

Academic & Professional Development

E-Portfolio/Blog (Production Diary)

In this diary I will be going over the development and timeline of my 3D modelling skills and assets. These will be chronological and include dates of when they were created for a more cohesive understanding.

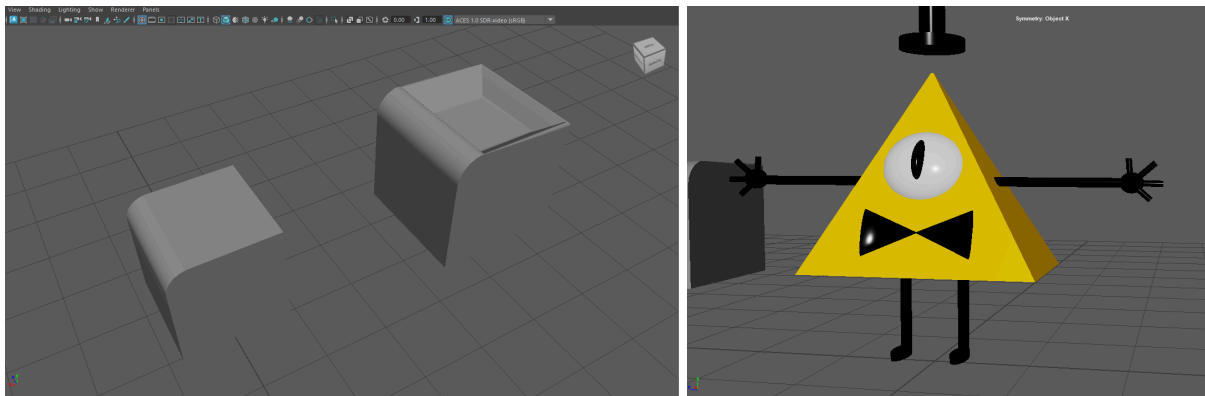
Lesson 1: Introduction to Maya

Oct 3, 2025

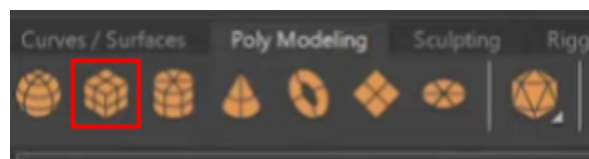
For being able to create 3D models, and learning how to use industry standard tools, I will be using a piece of software called Autodesk Maya, or just simply Maya [1]. This is professional 3D software that leading companies use, such as Marvel, Nintendo, Epic Games and many more.

Our goals for the first lesson wasn't specific, it was to simply mess around with Maya and learn the basics. Upon opening the program you are prompted whether or not you would like to do the tutorials. If selected yes, like I did, then it takes you to a pre-generated project already filled with assets, some dialogue boxes would then appear and guide you on how to move around, place objects, move and resize said objects, etc. Some notable examples of hotkeys include W - Move, E - Rotate, R - Scale, and Alt + Mouse - Move camera.

Once that was completed I moved onto creating a new project and seeing what I could do.

