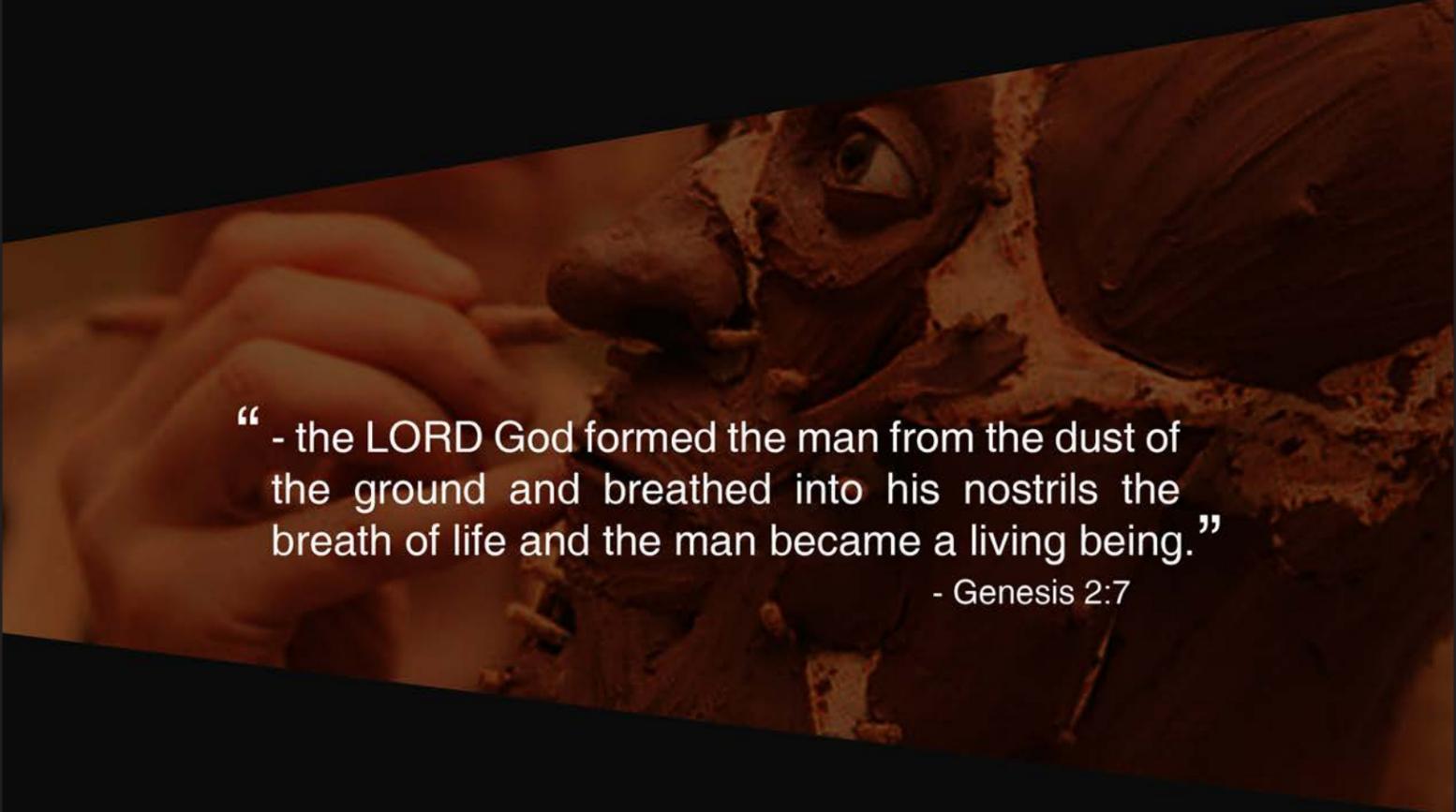




# breath

Creature Design in Clay Sculpture  
Grade 10 Visual Arts ISU

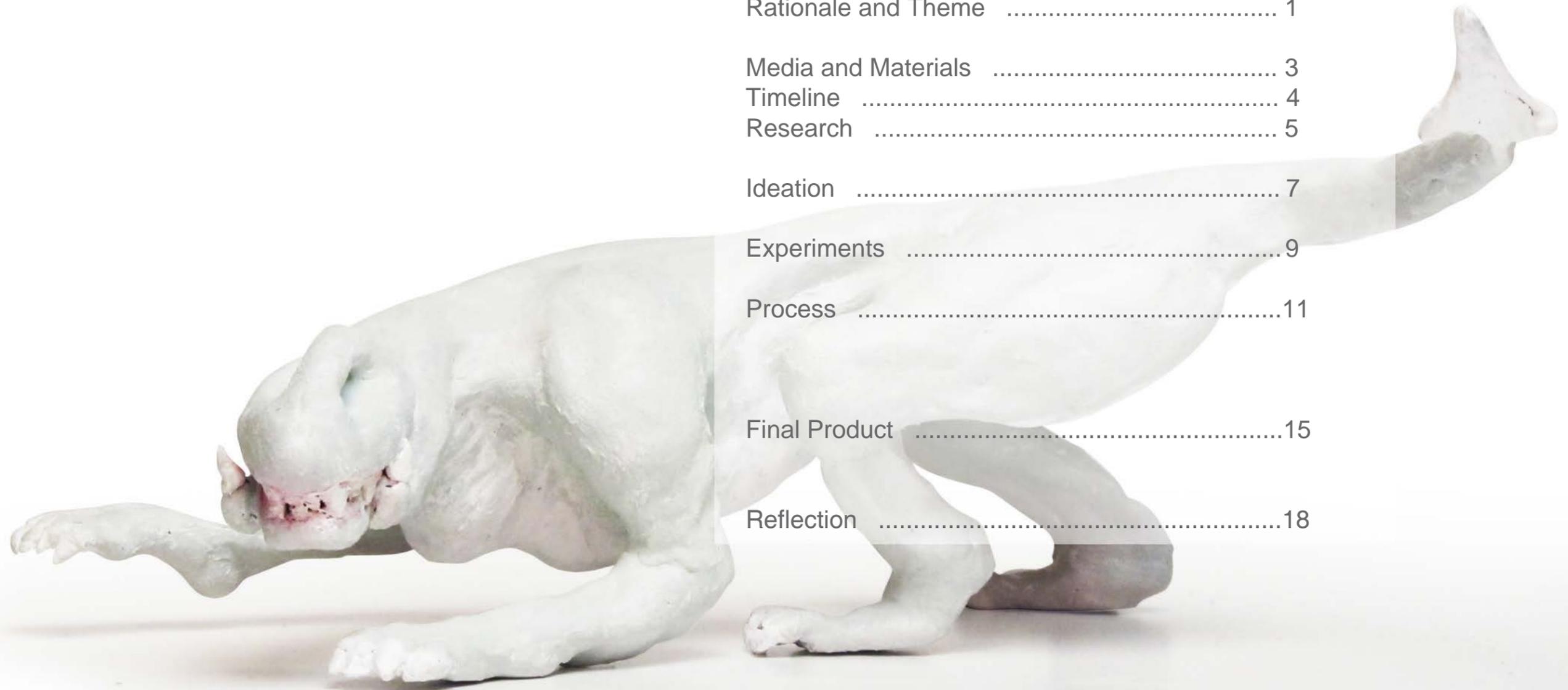


“ - the LORD God formed the man from the dust of the ground and breathed into his nostrils the breath of life and the man became a living being.”

- Genesis 2:7

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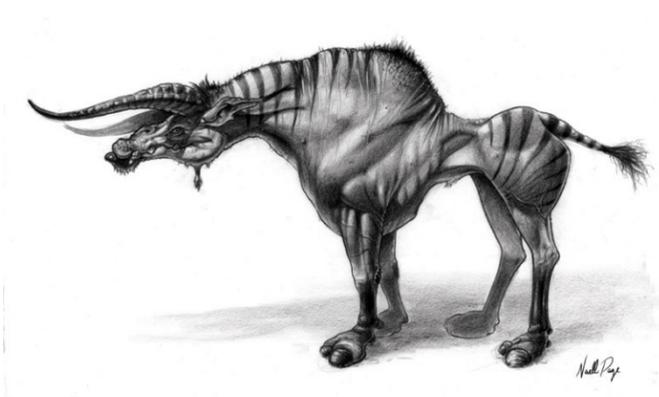
# Rationale and Theme

What did I do and why did I do it?

