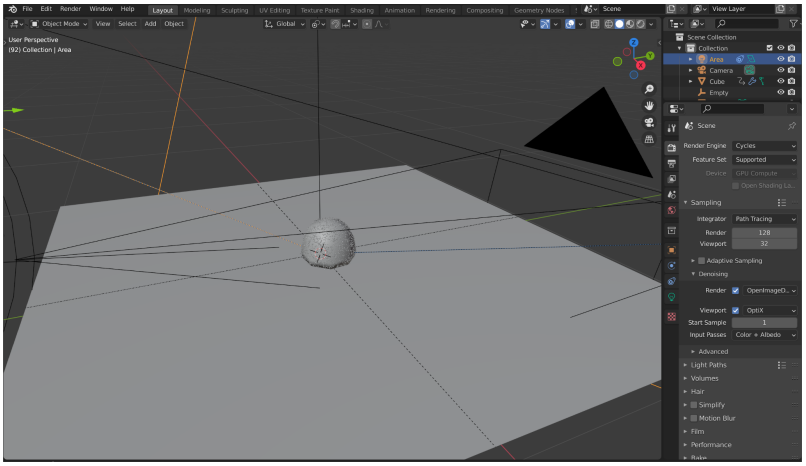
Hannah's project: Procedural generation + virtual reality

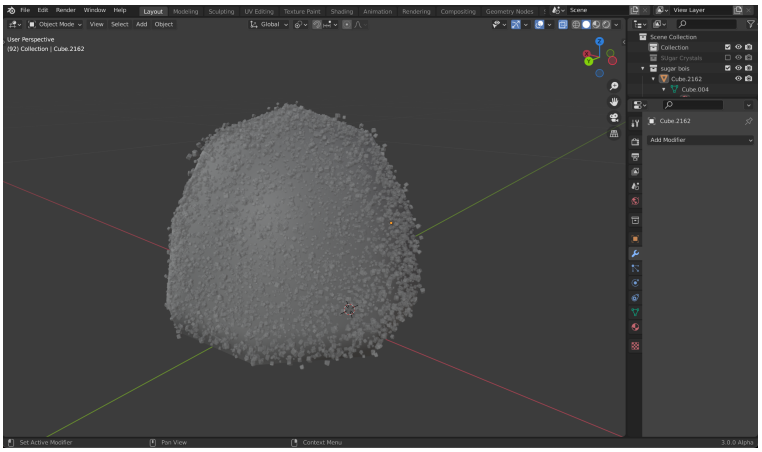
Plan: virtual world full of bouncy 3D gumdrops with procedurally generated sugar crystals and colours.

Process:
Use this tutorial on how to use blender's new geometry nodes (blender 3.0) to make a gumdrop. It uses geometry nodes to randomly place and size the different elements.

Above: blender tutorial
Left: my blender workspace
Below: sans-modifier model



My plan was to do several passes/iterations of the geometry and colour nodes leading to slightly different models each time. This hasn't been done a lot as it's such a new update to blender, so it was difficult to find sources for it. I decided to stick to making just one gumdrop to start out with. Look at my gumdrop_rendery.blend file to see the finished product.

