**Fyp presentation Script**

**Introduction –** starting with my hypothesis I wanted to use my project to Explore the combination of live data, art, Internet of things and how this can be used to highlight the environmental impact of housing and waste of finite resources.

The aim of my project is to look at how the internet of things can be used to aid and show the importance of resource management within the home environment. I would like to build a resource measurement system for water consumption within the household, which will be accompanied by a live data visual art piece representing how much water is consumed on a daily basis by the home occupants. This system would then help to highlight how wasteful we can be with the resources in our own homes and drive home the impact that this has on the rapidly depleting environment and help people to make the conscious effort to waste less and reduce the consumption of important resources allowing for a healthier environment.

**Background 1 –** The initial inspiration for my project was from the leader of the Living Data Program and visual artist from the University of Technology Sydney Lisa Roberts. I found an article where she was discussing the role of artists in helping to visualise scientific data to change people’s understandings specifically to do with climate changes She states “We need experiences that stir strong feelings of connection. Artists are leading the way to reconnect methods of analysis and expression”. Currently their work is based on a global scale and presented online, in conferences, art exhibitions, public spaces and social medias. I was interested on how this idea can be used on a more local scale using IOT technology to bring the idea into the home environment.

**Background 2 –** Another inspirationfor my project was a short sci-fi story written by J. G. Ballard called One thousand Dreams of Stellavista. This is a story set in a house he describes as psychotropic. The word psychrotropic is usually used to describe the effects of mental activity, behaviour or perception in conjunction with drugs and medicine. A psychotropic house is designed to sense and mirror the psychological state of their occupants and change aspects such as shape and layout accordingly seemingly alive. I found this story interesting and very relevent to today and the increase in the amount of internet of things devices built for the home to make everything in life easier and more adaptable to the user, houses are already monitoring occupants and adapting specifically making them more personalised. From this I started to think about what else the home could autonomously be monitoring or self conscious of and how could that be materialised.

**Background 3 –** Synthetic Sensors project is google funded project that aims to create a new type of sensor that can work across a broad range of appliances and visualise it, on the project website it is described as “a single, highly capable sensor which can indirectly monitor a large context, without direct instrumentation of objects”. This sensor is taking a big step forward in terms of IOT and I found its potential and diversity for envirnmental sensing very inspring for my project.

**Methodology 1 –** To start off I looked at homes and their total environemental impact, A paper called Environmental impacts of the UK residential sector: Life cycle assessment of houses covers the first-time results of a full life time cycle study of the 3 most common types of housing in the UK, detached, semidetached and terraced houses. This study covers all the life cycle stages including construction, use and demolition within 50 years. Interestingly the stage with the highest environmental impact is the use stage which counts for 90% of the global warming potential.

I then had to define what a resource is and what can be determined as a resource within the home that is used throughout the houses life. The definition of a resource is a stock or supply of money, materials, staff, and other assets that can be drawn on by a person or organization in order to function effectively. This definition is very broad and could be applied to many aspects of the home, to start I looked at documents such as utilities listings and bills to see what people commonly spend money on and come up with a list of resources. Which.co.uk has a great breakdown of home costs which included what I was looking for. The list includes:

Electricity  
gas   
water  
Telecoms

TV  
Parking  
Data

Money

to help I narrowed it down to resources that occur naturally and have the most effects on the environment.

**Methodology 2 -** From there I Researched into the 3 main naturally occurring resources; electricity, gas and water. From my research I found that water had the worst case of over use and wastage. Water is used for a lot of different tasks in the home, including food preparation, washing and hygiene, outdoors, consumption and heating. The world health organisation defines different levels of water access, “Basic access is the availability of a source of water that is at most 1,000 metres or 20 minutes away that affords the possibility of reliably obtaining at least 20 litres per day per family member” and “Optimal access allows for the consumption of 100 litres per person per day on average, supplied continuously through multiple taps and which meets all consumption and hygiene needs” currently according to website on average the average water usage for people in the UK is about 150 litres per day. meaning we are over consuming at least 50L of water and this is having big environmental impact.

**Project Build 1 -** I set out some aims and objectives to achieve with my project build those were, to create an online system that can measure water consumption from the tap, a live and changing art piece that correlates with the data collected from the tap. I would also like the art to be fashioned in a way that it would work within a gallery setting. Finally the system should be easy to use or installed without the need for any plumbing or specialist equipment or knowledge, I feel this would fit more within the realms of IOT.