

Matter World

Game Design Document

Game Design Core

- Help Player Learn Chemistry
- Steampunk Themed*
- Roguelike Platformer

Core Gameplay Loop

1. Player Enters a Level
2. Player Collects Different atoms
3. Player Creates Different Compounds
4. Player Uses The Created Compounds to Defeat Different Bosses
5. Player Unlocks a new Level
6. Back to 1.
7. If a player dies in any level then the player's progress is carried and the player returns to the home base.
8. Can start level 1 from the home base.
9. Back to 1.

Core Features

- Players can collect different elements.
- Players can craft different chemical compounds using the collected elements.
- Players can use different compounds and elements for different purposes.
- Players can fight and defeat different types of enemies.
- Enemies are all related to one certain element.
- Players have to exploit the weakness of the enemy or their element to defeat them.
- The will have elements from the periodic table from the atomic number 1 Hydrogen to atomic number 20 Calcium.

Setting

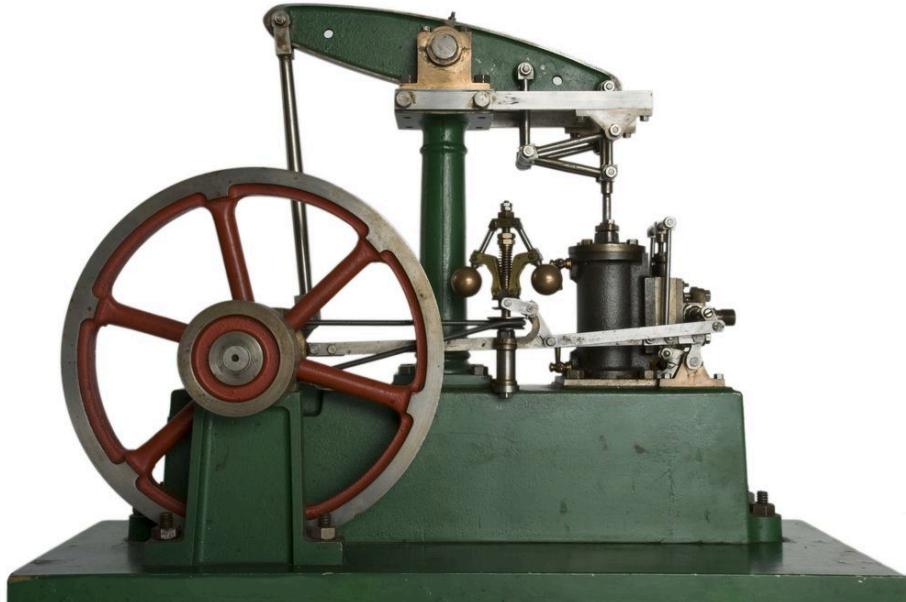
The world has gone to waste, ever since the **Elemental Robots** attacked. The main goal of the player who plays as Phineas, a young Chemistry prodigy. The world is still stuck in the industrial revolution of the Victorian era, but technology has advanced far forward. There are steam engines, drills and steam plants everywhere in the environment. Phineas himself prefers to wear steampunk clothes as that's the fashion in the world.

Phineas has to save his childhood friend Isabella from the clutches of the evil robots.

Isabella is also a chemistry prodigy just like Phineas, so the robots have abducted her, in order to use her knowledge to optimize and strengthen their own bodies.

Environment

1. To make the theme more “Steampunk” the use of steam engines as seen below as set props and environment objects can be done.



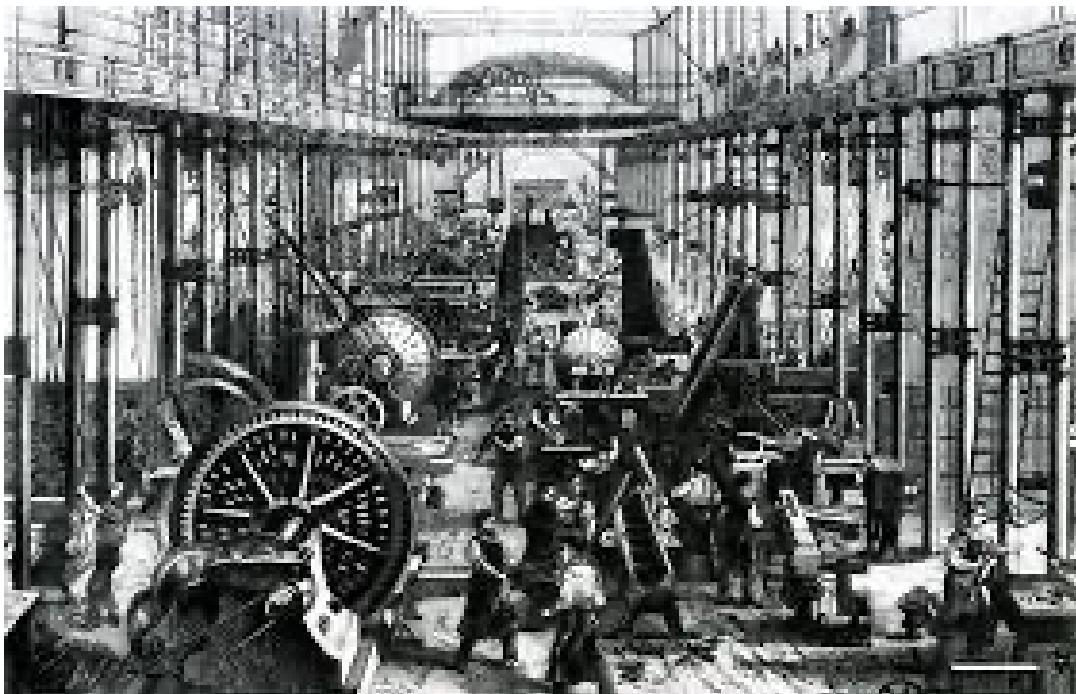
2. To sell the steampunk aesthetic the use of steam valves and gauges on enemies and weapons may be better.