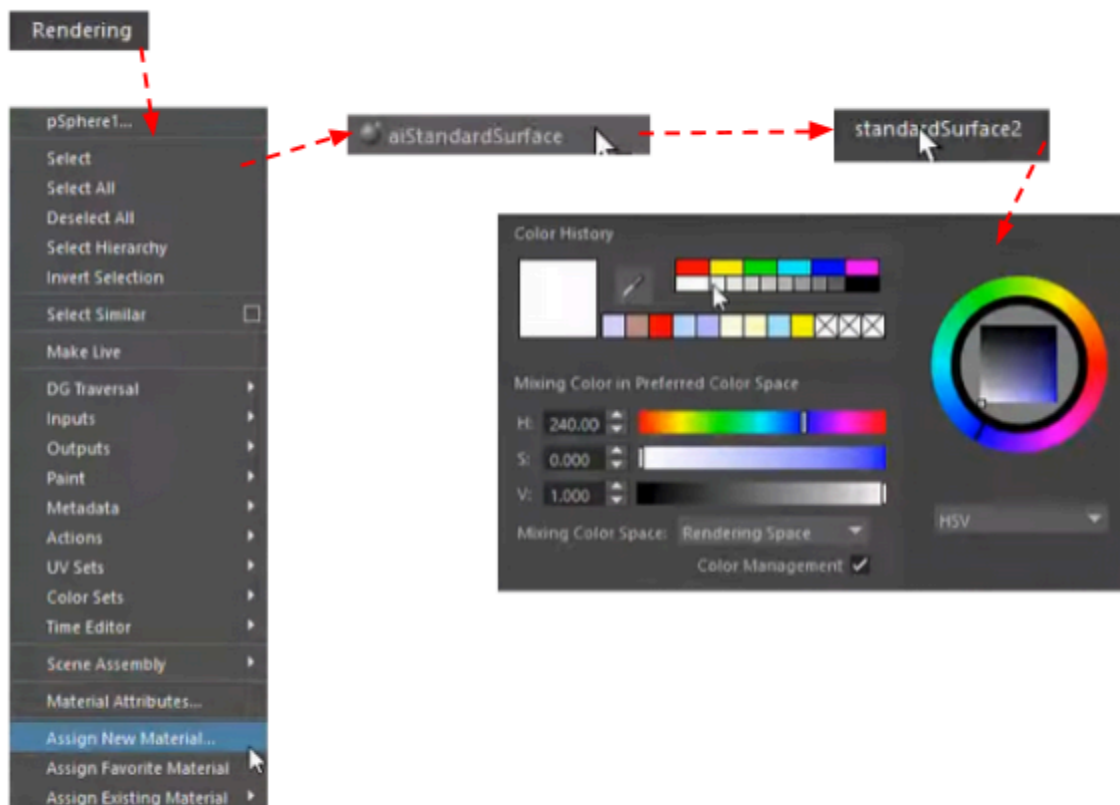


I first spawned in some cubes using the built in shapes.



Then I resized them and positioned them to how I wanted using their respective tools. Then I used the bevel tool (ctrl + B), and the Extrude tool (ctrl + E). Using these I made the shapes you see in the left image, one of them is concave on top, as was the doing

of the extrude tool. As for the image on the right, I thought what else could I create that was quite simple in design, so I decided to make a very simple model of the character Bill Cipher, from the show Gravity Falls [2]. I did this by first spawning in a pyramid shape and resizing it, then I added more shapes onto it, such as 2 ovals for the eye and the pupil, cylinders for the arms, legs, feet, hands, and top hat, and 2 smaller cone shapes for the bow tie. Lastly I added materials to the shapes by going to the Rendering tab > Holding right click on the object > Assign new material > aiStandardSurface > standardSurface2 Tab > Colour. From here I was able to change the colour of the selected object, I repeated this for all the objects I wanted to apply to [3].

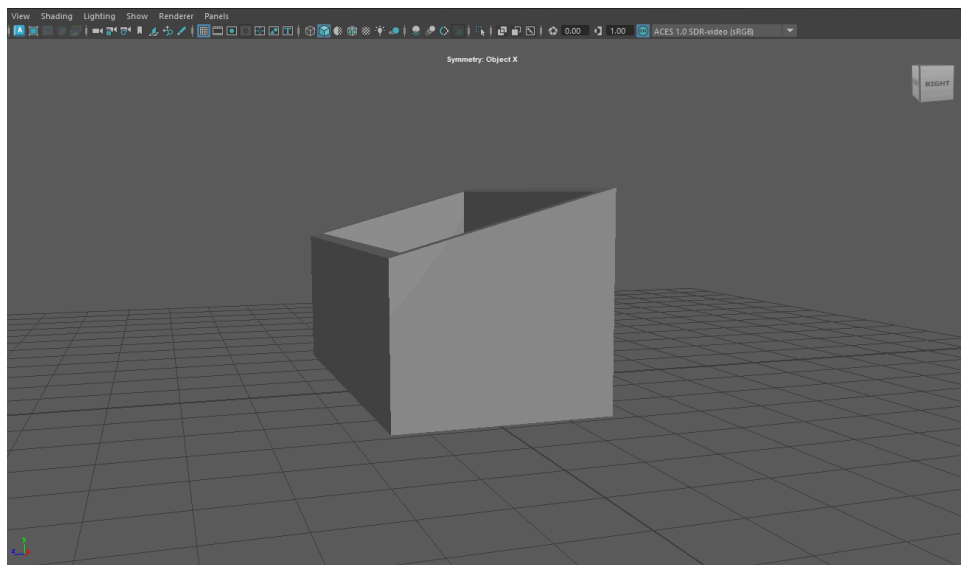


Lesson 2: Dumpster

Oct 10, 2025

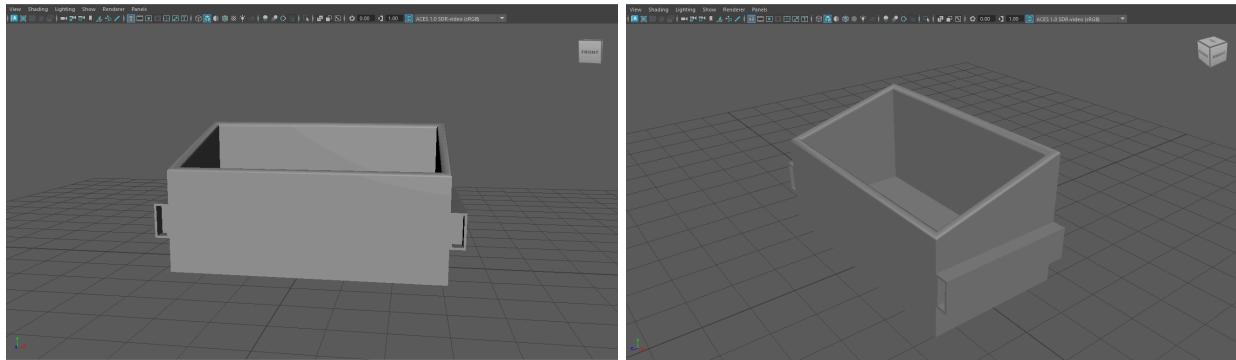
Moving on now to a couple days later for our second lesson, we were tasked with creating a 3D model of a Dumpster. Firstly I looked up some references for dumpsters to get the general idea for how to look [4][5].

