# COMP3851: Future Power – Science and Engineering Challenge

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## Background

A white board with several different colored objects on it

Description automatically generatedThe Science and Engineering Challenge, SEC, is a nationwide STEM outreach program presented by the University of Newcastle. They run several different events to support STEM outcomes in education. Future Power is one of these events and the project was to take the original demo and create a digital browser-based version of the game. The original game is a wooden game board and “generators” that use microcontrollers to run a game based around teaching the basic idea of balancing a power grid so that the requested and generated power were not too far out of sink and causing the grid to overload and shut down.

Fig 1: Original Game Board and Untextured Digital Reproduction

The project requested the use of the Unity game engine, having experience in other Game Object focused engines, much of the baseline knowledge was already present. Unity as a tool has a large community of creators online documenting, tutorialising and sharing their creations online. This community resource was an invaluable when adjusting from other more familiar tools like Unreal and S&box. As an example many resources were sought out to learn the use of Unity’s Text Mesh Pro user interface building system, and many of the roadblocks in the project stemmed from finding understandable methods of receiving input from the user.

The original game board required the transportation and setup of many unwieldy heavy boards, limiting the reach of the demo and increasing demand on staff. A digital demo alleviates this demand and allows for outreach beyond areas that the boards can be reasonably transported to and from. Embedding the demo in a browser tab using Unity’s WebGL compilation, working with low poly assets and the computationally simple nature of the game allows for low end hardware to run and experience the game reducing a further barrier to entry.

## Aims

## Methods

## Results

## Ethics

## Project Management

## References