Weekly Reports

WEEK 1

Creature Design-

This week we are introduced to our new project for the semester, making a 10-15 second 3D film of a creature of our own design in its environment. This first week we form our groups and discuss ideas for our film. Creating moodboards and preliminary sketches of our creatures.

Notes-

- Must include facet of our own identity
- No Blender only Maya
- Creature should interact with environment
- Create a poster for screening night

To Do-

- Sketches
- Moodboards- cinematography moodboard, creature moodboard, setting moodboard
- Artist Inspirations
- Treatment
- 150 word group dynamic report

Flour Sack-

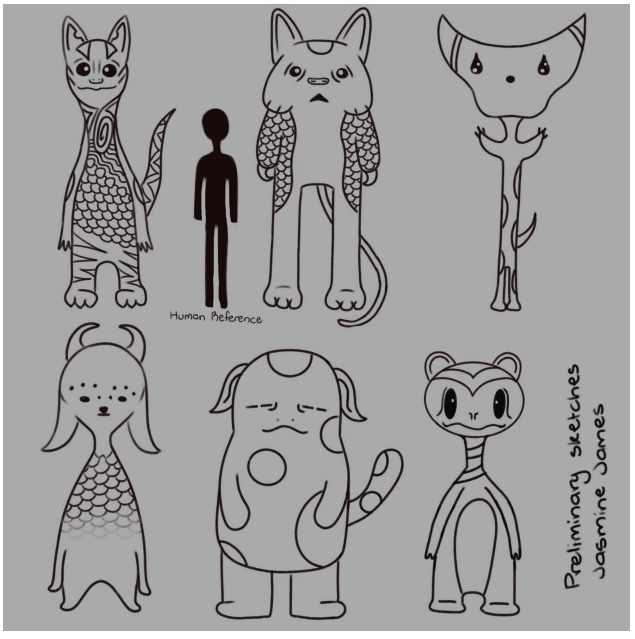
Create a short 3D animation of a flour sack jumping.

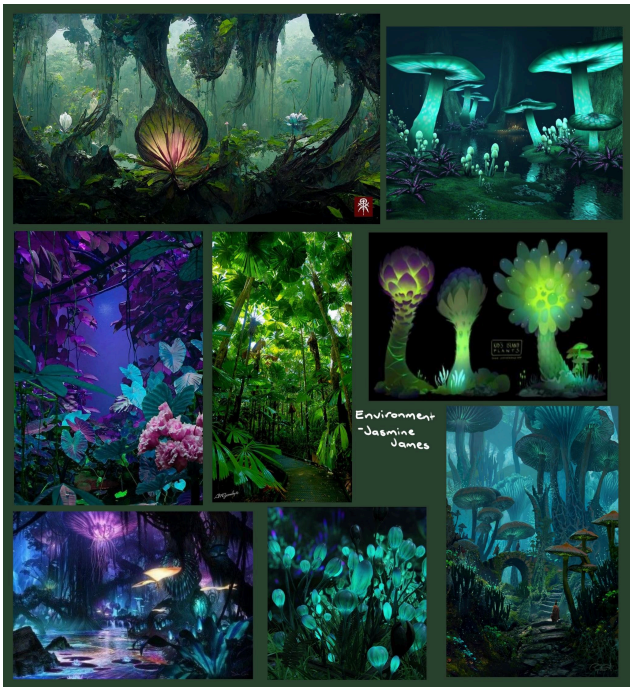
To Do-

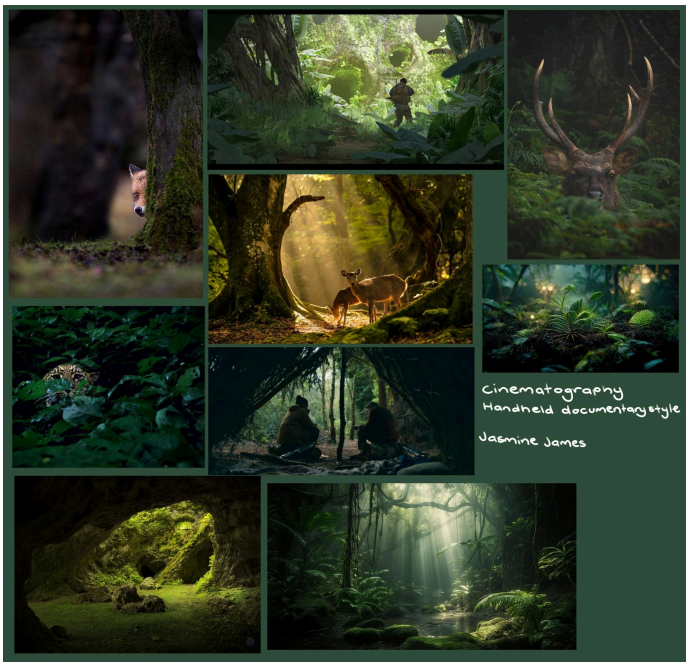
- Film reference video
- Draw thumbnails
- Create pencil test
- Animate in Maya

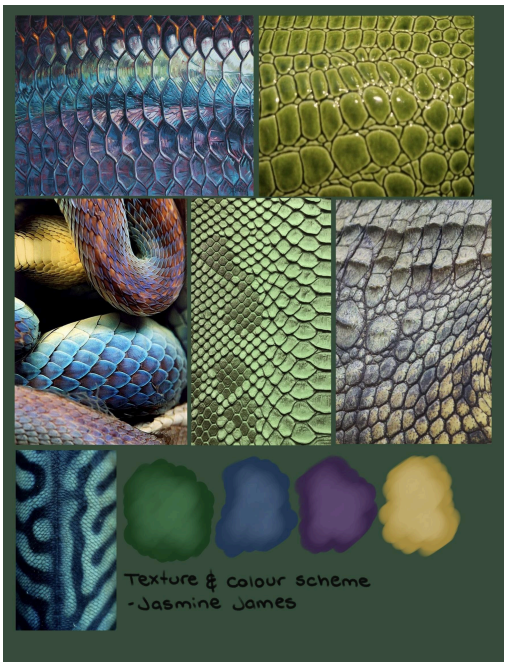
Thumbnail sketches

Preliminary sketches





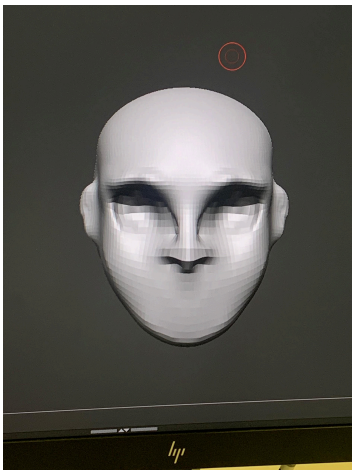




These are the moodboards I created for our short film. I looked for lots of jungle inspiration with lots of green. We want our setting to look like it's from another planet so I added images of glowing plants like something you would see in Avatar. We want our creature to be big and friendly and shy so I got images of creatures that have a larger, rounder body and look like they would hide well in a rainforest.

WEEK 2

This week we will be creating our orthographic planes of our creature characters as well as the turn around sheet. It doesn't have to be detailed but it does need to be proportioned correctly. Having a turn around sheet is very helpful when creating the 3D model. This lesson we also learned about Zbrush and how to do basic things with it. I'm excited to get better at using this software and create more advanced things.



