# Alex and Keenan Proposal: Mandelbulb

**Description**:

Using Volumetric shading to render the Julia function of the Mandelbrot set, aka the Mandelbulb using point rendering and voxels. We will need to first figure out how volumetric shading works using 3d textures, then use a mathematical formula to shade. After that, we can work on developing the main loop of finding locations which are in the mandelbulb set and rendering them based on the previous locations of the equation.

**Code Structure:**

**Optimization:**

For optimization, we will implement Culling and dynamic LOD depending on how far you are from the shading points of the Mandelbulb.

**Sources:**

<https://www.skytopia.com/project/fractal/mandelbulb.html>

<https://www.skytopia.com/project/fractal/2mandelbulb.html>

<https://www.youtube.com/watch?v=rQ2bnU4dkso>

<https://forum.openframeworks.cc/t/visualization-of-3d-densities/20975>