Design Doc 1.0 – **Initial Prototype**

Game: Compete with other players to grow a larger plant over the course of a year.

Player Object

* Plant
  + Is the player’s proxy object: gameplay revolves around this object.

Player Resources

* Soil
  + Multiplier for sunlight in growth formula
  + Vulnerable to attack by other players
  + Cannot be reduced below a minimum value
* Water
  + Multiplier for sunlight in growth formula
  + Vulnerable to attack by other players
  + Cannot be reduced below a minimum value
* Seeds
  + Used during player’s turn
  + Objects for interacting with other players or with self growth formula
  + Attack other players or buff self
  + Attack:
    - Decreases a specific (water or soil) resource of another player by a small amount
    - Decreases sunlight received by another player during next round only (temporary)
    - Affect sunlight gain by all players for one turn each?
      * Not sure if balanced.
  + Self-buff:
    - Temporarily immune to attacks
    - Temporarily increase percentage of sunlight strength gained
    - Add permanent constant to Formula (example (WL+C) instead of (WL)). Requires lots of math fine tuning.

Global Resource

* Sunlight
  + Received by all players equally (before Seed modifiers or anything else)
  + Percent difference depending on the stage of the game.

Growth

* Formula based
  + G = WL + SL
    - Where G is growth, W is water, S is soil, and L is sunlight

Player Actions

* Gain resource
* Gain growth
* Gain Seed
* Use Seed

Turn Cycle (per individual player)

* Increase 1 resource
  + Water or Soil
* Choose one:
  + Increase 1 resource (again)
    - Water or Soil
  + Gain Seed
  + Use Seed
* Grow
  + Check current sunlight level
  + Check player resources
  + Increase growth variable of that player’s plant object according to formula
  + **Design Fork:** Player growth at the end of each player’s turn, or the end of each set of 4 rounds?
    - In the first case, growth is steady and constantly changing. Lots of player options for strategy, but could lead to snowballing
    - In the second case, growth is an end of round result. Brings the strategy much closer to turn based, but gives *large* advantage to certain players depending on turn order.
    - Prefs:
      * Taylor: Would prefer first. More dynamic, less prone to massive game swings.
      * Michael:
      * Misha:
      * Amanuel:
      * Shimul:

Turn Cycle (per game)

* Each season is 4 turns per player
* Begins in Spring – 4 turns
  + Sunlight at 100%
* Summer
  + Sunlight at 150%
* Fall
  + Sunlight at 80%
* Winter
  + Sunlight at 50%
* I’m not sure if the math works out on this one. We’d have to test growth rates by either modeling the equation or playing the thing
* After 4 turns of Winter, the game ends
  + Player with largest plant wins that round.

Expansion Ideas for post-prototype

* Give water and soil different traits beyond simple multipliers to growth formula
  + Needs to be balanced so both water and soil are necessary and/or incentivized. Bad design would lead to one resource being prioritized at the expense of others
  + Multipliers don’t need to be equal, but they do need to be equally weighted in the player’s eyes for building towards win condition.
    - Not necessarily at the same time: a different design could have soil as superior early game and water superior late game. But this is difficult to implement in a way that’s balanced.
* Add option to select different starter plants
  + Different base values
    - Modify formula to take account
  + Different traits?
* At the end of each year, place each player’s plant in their Garden
  + Functions as our database.
  + Give it some interactivity
  + Influences/gives traits to next round’s plant
* What else?