3. Bronze, brass and leather aesthetics can be used.



4. For setting the industrial revolution of the victorian era, by the use of heavy steam powered machinery as the environment may look nice.



5. For enemies the Dwemer Spider and the Dwemer Centurion from the game Skyrim can be used as reference.



6. For environment and weapon design, inspiration can be taken from the game Void Train as seen below.



Educational Content

1. Since the game is about chemistry and the theme is steampunk, using the chemical reactions that release steam as the enemies powersource may be nice. And to defeat the enemies the reactions need to be neutralized or put out.

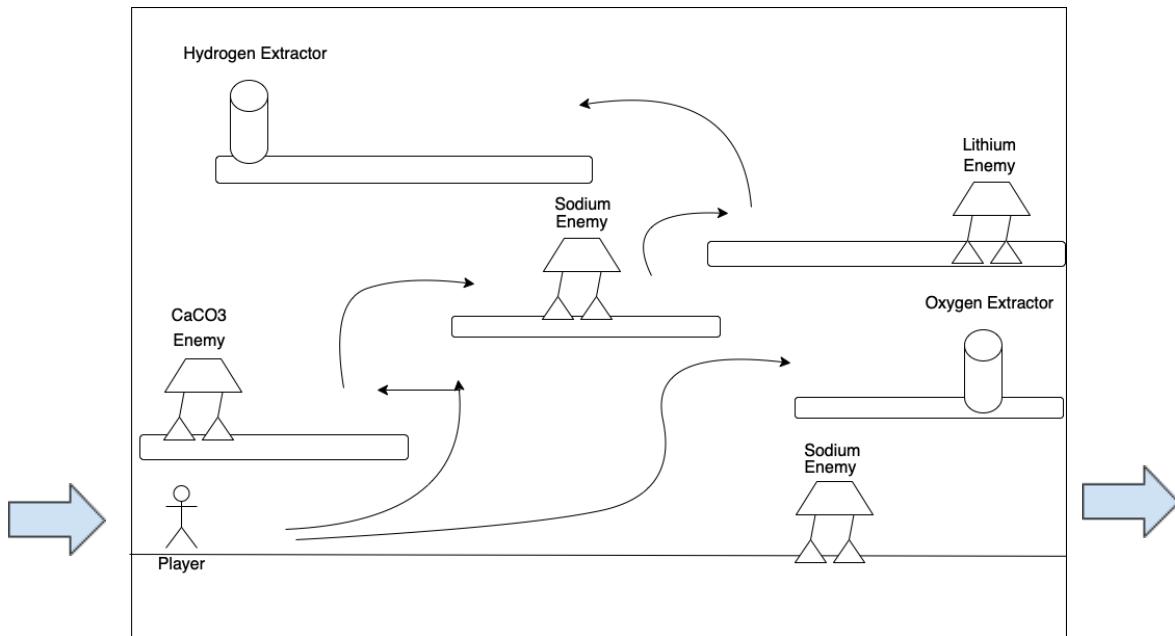
A few examples would be, HCl and Carbon react to release steam, so using a base like NaOH to neutralize the acid may be one way of defeating the enemies.

Some enemies may be made of certain alkali metals such as Sodium, Potassium, for those enemies using water maybe a good way of defeating them.

Some enemies may be made of Aluminium so Using Gallium, an element that can dissolve the metal, may be a good idea.

