

# Film Lab Production Log

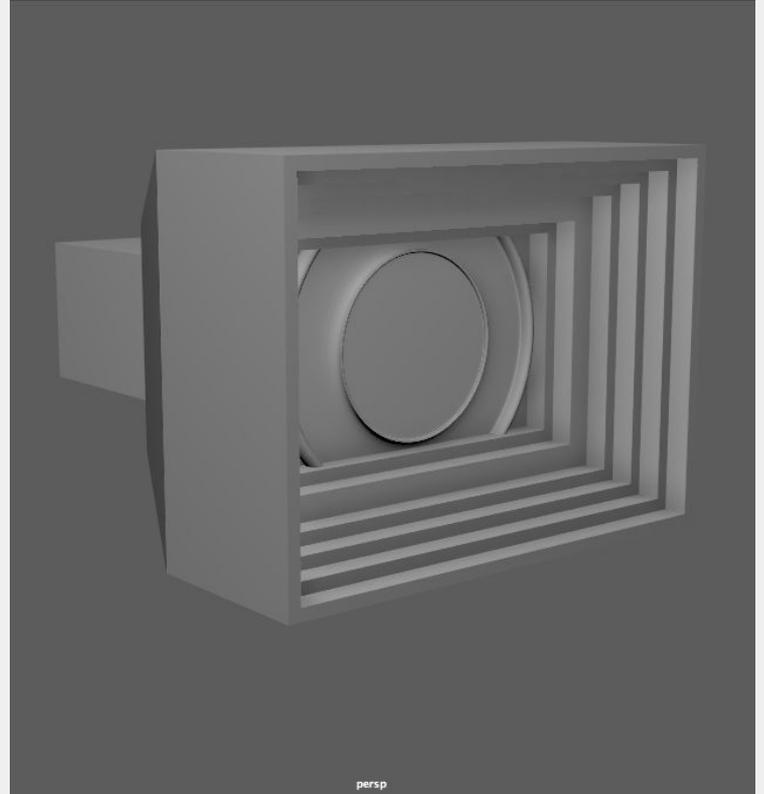
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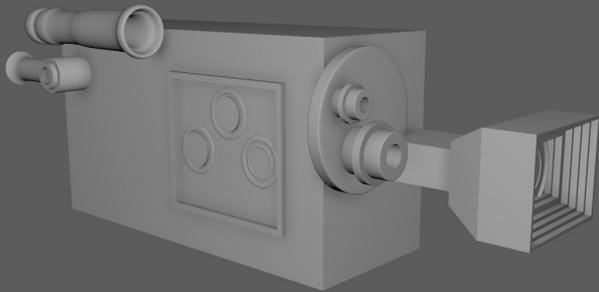
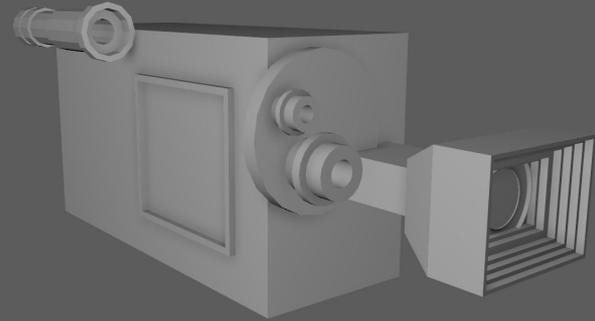
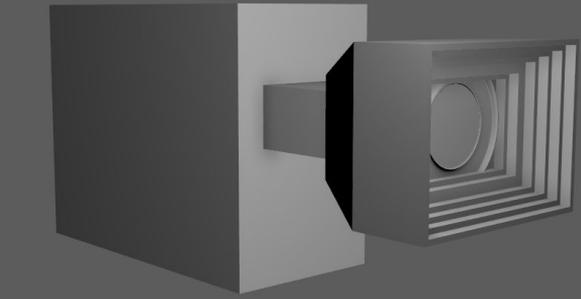
# Making the camera

I began creating the shooter for the camera long with the lense inside it first. I started with a cube and extruded inwards multiple times to add the layers on the inside of the camera.

After this I added edge loops to each of the layers and on the outside of it to keep its square shape when it would be in smooth shading. I also extruded the back of it a little bit which will attach onto the main body of the camera.

The lense was simply a circle with some added extrusions around the edge and in the middle part to create the lense.





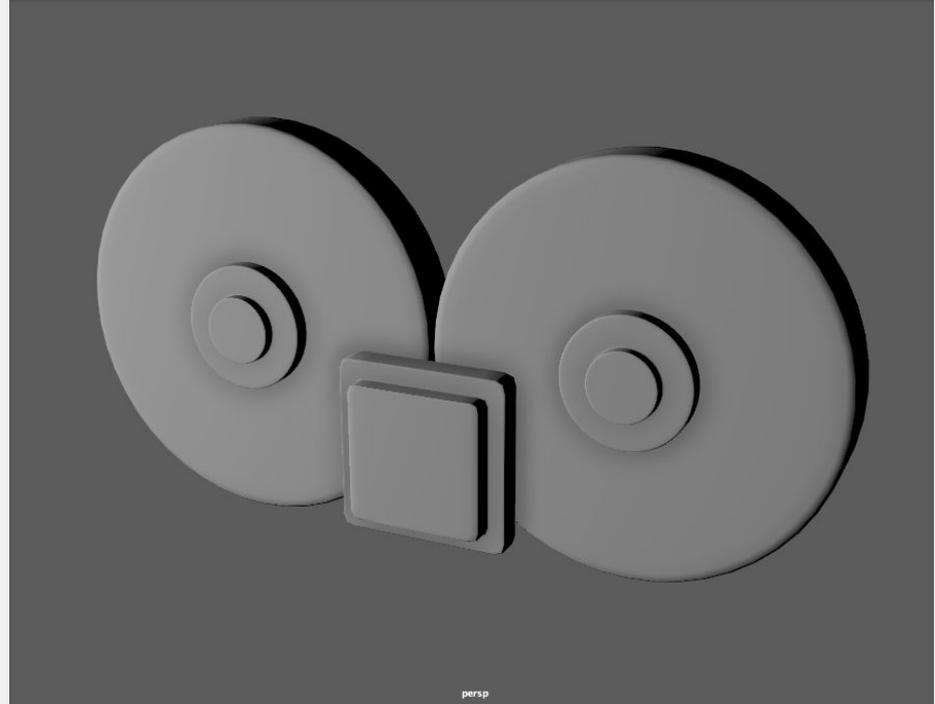
The next part was making the main body of the camera. I extruded this from the back of the camera lens housing but I later on decided to have these two parts separate, so that if I wanted to move or resize something it wouldn't affect the other parts. Making working with the camera a lot easier not having it all as one part.

