

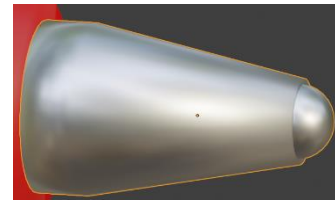
COSC342 - Assignment 1: Pen Model

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I am pleased with what I completed for the pen model. It is a to scale model that just lacks depth in the material and texture choices. Each pen end piece is created out of three cylinders and two cones connected to a cylinder for the main pen body.

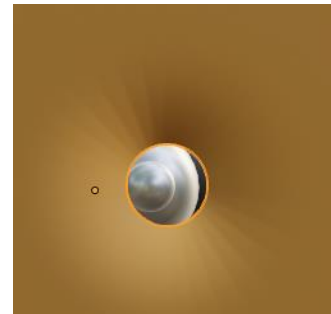
To add the raised bumps, I split a cylinder into sections that I could then extrude on symmetrically.

The ball tip end I used a cylinder attached to a cone and placed a sphere into the cones end. I then used a boolean modifier to cut out the excess sphere from the union of the cone and sphere. I combined the objects to solve some weird lighting issues.



I could then duplicate, reverse the coordinates, and flip this pen end to create both sides of the pen. The first ring and raised portion use a rougher material to match the rough plastic look. The second ring and red cone use a material half as rough to get the shiny plastic look. The ball point ends are fully metallic with half roughness to avoid it being too shiny.

The pen caps are cylinders that had one end cup and then extruded into the cylinder. I then cut and extruded the closed end to create the slightly creased hole. My pen was water damaged so the ends were quite different to what they were originally, so I am not sure if this is how it was supposed to look or not.



My materials are not the best and do not look realistic. I could not find any better methods I was happy with. For example, I applied an image texture of cardboard onto the main pen body and caps. But it just looked somewhat stretched and I wasn't happy with it. I also tried to add the logo and text to the pen body. Yet I could not work out how to get the UV to map correctly and just ended up with a mess.



For the scene I used an HDRI environment texture and created a transparent cup to showcase different components of the model in a scene that looked natural.