I have learnt a lot this term, starting with one dimensional sound, moving on to two dimensional graphics and then to three dimensional space. I am particularly interested in 3D and realise the power of 3D engines, so I have chosen to use the three.js 3d library to create my final project.

I started the project by creating a scene based on the three. js official documentation, which included a Scene, a Perspective Camera and a renderer. To build a 3D world I need a skybox, so I created a cube to act as a mapping container and applied textures to six faces respectively. I also added an ambient light to the world to create natural lighting. My idea was to create a park with a statue from an alien planet in the centre. Thus, I created a sphere, which I used standard material to give it a certain metallic look. I hoped this would leave people an impression of alien beings watching over the Earth. Then, I made it reflect the scenery of the whole park through texture mapping. Since a sphere is too monotonous, I created a torusknot to orbit it. This time I used normal material, and the rainbow colours made it seem like it came from beyond Earth. To make them more alien, I created an animation function to make the sphere and the Torusknot spin. In addition, I wanted to make them float on water, like the sculptures on the pond in the park, so I called the water file in three.js. However, probably due to the version of the library I used, I didn't succeed in getting the water to move. Instead, I created a mirror with water texture that reflected my statue and the whole world. I kept the water and hope to try something else to solve this problem over the winter break. I also considered the sound, as it is in a park and can't just have a view with no sound. Therefore, I referred to the three.js documentation and added bird song to my park. A 3D world certainly can't lack interactivity! Hence, I created three mouse events to enable interaction with the whole skybox and my alien sculpture. Firstly, I listened to the right mouse button to control the rotation of the whole world and the water surface. Secondly, I listened to the wheel of the mouse to control the zooming in and out of the sphere and torusknot. Thirdly, I listened to my left mouse button. By clicking on the sphere or torusknot with the left mouse button and holding it, people can drag them anywhere in the park.

These are my projects, which impressed upon me that the 3d engine is super amazing and inspired my curiosity to continue exploring afterwards.

Github: https://github.com/22015680/Coding_One.git

Mimic: https://mimicproject.com/code/adbf6a2e-ad41-e405-f964-c944ecbf0825

Video Description: https://www.youtube.com/watch?v=F39M8Ow1UAI