Design Introduction

For the project, I have stuck with the idea of a simple 2D platformer with science themes and simple problem solving elements.

Therefore, design wise, there are six major areas for design:

1. Main concept/story
2. The playable character
3. The main area between levels
4. The physics levels*
5. The biology levels*
6. The chemistry levels*
   *These include not only aesthetic design by movement and problem concept as well.

The idea of a 2D platformer was not one taken without consideration. While I will cover what I mean by a platformer and go over it with examples, I will take the time to explain my reasoning behind choosing this format for the problem in the introduction.

Firstly, I wanted something that would suit my target audience given the situation. The key issue was that I am expected to expose students to science that they are not familiar with. This pretty much removed any ideas of a quiz, as it would be asking too much of them. In addition, the idea of fun must also be upheld- my client made this **very** clear.

With this in mind, I decided that maybe it would be better to promote an interest in science rather than make a dedicated educational resource. Stepping away from this idea of an educational resource- a promotional resource would seem to be the next step. With a younger audience in mind, it may prove more viable to pace the exposer out; interaction would also help to ensure that they are paying attention. These fields and the present concept of fun made me think that a short game would be the best method of approach for this task.

Of course, just say, "a short game", doesn't solve too much, I already know I want to avoid quizzes in this resource, there should be more of an immersion of science rather than a lesson. The game itself should be simple to pick up and play- any type of tutorial should only take about three minutes maximum, there is also themes and age ratings to consider as well.

Based on my own personal experiences, I have fond memories of many flash platformers played on host game sites. Because I was able to play these times of games in school break times- this serves a proof that, they can be picked up near instantly. This is useful, as the basic gameplay mechanics will not distract players from other aspects of the game. Things like music, artwork and story will all take precedence over the game itself, perfect for the focus of this project.

Reinforcing a point, I just made, a 2D platformer is a well-established concept at the core. This will allow me to spend more time on theme and visual design than game design. When I say game design, I mean the primary mechanics rather than the levels and interactions. As the science will be presented via and interaction, it would be logical to spend more time on that aspect.

There is also the computational method to consider. While I could just state that this kind of game has been done many times before using the computational method; I would lose the ability to discuss why I personally choose the computational method in relation to the subjects I am promoting in a platformer, there are well defined elements that make up each stage. The elements are a follow:

- The player controlled avatar
- The static stage (e.g. floors and walls)
- The dynamic stage (moving walls and platforms)
- Interactive items (e.g. switches and buttons)
- Stage progression or reset features (e.g. pits, spikes, checkpoints and goals)

With each one of these elements having roles that effect every other element, it becomes simple to see the relation of input, output and processes between them.

If a whole game can be broken down in objects that defined relations and interactions with each other than it starts it become clear that object-orientated programing starts to become an increasing viable option when it comes to game design. This also has its own uses over analogue (non-digital) methods, as rather than having to craft and develop physical elements for a game (because the logical assumption is that if this game was to made on a non-digital tangible platform, it'll almost certainly be either a board game or card game). This would than force me to start managing supply costs and materials, I would be making no profit, and so then, I'd have to seek out funding with no returns. It seems much more logical to develop the game digitally. I have a computer with internet access, I know different free programming software and the distribution of the game becomes so much easier. Applying a digital computational method not only allows a clear-cut plan; it also allows me to realistically approach the problem, as there is very little worry about physical resources.

Other design considerations I will have to look out for are:

- Instructional aids, both virtual and physical;
- Iterative testing and I will effectively use it;
- End user acceptance testing;
- Final product testing;
- Product delivery means.