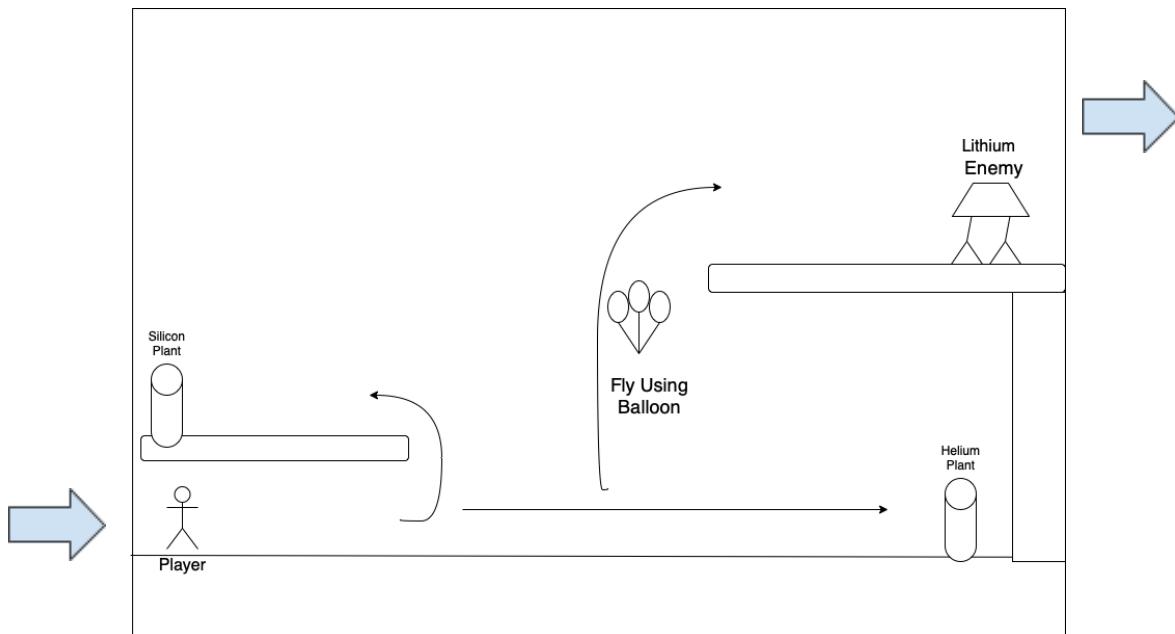
2. The player may carry all the elements in their inventory, which may look like the periodic table. The player may use various compounds as ammunition.
3. The player may be able to craft different compounds using a crafting bench, which may look like a chemistry table, with beaker, burners, flasks etc.
4. The player may be able to craft the compounds by combining other compounds or by performing simple chemical reactions.
Eg: players may combine 2 hydrogen and 1 oxygen to make water.