Once I had an idea of what I wanted to do, then spawned in a cube model and stretched it to make it more resemble a cuboid, then I used extrude to cut a hole in the middle of the model, after that I used a tool called Edge Selection (F10), and grabbed one of the edges of the cuboid, then I lowered it down slightly so that it created a wedge shape.



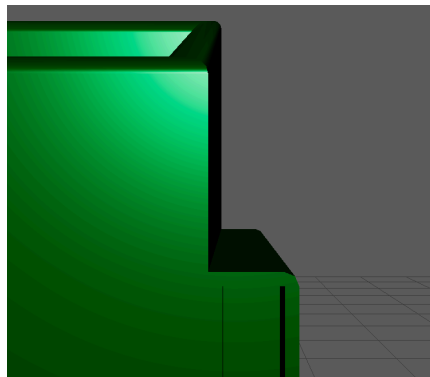
This image here shows what I had created so far, a cuboid with a hollow cut in the middle, and slightly wedged. This is now the body for the dumpster.

Moving on, I then used the Cut Tool, which allows you to create separate vertices in the model. I used the cut tool on either side of the dumpster and used Face Select (F11) to grab those new faces and bring them out slightly. Then again on these new objects I used both extrude and face selection to move them back in.



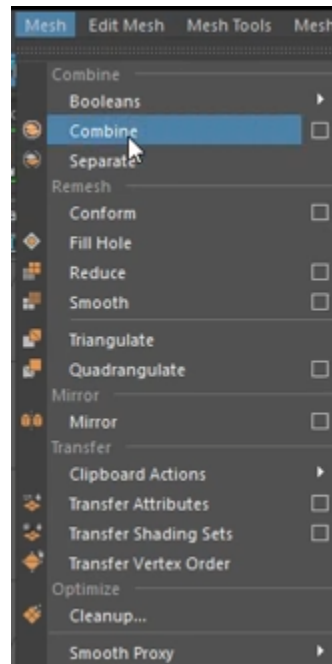
These images show the new side extensions.

I then applied the colour technique I learned in lesson 1 and made the dumpster green, just to make it look more authentic, furthermore I rounded some of the edges of the model with the bevel tool, just to make it look less blocky.

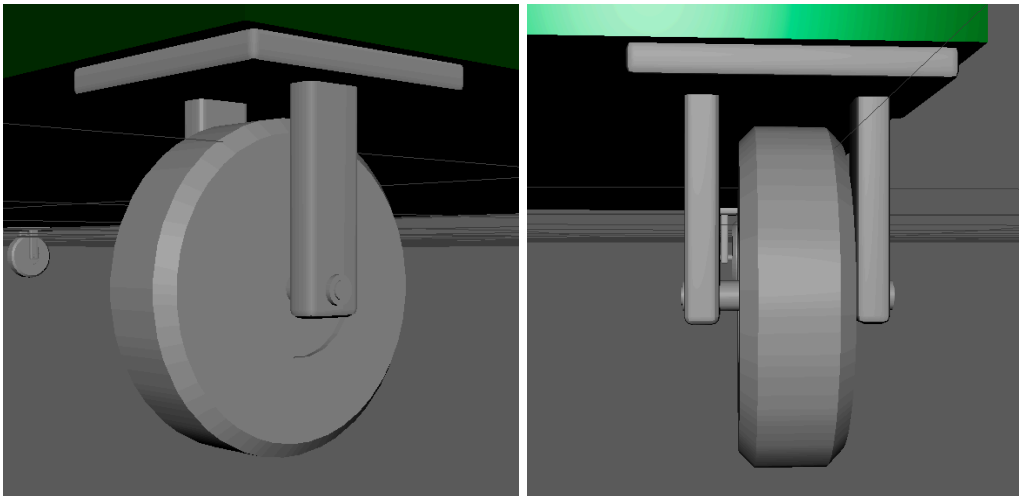


This shows the new rounded corners of the model as well as the green colouring.

Lastly, I wanted to add wheels, so I looked up reference [6] and started importing more models from the built in shapes tab, such as cubes and cylinders. I started to put them all together, resizing and positioning them until I was happy with the result. I also decided to bevel the edges to make it look nicer and rounder. When I was finally happy with one, I grouped the parts all together using Shift click to highlight all of them, then going to Mesh > Combine. This made all the parts one single part that I could move around.



Once I had combined all the parts together I positioned it underneath the dumpster and copied it 3 more times so that I could have it in each corner.

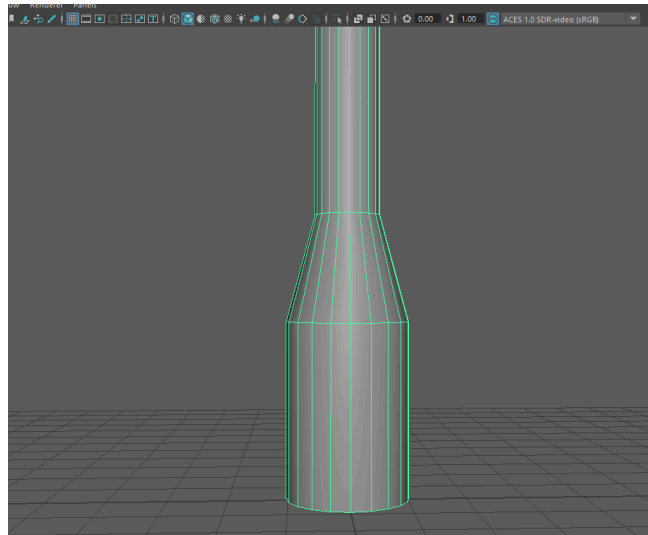


These images show the wheels being attached to the bottom side of the dumpster. They have been combined for easier maneuverability and transforming, as well as being beveled to make it nicer to look at.