This is the first thing I made in Zbrush, I made a face but wasn't able to do lips because I'm not sure how to do that yet.

Notes-

- Add human image for size reference
- Include facial expressions of character

Homework-

- Final character art turnaround sheet
- My job is to do lineart

Flour Sack Walk-
Create a 3D animation of the flour sack walking on the spot.
Keys- when heel touches ground Breakdown- the passing positions
Ups and downs- highest and lowest points
Notes-

- Basic everyday walk
- Two steps is one second duration

Homework-

- Flour sack walk
- 2 examples of character walks (1 animated, 1 live action) compare and contrast, what does this tell us about the character- 150 words- APA referencing

Walking Examples

Walking variation 1 Walking variation 2

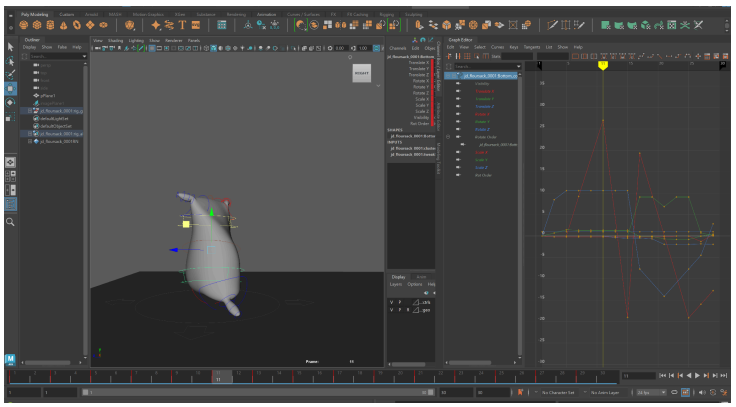
These clips are two examples of very different styles of walking. In variation 1 the character has a very light walk and bounces a lot as they move. The way this character swings their arms a lot while they walk can tell us that they feel happy and light. They are not hunched over to hide their emotion and are very expressive in how they feel. This walk is exaggerated and big. Variation 2 is also an exaggerated walk and has a very cartoonish style. Like variation 1, this person is using their arms a lot in their walk and their footsteps are very light. However, in this variation the emotion is different, they step with caution and are more stiff in how they move compared to variation 1 who walks very freely and bouncy. The way the person in variation 2 is walking can tell us that they are sneaking or being very cautious, their light footsteps are quiet and their arm movement is to stabilise themselves. This variation is a very quiet expression displayed exaggerated while variation 1 is a very loud expression also displayed exaggerated but fitting for the emotion.

Walking Variation 1:
Joao Sustelo (2016) ‘animationtest’ available at
https://vimeo.com/168331928

Walking variation 2:
Kevin Parry (2017) ‘100 Ways To Walk’ available at
https://www.youtube.com/watch?v=HEoUhlesN9E

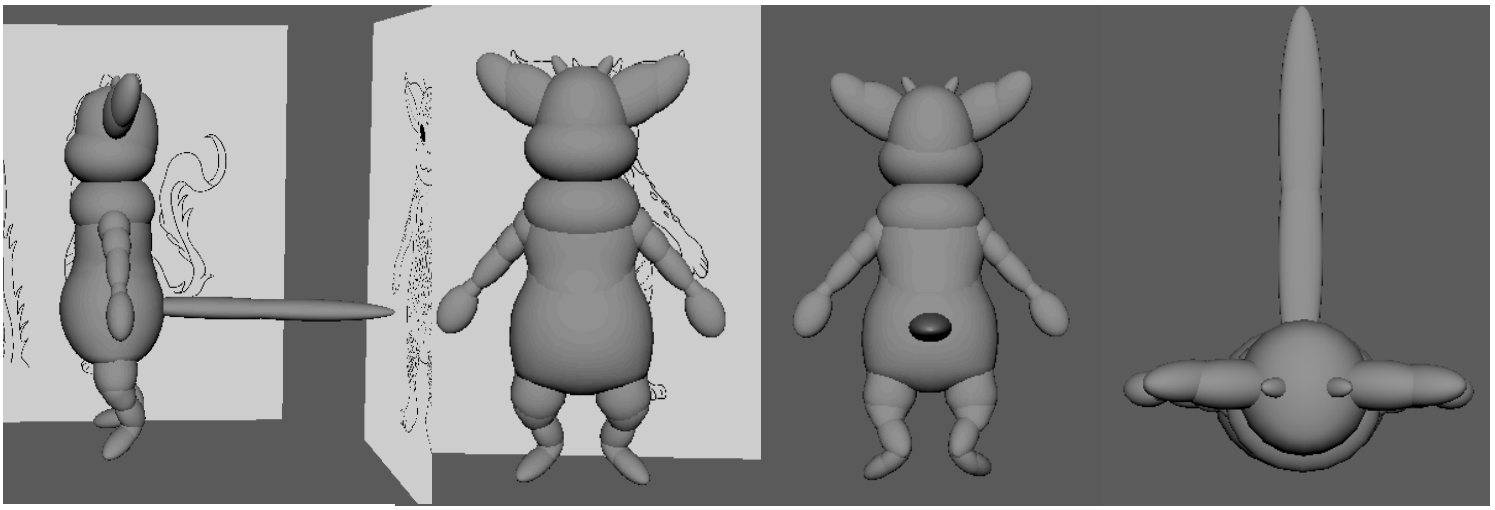
WEEK 3

This week we did some more work in Zbrush. We used the app MakeHuman to create a baby model and then imported it into Zbrush to create a doll model. I think this app will be very helpful in the future when creating human models so we don't have to build it completely from scratch. It was interesting to watch Emily build the model and we were able to learn which tools do different things.



Working on flour sack linear walk. It was really interesting to animate human features on a non human model and give it personality and character, it will really help with future animating.

Lineart for character final



Hard Modelling

This is our final 2D design, Medina did the sketch, I did the lineart, Reyna did the block colour and Hannah did the shading.

Overlapping and follow through notes

Follow through refers to the termination of an action, showing that it doesn't stop abruptly. Follow through and overlapping action are grouped together because they are closely related. These principles help create movement more realistically.

Follow through occurs at the end of an action to create closure. Rather than stopping abruptly, elements that were set in motion continue to move at a decreasing rate. Follow through often occurs in secondary movements such as hair.

Overlapping action involves having multiple actions occur simultaneously. It mimics the way different parts of a character or object move independently. Elements that are affected by the primary action may continue to move or adjust. Even after the movement is complete.

Overlapping enhances the realism of the animation by making it look less stiff and robotic.

Overlapping and follow through can help enhance my flour sack animation and make it look less stiff and more realistic. Follow through is when an animation continues at a slowing rate instead of stopping abruptly. I can use this in my animation by making the flour sack bounce after the steps instead of freezing after the last step.

Overlapping is when multiple small animations happen simultaneously like different parts of the character moving independently. In my flour sack animation I can use the overlapping technique with the little 'hands' on top of the sack and have them bounce and sway as the sack takes a step.

WEEK 4

Live action reference can be quite useful to generate ideas for your animation. Creating reference videos is helpful when creating a unique performance that doesn't rely on cliches and is physically and emotionally believable.

Creating a performance reference is our way as animators to help us see how a performance is constructed.

Silhouettes, gestures, postures, movements etc are always adjusted, sweetened, or blended to produce a more appealing result.

