

The Loops of Creation



Despite the advances of technology and the incredible discoveries of science, the truth behind the origin of life remains a mystery. People from several fields of knowledge propose different theories around how life began. Some of these theories are based on quantum physics, explaining that the world began from the smallest state of matter. Others believe that the first form of molecules came from different nature interactions. On the other hand, some people think that our universe must have been created by another mind... a superior mind.

It would be interesting to take advantage of the abstractness and complexity of all of these creation theories to create simple animated sequences.

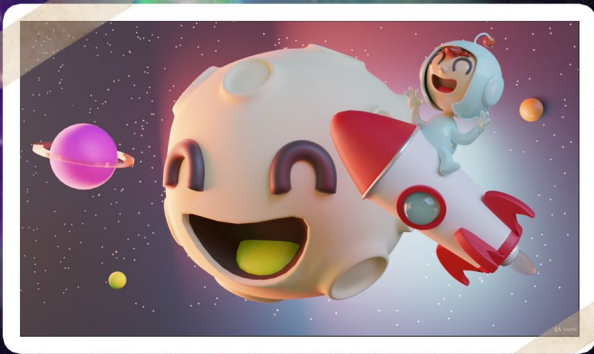
This project aims to create three looping 3d animations based on three different theories of the creation of life. These theories will be:

The Creation from Minimal Molecules

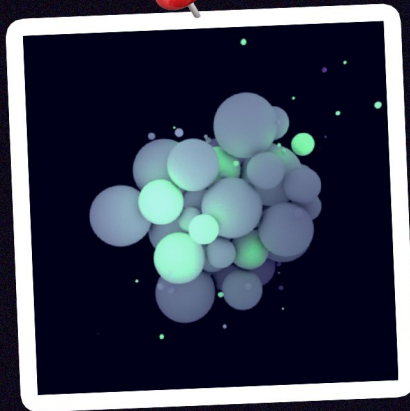
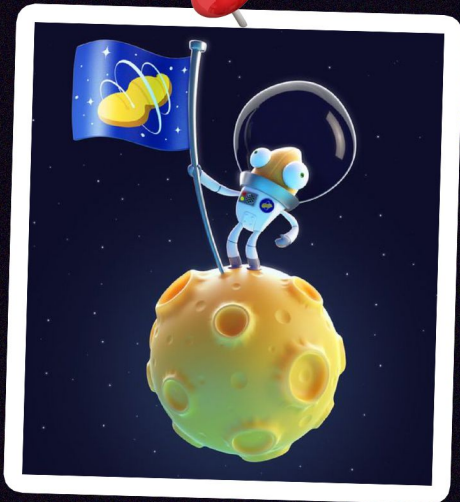
The Creation from an Electric Spark

The Creation of a Superior Being

The idea is to take the principles behind these creation theories and humorously illustrate them through a cartoon animation style.