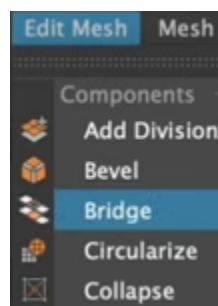
Lesson 3: Lamp Post

Oct 17, 2025

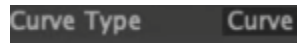
Our next assignment was to create a lamp post. I didn't use any reference for this project, I just went from memory. I first spawned in a cylinder and used both edge select and extrude to create a base, then I extended it upwards to create the post.



From there I spawned in a cube, resized it into a cuboid, then I used a mix of edge select and extruding to create a sort of wedge shape, this was going to be used for the light. Once I had that positioned where I wanted, I made use of a technique called Bridging. I first went into face select mode and deleted both the top of the cylinder of the post, and the side face of the light, so now there was a hollow opening in both meshes. Then I combined the 2 objects and then in edge select mode I shift + double clicked the edge around the face I had deleted on both the objects, and I went to Edit Mesh > Bridge.

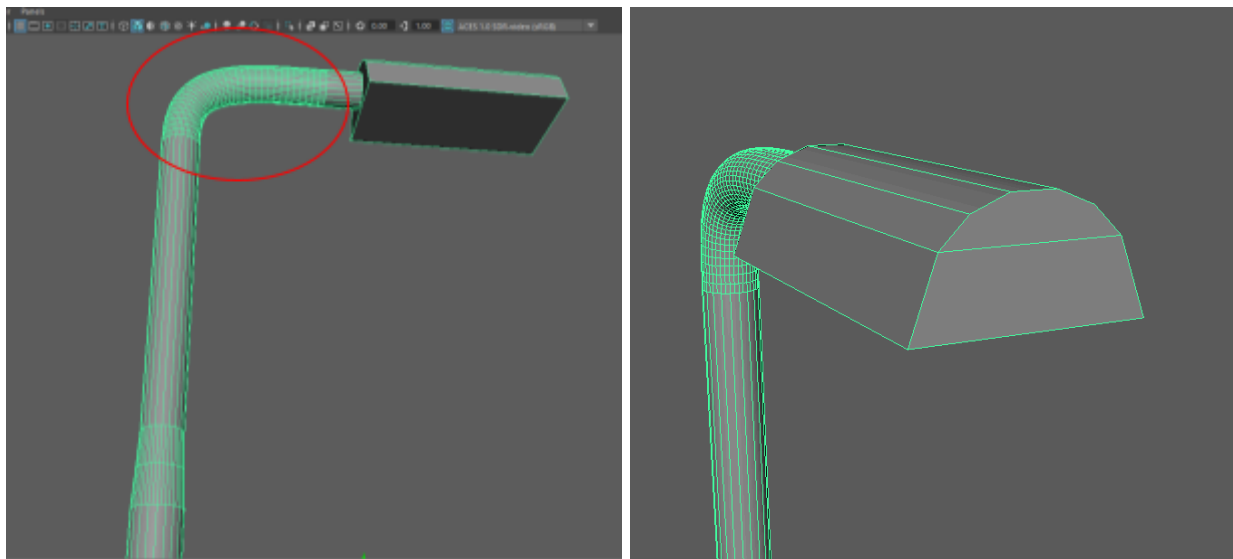


This then created a mesh that joined between the 2 objects, however I wanted it to curve and by default it is set to linear, so I went to Curve type and changed it from Linear to Curve.



This then gave me what I wanted, a curved mesh between the lamp post and the light.

Here I also decided to change the Divisions number so that there would be more of them, I decided to do this as it would make the model look smoother and less blocky, however in hindsight I may have over done it as there are a lot of divisions in the model where it shouldn't really need them.

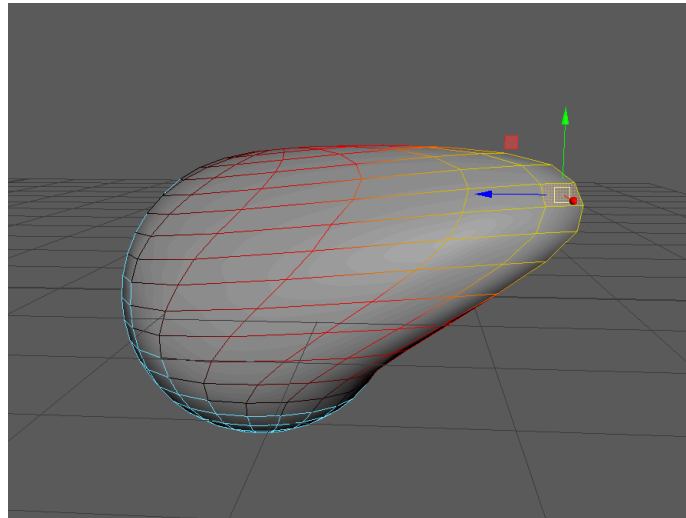


In the image on the left we can see the curved mesh connecting the post and the light, the more green wireframe there is, the more divisions there are, meaning that while it appears smoother it is also more demanding on resources. The image on the right is a close up of the light part.