I made other parts of the camera such as the round bit next to the lens casing and the viewfinder separate as well as the square part on the side that has some dials and buttons.

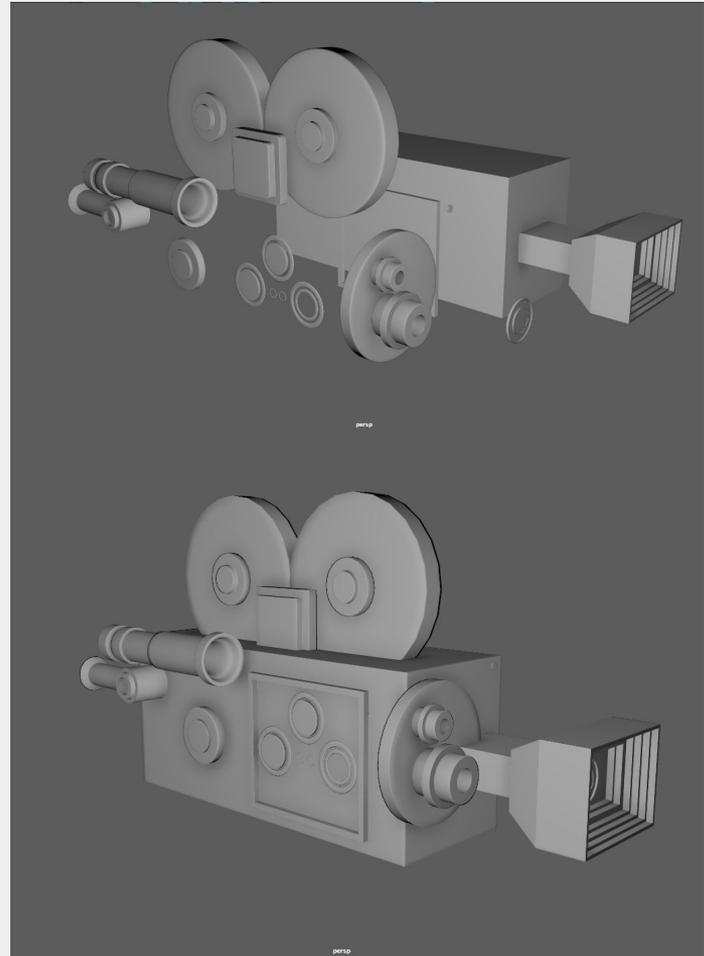
I made the housing for the film stock on the side, this was simply just a polygon cylinder than has been rotated 90 degrees on the z axis.

I then resized them and duplicated and made a smaller cylinder for the middle of it and extruded a small part out of it and duplicated another on the other side of the film casing.

I duplicated both of these parts and then made a cube than was flattened a little bit, with an extrusion in the centre. Duplicating another on the opposite side.



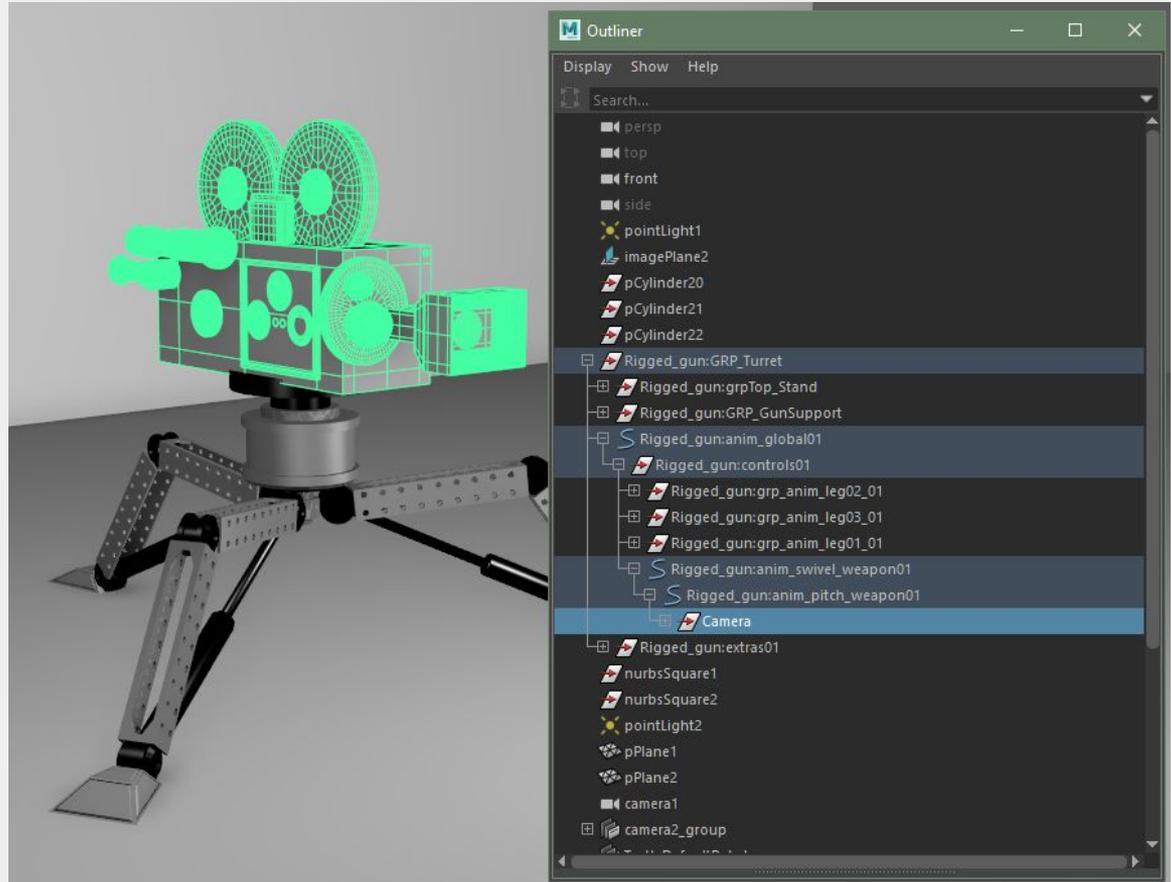
With all of the parts that can be seen on the top right, I moved them all into to place on the camera body. I think having all the parts separately rather than as one part which I did in the beginning made it much easier to go back and make any adjustments to any of the parts without affecting the others geometry, Which could cause problems for me later on in production if I wanted to do anything different.