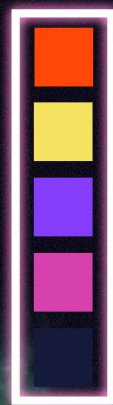
Music of the Spheres - Coldplay



Conflux 2021
Behance



Conflux 2021
Behance



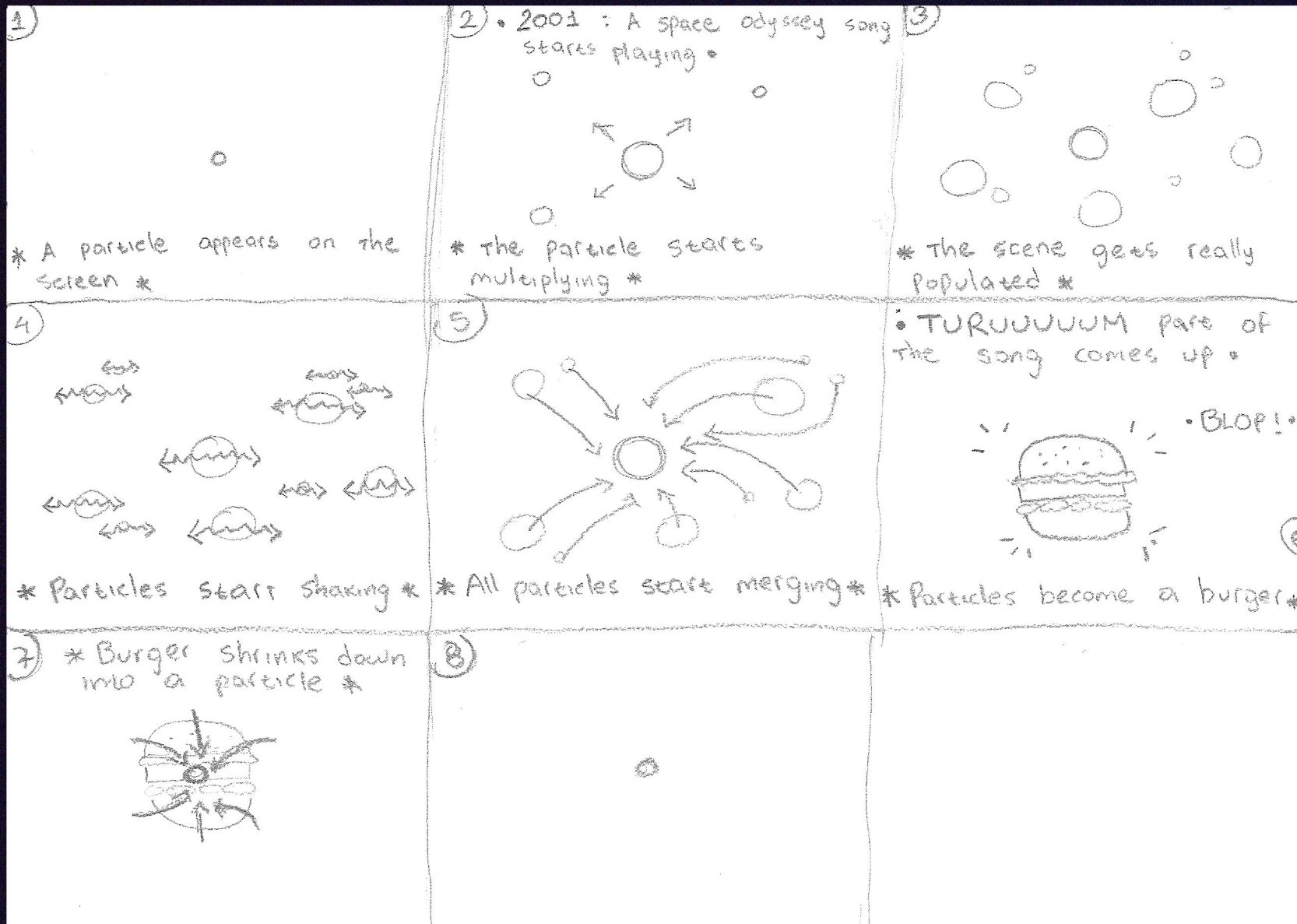
MOOD BOARD



Daegu National Museum
Behance



The Creation from Minimal Molecules



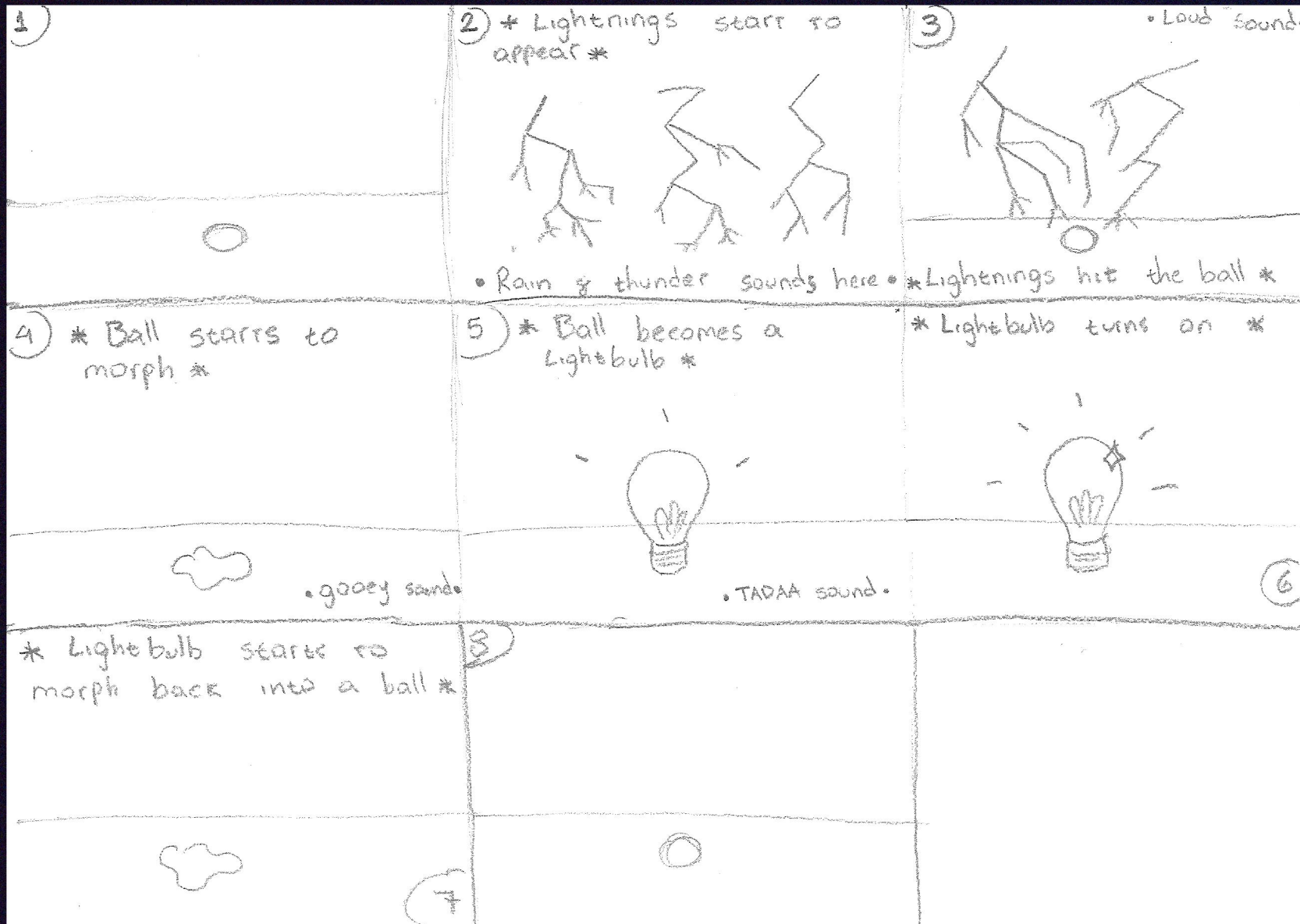
Key Verbs:

- Shake
- Morph
- Multiply
- Merge

Animation Principles:

- Staging
- Slow in and out
- Stretch

The Creation from an Electric Spark



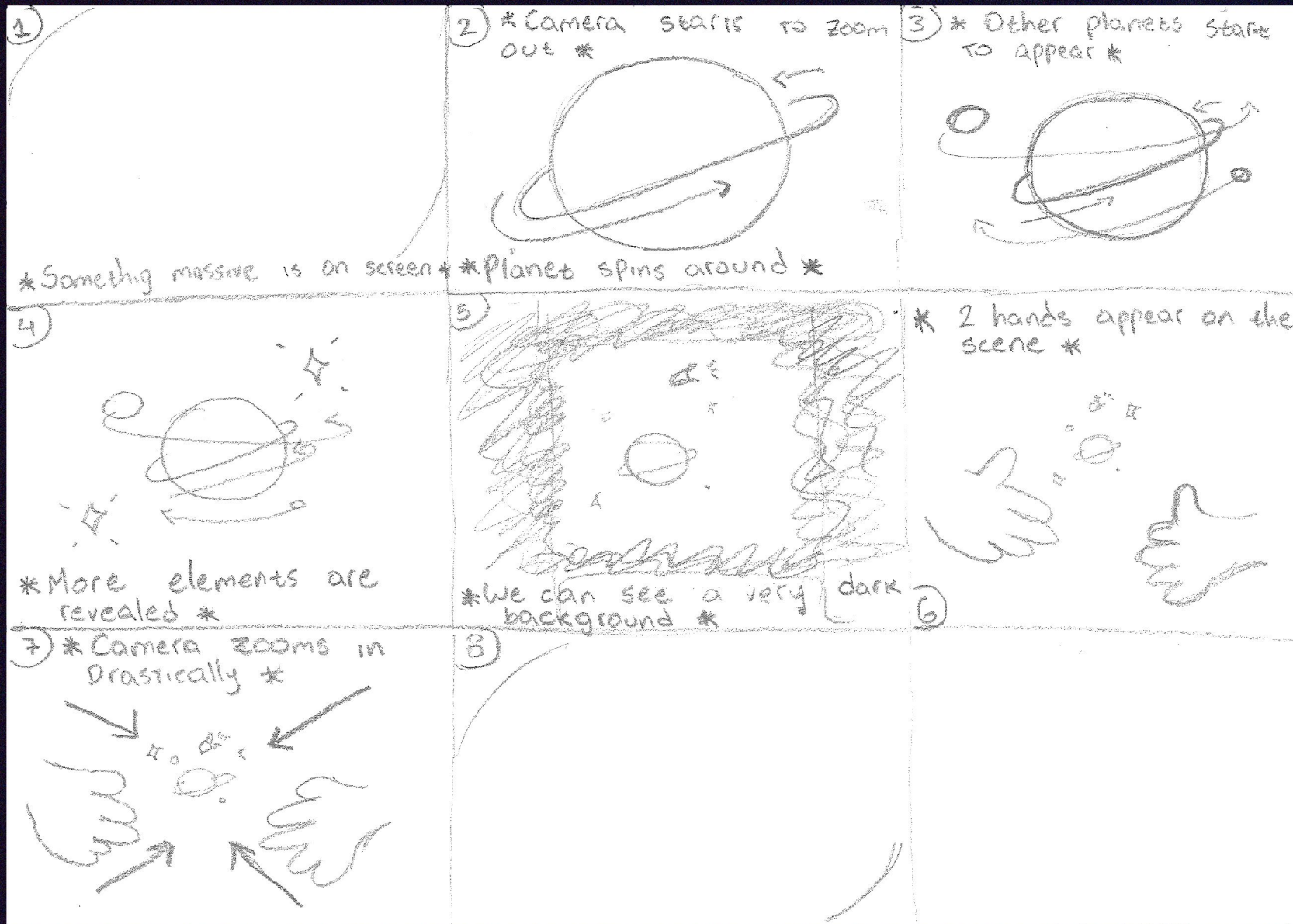
Key Verbs:

- Light
- Morph

Animation Principles:

- Staging
- Anticipation
- Squash

The Creation of a Superior Being



Key Verbs:

- Spin
- Orbit

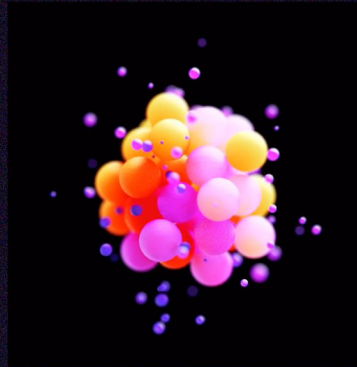
Animation Principles:

- Staging
- Timing and Motion
- Anticipation

References

Conflux 2021

https://www.behance.net/gallery/131324881/Conflux-2021?tracking_source=search_projects_recommended%7C3d%20animation



There are many factors that I would like to extract from these references. First of all, I am interested how the Conflux 2021 animation builds tension organically through anticipation. Despite no drastic action occurs afterwards, the organic growth of the particles and the way they are staged on the screen make the viewer think that something is about to happen. I am also interested in the materials that they used for their animation. I think that if I replicate those textures, I can achieve the cartoon style that I want for my own sequence.



From the Daegu National Science Museum animation, I am fascinated by the way that they morph shapes into others. The transitions are organic and flow well with the rhythm of the animation. They exploit the animation principle of time and motion, creating a sequence that is engaging and exciting. I think if I play with time and motion in the same way they did in their sequence, I will be able to convey humour in my own animation.

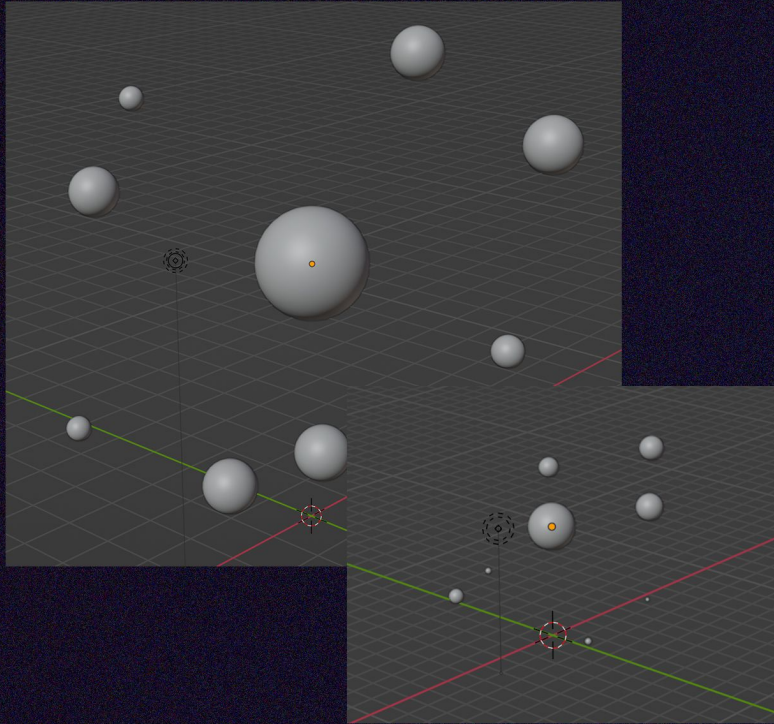
Daegu National Science Museum

https://www.behance.net/gallery/134023395/Daegu-National-Science-Museum-%28Dircut%29?tracking_source=search_projects_recommended%7Canimation



Finally, I will try to combine the visual style of both animations to create a sequence that is cute and organic but not that childish.

Experimentation



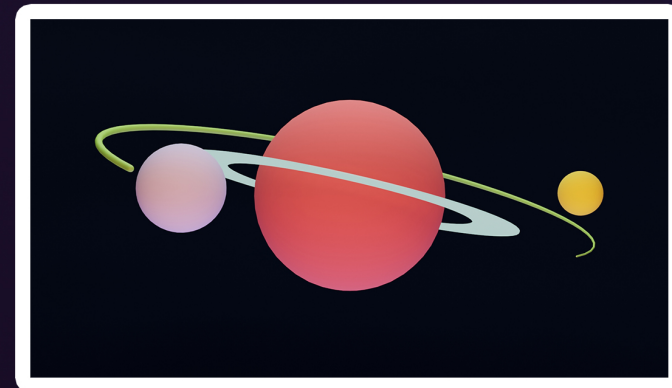
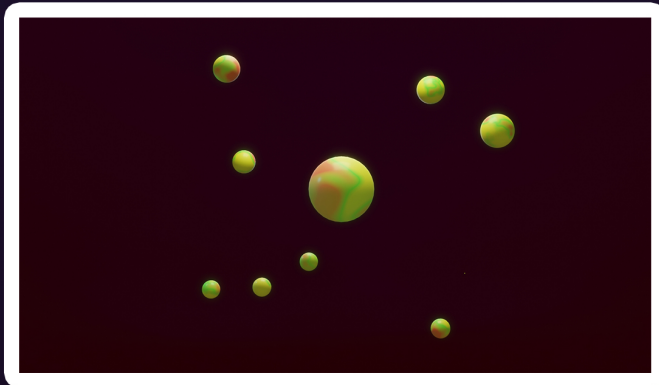
For my first animation I started experimenting with geometry nodes to manipulate particles floating around. This tool allows me to change different properties of a group of elements at the same time. I still have to figure out how to tweak certain things around, but I will stick to this method to create the rest of the sequence.