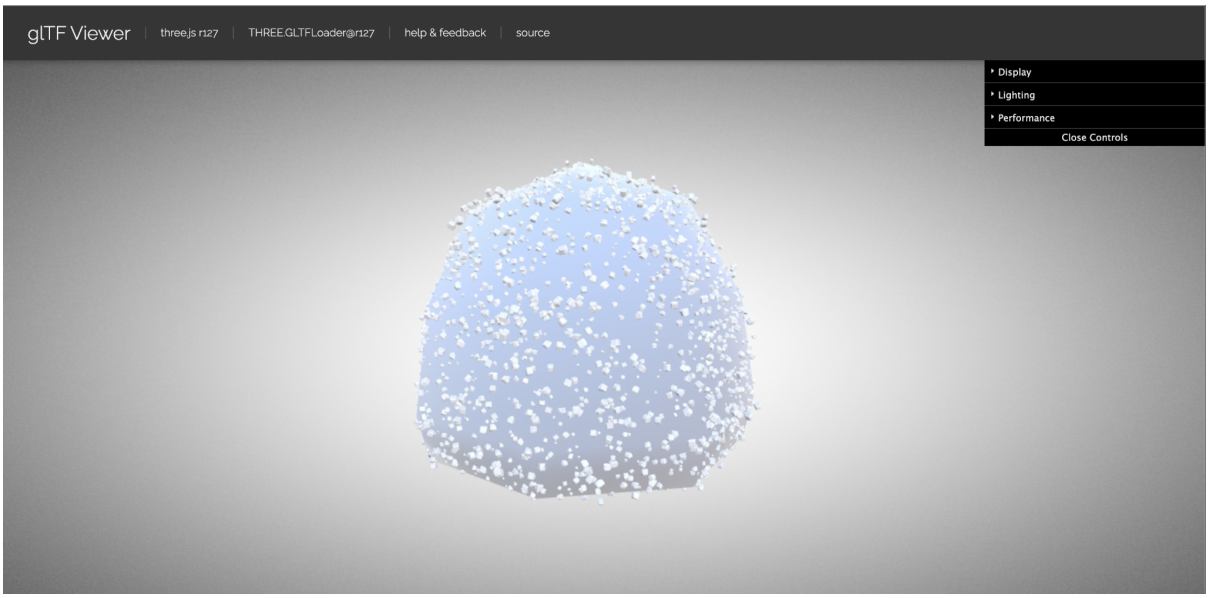


Next step was to remove modifiers in order to make it a viable gltf/glb file. Look at all that crystal structure!

Find the best tool to put it into a virtual reality environment. I researched the best way to do this and came across a tool called verge3D. It's made specifically for use alongside maya/blender and other modelling software, and has a programming interface similar to scratch, in a drag-and-drop style. Because of this, it's more of a tool for 3D artists than it is programmers.

My other option is AFrame and glitch, which isn't specifically for going straight from modelling software to webgl, but is still pretty good.

ISSUE #1: My GLTF file did not show up when I tried to put it into verge3D. I also tried using glitch, which I've used in the past, but had the same problem. I checked that the file was okay by using an online GLTF viewer, where I could see it with no issue.



Below is my code in glitch, which, alas, did not work.

```
<!DOCTYPE html>


<html>

  <head>
    <script src="https://aframe.io/releases/0.8.2/aframe.min.js"> </script>
    <script src="https://unpkg.com/aframe-animation-component@^5.1.2/dist/aframe-animation-component.min.js"></script>
    <script src="public/js/sphereexpand.js"></script>
    <script src="public/js/backhome.js"></script>
    <script src="public/js/examplefunctions.js"></script>
  </head>

  <body>
    <a-scene>
      <a-assets>
        <a-asset-item id="gumdrop_model" src="https://cdn.glitch.com/3055696d-6e43-44ef-9161-f0194b0e706f%2Fgumdrop_world.gltf?v=1622610
            response-type="arraybuffer"></a-asset-item>
      </a-assets>

      <a-entity id="camera" position="0 1.6 0" camera look-controls wasd-controls>
        <a-entity cursor="rayOrigin: mouse"></a-entity>
      </a-entity>

      <a-entity laser-controls="hand:right"></a-entity>

      <a-entity id="gumdrop" class="homeworld" position="0 0 0">
          <a-gltf-model rotation="0 930 0" src="#gumdrop_model" scale="1 1 1"></a-gltf-model>
      </a-entity>

    </a-scene>
  </body>

</html>
```

I think if I were to seriously commit to using verge I would've had to be familiar with the software first, instead of going straight into attempting to use my own model alongside this new tool.
Note: blender was also new for me which was a bit silly! But it's really cool and it was a lot of fun to learn.

So my project was essentially put on pause at this point. Where to from here?

1. Keep learning blender and become familiar enough with it to understand how to use the node structure to do several iterations of colour and geometry
2. Figure out why the model will not show up in webgl. So annoying.

In all honesty, this was a time issue more than anything else. I was really excited to make a little gumdrop garden, but I prioritised other work over it and didn't utilise the in-semester time I had to work on it. HoweverIt's something that I'd really like to continue developing as a personal project so stay tuned! Once I have Massey's resources available to me again (I'm currently in Christchurch), I'm going to continue working on this.