I used the assets of the rigged robots legs that was free for use.

I lined up the camera with the legs and needed to group them together. So that that when the global rig is moved it will move along with it.

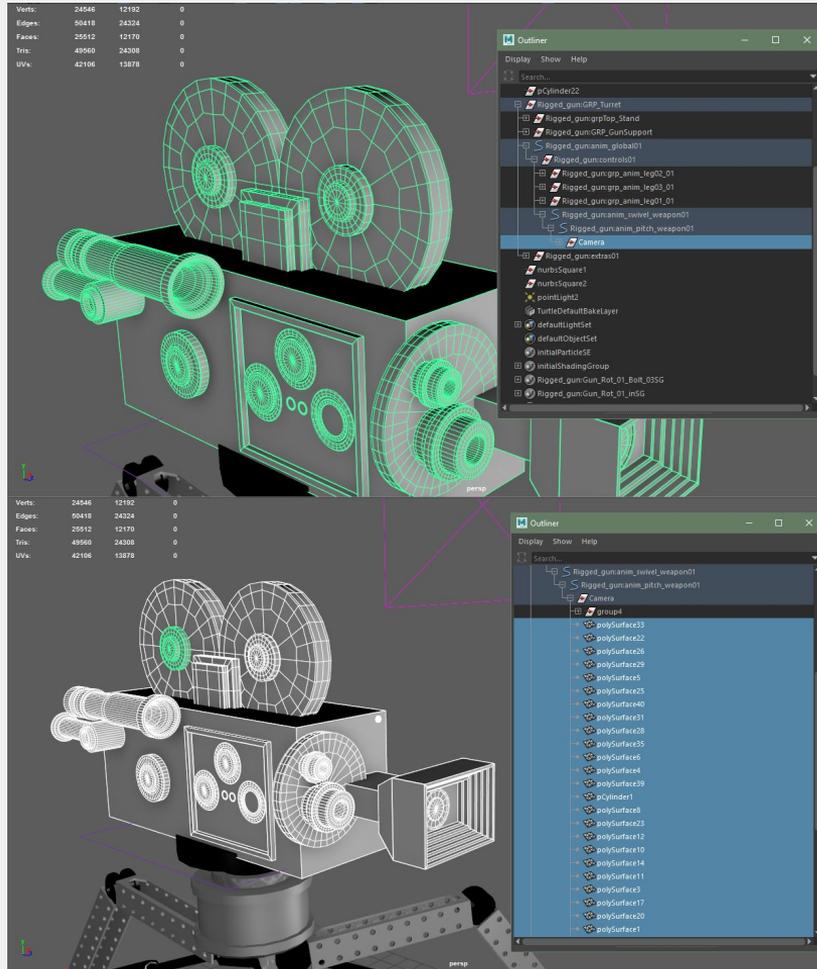
To do so I had to go through the outliner and through each part of the rig to find where the original gun was rigged to and place it in the part of the rig to be able to swivel and pitch the camera.



However the model was currently low poly and the parts that were meant to be smooth and round were blocky, like the film reel housing and the viewfinder and other smaller parts.

The problem was that when the it is grouped with the legs, adding more polys to smooth it had no effect despite the polycount going up.

I had to then go back through the outline and select all the parts of the camera to be able to add in the extra polys to get the desired look.

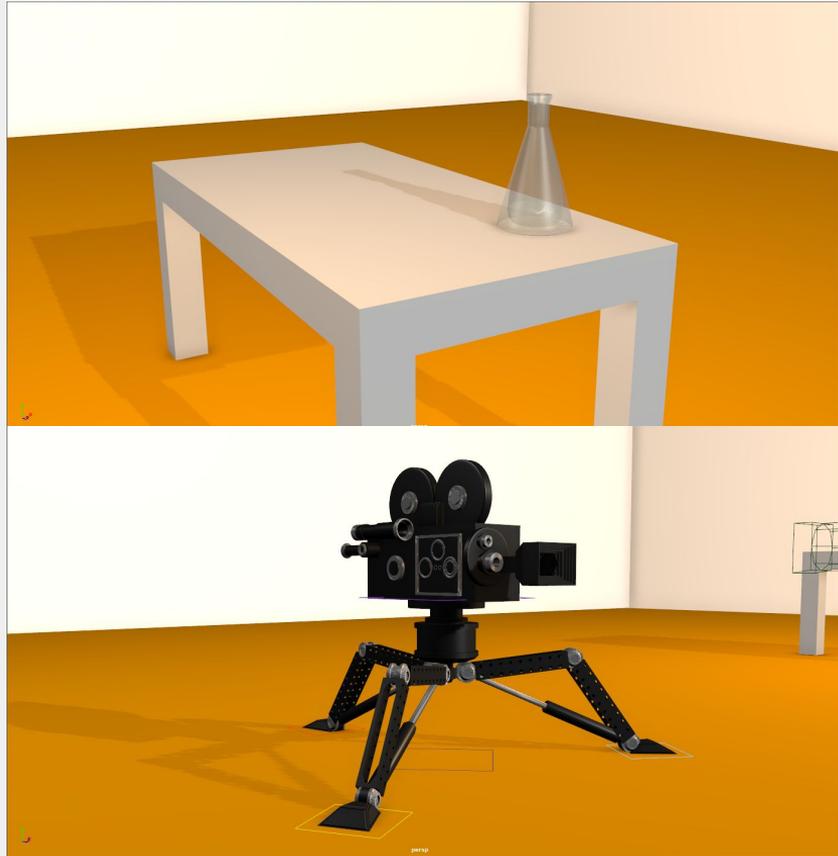


After finishing building and rigging up the camera I began adding some colour to it. A matt black blinn texture to most of the camera body and legs and a chrome anisotropic the smaller parts, to get a look I felt looked good.