As my first CyberArts Independent Study Unit, I really wanted to try something new and different, and expand in a field I've never really explored. My main idea was to do a sculpture of some sort. Some ideas for mediums I had were wireframe, paper models, and random junk. Eventually, I decided I wanted to try clay sculpting. I felt clay sculpting would allow me to achieve more natural forms and shapes so I wanted to try to model a creature, as I felt that trying to sculpt something that has the appearance of being alive would be a sufficient challenge for me to tackle.

Speculative biology, an unofficial scientific field, has been a long-running interest of mine. Speculative biology deals with the creation of entirely original animals, justified in a realistic manner. People who delve into this are able to come up with complex biological solutions to certain forms and shapes of fictional fauna. Many of these take place in hypothetical extraterrestrial settings and alternate realities, as it allows for the most freedom to come up with new and entirely alien animals. In many examples, an entire planet and its environments are created, with the animals designed after with thought put into their evolutionary backgrounds and justifications for creature designs.

One certain speculative world that has been created is called Furaha, by a man named Sigmund Nastrazzurro. His blog "Furahan Biology and Allied Matters" covers a lot of his work and also in depth case studies for things like limb layout and placement, logical eye formation, and the possibility of floating animals supported by organic balloons. After following his blog for over 3 years, it was one of the most major influences that helped me decide on this idea.



Another one of these worlds, one I had discovered and had actually led me to Nastrazzurro's Furaha, is the fictional world of Darwin IV, created by legendary painter and concept artist Wayne Barlowe. I believe it was watching a documentary based off of his world and his book "Expedition: Being an Account in Words and Artwork of the 2358 A.D. Voyage to Darwin IV", as well as the book "Wild World of the Future" (yet another speculative biology work, set in an alternate reality), that has led to my current interest in this field.

When James Cameron's Avatar came out in 2010, not only was it shocking for its groundbreaking visual effects, but one of the first things that caught my eye were how detailed their backdrops were and the thought put into creating a realistic setting for the movie. I was so interested in fact; I own both a companion book explaining more of the movie's backstory and their officially released art book that delves into the conceptual process of designing the sets. I was especially awed at the intricately detailed clay mockups of their creature designs.

I want to explore the portrayal of seemingly fantastical creatures in a realistic manner and setting, which stems from my interest in speculative biology. Playing god is something that can be implied with the creation of entire creatures and ecosystems from scratch. Exploring the origins of life as we know it as well; clay has shown up in many creation myths and legends, as well as scientific theories of how life first developed on the primitive Earth. Which is only fitting to model entire creatures out of a material from which they may have arisen from billions of years ago. I gain a certain satisfaction from the design and creation of such imaginary worlds and creatures, which I think is from creating something original and unique.

I felt this would make a great addition to my portfolio because I have a strong interest in the backing and reasoning for this assignment, and I was also exploring a medium I had never worked with before.

# Media and Materials

What did I use and how did I use it?

I planned on gaining a better sense of anatomy and realistic proportions by studying the musculature and skeletal frames of different animals. This helped out in the sketches of my creatures and their eventual models. I sculpted in a realistic style, and had my creature design grounded in reality.

I worked primarily with plasticine and Sculpey. Sculpey was to be for my final product, but because it's fairly expensive, I decided to practice with plasticine first. Working with the plasticine helped me get a feel for what sculpting is like, as I was told it had a similar feel to Sculpey. I was able to discern many things from working with plasticine, like the approximate amount of Sculpey I would need to use and how to work the fine details like teeth and claws.

My final work was done with a wireframe model made out of armature wire, which I used to help support the Sculpey, and also to bulk it out so I wouldn't have to use as much of it. I also used a few sculpting tools while working, mainly just a needle and occasionally some rounded surfaces and a wire saw.

In the end, I didn't exceed my projected cost range, although it did turn out to be a fairly expensive project. I used around \$60 worth of plasticine, Sculpey, armature wire, and sculpting tools. My final piece is around 14 inches long from the head to the end of the tail, and takes up around half a cubed foot of space.



# Timeline

How did I spend my time on this project?

**April 23rd**  
Concept sketches

**May 5th**  
Concept sketches

**May 26th**  
Worked on mock-up experiment

**June 2nd**  
Final product started

**June 6th**  
Flash presentation started

**June 8th**  
Presentation

**April 24th**  
Materials collected

**May 17th**  
Concept sketches

**May 2nd**  
Mock-up experiment started

**May 27th**  
Mock-up experiment completed

**June 3rd**  
Final product completed

**June 7th**  
Flash presentation completed

**June 17**  
Present day

# Research

Where did I look to help me with this project?