At least 20% of production time should be spent on filming reference and planning drawings. Some people may spend up to 60% of their time on planning. If you are

given 5 days to produce an animation then spend at least one whole 8 hour day on planning as a minimum. If you are given 3 weeks then spend 3 days on planning. For actions that go beyond your physical capabilities you can turn to other reference materials to help like photos, comic books, live action movies (for subtle facial expressions), animal documentaries, internet videos.

3D Artist- Juan Hernandez

The artist I chose to write about is Juan Hernandez, a character artist and visual development artist from the Czech Republic. I really like his works. He does a range of different styles of 3D art from very cartoonish to quite realistic. My favourite of his is the artwork on the top left called Snail Souprise made in Blender. I love that there is so much going on in this scene and all the little details that you notice when you look closer. I also really like the style and how it's quite cartoonish but looks like the characters could start moving on their own, the poses and expressions tell so much of a story. I also love the lighting and how it looks so natural in the scene and you can see where the light source is coming from instead of a studio light.

We filmed our reference video this week, we booked out the greenscreen room so we would have lots of space. We tried to time each movement so it would fit in 15 seconds.

WEEK 5

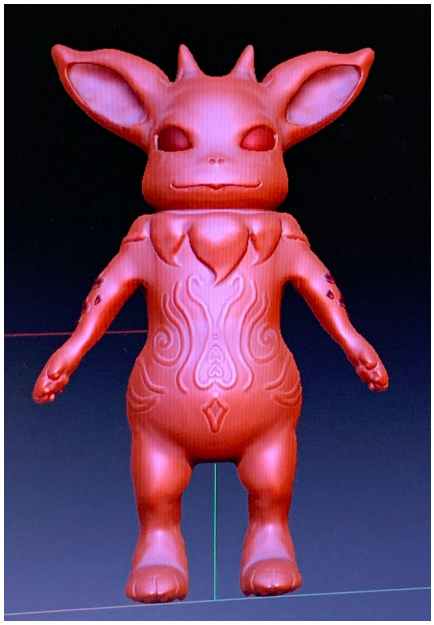
This is what our Zbrush model of Flaleo is looking like right now. We have the standard shape ready and we need to go in and do lots of refinements and add the smaller details like the tattoos and scales. We also need to figure out how to do the facial features. I think the eyes will be difficult to do so we will need to spend lots of time on that.

Notes:
Before thumbnailing the animation we have to practise drawing our character from different angles by drawing the line of action and drawing over the top. Thumbnail for an hour or more before starting a shot so you have the right idea of what the character should be doing.
Look for interesting things in the reference videos like silhouettes, weight shifts, forces, subtleties, poses and emotions.
192-240 frames feature animation for blocking
800-1000 frames television animation for blocking

This week after our lesson our group worked on our model again and polished and smoothed up some areas and made Flaleo's facial features, little arm spikes and paw and foot pads. I think our model is coming along well. We do have to try and twist the arms so that it is standing in more of a T-pose because we forgot that it is important to have the arms in the right pose for rigging. We also need to add the scales on the legs and the body pattern- detail things.

This is our storyboard that we also made together this week to show our animation sequence and how our creature will move and interact with the environment.

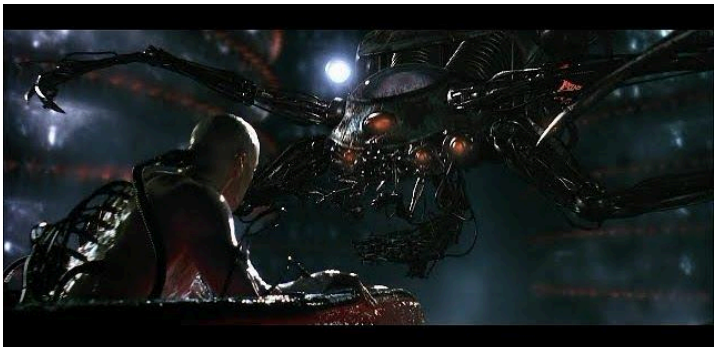
WEEK 6



We didn't have any class this week because of the Easter break but my group and I still met up to work on our model and polish it off.

We had to remodel the hands to make the arms twist the right way. We tried many times to rotate the arms in Zbrush and Maya but it would never work properly so we just decided to remodel the hands altogether. We also added his body details all around. We decided not to model the scales on his legs because it just didn't look right so we've decided to add the scales as a texture when we get to that point.

Our homework was to also watch The Matrix or Beetlejuice. I chose to watch The Matrix. (I didn't like it)
The whole movie heavily relied on animation and CGI in many scenes like the moment Neo's mouth closed up, all the shots with bullets, and all the machines in the Real World. A big scene is the one showing the red pods and the machines that control them and take energy from them in the Real World. The animation in these scenes is very good and looks quite realistic, it is smooth and the main character Neo doesn't look out of place being a real person in an animated scene. The lighting is dark with lots of red which makes the scene look very ominous and tense but can also help to hide any imperfections in the animation. There is also the scene where Neo dodge the bullets which is a very famous shot from the movie. This shot uses an effect which slows down the shot making it seem almost still. We can see the bullet moving in such a slow motion that you can see each frame that the bullet moves making Neo seem super fast.

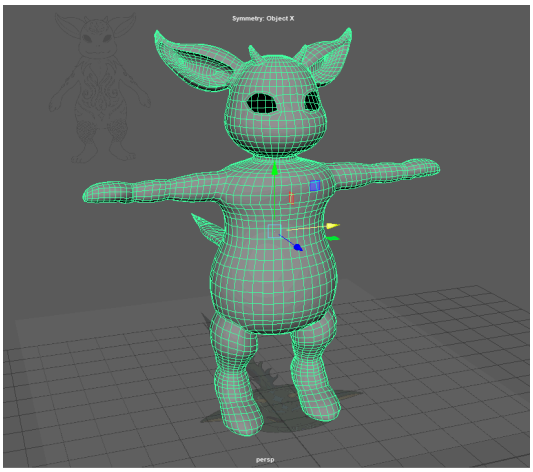


WEEK 7

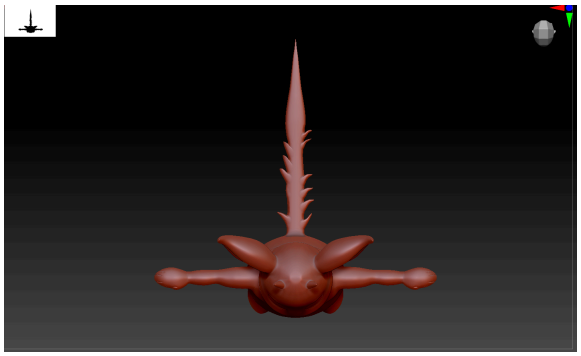
Textures and shading

- UDIM layouts allow for multiple UV tiles to be created so that all the UV information does not have to be crammed into one 0-1 texture space. This allows for more detailed texture information.
- Shaders define the way light interacts with the surface of the model.
- Albedo maps are the basis of the entire model, primarily defining the colour of the texture.
- Normal maps give the texture the illusion of depth, affecting the angles at which light bounces off the surface.
- Roughness defines how light scatters across the model, the rougher the surface the greater the scattering.
- Metalness is useful when your material is meant to be metal as this shader does a better job of simulating this type of lighting.
- Displacement maps are similar to normal maps in the way that they add details to the base mesh, however they affect the look of the surface geometry.
- Emission maps allow you to define parts of your material that seemingly emit their own light.
- Subsurface scattering simulates how light passes through an object, some light bounces off the surface while some bounces around inside the surface.