Lesson 4: Cup & Saucer

Oct 24, 2025

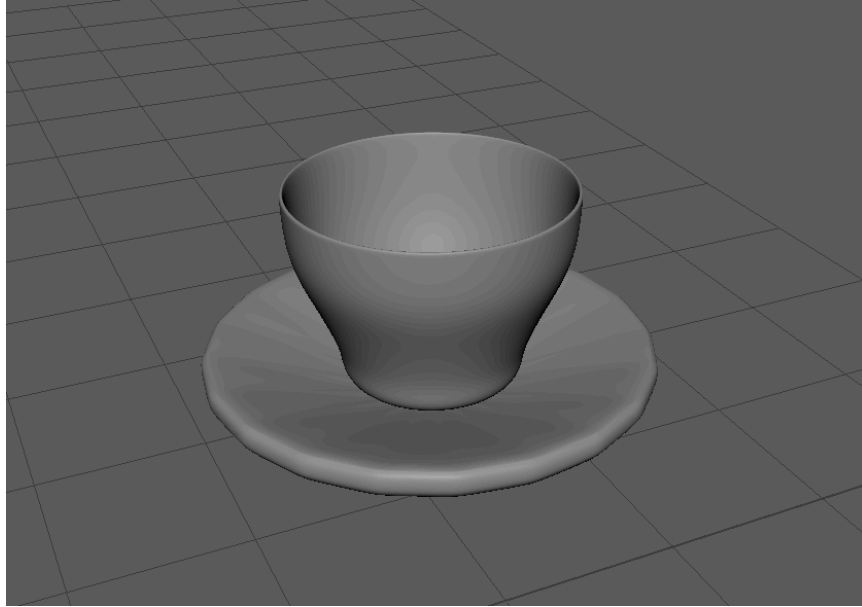
Before creating the Cup & Saucer, I did a test where I spawned in a sphere model and used what is called Soft Selection, where you are able to adjust the radius around the object, the gradient in this mode tells you what parts are to most affected by the tool, yellow being more so, red in the middle, and blue not so much if at all.



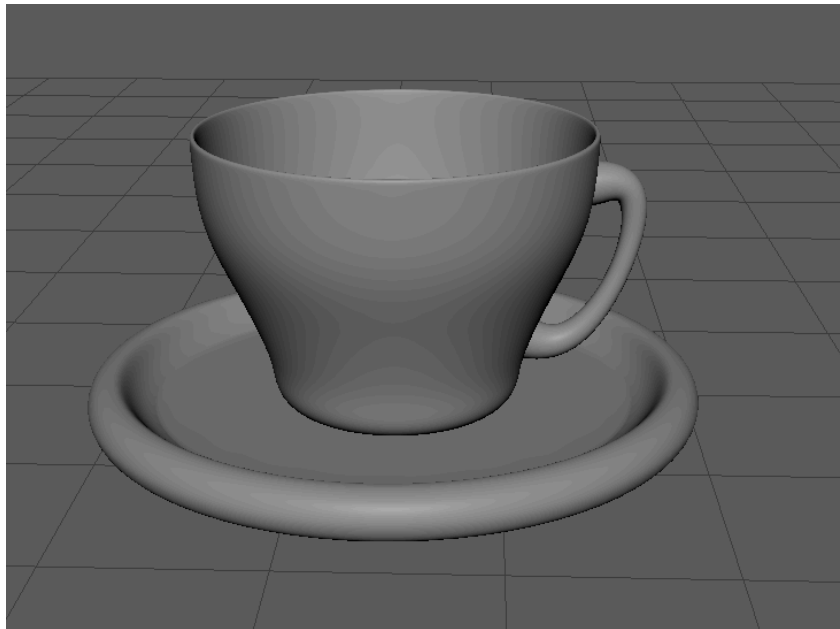
In this mode you are able to stretch an object into different shapes, which was helpful in creating the cup.

After this I made a start on creating the cup. This was another design where I felt I didn't need any reference. I first spawned in a cylinder, hollowing out the top using the extrude tool, creating some divisions in the middle using the cut tool, then I used the Soft Selection tool around the middle of the cylinder to mold the shape of the cup, thinning out the bottom and widening the top.

As for the handle I used the bridging technique and created two smaller cylinders on the side of the cup, one at the top and one closer to the bottom, I deleted the faces of the parts I wanted to connect then I bridged them, making sure to enable curve rather than linear, and also raising the divisions, so that it was smoother. After that I created a simple base for the saucer, by again using a cylinder, using the bevel tool to curve the sides and the cut tool to create a point in the middle from which I could bring down slightly to make the whole thing curve in the centre.