After I had chosen this assignment, I immediately went and looked for where I could take this project further. Because I had been heavily inspired by the concept art of the film Avatar, I looked for the artists that worked on the creature designs during their production. Inside the "Art of Avatar" book I found four artists – NevillePage, Yuri Bartoli, Jordu Schell, and Daphne Yap. These four artists worked on a range of fields that covered things from creature design, creature modelling, clothing, and set design.

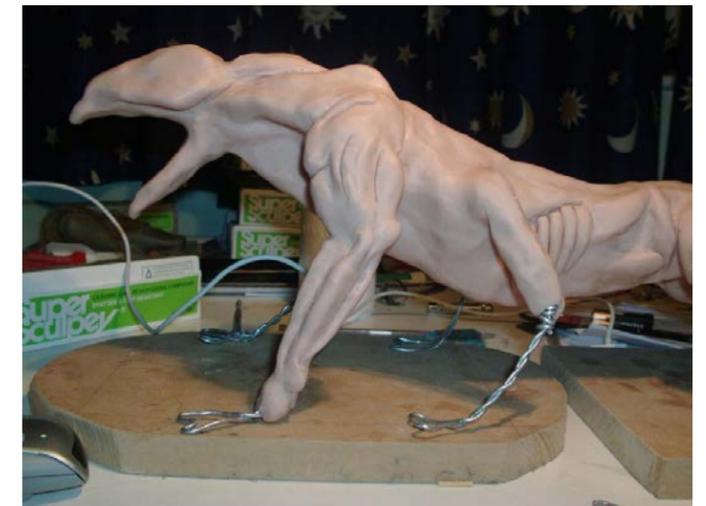
Neville Page worked on creature and character design, Yuri Bartoli worked on the sets and creatures, Jordu Schell primarily focused on the creature and character modelling, and Daphne Yap worked on the costumes. Jordu Schell is an amazing sculptor, and is largely credited with helping move the main female lead concept in Avatar off paper and into a 3D environment, fully capturing her description. With such a large scale production, most designers worked on more than one creature or concept, making it hard to properly credit specific people.

I looked through the digital portfolios of all the artists I could find that had one, looking for different styles and general inspiration for my final piece. Looking through the different mediums they used, clay was general the standard. However, I had chosen to use Sculpey due to handling and time constraints, so I also looked further into Sculpey modelling online as well.

Wayne Barlowe himself was someone I research extensively. His conceptual paintings for the world of Darwin IV are absolutely gorgeous and his creative vreature designs all have a distinctive style and feel to them. He also served as a consultant to the creature design team early on in the production of Avatar, where his skills were no doubt used to their merit.

DeviantArt was a great site to visit here because many speculative biology enthusiasts make entire galleries dedicated to their world and creature designs. On DeviantArt I found several artists I really admired. The greatest among these would be ~Benross91, who had made models of the creatures from Avatar out of Sculpey, and had documented all his process work in detail with dozens of photos. His work and his process influenced my workflow greatly.

After a few quick Google searches, sculpting forums like the Shiflett Brothers sculpting forum were very informative about the proper handling of Sculpey and its curing and baking temperatures and times. These forums were my main reference when I was working with the final stages of my project.



# Ideation

My planning and conceptual work.

As my chosen theme has been a long standing interest of mine, I had a wealth of knowledge and prior concept sketches to draw upon as well as the works of many artists online. I started off by sketching multiple creature designs, strongly inspired by the works of Wayne Barlowe's Expedition and James Cameron's Avatar.