Level Design

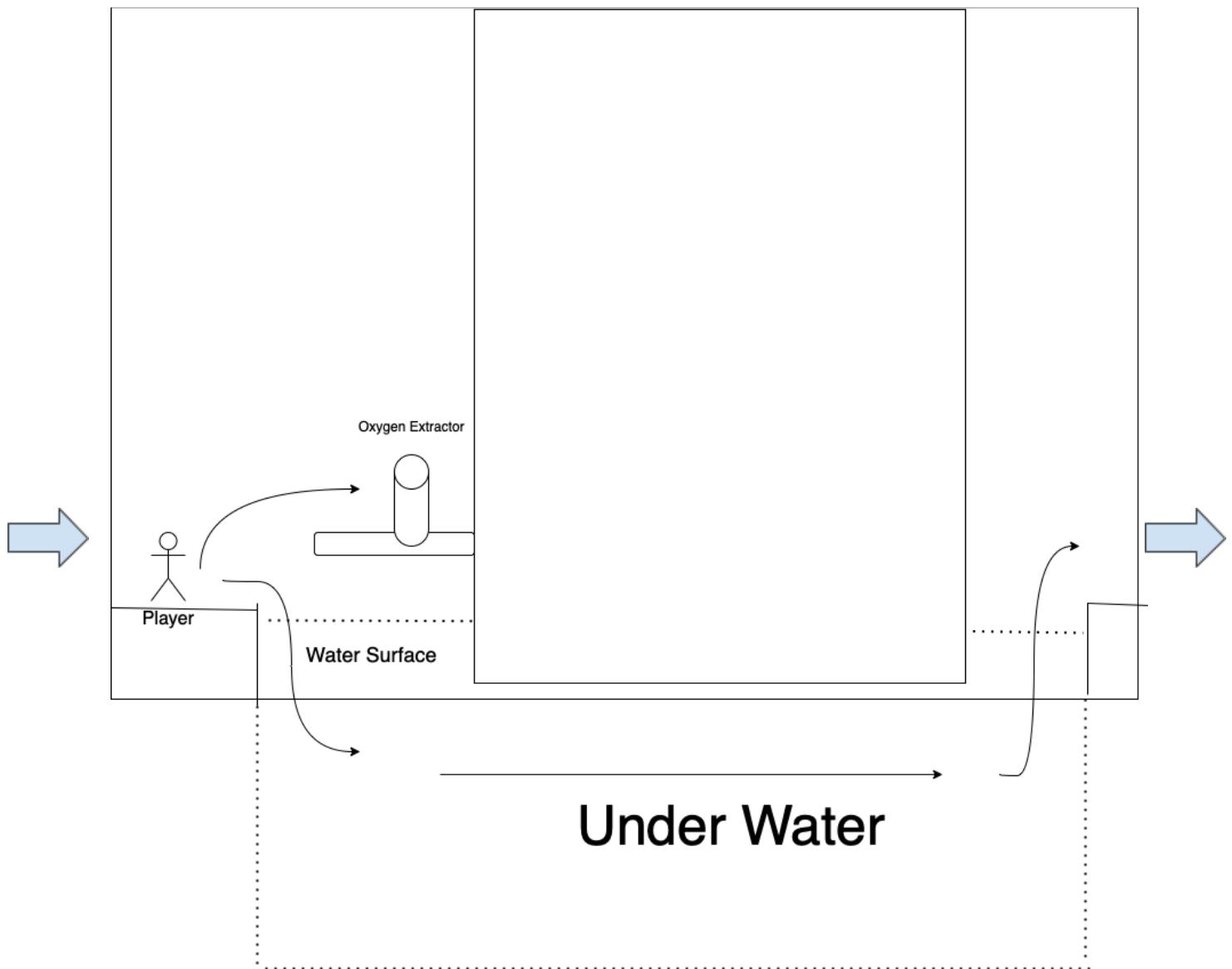


Example Level

Here the player can get to the hydrogen extractor and the oxygen extractor. Then the user can craft H₂O in order to defeat all the enemies here who are all weak to water.



Here the player can first collect the Helium and Silicon from the extractors, then the player can craft balloons with helium and can float to the top of the level to defeat the enemy and proceed to the next level.



