Plasma Games Unity Project - Design Document

**Objective:** To create a 2D educational mini-game in Unity that follows the project requirements.

**Requirements:**

* ~~Must be a 2D Unity Game.~~
* ~~Must include a Drag and Drop Mechanic.~~
* ~~Must record and export some type of Data. Exporting could be to a .txt file or the console.~~
* ~~Must include a Unity Animation~~
* ~~Must be able to be completed in less than 30 minutes~~
* ~~Must contain at least two Scenes~~
* ~~Must be contained in a public Github repository~~
* ~~Must be able to be exported to a WebGL build.~~
* ~~Finished, polished, and playable by the established due date. (Finished means all Code committed to and viewable on Github by the due date. Whatever is in the repo on the due date will be what we examine).~~
* ~~Must follow the S.O.L.I.D. principles of programming. (~~[~~article~~](https://medium.com/@alejandrodiazjllo/s-o-l-i-d-principles-for-unity-a1556ee99e7c)~~,~~ [~~video~~](https://www.youtube.com/watch?v=QDldZWvNK_E)~~)~~

**Idea:** Create a 2D drag and drop game that introduces students to the basics of chemistry. In this game, players can drag simple components, such as ice, salt, water, etc into boxes that will produce a compound of some kind. (Ex. Combining milk and ice to create ice cream.)

**Pitch:** The player will start at a menu screen where they can choose to begin the game or go to the info screen where a character will explain how to play the game and what the students will learn. The character will be named Professor Chem and will have a scripted dialogue that the students will read. Once the player is ready, they can begin the game. Profesor Chem will be off to the left-hand side of the screen and the elements will be located at the bottom. Boxes will be placed in the middle of the screen that players can drag elements into. When hovering over a component, Professor Chem will briefly explain what the object is composed of ,along with what properties it has. This will help students understand the nature of each component they’re interacting with. When the player has dragged each component into the boxes above a compound/mixture will appear in a box to the right, which will represent the combined product of all the components in the current scene. Professor Chem will describe what the product is and why combining those components will create the final product. The levels will continue like this adding more components and more complex products as the game progresses.

This game will be in **2D**. Its core mechanic will be **dragging and dropping** components into boxes and producing a product. It will **record actions and export them onto the console**. When players create a product **an animation will play** signaling they have successfully combined the given components. This will be a relatively short game that can be completed in **5 - 10 min**. There will be **multiple scenes**, including an Info scene and different levels. All work will be done in a **GitHub repository** and be able to be exported as a **WebGL build**. It will also follow the **S.O.L.I.D** principles of programming when creating C# scripts. The due date for the completed project will be **May 23rd @ 9am EST**. All work should be uploaded in the **GitHub repository** by this time.

**Deadlines:**

*Prototype:* Creating the basic functionality of all the mechanics described above - **May 14th**

*Final:* Completed version ready for review - **May 23rd**.