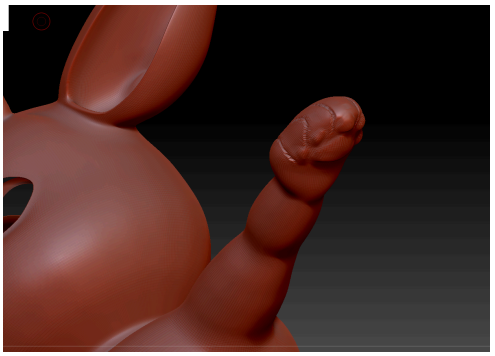
This week was a busy week for us, we had to completely remodel our creature because once we imported our original finished model into maya the topology was all messed up and asymmetrical. It would have made it super difficult for us to try and UV unwrap. We originally decided to just remodel the head thinking that's where all the problems were but after we modelled the head we realised the rest of the body was a bit of a disaster as well. We did the majority of the modelling in Maya and rebuilt our creature with a much cleaner topology. Our original mistake was that we built our first model in maya using separate spheres but for this one we built off of one sphere by extracting everything.

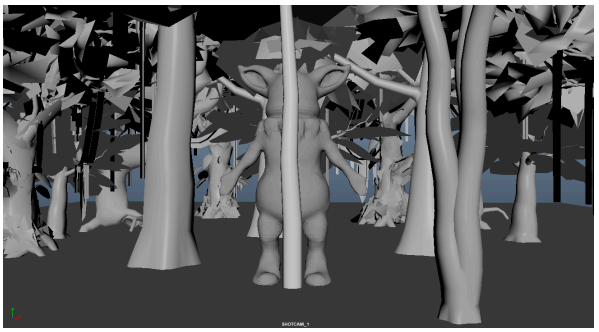


This is our current model after finishing the Maya process. We also turned the arms facing down and put his arms into a more flat T-pose. Flaleo is looking a lot more smooth and clean compared to our first model, it should be much easier to work with in Zbrush now.

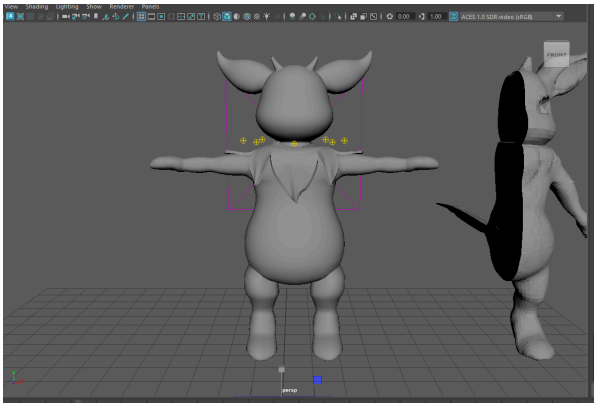


This is the model in Zbrush, we tried to do as much as we could in Maya so we wouldn't have to do much in Zbrush. We added the details for the tail and also the paw pads.



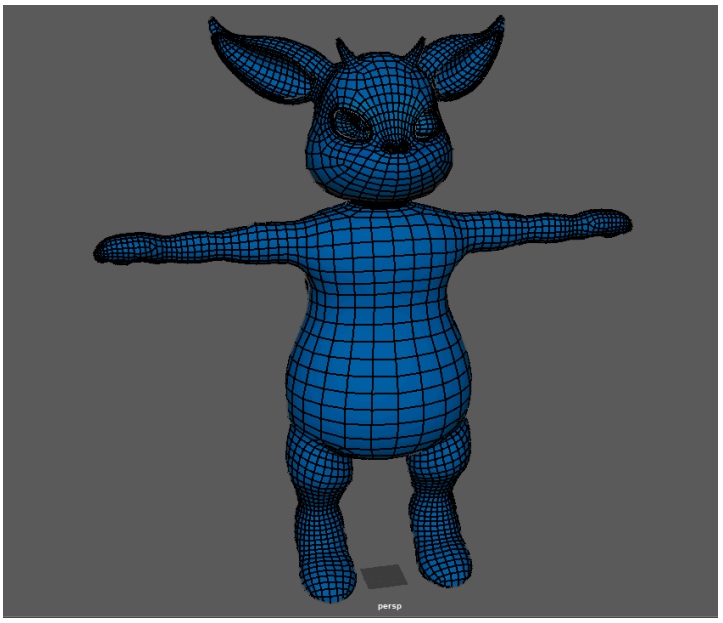


This is the first test of our environment scene that Hannah built. We downloaded our assets off Sketchup using free downloads. We want to go for a jungle, rainforest look.

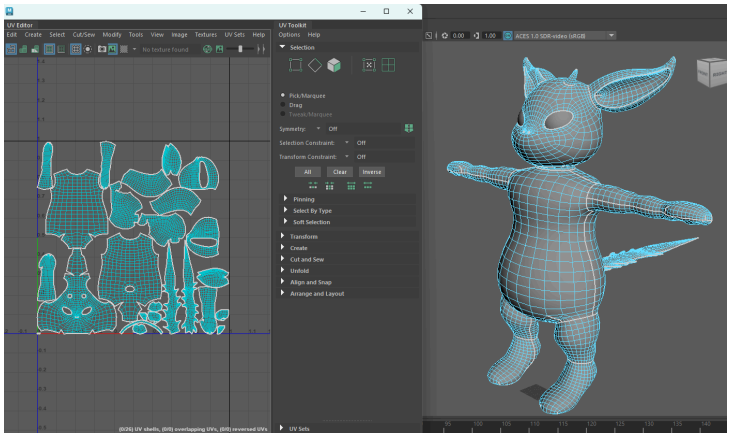


I also made the leaves this week and applied ncloth to them so they are able to move fluidly without being animated. At first we thought we would model them straight on him like we did with our first model but thought it wouldn't move right and might make skin weight painting tough.