I created a simple white blinn table and a science flask sitting on top of it, that will later be knocked over a spill liquid.

For the environment i created a large cube and reversed its mesh and deleted to top and front faces so I could see into the set.

I went for a clean yet colorful look of white lambert walls with a orange lambert floor.

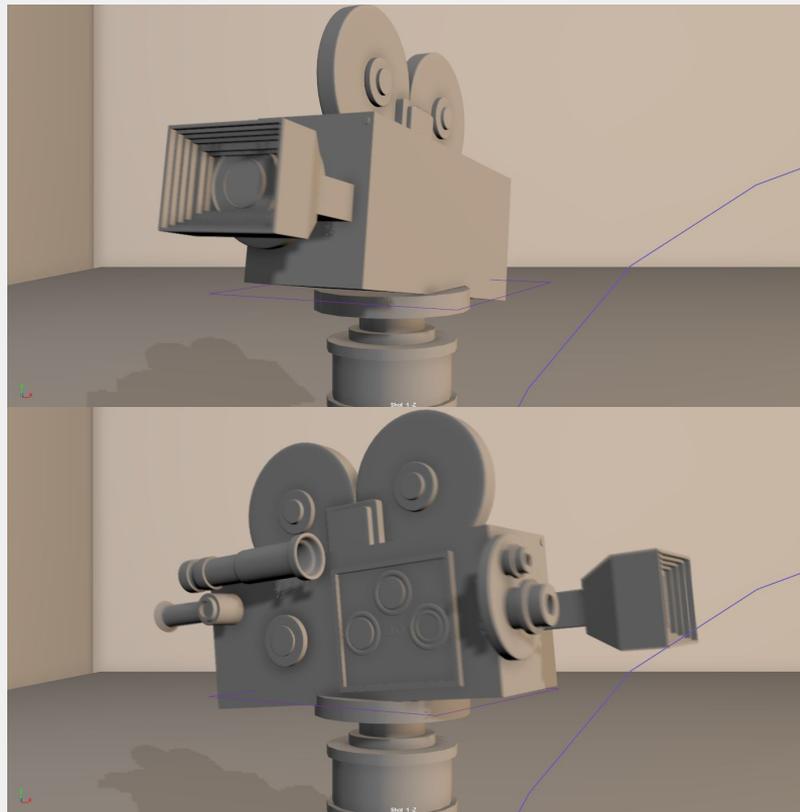


# Animating the objects

## Shot 1

For the first shot I had the camerabot facing the camera then look left and right, as it's turning its head back to face the camera it quickly turns right again because it's seen something it likes.

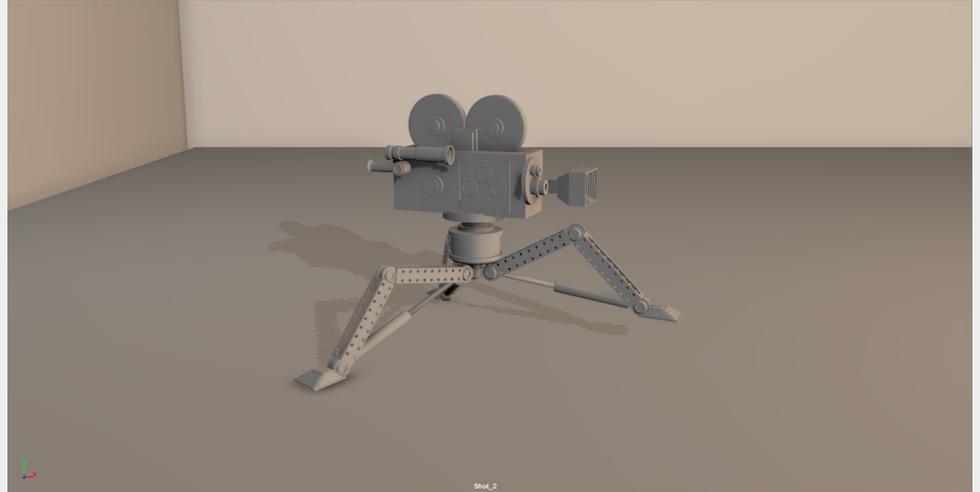
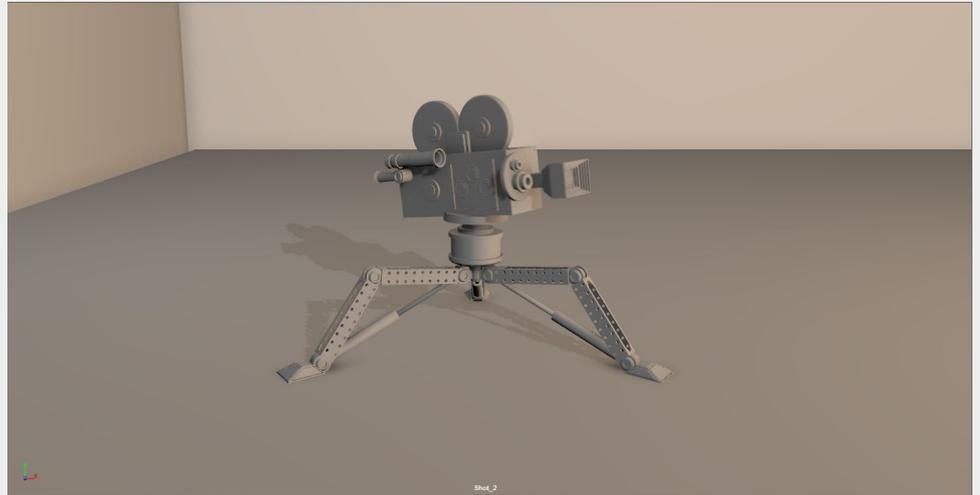
This shot lasts for 125 frames before cutting to the next shot showing the full body of the bot as it turns to face what it's seen.



