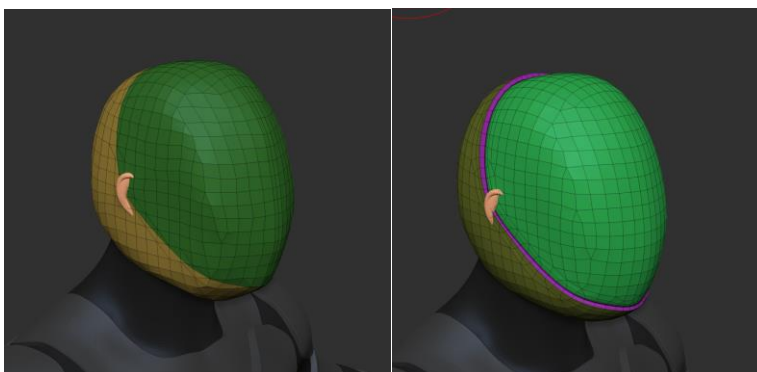
After adding a spear to my character. I then scaled this object, so it was a similar size to the characters head.



Using the move tool and the flatten tool I started to morph the mask armour the characters face

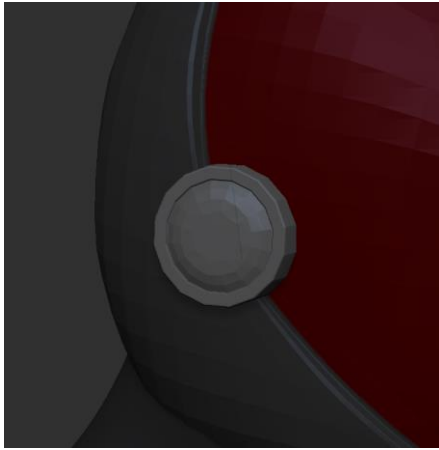


After this I realised I had not dynameshed the object, so I quickly did this before starting to work on the next part. I wanted to make the mask two separate sections and have a visor and the rest of the helmet. To do this I look at my mask from a side profile and using the slice tool I was able to separate these pieces and give them different polygroups. after I did this, I was then able to find the group loops feature which was under geometry to add rounded edges to the poly group areas. I then moved the back half of the mask to bring it out more.



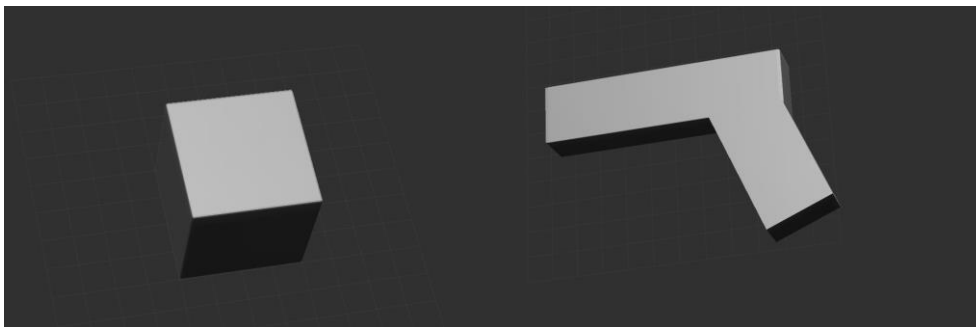


After some further adjustments to the mask, I then was happy with the final shape. I then wanted to add bolts to the side of the mask, and I initially used the imm screw objects for this however I did not like the look of this, Also I decided to change them to snorting that look closer to what I initially wanted. As shown, you can see I painted the mask so then later when texturing I was able to know what colour I wanted the pieces.

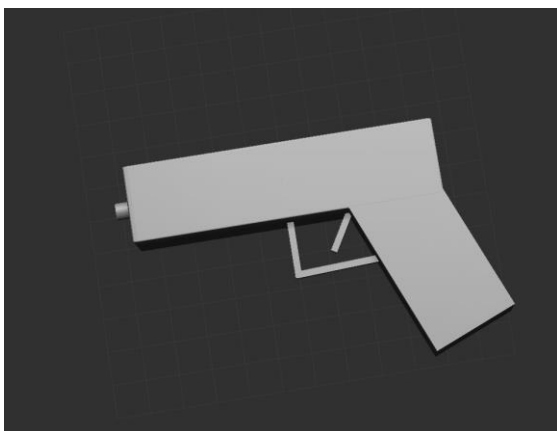


#### ***Accessories modelling:***

For the accessories I wanted to make a pistol that would attach onto the characters leg. To make this I took a cube and resized it to then length I wanted the barrel. I then did the same for the handle.