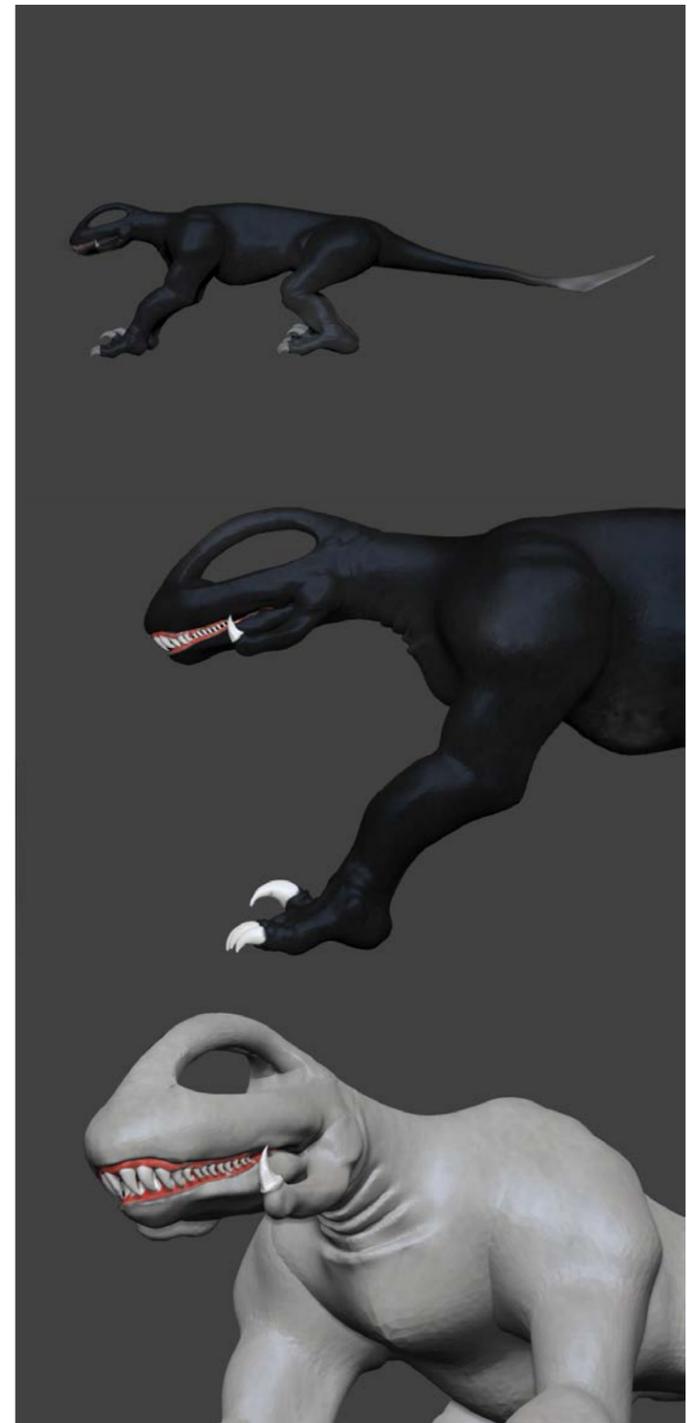
I put in work and details that I knew that weren't going to be directly visible in my end product. These included my considerations for the environment such a creature could inhabit, it's organ systems, how it's musculature was structured, and how it's evolutionary tree may have played out, along with its predators and prey.

I looked to Wayne Barlowe's stylistic choices such as the lack of eyes to create a much more alien feel to the animal, as well as Avatar's use of over-accentuated and defined musculature, though I did tone it down a bit. Adding to the extraterrestrial feel I decided to forego conventional nasal passages, but instead included a set of gill like operculum that led to air exchange directly with the lungs.

The main idea I had in mind was to make a very lethal predator. I included a set of mandibles at the side to add to both an alien look and a more lethal appeal. The teeth are perpetually visible with lips peeled back and the teeth exposed all the time, similar to alligators and crocodiles. While investigating musculature, I used a tiger's skeletal and muscular structure as my primary reference.

After I had finished my concept sketches, I moved onto the computer where I modeled a rough figure of my creature on a free program called Sculpttris. True to its namesake, this 3D sculpting software manipulates polygon points much like how a sculptor would work play, pushing and pulling and smoothing over the polygon mesh, allowing for a very organic and natural workflow.

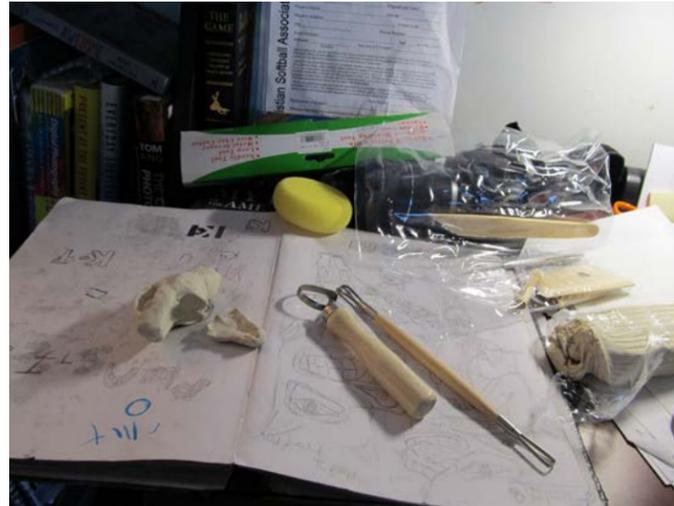
However, my model is lacking a realistic skeletal or muscular structure, much to my regret. Through the process of modelling my creature on Sculpttris, I was able to have a better grasp of the detail of my creature and its appearances from every angle, something I found hard to achieve through a pencil, paper, and my imagination alone. I would later use this model and its resulting renders to help plan my final product.