## Shot 2

This is another stationary shot showing the whole of the robot as it turns and prepares to leap towards its target.

The shot last from frame 126 - 280. The next shot will cut to a wide angle as the robot is gearing up to jump.



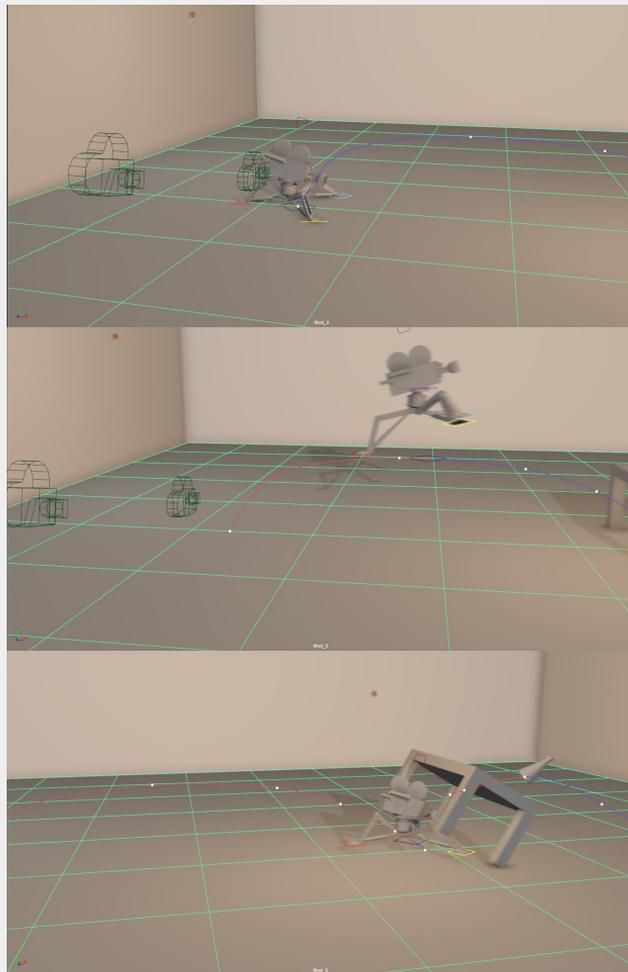
### Shot 3

The wide shot of the robot preparing to jump, leaping across and the first few frames of it hitting the table, knocking over the flask playing through frames 281 - 349 as the flask flies off the table as it flips.

As the robot jumps the can camera will pan right with it, and the table with the flask will come into frame as it hits it.

The blue line that the robot follows is called a motion trail, this adds a visual indication of the path the animation follows as it moves. Each dot on the line is a key on the timeline, this makes it much easier to simple select the key on the trail and adjust make any improvements to the animations in the timeline.

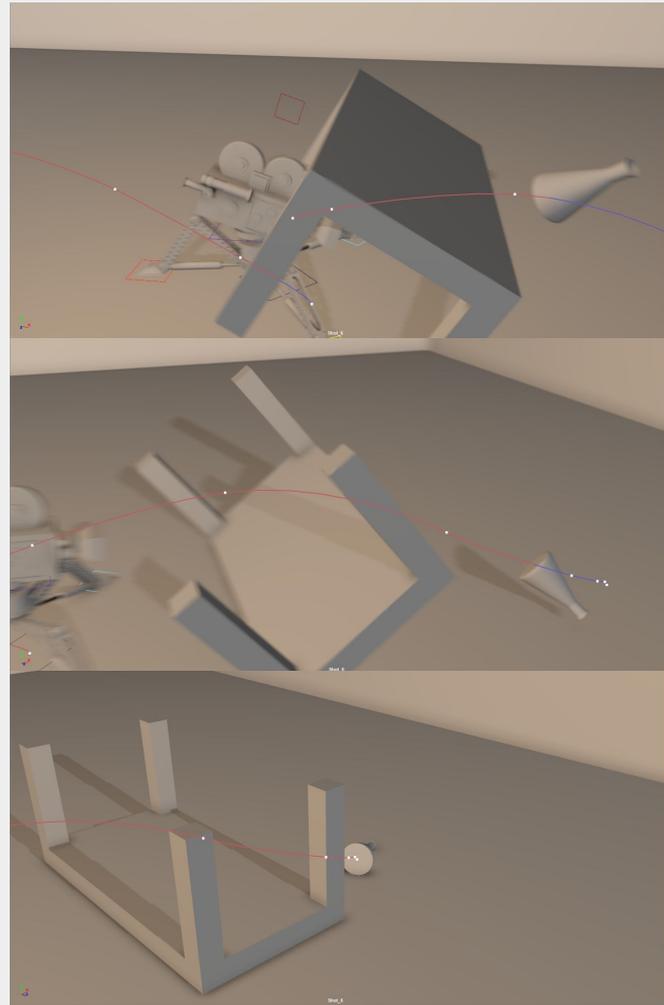
Blue means it hasn't been played on the timeline yet and red means it has past that key on the timeline.



## Shot 4

This shot carries straight from where shot 3 left off but from the right side of the table as it flips over, the camera pans right following the flask and table flipping over, with the table sliding across the floor and the flask hitting and rolling on the floor.