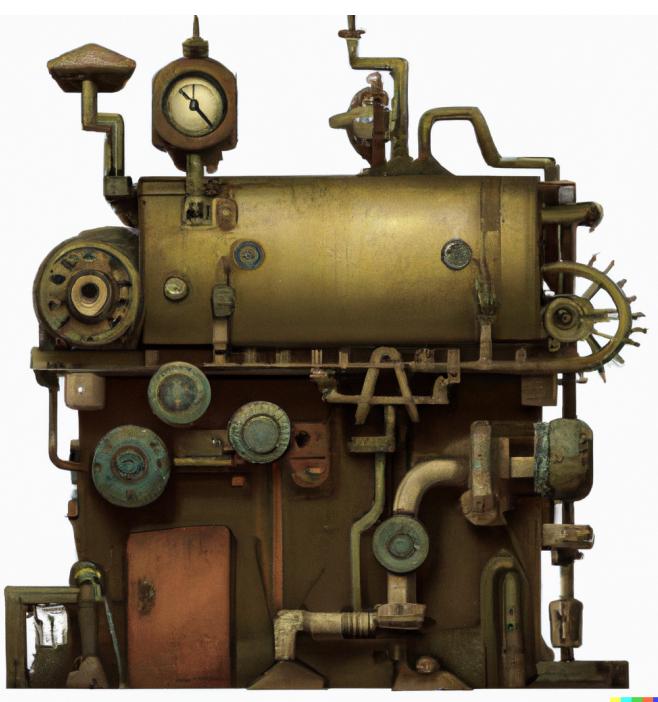
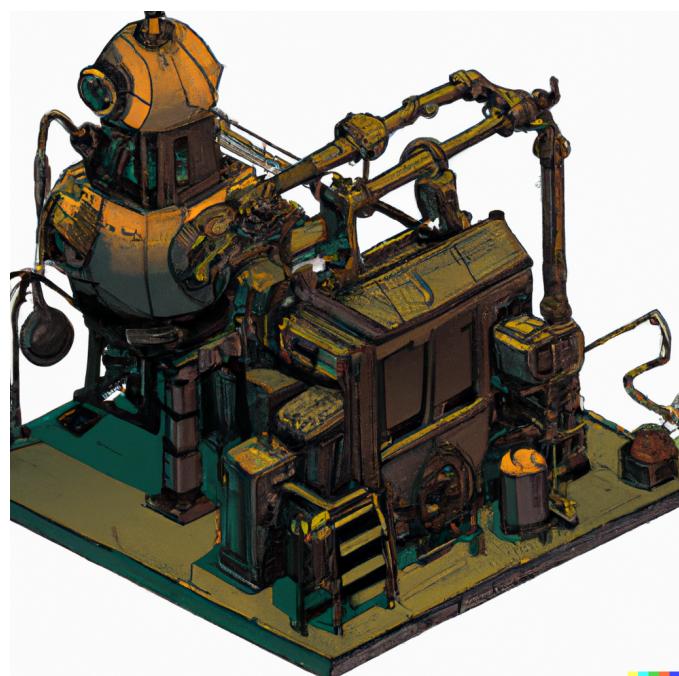
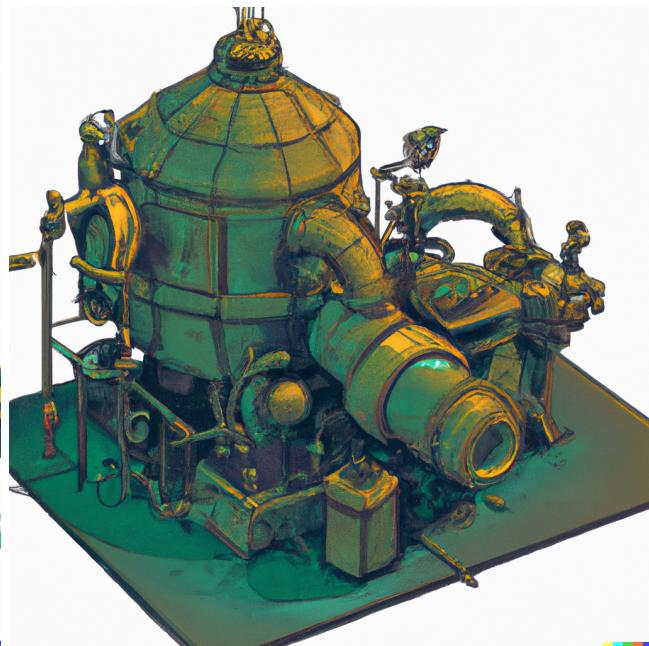
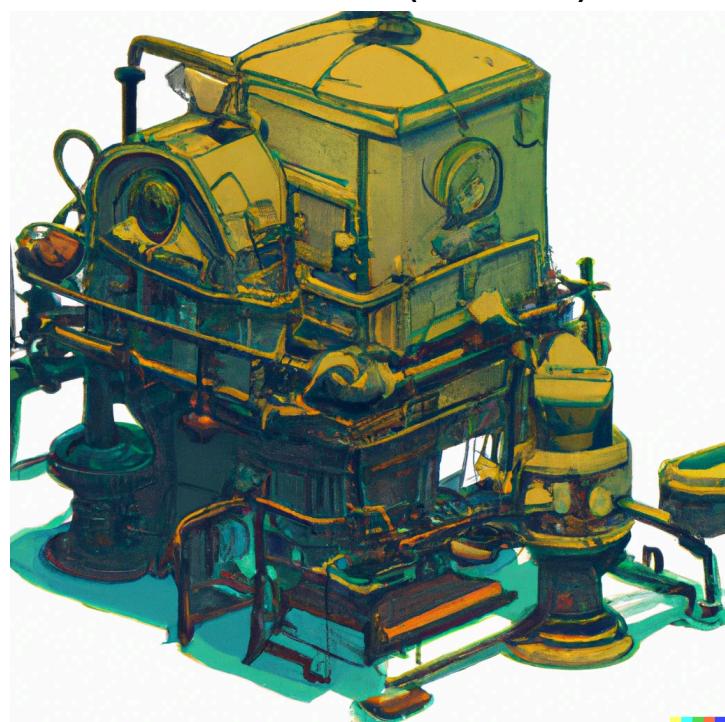
Here the player can first get oxygen from the oxygen extractor and then put the oxygen in a container tank, then the player can swim under water using the oxygen to get to the other side and complete the level and move to the next one.