For the tip of the gun and the trigger I used the same technique by adding shapes.

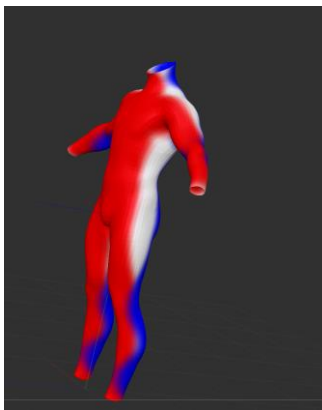


After this I then used a combination of different tools like the polish and the flatten to smooth out the gun and add more edges to it.

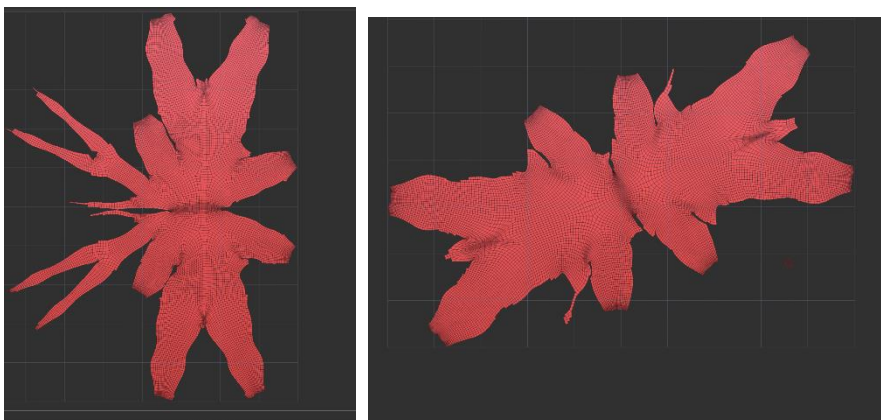


### UV UNWRAPPING:

Using uv master tool I was able to make the uvs so that I could have the seams be in certain locations that I wanted them to be in. for example with the under armour suit the uvs were all over the place but with the uv master tool I was able to move all the seams of the textures to the back of the model. This would be helpful then texturing in substance painter. I did this to all my models to allow it to be easier to texture them.



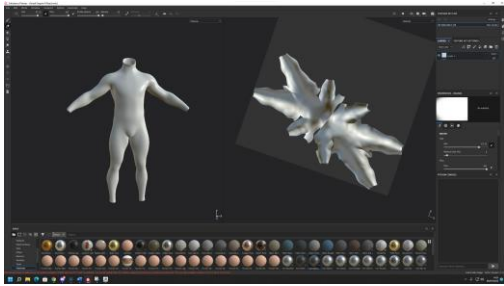
Before I edited the uvs for the under armour, the picture below shows a before and after of the process. Before the uvs were messy and everywhere but after using this trick I was able to clean it up to make the texturing process easier for me.



Bringing into substance painter.

I then brought these newly wrapped models into substance painter. From there I applied the textures that I wanted for the models

To start off I wanted to use the carbon fibre texture for my characters under armour but while I was applying it looked to reflective, so I turned off the roughness to make it less shiny.

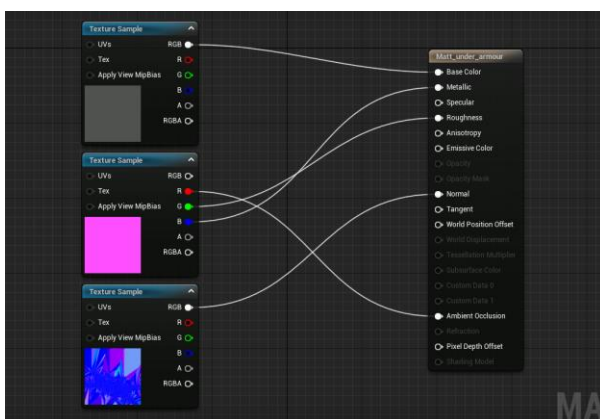


this was repeated multiple times for all the other pieces of armour.

## EXPORTING TO UNREAL:

For the final look of my character, I wanted to export everything into unreal. I wanted to do this as I have previous knowledge in unreal and rendering out the final model would be a lot easier in there.

To start off I took all my models that I have textured and brought them into unreal and compiled a blueprint with all these models in so then I could work on them all together. To import the models into unreal was an easy process. First I imported the models and the textures but the textures came separately so I had to look at the material and edit the material for all the objects.



After I brought my character in, I wanted to set up a scene for him and wanted to set up some lighting to show off my character



This is my final scene.

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