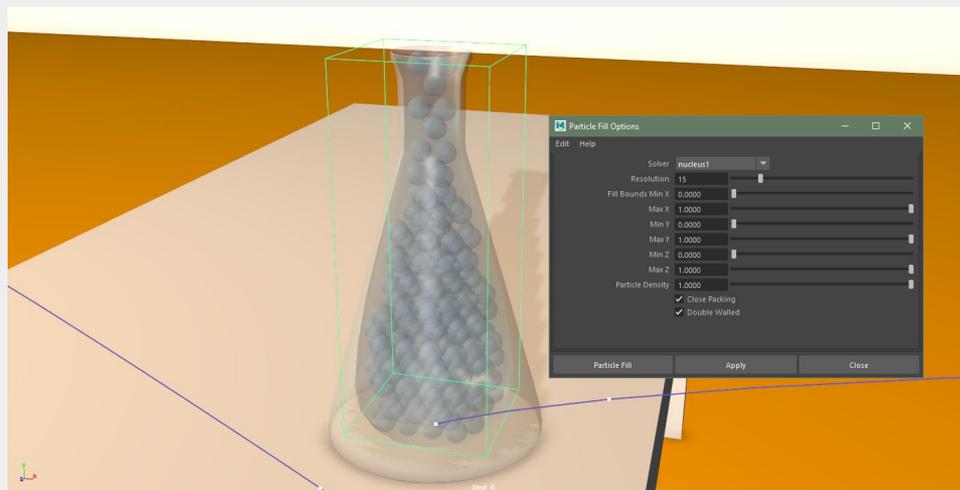
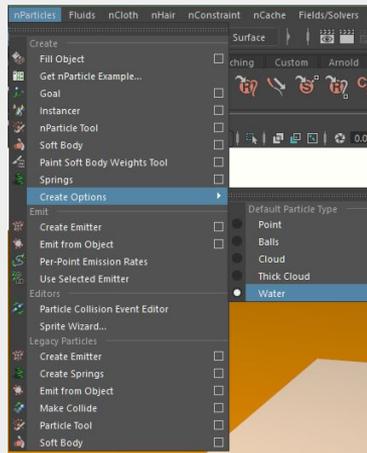
The shot lasts from frame 350 - 375. The flask has a motion trail added to it so i could refine its movement as it flew in the air and the weight of the liquid would tilt it and eventually it will bounce off the floor a little and then roll, spilling its contents everywhere.



# Adding liquid to flask

This part took many trials and errors and searching youtube videos, to understand how to get the liquid to act the way i wanted. I had many problems in the beginning with the particles being in between the outside and the inside of the mesh, or the particle being too big so they wouldn't pour out or too compact which would cause them to explode out in all directions. I finally managed to get the liquid to behave the way I wanted it too and the result came out really well in the end.

To add liquid to the flask I had to have the flask selected and switch to the FX menu set, then go to nParticles at the top and make sure the create option was set to water. Next I click the dialog box next to Fill Object and let the rest of the settings as default apart from resolution which I increased from 10 - 15 and ticked the double walled box.



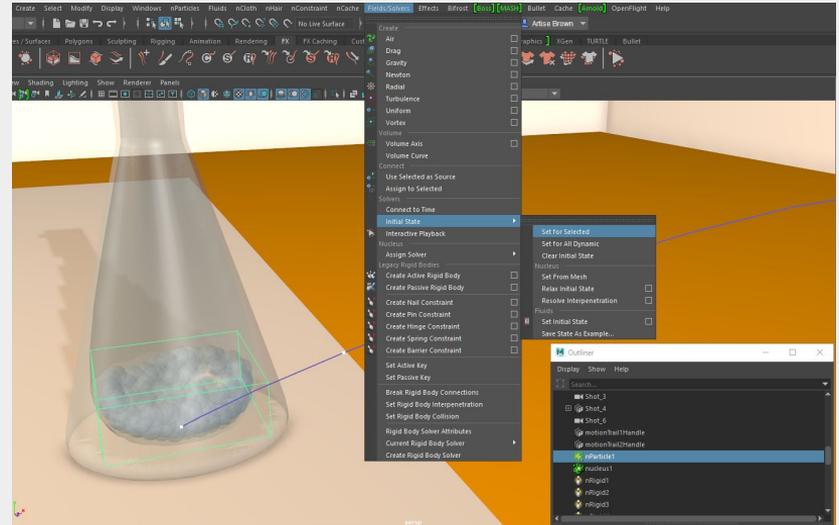
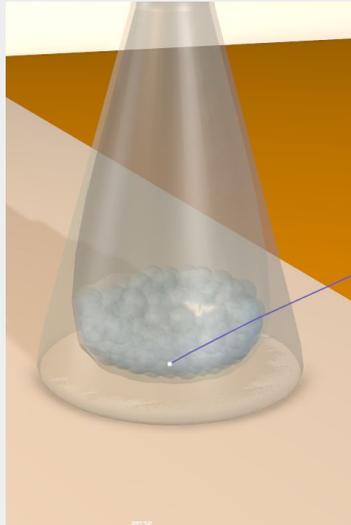
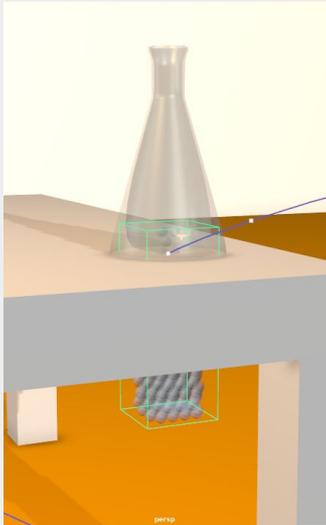
Because the nParticles are floating I had to let it play so they would settle at the bottom of the flask. The next step was to save them in place so it will be at the bottom for the beginning of the animation.

The problem with this though is that there's nothing for the particles to collide with so they will fall through the flask.

To fix this I needed to select all of the objects I want to have colliders. I then go to nCloth in the FX menu and then create Passive Collider to add collisions to all the objects so the liquid will interact with them.