Environment Objects Concepts

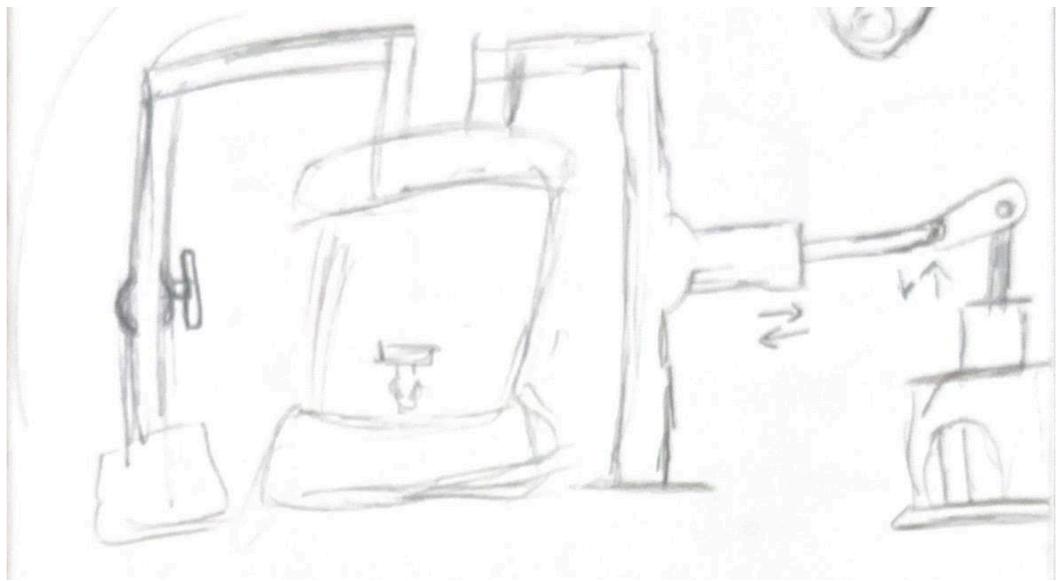
Solid Extractor(Concept idea)



Solid Extractor (Final Idea)