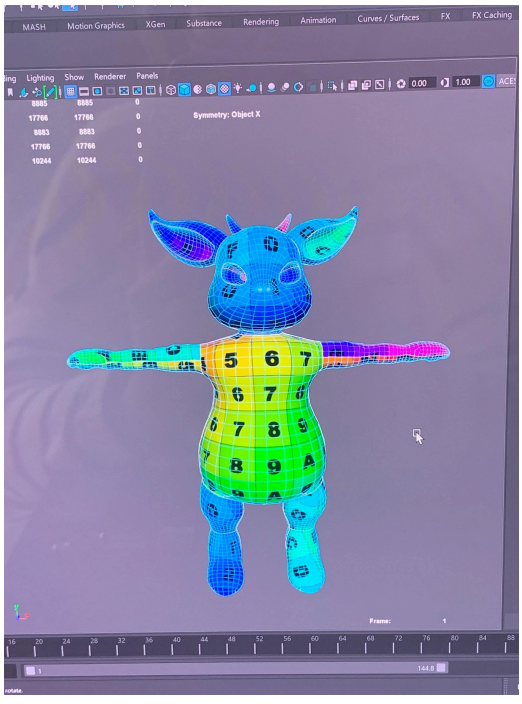
Holiday Week 1



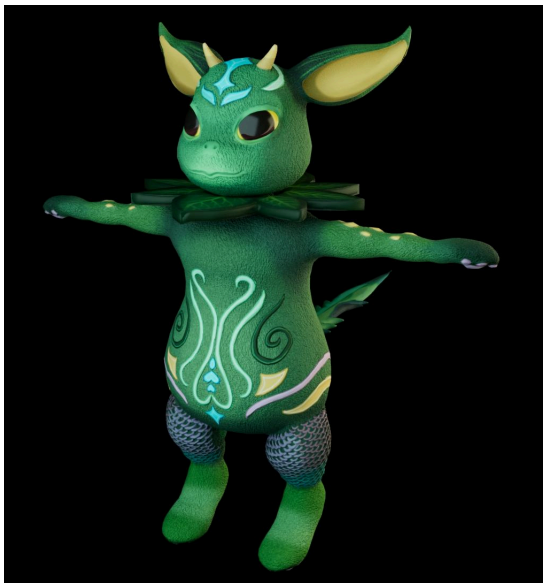
This week we spent a lot of time finishing off our model and then started retopologising it. We had a bit of struggle on the points like his hands, horns and tail trying to make sure there are no n-gons or triangles, we had to make lots of adjustments to make sure there were only quads.

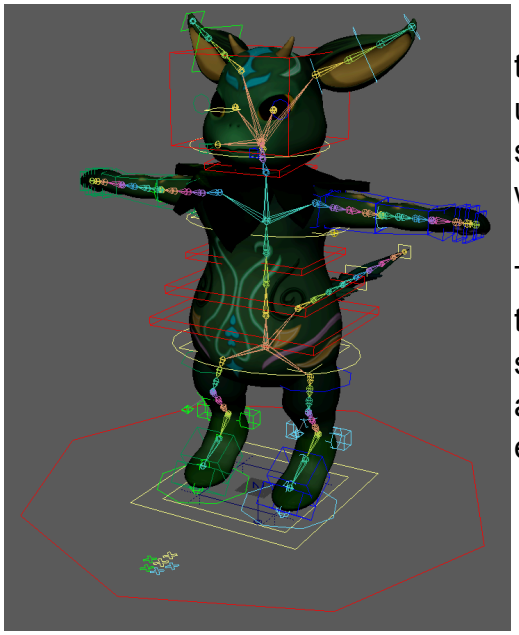


The UV unwrapping was also done this week so soon we can start texturing.



Holiday Week 2





This week we rigged and textured Flaleo. We used Substance Painter for the textures, using a plain paint texture to paint on the textures and then found a fur texture to put underneath, it is only really noticeable close up. We need to fix the leaves around his neck because since it's an N-cloth, the textures don't move properly when the leaves fall into position.

The rig was made with Mgear, it was easier to use Mgear than to create a rig from scratch because he has a somewhat humanoid shape, a rig was made for the tail and the ears. A blendshape was also made for the eyelids so he can close his eyes and blink.

This is what our setting looks like this week, it is more packed but we still haven't figured out the problem with the textures. The cameras are placed where they will move to in each shot. This file is way too big though because lots of the models have a really high poly count.

WEEK 8

Scene

- place or setting where action occurs
- a scene is composed of on snot or a series of shots showing a continuous event

Objective- the thing the character wants to accomplish

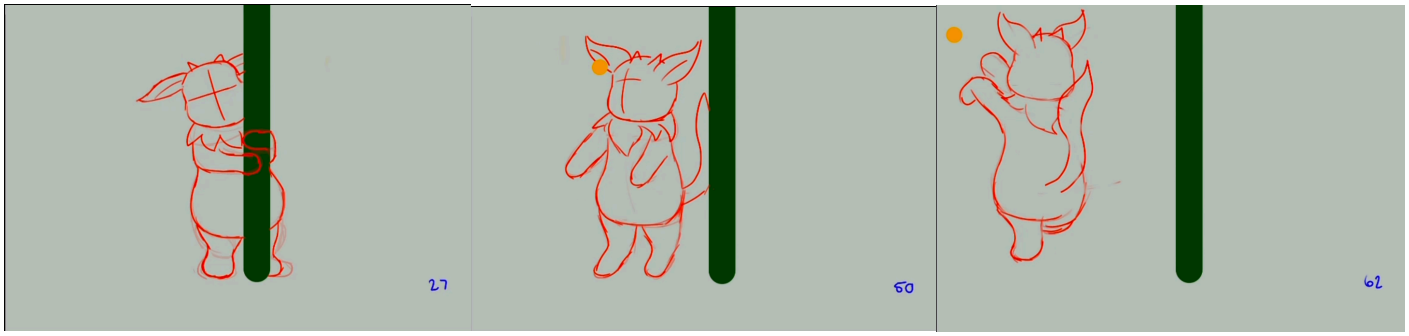
Obstacle- thing stopping or making it hard for the character to accomplish its mission

Action- the thing the character does to finally accomplish its mission

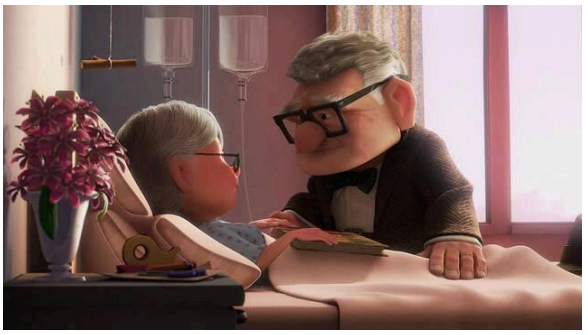
The character's intention is the emotional reason that drives them toward their objective.

The character should always have a clear reason for doing something while they do it.

Characters should appear to think and not go through their actions mechanically



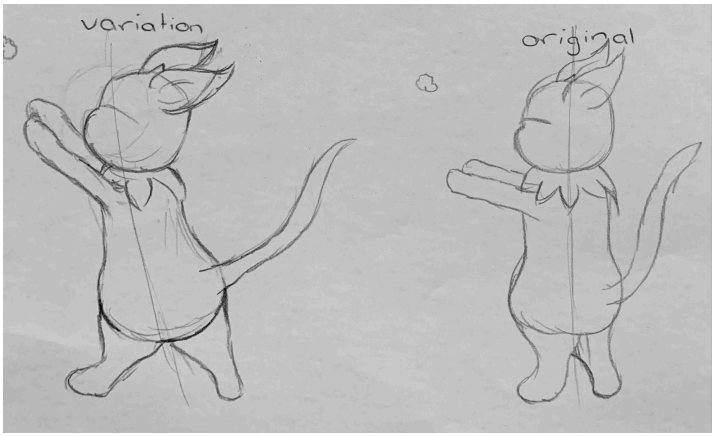
This week I made our pencil test of Flaleo's movements on Procreate. It is 12 fps and 73 frames long. I didn't draw his facial features since we are not supposed to be doing much facial animation. I kept it pretty simple using the green line to represent the tree and the yellow circle to represent our glowing object.