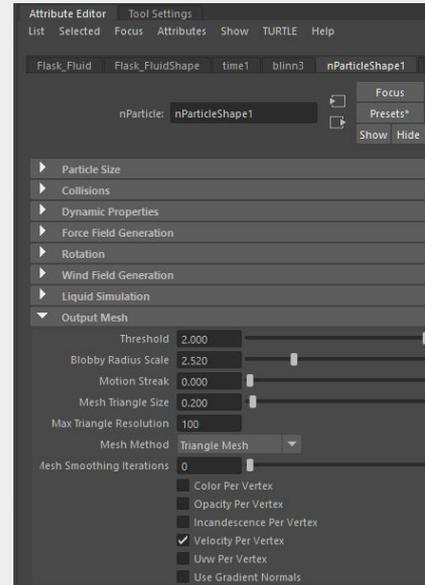
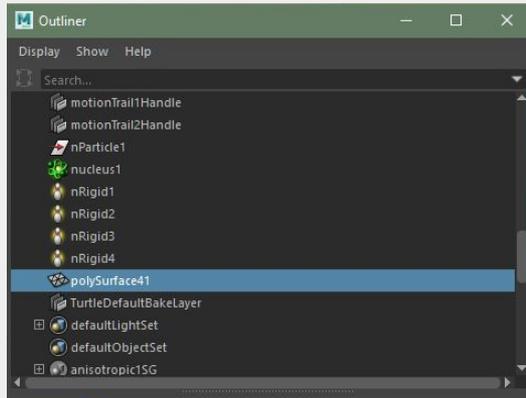
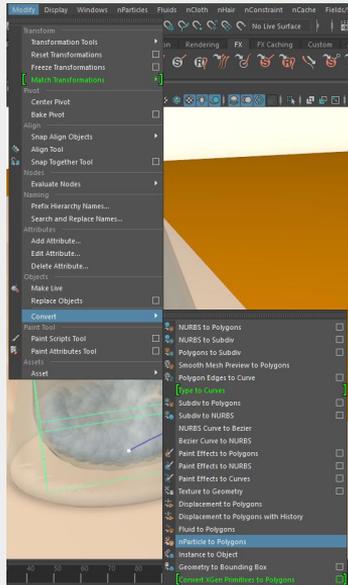
With the nParticles at the bottom of the flask I then select them, doing this in the outliner is easier.

In the Solvers tab go to Initial State and then click Set for selected. This will save where the particles are in that current frame for first frame.



The next step is to convert the nParticles into Polygons to make it have a more liquid appearance. To do this you need to go to modify - convert - nParticles to Polygons. You will notice that they have disappeared, but they haven't I just need to adjust the settings to make it appear in its polygon state. In the outliner you will find that the nParticle has become polySurface, select it and then go to the Attribute editor and find nParticleShape.

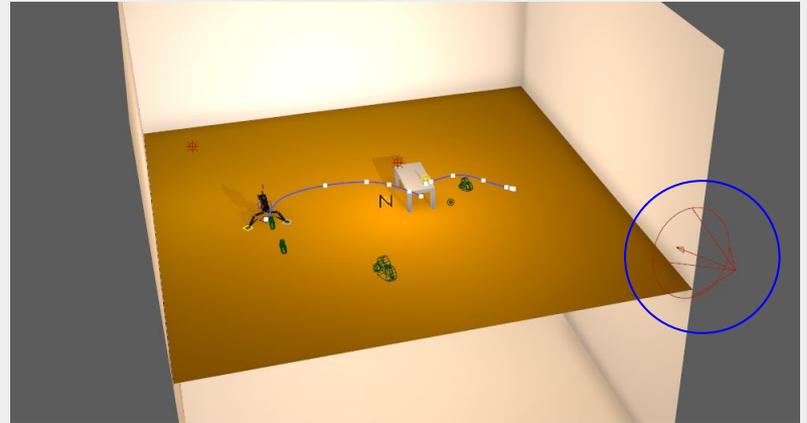
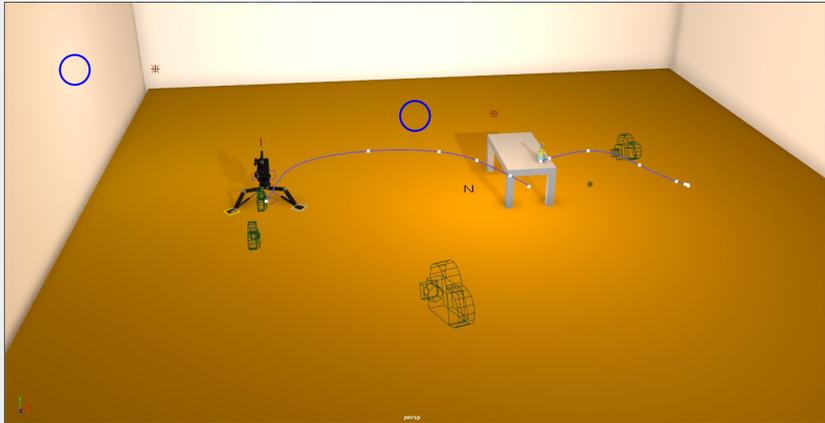
In the Output Mesh you to play around with the settings the Threshold and Blobby radius scale to increase the size of the polygons and scale it so it's still in the correct part of the flask. To increase the resolution and quality of the liquid, the Max Triangle size needed to be reduced. I put this t 0.2 as this gave the best performance to fidelity I wanted, as any lower slowed the computer down and high was more blocky looking liquid.



# Lighting the Scene

For the lighting I added two point lights that can be seen circled. The one on the left is a little dim a casts a bot white light on the side with the most detail on the robot. The one on the right in the centre of the set is much brighter, lighting up the entire scene and is a little yellow, warming up the look of the whole thing more with the orange floor.

Outside of the scene is a spot light to brighten up the scene a bit more and also have some shadows cast into the background of the scene. I lit it up this way so that the shadows wouldn't be too distracting if they were cast out into the foreground. The shadow colour was also toned down a little from black to grey so it's more subtle and again doesn't stand out too much.

