Analysis- Requirements for the Solution

The client requirements have been identified as followed:

1. The product needs to be science based: all assets and themes in the games will be science based, from level to object and obstacle design.

2. It should promote all of GCSE science (therefore represent biology, chemistry and physics); the game will be split into three parts, each part will represent one of these aspects of science.

3. The product needs to be fun (the client gave emphasis on the importance of the education being subtle); by using a game format and avoiding quizzes it should feel more like an enjoyable experience then revision. By ensuring that the game and controls work, immersion should also help to increase enjoyment when playing the product.

4. It has to be online or available across the school's shared network area; either I export the final version of the product as a web service or as and executable file on the school's server.

5. It has to be suitable for year 7s and year 8s; Stylised graphics and simple themes and controls will make the game appeal to a younger target audience.

6. All students should be able to complete it- therefore it should be easy to use; simple controls and a reduced overall complexity will make the game accessible to people of all abilities. Removing the ability to die will also ensure that anyone can finish the game without having their progress lost.

7. Between the fun aspect and target audience, there should be no questions present; as pre-GCSE students would not be able to complete GCSE questions, none would be present in the game.

8. It needs to be in a game or simulation format: liberal use of a graphics user interface with sharp input/output feedback will immerse the user as either a game (i.e. has a set win condition and means of getting to them) or a simulation (i.e. the ability to interact with an environment with set rules)

Development of my project requires both software and hardware, spread across research, development and documentation. I believe for the whole project, I will need the following:

- Computer: as this is a digital project, most of the project will be created on a computer. The preferred system specifications would be would 3.40 GHz processor with 12.0 GB of installed memory.
- Word processor: For documentation and planning of work, most files that store some kind of information will be stored in word documents. Most interactions with my clients will also be with printed word documents and that is what he is familiar with, all reports and interview summaries will also be in this format.
- Spreadsheet software: For time management (like a Gantt chart) and the logical storage and analysis of user feedback, like surveys and independent testing feedback.
- Graphics creation and editing software: Visual assets of the game will be created and edited from scratch, therefore I will need software that will allow me to create these assets.
- Sound editing software: In the possibility of sound being added to the game (the difficulty may prevent this from becoming a reality), I will need a sound editing software to implement sounds into the project.
- Music creation software: I would really like for there to be background music in the game. As I cannot play an instrument to record and add into the game (using sound editing software), I would need to use a music creation and editing software.
- Text editor: For moving pieces of code and notes around. Some sections of code may be written in a text editor and reviewed before being added to a function during the development process.
- Internet browser: This has many different resources, depending on what I would be doing at the time. In analysis stages it will be used for research on topics that are related to my problem (an example of this would be looking at other platformers to see how they behaved). In development I will use a browser to aid my design, such as explore science themes and look at objects in real life to aid with graphics. During development I will use it in tandem with books to aid the programming of the solution and during evaluation, I will use it to aid with formatting a formal evaluation.
- Java Development Software: I will have to download a programming environment for java. This will allow me to create, test and debug my code in a controlled environment. This will be the interface I use in the whole development of my solution.

There are also peripherals I will need such as:

- A monitor: I need this peripheral to see the content I am creating, be it worded documentation or solution programming. There is also graphical aspects of my game that would need constant review during development as well.
- A mouse: For quick navigation around the operating system of the computer and in between files that will be opened at the time. While it would be possible to navigate without a mouse, my work efficiency increases dramatically when I can navigate with a mouse. A mouse is also vital for asset development, as I am only proficient in creating digital graphics and sound manipulation using a mouse.

- A keyboard: For inputting alphanumeric characters into the computer. This has countless uses; such as recording documentation, inputting programming language in a programming environment, entering keywords into a browser and as an aid for finding files saved on the operating system.
- A scanner: during the design phase and parts of the development phase there will be non-digital sections of the project. A scanner allows this work to be transferred to a digital form, allowing it to be implemented in digital documentation and saved digitally (what also allows back-ups).
- A printer: This allows me to print out hard copies. This is very useful for proof reading and physical back-ups. While a mono-printer will be fine for most worded documentation. A colour printer will be needed for design and development documentation as my solution features a wide range of colours.
- A digital camera: There may be some physical documents that may be very difficult to scan (e.g. a poster), in times like a digital camera would be able to take a picture of the media (or multiple pictures) that can be transferred and edited using graphics editing software, to allow that media to be used in documentation for stored.