Animation evokes emotion in many different ways through character design, colour, music. Animation can be very expressive and is able to show emotion in more exaggerated ways than live action films. The sad, famous scene from Up with the montage of Carl and Ellie's life ending in Ellie dying is a good example of using music to create emotion. The song is happy during the happy moments of the montage and even though it doesn't change, it becomes sad in the sad moments, paired with the slowed down pace of the montage it is very effective. The early scene in Finding Nemo after Nemo's Mum dies and Marlin finds his egg all alone is an example of colour and expression used in animation. The scene is very blue and dark which is very commonly used to symbolise sadness. Marlin's expression is also effective, despite him being a fish, there is lots of animation used on his face like his eyebrow bones. Fish don't show emotion with their face so having such emotion on his face really brings life to his character and helps us to sympathise with him.

Our setting looks really good this week, our group member Hannah spent a really long time texturing and lowering the polycount on models. The style of our setting is really cute, it doesn't look like realistic trees and plants but the rendering makes it look like it's in the real world. There is an assortment of different plants and mushrooms to make it look like it is on another planet. I think we could add a few more shrubs and grasses along the ground to make it look less flat.

WEEK 9



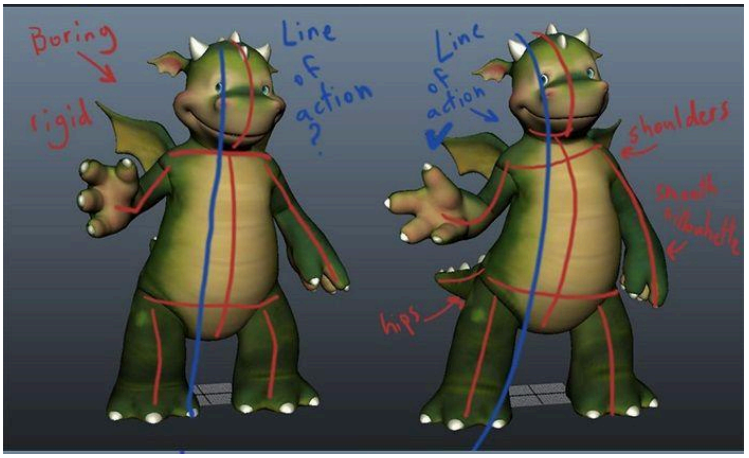
This lesson we worked on exaggerating our line of action and redrawing key poses from our storyboard to add more movement to the line of action. I really like the variation on the left, it has a lot more movement in it and a curve to the line of action.

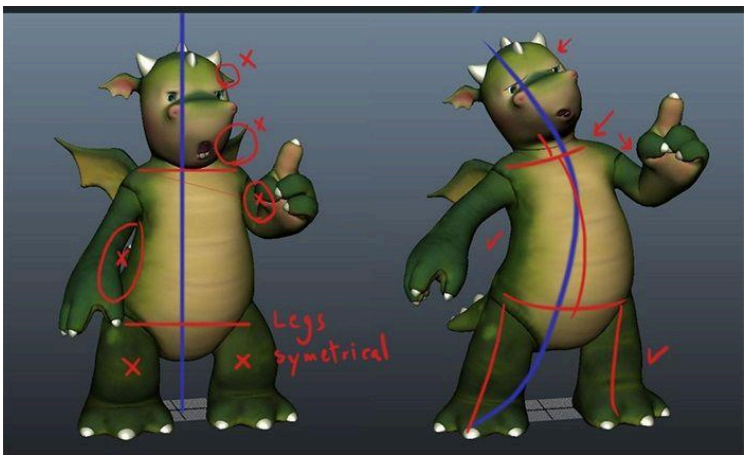
The second variation is also good as it makes our character look less stiff and has a bit more expression compared to the original which looks a bit zombie-like.

<u>Dr Kennedy's Lecture</u>
Preproduction
-Think and plan
- Draw poses and gestures in the form of thumbnails
- produce video reference
- draw thumbnails again
- share your ideas with others.

- Analyse your character's desires and what is their obstacle.
- Start with a broad idea of the acting you want for your scene and create thumbnails for each key pose to help visualise performance.
- The golden pose provides the clearest sense of character intention and personality in a shot.

Key poses
- Every change in characters thought, emotion
- Change in direction when the character goes one way and starts going a different way.
- Breakdown





Line of action- straight lines are boring
- Think about how the silhouette looks
- Add more curve to the line of action

Don't draw the arm from the torso outwards, draw where you want the hand first and then draw the arm back from that.

Blocking

- Blocking is your own proof of concept, and should be seen as more of a working document that needs constant refinement and reevaluation to ensure the best result.
- One shot should have one clear goal or thought to it. Adding too many ideas to a shot means that none of those ideas are clear.
- It's a good idea to create a window that features the silhouette of your character.
- Animate in gimbal mode whenever possible

Blocking Pass 2

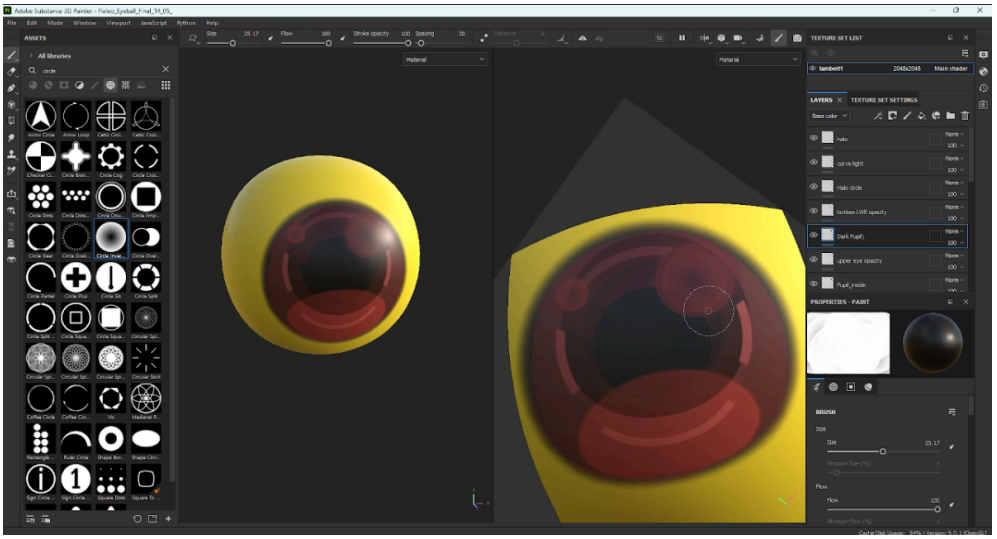
- Moving holds are often used to emphasise when a character is thinking so that the audience gets to pause and savour that beat.
- The character cannot completely stop moving, or else the character looks dead.
- Different parts of the body come to rest at different times.
- The movement immediately following a moving hold should have a dramatically different energy from the moving hold.

1. Does each action read well
2. Is each action interesting
3. Did you utilise pose changes
4. Is the character moving the correct amount for the mood of the shot
5. Did you solve all problems
6. Do you know what you're going to do next?

<u>Line of action</u>

The line of action is very important in animation as it is the fundamental base of a character's pose. It helps animators keep their characters looking dynamic and having more dramatic emotions and poses. Having a basic and straight line of action looks boring and doesn't show enough expression or emotion in the pose. Having a more curved line of action allows for a range of more interesting poses and movements. The line of action can make a character look more alive and less stiff. A silhouette is also very important in animation and a good line of action helps make it look clear and visually understandable. An example of a good line of action is Road Runner. The characters have very exaggerated and dramatic poses because their line of action is so dynamic. It adds to the humour of the cartoon as their poses are so unrealistic but still easy to understand.