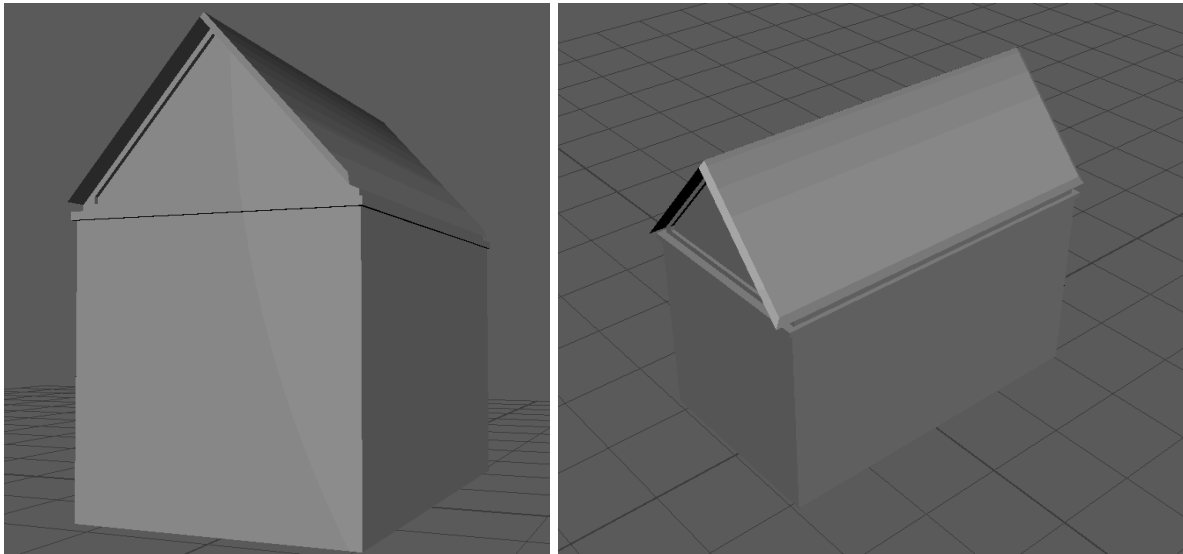
I then improved upon the saucer and smoothed it further, and creating a lip around the edge, I also flattened the centre to make it look more like a plate.



Lesson 5: House & Door

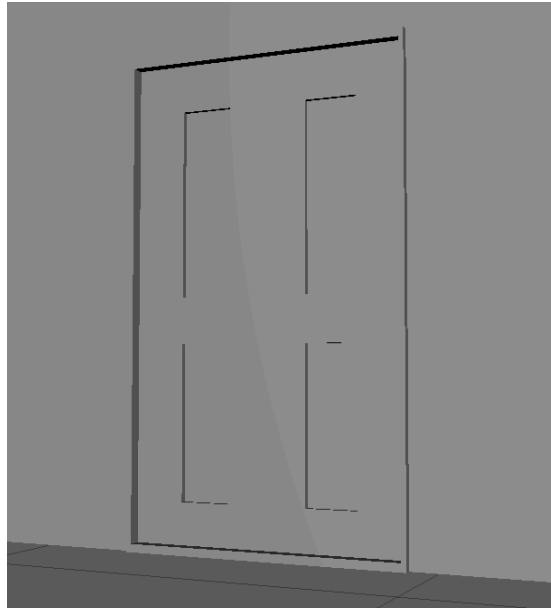
Nov 14, 2025

For the house I began by spawning in a cube, again transforming it into a cuboid, this would be used for the body of the house. As for the roof I copied the house and placed it on top of it, I flattened it down and brought the edges out slightly to create a ledge. From here it was a case of using the extrude tool a couple times to mold the shape of the roof, ultimately trying to get it to have a point. Along the way I also used bevel as well as cut to get more shape out of it.

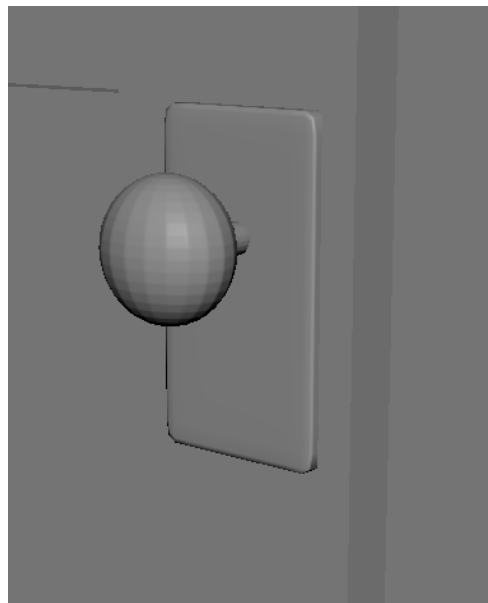


The pictures above show what it looked like up to this point, which I thought was okay, however I thought I could add some more detail.

I began working on a door for the house. I did this by using the cut tool to create a rectangle shape in one of the faces of the model, then using extrude, I created an outer border as well as moving it inwards to create the actual door shape. Using the cut tool again, I made 4 smaller rectangles on the new face to replicate a door pattern.