For the second animation, I started by figuring out how to make lightnings in an easy way. I just had to create the main structure of the lightning (based on a cylinder) and add a displace modifier to it. After that, it was just a matter of animating the modifier, the rotation and the material of the lightning to achieve a realistic look and feel. I am satisfied with the result but I need to keep working in the rest of the sequence.

The Loops of Creation

Reflection page

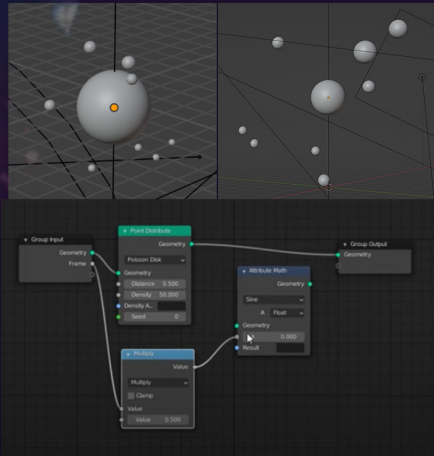


Ricardo Arevalo

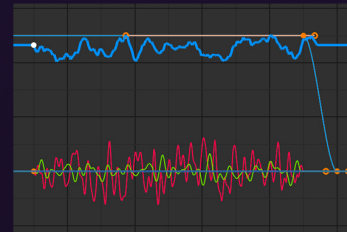
The Creation from Minimal Molecules

This animation portrays how our world may have been created by the clash of minimal particles.

The reference verbs for this animation were: multiply, shake and collapse.



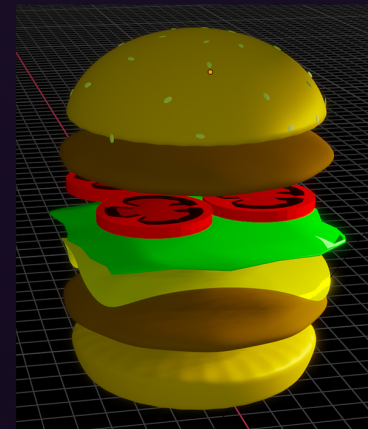
One of the big challenges of this animation was creating the small molecules that float around the main ball. The most effective method that I found to animate the small molecules was using geometry nodes, which is a tool that I have never used before. Unfortunately, I did not get a screenshot of the geometry nodes map before applying the effect as a modifier. However, I generated the particles using a node called "point distribute" which allowed me to create a copies of a reference object within a determined space. After that, I had to play around with the rotation, the seed and the location of the particles to achieve the shaking effect that I wanted.



I also applied a noise modifier to the keyframes that made the particles shake to achieve a more realistic effect.

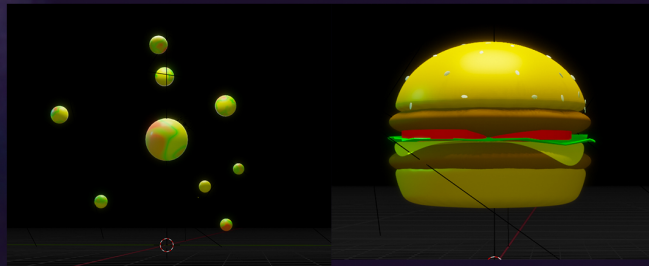


The next step was sculpting the burger, which was quite easy. The burger that I made is based on cylinders and planes. I did not add many details because I thought it was not necessary.

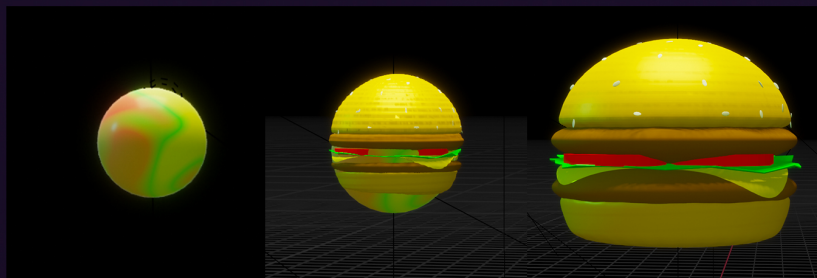


After that, I applied textures to the burger using solid colours and some glossy materials for the lettuce and the cheese.

The Creation from Minimal Molecules



Sophia suggested that colouring the particles with the same materials as the burger would make the animation more coherent and I thought that was a good idea too. I extracted all the colours from the burger and applied them to the particles using a colour ramp.



After applying textures to all of the objects in the scene, it was time to animate the transformation of the particles into the burger. I made this using a shrinkwrap modifier. This modifier allowed me to transform the burger into the middle particle and animate its transition into its original shape.



Finally, using the animation principles of anticipation and stretching, I made the burger stretch in different directions before disappearing.

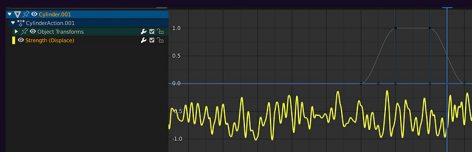
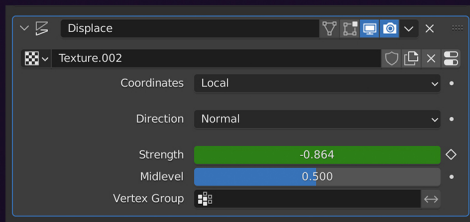
The Creation from an Electric Spark

This animation portrays how our world may have been created by a lightning striking into a puddle of organic matter.