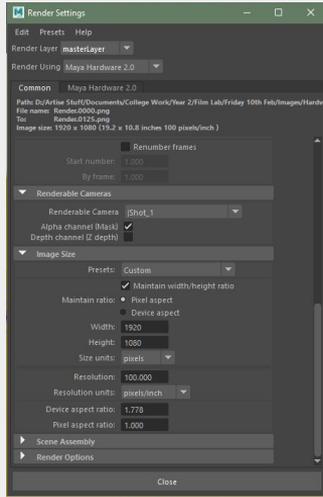
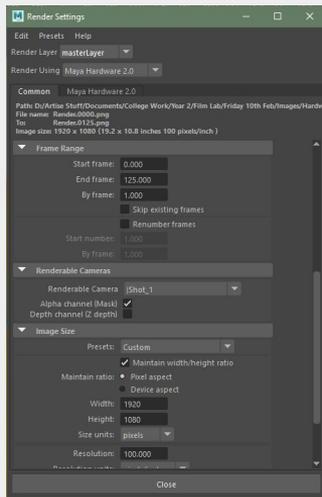
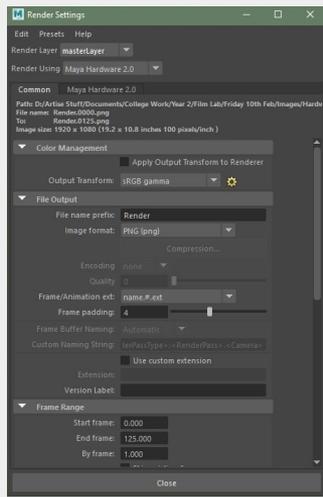
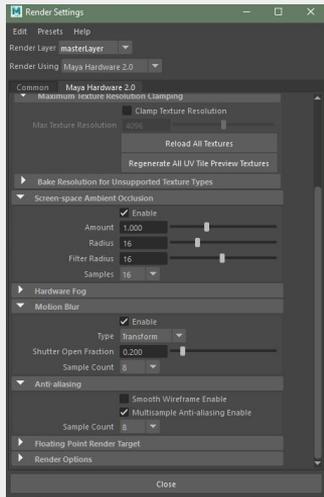


# Rendering the ident

When rendering I had to make sure all the settings were correct to get the best picture for the frames. This included having anti-aliasing set to 8 to smooth out the edges of objects, Improving the shadows with Ambient Occlusion and finally adding a little bit of motion blur for when things are in movement, such as the robot jumping and the table and bottle flipping over. When in playback it looked much better with the subtle motion blur than without it.

Each camera had to be rendered by going to the frame range and setting when that shot starts and what frame it ends. This had to be done on the correct cameras to get right shot in the timeline of the animation. For example shot 1 of the robot looking around had to be rendered with camera 1 set as the renderable camera and frames 0 - 125 for the frame range.

After all the settings are in order I simply had to click batch render in the render tab to have all the frames selected render out. I did this again for each camera.

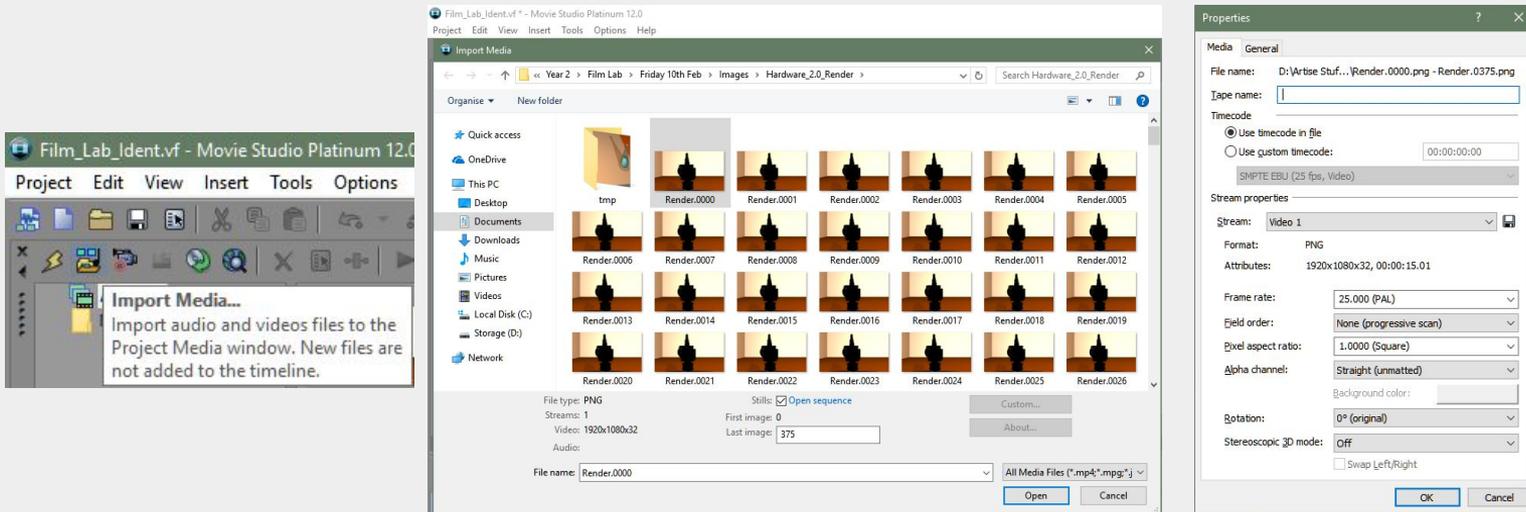


# Editing and Rendering

For the editing I used Sony Movie Studio as I am more familiar with this editing software. To import all the frames into one sequence, I click the import media button, click the first frame which is Render.0000 and tick the box for Stills Open Sequence with the last image set to the final frame which is Frame 375.

After this a Properties box will pop up for you to make sure everything is good from the Frame rate to the Pixel aspect ratio. If everything looks in order click Ok and all the frame will be bundled together as one video.

For the shot of the robot jumping into the table I sped this up by compressing the frames so it's shorter in the timeline, as the normal speed felt a little slow.



I adjusted the aspect ratio a little to give it some letterboxing to give it a little more of a cinematic look. I also adjust the brightness and colour as the rendered frames were very dark.

Now came editing in the sound effects which I got free ones <https://freesound.org/people/Jagadamba/sounds/258069/> and some from youtube <https://www.youtube.com/watch?v=fIL6uH1NsaM>, <https://www.youtube.com/watch?v=85zOPbPzkoQ>, <https://www.youtube.com/watch?v=6Q9t8ucAc2M>, <https://www.youtube.com/watch?v=Xrl3dTOqslo> , <https://www.youtube.com/watch?v=-SjOkb3kVqI> that were royalty free.

I added in a beep for when the bot turns on, and as it looks around I used a camera zoom sound effect. As it turns the robotic sound effect is played and for the preparation to jump, I had a hydraulic sound effect repeated for each crouch but sped up each time until the Jump. For the table flip, I layered a table flip sound with the bottle hitting the floor to play around the midpoint of the tables sound effect.