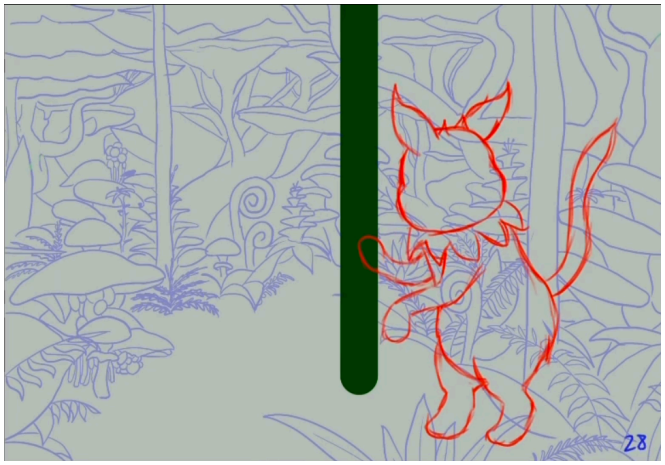
WEEK 10



This week some changes were made to Flaleo's eye, after receiving feedback to add a pupil to his eye since his eye was just a big black dot on yellow. His eye is now dark brown with a black pupil, we didn't want to make the pupil too visible because he has very dark eyes but we made one slightly visible.




We also refilmed our reference video after receiving feedback from Dr Kennedy that our story would be hard to understand for the viewers, we added more to the start of our animation. Flaleo will be foraging through a bush before seeing the camera and hiding behind the tree instead of starting behind the tree at the start of the animation.



I also edited our pencil test so it matched the new reference video with our new movements and golden poses.

150 words
Receiving feedback from lecturers and peers is very important to create a good piece of work. There are many things we may not consider or notice about our own work until someone else has said something about it or given feedback on an element of our work. For example, with our animation we know every little detail about our characters or setting but might not make it obvious to the viewer which can confuse them and leave them with questions if the details are not visible. It is helpful to be told about these things so we can get an outsider perspective on our works and see how it looks to everyone else. Sometimes receiving feedback can be difficult especially if it is a constructive criticism, it can make us feel bad about our work or silly for not realising something until being told. But it is still important to hear constructive criticism from lectures and peers as it can help us improve our work and we can potentially be happier seeing the changes suggested and the final results.

WEEK 11

Spline pass
Work in three passes and address the shot in its entirety with each pass.
The first pass is the refining pass- fix any foot drifts, unnecessary overshoots, and issues with interpolating between keys, breakdowns, extremes.
Pose tweaks should be done from the shot cam view. Make sure there is no foot drifting before moving onto the body. Use fast outs on foot lifts and fast in on foot contacts.
Start working with the root of the characters rig, usually the hips, and tweak down through the hierarchy
When you move into spline mode, depending on how extensive your linear keys are, you may encounter some nasty surprises in your animation. A way to help is to use auto tangents in your animation preferences, these help to avoid overshoots in your animation curves.
Hitches are areas of uneven spacing in your curves. To find and fix a hitch, isolate the curves that have a bump in them and smooth them out.
Drifting are areas where things like the feet are moving when they should be firmly planted. Most often caused when tangents overshoot in spline mode.

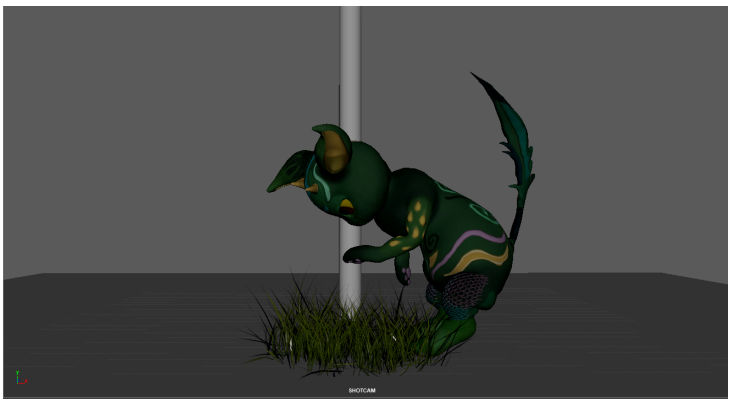
Second pass- timing pass

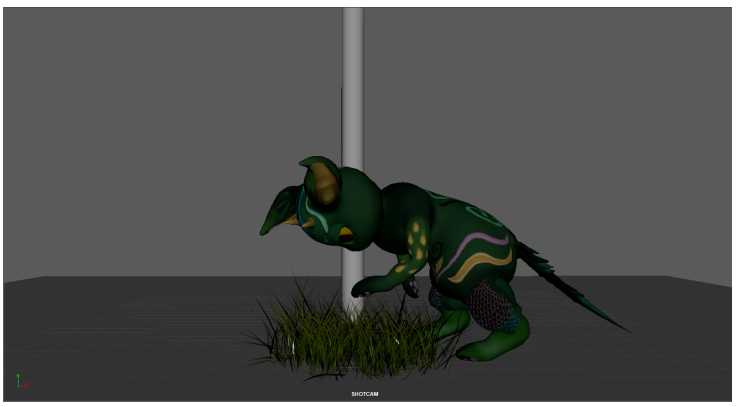
Third pass- weight pass
The shot may have weight problems, likely due to timing. Make sure your poses feel heavy wherever possible.

150 words
We have encountered many challenges during the process of our assignment but our group has worked together very well to overcome these challenges. During modelling we didn't have many challenges until we got to zbrush and realised that our model was all separate objects because we didn't realise it had to be made from one object so we combined the mesh and went back to zbrush. There was a little struggle with rigging and skin weight painting mainly with the tail because the tail needed to be really dynamic so there was lots of trial and error for Hannah who did the rigging. We came in almost every day during our break to fix our challenges, we had problems with zbrush and uv unwrapping so we had to remodel our creature and put it into zbrush and then retopologize it. We all took turns working on different things so we all contributed to fixing the problems

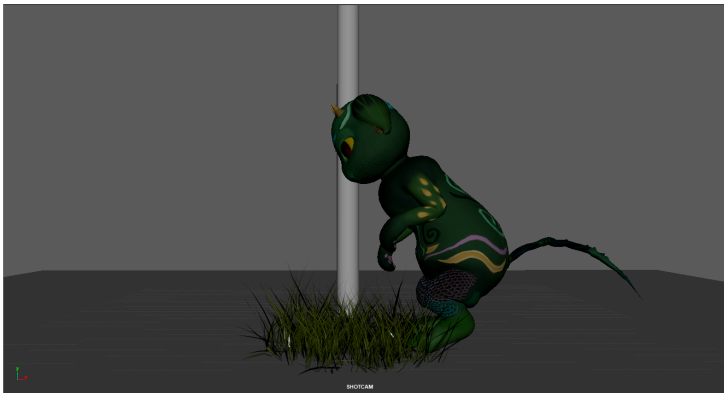
This week I made adjustments to the finished linear pass and put it into spline mode. We received lots of feedback about the poses and little changes. First I changed the position of his feet in the first pose so he looks a bit more dynamic. Then I changed his tail before he jumps into a U shape so it matches the way he's going to jump. I also adjusted his ears before he freezes so his ears react before the rest of his body, I also made him hold the pose before he reacts a bit more so it looks like he's registering what he's hearing. Lastly I made his head tilt more towards the firefly when he peeks out. I got rid of the first peek so instead of having two peeks he only has one and reacts to the firefly at the same time.