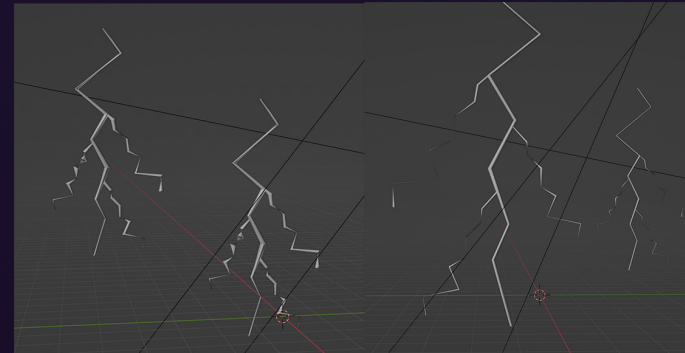
The reference verbs for this animation were: morph, stretch and light.



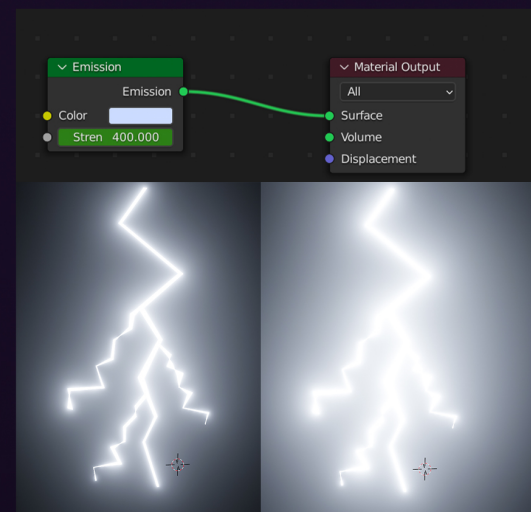
What was interesting about this animation was trying to create a lightning in a 3D. I could not make my head around it so I watched a couple of tutorials that explained an effective way to create lightnings in blender. The first step was creating the shape of the lightning out of a cylinder. After that, I had to apply a displace modifier in order to achieve that feeling of slight movement that lightnings have in real life.



The next step was applying a noise modifier to the keyframes that controlled the displacement modifier in order to randomise the movement of the lightning.

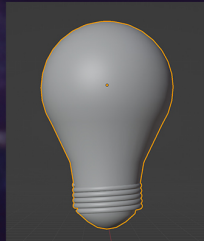


Then, I duplicated the lightnings and changed the sizes and rotations of the new copies to create a thunderstorm.

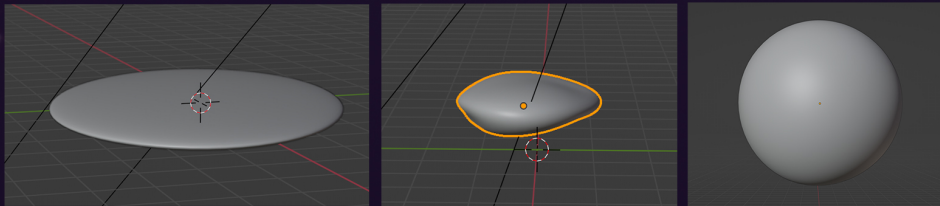


Finally, I applied an emissive material to the lightnings and animated the emission strength in really short keyframes so it looked like they appeared really fast.

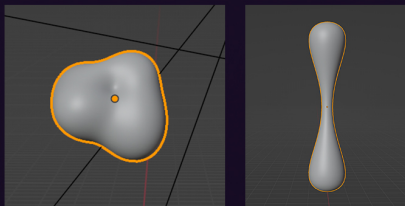
The Creation from an Electric Spark



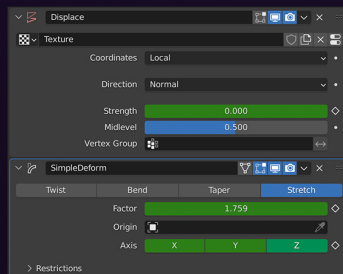
Later on, I sculpted the lightbulb from a sphere. I used the proportional editing tool and a screw modifier to create the metallic part of the bulb.



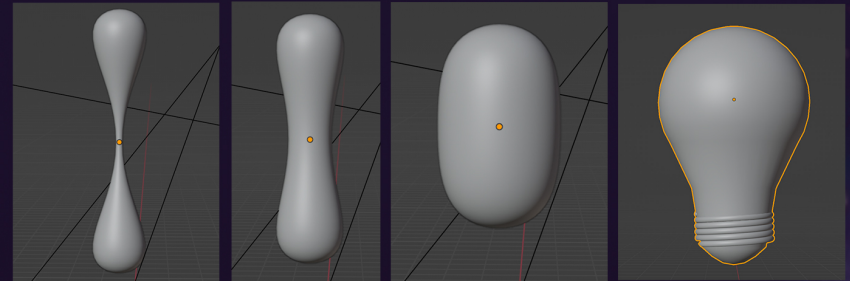
The way that I created the puddle was through changing the scale of a sphere. Then, I made the animation of the puddle becoming a sphere through playing around with scale, rotation and location.