# Experiments

My initial explorations with plasticine.

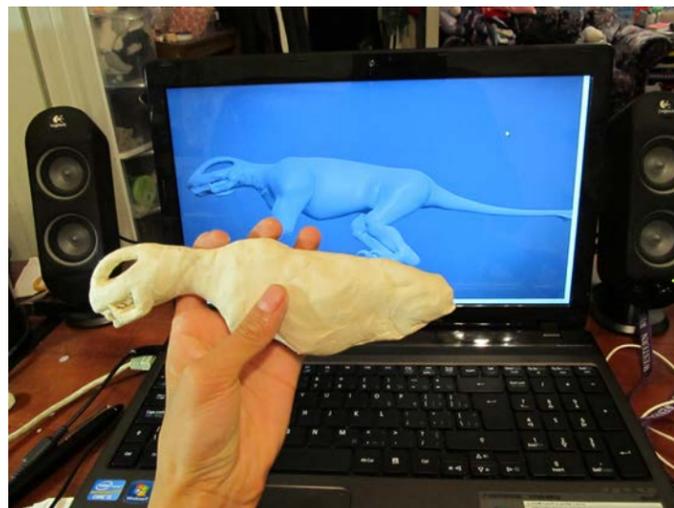
I decided to work with plasticine to create a few experiments first, as Sculpey is fairly pricey and I had found that plasticine was similar to Sculpey in the way it handled. I bought 3 pounds of plasticine to use in my mock-up, so I could better judge how much Sculpey I would need to use for my final model.



I started off with the head, which I used to get practice with creating details like the teeth and the mandibles. I later used it as a scale for the rest of the body, much like how artists use the human head to measure proportions.



Here I've added on the torso. You can see my rendered reference image in the background.



I began attaching the legs and the feet. The feet I found were very difficult to work with, as every time I propped my model up, the bottom would be flattened. Eventually I had to leave my model on its side most of the time, where the flattening could be minimized to areas that are not as noticeable.



I found my fridge to be a very useful asset, as plasticine hardens dramatically when frozen. This allowed me to work easily with new parts to add on without causing much harm to the now rigid former structure.



My final concept mock-up along with the computer display as a reference. I learned that plasticine was not strong enough to entirely support the weight of the creature's head and torso, so I realized that my armature was going to be vital in my final product.

# Process

Creating a dynamically posed concept model with Sculpey.

I began with all the materials I planned to be using on top of my desk. I had gathered my plasticine reference model, armature wire, sculpting tools, and two pounds of Sculpey.



I constructed the armature, which I held together with hot glue and a smaller metallic thread to tie knots and lashings.



Here I've bulked up my armature as well as posed it dynamically - bulking up is a process in sculpting to conserve the amount medium used and to decrease the weight of the overall structure. The box with Sculpey is open to the right.



The first thing that caught my attention right away with Sculpey was its texture and feel - completely different and worlds apart from the messy and greasy nature of plasticine.



I started to block out basic forms and musculature onto the armature.



Here detail can be seen added to the feet and the legs, especially to the individual talon-like claws and the rough musculature.



The mouth took a very long time to make - I made inside of the mouth and then the individual teeth, and stuck them on; one by one. Here you can see the beginning of the long process.

# Process

Creating a dynamically posed concept model with Sculpey.

