**SpaceChem**

Problem:

Produce chemical formulas from given inputs

Core Game Loop

* Produce chemical system
* Test
* Iterate and change
* Successful system line
* Move onto next level

Challenge(s) of the game

The one and main challenge of the game is completing each level.

A player is limited only by space and so sometimes may need to condense and re-organise their production line.

A player is not limited by resources of costs of any kind, however at the end of each level they are rated on their efficiency and use of materials.

Game mechanics

* Picking up and placing down elements
* Bonding elements
* Creating logic lines and loops
* Syncing loops

The game involves taking certain input in the form of elements/compounds and creating a system to create (a) given output(s) using the input.

It is a logic based game revolving around chemistry and relies on creating bonds between chemicals to create new chemicals. It is similar to Infinifactory. An example of a simple level would be creating a loop that picks up two elements from the input zone(s), bonds them to create a compound and then drops off the newly created compound in the output zone(s).

**Constraints**

Physical space is the constraint of the game; all systems must fit within an 8x10 grid. This means that players have to be efficient with their space.

**Conclusion**

Players are able to create any system they want as long as the desired output is created. With the only constraint being space, players are able to test and create any system that can fit within the confined boundaries. This leads to many levels being solvable in a number of ways and thus means two players are likely to finish the game with different solutions to each level.

How this fits our game:

By giving the player a number of different mechanics, they can use these to create any system they want. There is no one correct way to complete a level and so we often find players completing levels in different ways, this gives players the creative freedom to explore the mechanics and find their own solution to each level.