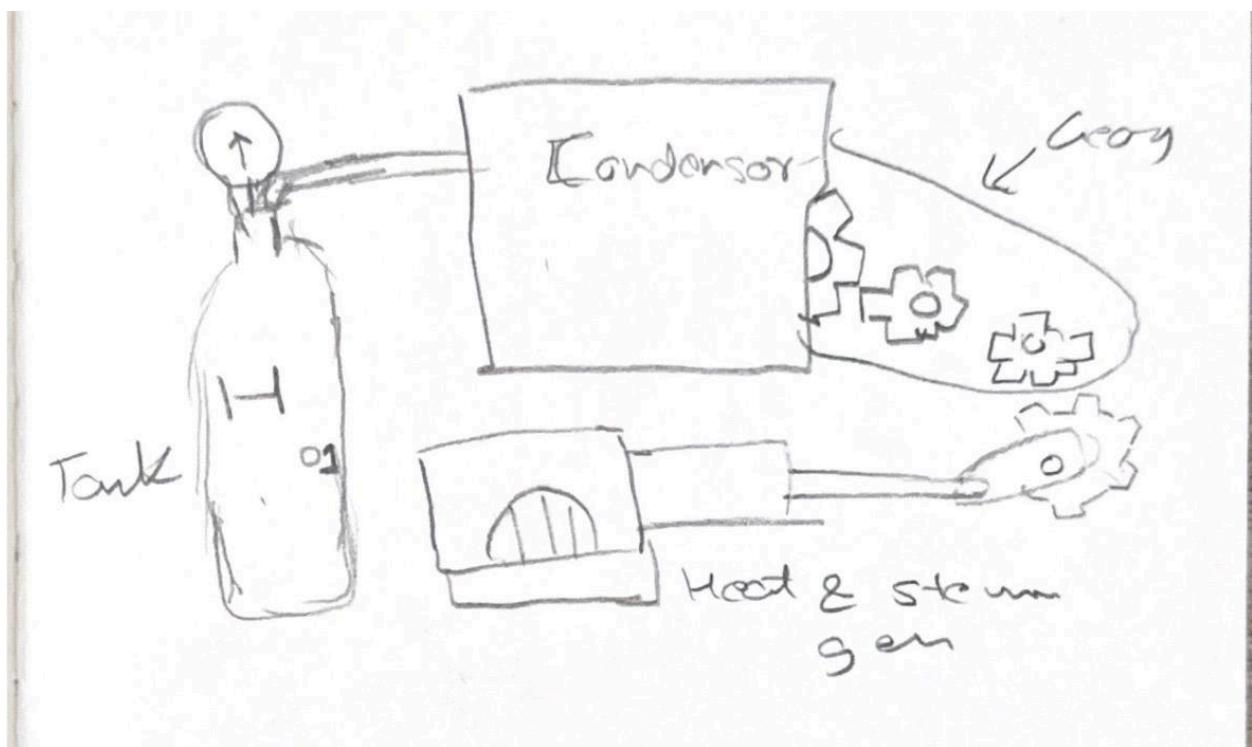
Liquid Extractor



Inspiration

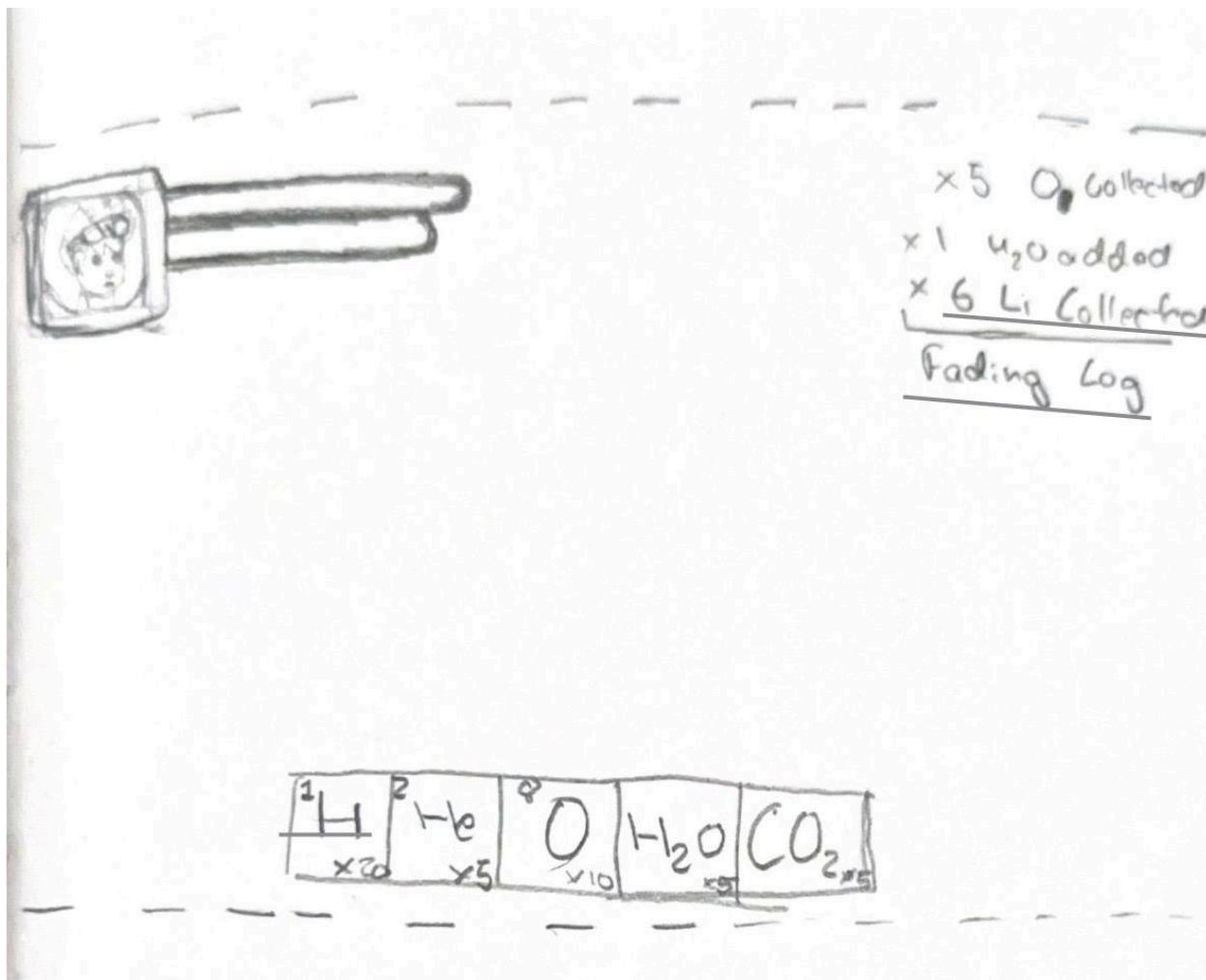


Gas Extractor



UI Design

HUD



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The game hud is very basic. On top left we have the players status bars, health and *stamina, exp, energy*. On the bottom center there is a small hotbar with 5 slots, the inventory items are shown as the icons from the periodic table. In the top right there is a fading log that shows the items the player has picked, lost, crafted etc.