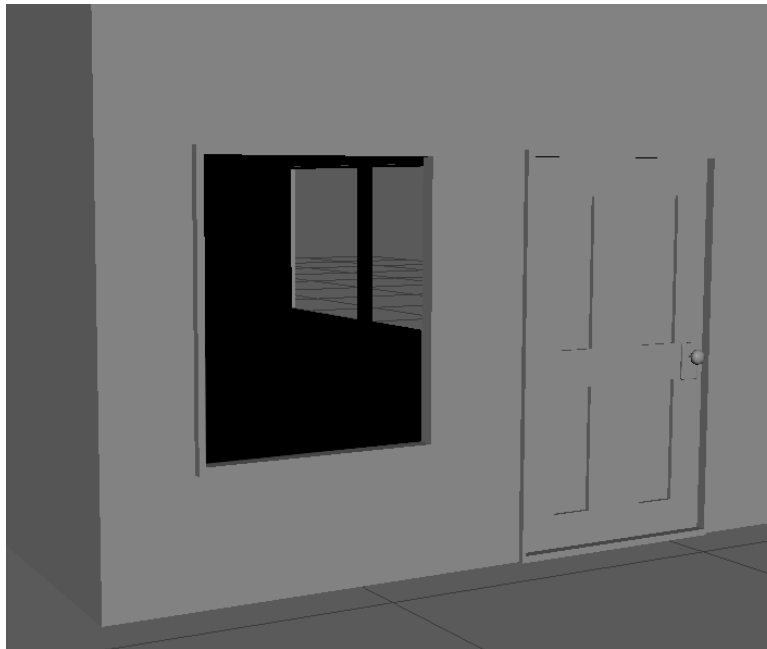


This was looking okay and I also created a door handle by using a sphere and beveling the corners, a cylinder for the mechanism, and a sphere for the handle.



Given more time I wish I had smoothed the sphere and maybe added a keyhole for more detail but where it is currently I'm happy with.

Lastly for the house, I added some windows by again using the cut tool to create some squares around the model, and extruding the edges to have it come out slightly for a border, then deleting the face to make a visible hole in the mesh.

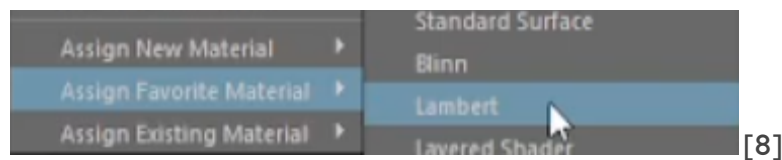


The image above shows the windows on the house. I added one on the front next to the door, and 2 around the side, separated with a beam in the middle, the dark shading is the inside of the house.

Lesson 6: Can Pull Ring & Sword

Nov 21, 2025

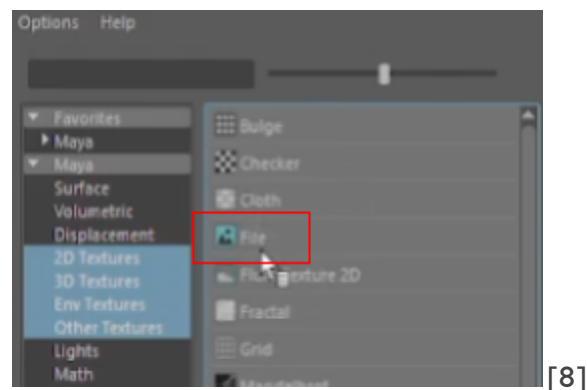
For this model I used the Quad Drawing technique, where you would bring in a reference image and then trace polygons over the image until eventually you replicate the image into a model. To start, I spawned in a flat polygon plane which is found in the shapes tab with the others. I then selected the plane and held right click, and moved down to Assign Favourite Material > Lambert.



Doing this allows me to change the colour and apply textures / images to the plane. So from there I go to the right of the screen where it says colour, and I click on the little black and white square next to it.



This will open a new pop up window where I want to select the file option.



Then back on the right side of the screen it will say Image Name, with a little folder icon next to it, clicking that will allow you to pick the image you want to apply onto the plane.

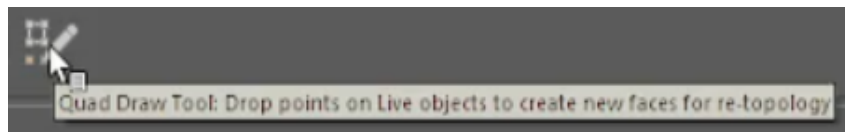


From here I selected the image that was provided to us from our lecturer, that being the top of a can of drink, more specifically a can pull ring. [7]



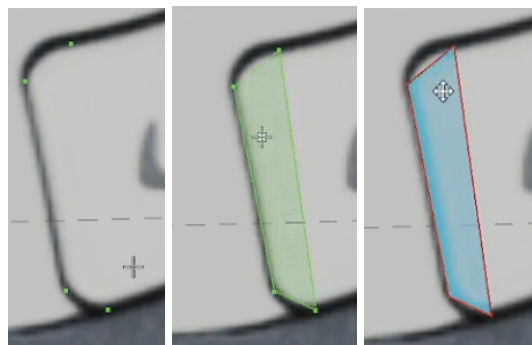
www.shutterstock.com · 2400736353

Upon importing the texture, it doesn't appear straight away. That's because I was in the wrong shading mode, to fix that I just pressed the 6 key, which changed my shading view to texture view, then the image appeared. The last thing I had to do before I could model was to make the plane live, to do this I selected the object, held right click then found the option that said Make Live, doing this not only makes it so we can't select the object any more, but now there are some new tools that I can use. I was now able to start modeling and to do that I used Quad Drawing, which was found at the top of the screen upon making the object live.