Then, I made the sphere stretch and deform by displacing a cloud texture on the sphere and animating the strength of the modifier.

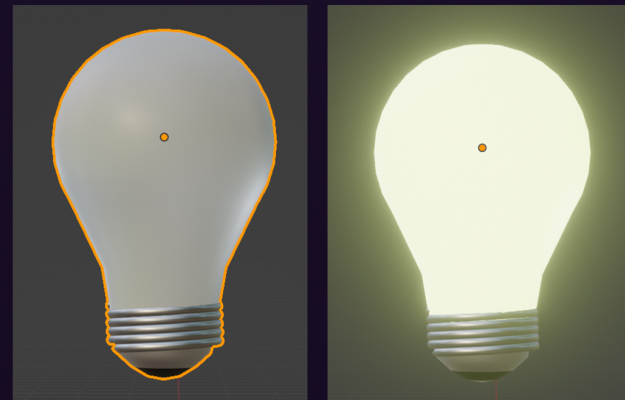


I thought about the animation principles of anticipation and stretching, that is why I applied a simple deform modifier to stretch the ball just before it morphed into the lightbulb.



I again used a shrinkwrap modifier to morph the ball into a lightbulb.

Right after that, I inverted all the keyframes to get the lightbulb back into the ball and then into the puddle again.

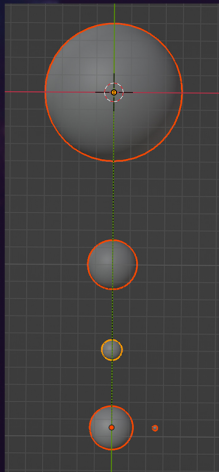


Finally, I applied materials to the bulb and animated an emission to create the effect of the lightbulb turning on.

The Creation of a Superior Being

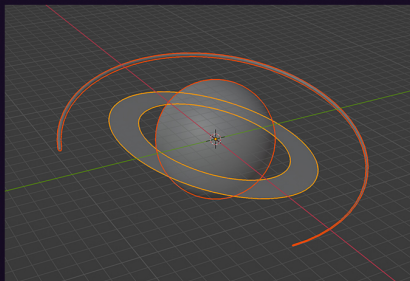
This animation portrays how our world may have been created by a superior being.

The reference verbs for this animation were: spin and orbit.

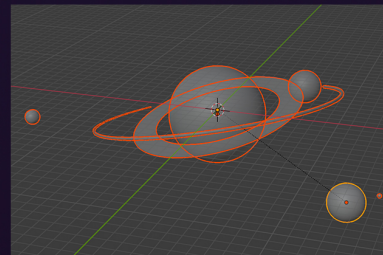


From all the animations, this was the most simple in terms of sculpting. The first step was creating all the planets which are all spheres.

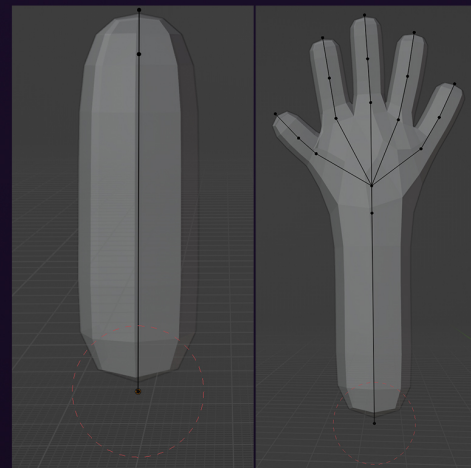
I created them all in edit mode so they could keep their origin point in the first sphere I made. That would speed up the animation process as I only need to apply rotation to all of those small planets to make them look like they are orbiting around the middle planet.



After that, I included a couple of more details to the middle planet and rotated them to make the composition more complex.

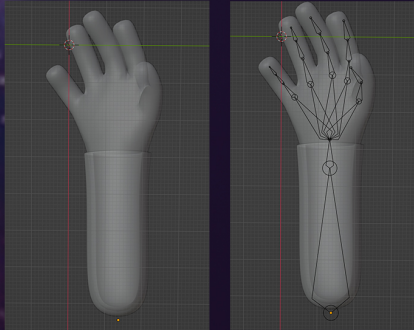


Then, I keyframed the rotation of every planet to be different from each other and I was happy with the result I got.