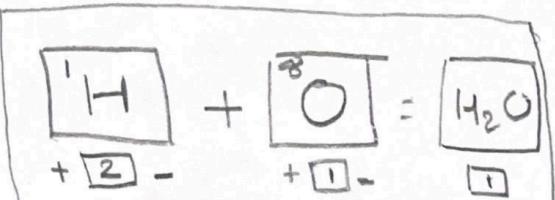
Game Inventory and Crafting Menu

Game Inventory



Inventory		
¹ H x2		² He x5
⁸ O x6	¹ H ₂ O x8	

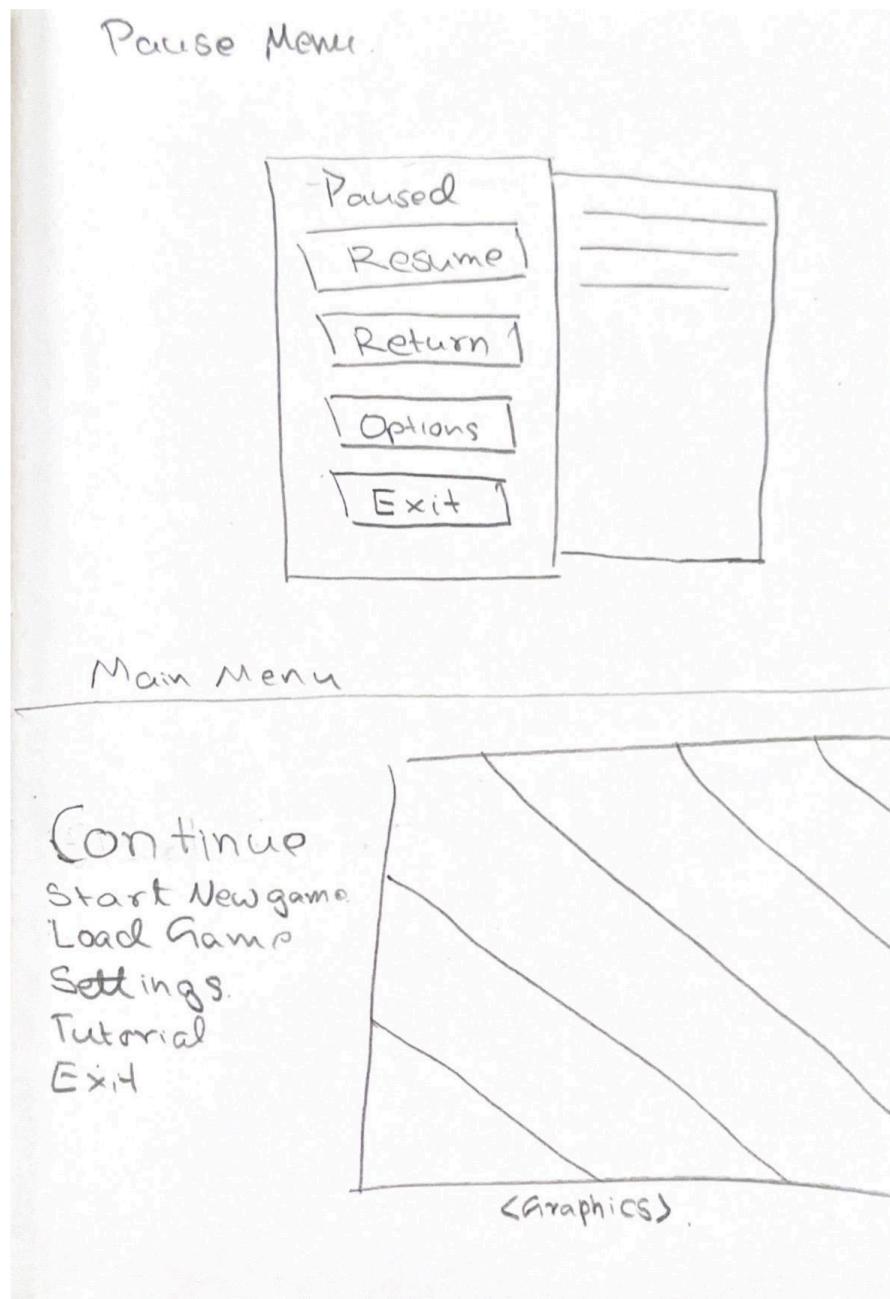
Game Crafting



¹ H ₂	¹⁶ O ₂	H ₂ O ₂	CO ₂	CO	C ₂

The inventory will be in a layout similar to that of the periodic table. The inventory items will have the appearance of periodic table elements icons. The crafting menu has slots for elements and a numeric slot below them to increase or decrease the quantity of the element and on the right will be the crafted element. And below will be a small inventory view the user can drag elements from.

Pause Menu and Main Menu



The pause menu has the basic buttons for every game like the resume, options and exit button along with the return option which returns the user to the home base as the game is roguelike. And the main menu has basic options on the left and a graphic on the right.

Usage of all elements

Element	Usage	Use Case
Hydrogen	Use, Craft	
Helium	Use	
Lithium	Use	
Beryllium	Craft	
Boron	Craft	
Carbon	Craft	
Nitrogen	Use, Craft	
Oxygen	Use, Craft	
Fluorine	Craft	
Neon	Use	
Sodium	Use, Craft	
Magnesium	Use	
Aluminum	Use	
Silicon	Use	
Phosphorus	Use	
Sulphur	Use	
Chlorine	Craft	
Argon	Use	
Potassium	Use	
Calcium	Craft	