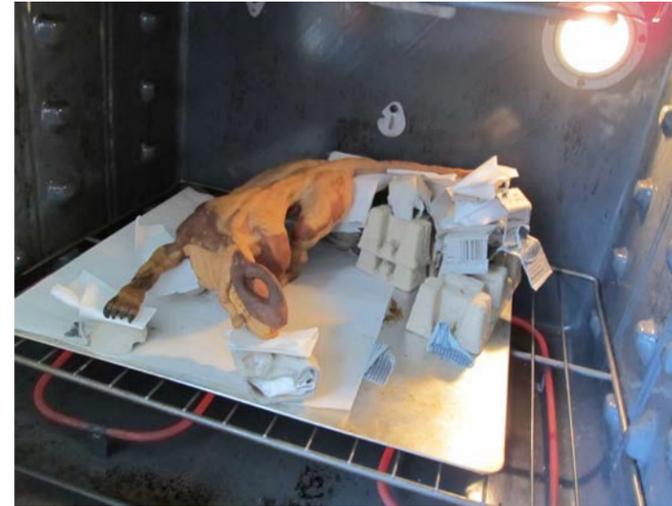
The overall appearance of my final model before the process of curing the medium.



Another detail shot, here you can see the over-accentuated musculature common in the animals from Avatar, a style I employed to some degree to my own creature.



To prepare it for curing, I propped the model up onto a quickly built and improvised scaffold made out of a carton. I used wax paper to make sure the rough surface of the carton would not make any accidental textures.



Here it is inside the oven. The curing process took nearly 4 hours. Though the labelled instructions on Sculpey boxes merely state 15 minutes per six millimetres, through my research on online forums, I found that a shift in colour (I had to look for a dark reddish-brown) is a better indicator, and allows for a stronger model once the curing is done.



After curing I immediately checked to see how my details fared in the process. They all did surprisingly well, but texture incongruences and overlaps that I previously had not noticed had to be sanded down.



After sanding, which was limited due to my access to only high grit sand paper, I moved onto painting a few base coats of white. I didn't want to go for a plaster model look, so to add more life to my model, I painted a light grey-blue over the top, leaving the underside and the belly white, and added a bit of fleshy pink to the gums.

# Final Product

A very photogenic and interesting new paperweight.



# Final Product

A very photogenic and interesting new paperweight.



# Reflection

Am I satisfied with what I've created? If I could change anything, what would it be?

This was a new and unexplored field of art for me, and I felt I had handled this new medium quite decently. I'd always wanted to try sculpture, so the fact that I created something that doesn't look half bad is quite an accomplishment for me. I guess I can call this being proud of what I've done.

This isn't without its faults though, and there are a lot of things I could've improved on. Things like detail retention were really hard to get right, since every time I propped up my final model, the work I put into the foot structure like the heel and an arch got flattened by the weight of the creature itself. In the final model, the feet are flat on the bottom. I would work harder to preserve the detail if I were to do this again, and maybe try double baking to ensure this happens.

I found another problem with detail when it came to dealing with teeth. After I had painstakingly put all the teeth into the upper jaw and the lower jaw, it came time to put the two together. The teeth became squished together and deformed despite my best efforts while I was working on connecting the lower jaw to the rest of the head and adding the mandibles. However, it came out alright because I had the teeth redefined a lot when I had set up the scaffolding for it to be cured on. Again, baking the teeth ahead of time might've been a good solution.

The scaffold was very useful when it came to refining the details, as Sculpey is a soft medium and it's hard to keep it still using hands all the time. While the scaffold was up, I found it much easier to smooth over areas and add things like musculature. I might want to try working with a stiffer medium, like white clay, or focus less on the details before I set up a scaffold, so I won't waste time continuously redoing sections.

The painting was rushed, and I could probably go over it a few more times to ensure an even coat, and without forming bumps when the paint dries. I also might want to try more than once colour palette, although that would require a whole lot of pictures or multiple models.

Now that I have experience curing Sculpey, I hope to achieve better results next time, as well as prebaking a lot of prior pieces so that it would be easier to sculpt the details. Some of the claws came out pretty much black on this first try, which was something I was quite worried about. The rest of the animal seems to have cured just fine though.

If I had more time, and more money, I would definitely try and make an entire collection with multiple creatures, and maybe even environments and plants, to complete the look and feel of what I've envisioned. However, Sculpey is an expensive medium, and as I had learned through this project first hand, it also takes a long time.

I plan on working more with Sculpey in the future, as it is such a versatile material. Personally, I like to describe it as the best of both plasticine and clay. It's much easier to use and master than actual clay, so something like Sculpey is perfect for an enthusiast. Overall, I think this project was a success and I had a lot of fun building the models.