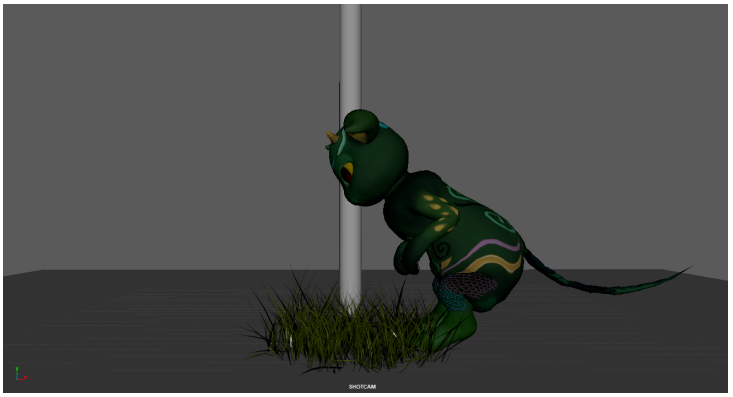
Leg change before after



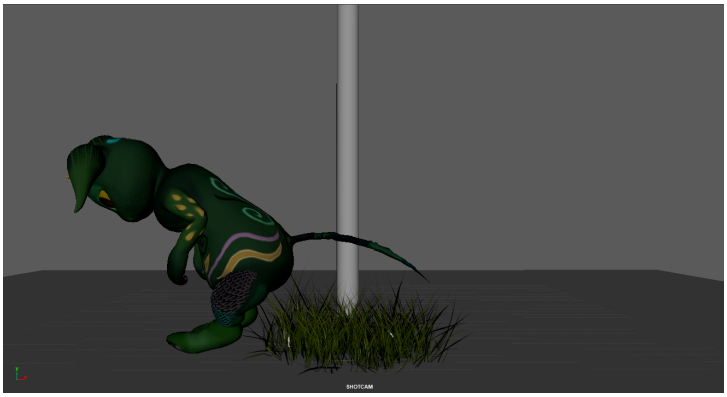


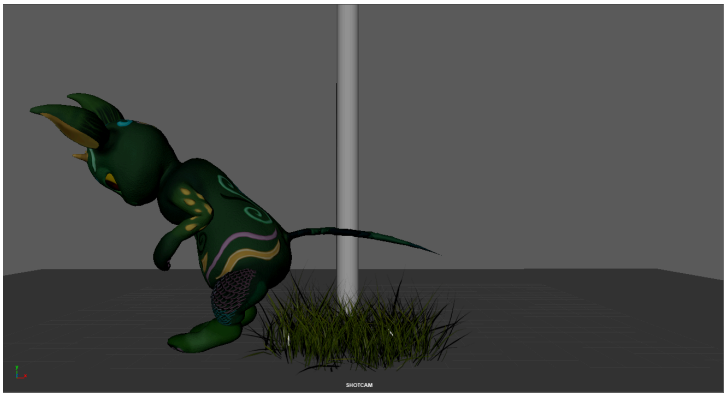
Tail change before after





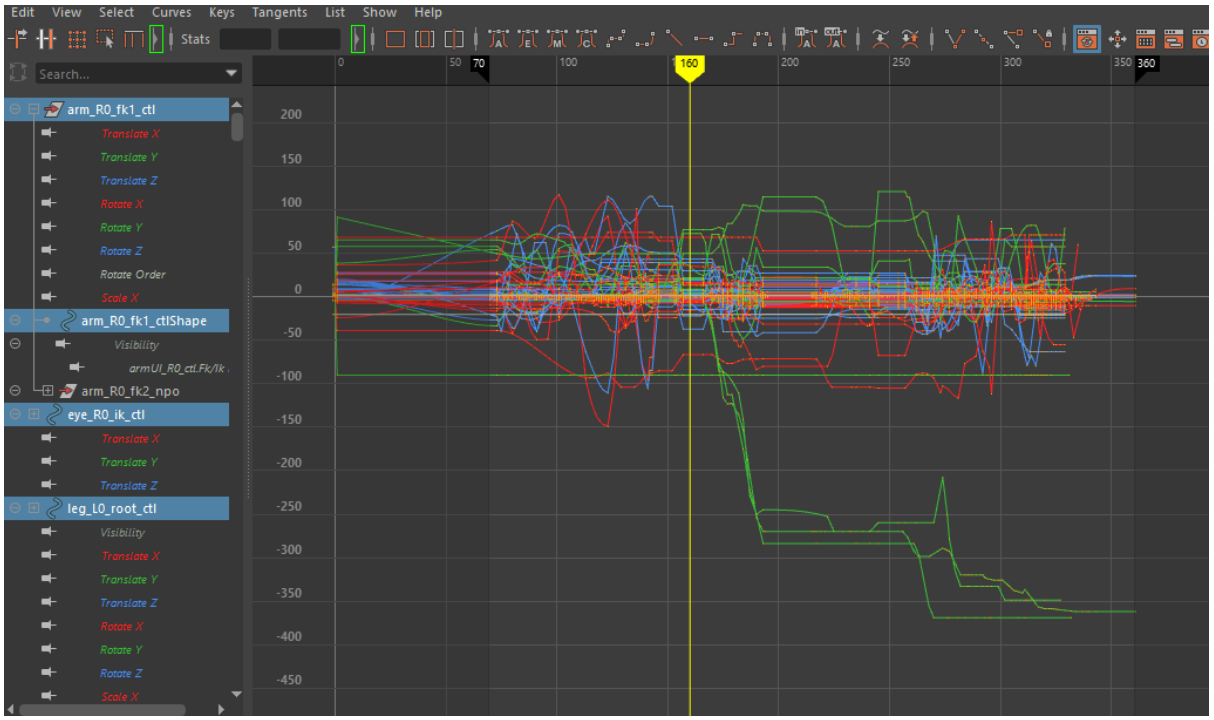
Ear change before after





Head change before after

I put the animation into spline mode and made some fixes where his arms go through the tree. I also fixed popping with his knees, and made his tail more fluid, I also did follow through animation with his head to make it move slightly after his body. This was a tedious process trying to notice all the tiny changes and make sure it was completely fluid but it looks much better with the spline done. I did lots of work in the graph editor, moving around keys so there were no weird jumps or weird timing.



Week 12

Polishing

- All timing should be figured out before polishing- You don’t want to be animating and figuring things out as you’re polishing
- Clean up any knee pops or elbow pops with squash and stretch
- Check arcs using the arc tracker
- Make sure that bendy parts of the body don’t end up becoming locked at the same angle from frame to frame.- There should always be visible rotation in animation, unless it’s a held pose.

This week we finally have a finished scene, while I was working on spline, my group members did lots of work on the setting and it looks really good. We also worked on lighting. Jason gave us lots of feedback on how to do good lighting. We decided to add a torch light when Flaleo gets shocked to really show the reasoning for his surprise. The plants and trees look much more realistic now because we used the alphas in the shaders to make the shapes more defined. It’s really come a long way.