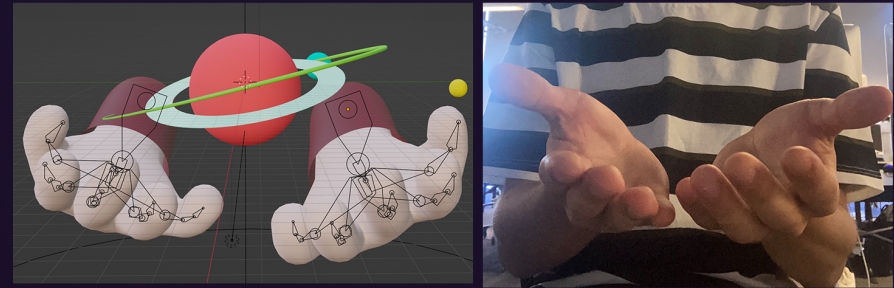


The next step was a little bit more complicated, I needed to create the hands of God. I watched a couple of tutorials about how to make hands. The tutorials suggested sculpting around a cylinder adding a skin modifier. The idea was extruding the cylinder five times to replicate each finger. After that, I applied the skin modifier and added a couple of subdivision surface modifiers to refine the look of the hands.

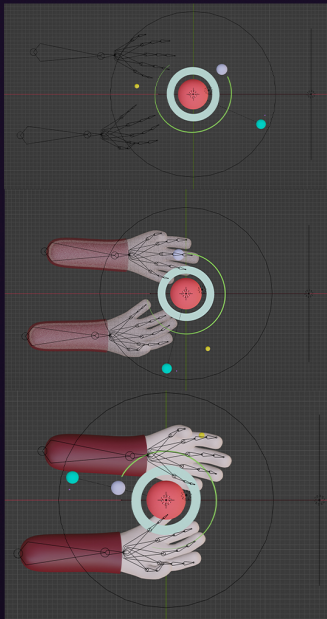
The Creation of a Superior Being



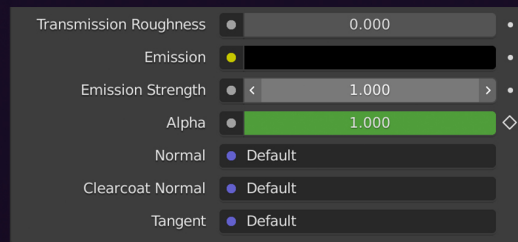
I spent a couple of hours polishing the final look of the hand. When I was happy with the result I inserted an armature to be able to animate the movement of the hand. I also added a sleeve to each hand by creating a cylinder around what was supposed to be the arms.



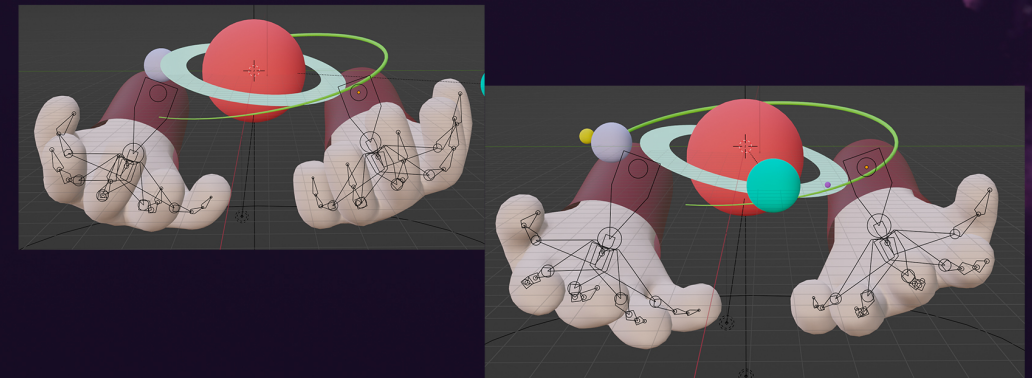
I tried using my own hands as a reference to sculpt the initial pose of the hands



Then, I animated the location of the hands as if they were approaching the planets to grab them.



I also animated the alpha value of the hands' texture so they would start becoming visible as soon as they approached the planets



I kept in mind the animation principle of staging when I was deciding the camera angle for the composition. Having the planets in the middle would make the viewer think that they are the protagonists of the story. However, both the camera angle and the way the planets are aligned have plenty of space to reveal a pair of hands that are even bigger than the previous planets.

Sounds Reference List

Bike, Bell Ding, Single, 01-01.wav
InspectorJ
<https://freesound.org/s/484344/>

Bubbles
Electroviolence
<https://freesound.org/s/234556/>

Electric Buzz
smokinghotdog
<https://freesound.org/s/584241/>

Electric Hit
BennettFilmTeacher
<https://freesound.org/s/523784/>

Electric Hit
BennettFilmTeacher
<https://freesound.org/s/523784/>

Electricity00.wav
jeremysykes
<https://freesound.org/s/341666/>

musicalwinds_new.wav
CosmicD
<https://freesound.org/s/33506/>

Pine forest, rain (La Palma, Canary Islands)
FonotecadeCanarias
<https://freesound.org/s/210955/>

Schlorp
Clagnar
<https://freesound.org/s/557647/>

Shock_Three.wav
Nodgez
<https://freesound.org/s/488664/>

smpl0034-nobre coração.wav
brunokeen2
<https://freesound.org/s/31436/>

Space Odyssey Theme Song
grafou194
<https://www.youtube.com/watch?v=QwxYiVXYyVs>

Thunder Sound effect
MrSoundtabel
Youtube.com

WATER_BUBBLES_LARGE 01.wav
StephenSaldanha
<https://freesound.org/s/121895/>

Whoosh water x3
beman87
<https://freesound.org/s/162844/>