[8]

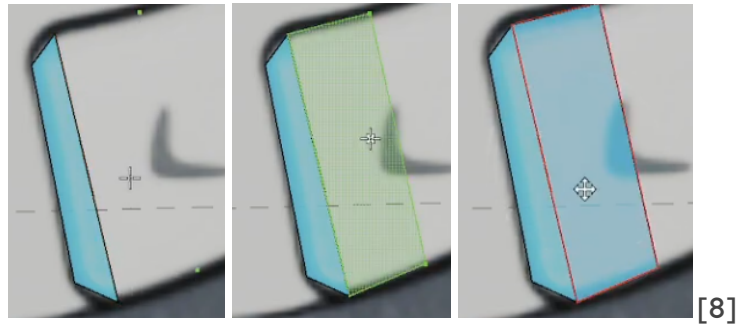
Selecting this tool makes it so that I can make my own polygons. I repositioned my camera so that I was now looking down at the image, and then I made 4 points with the tool around the edge of the ring. Holding shift over the middle of these points then clicking creates a flat polygon.



[8]

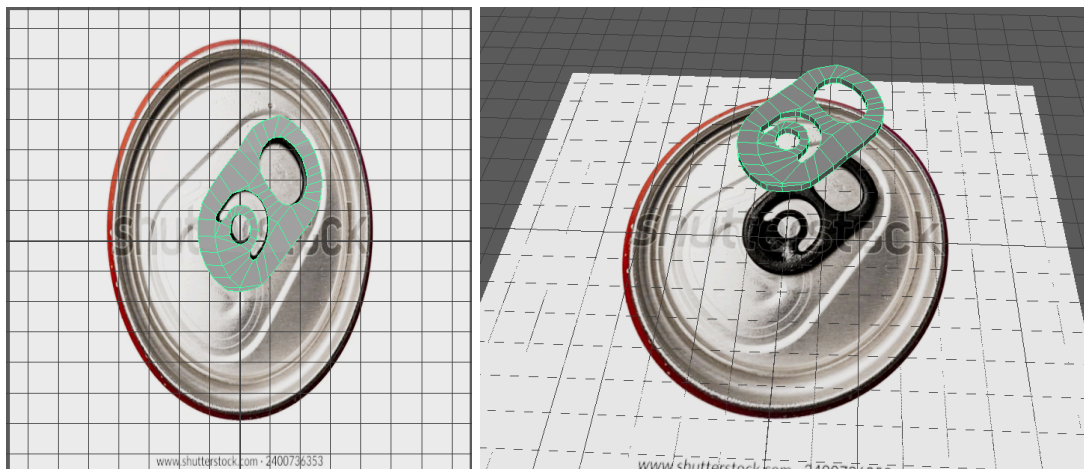
The images above are demonstrations of the tool being used on a different image.

From there if you make 2 more points then follow the same steps you are able to create more polygons.

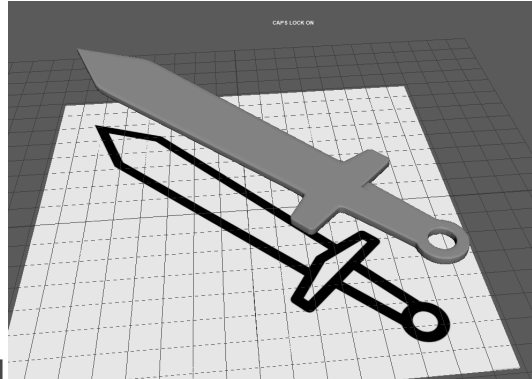


The images above are demonstrations of the tool being used on a different image.

I did this all the way around the image of the pull ring, and eventually created a flat model. I then selected the model I had just created and raised it slightly to give it more volume and depth.



Using the same technique, I decided to make my own model using another image, this time of a sword.



[9]

I followed the same instructions of creating a new favourite material, making the image live, and then outlining the points for the quad draw tool. Lastly, I used the bevel tool to make it slightly rounded at the edges, just to smooth out any rough edges I had made when marking the points.

Bibliography

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[3]

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[4]

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[5]

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[6]

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[8]

Adam Head, "UWTSD BA Computing | Maya: How to Quad Draw - Tutorial," *YouTube*, Oct. 28, 2024. <https://www.youtube.com/watch?v=fOKKA1jE1cM>

[9]

"Short Sword Blade Line Art Vector Stock Vector (Royalty Free) 426581539 | Shutterstock," *Shutterstock*, 2016. https://www.shutterstock.com/image-vector/short-sword-blade-line-art-vector-426581539?dd_referrer=https%3A%2F%2Fwww.google.com%2F