

POLYPORE

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Game Overview

Goal

Polypore is a tile based real-time 4X strategy game focused on the exploration and discovery of an unknown planet. The player's goal is to ensure the crew's long-lasting survival before the captain dies. The player does this by locating a large meteor on the planet that contains a crucial fuel source they need to get the ship working again, extracting the fuel source, and bringing it back to the ship.

The player can either escape the planet to achieve a full victory or settle and entrench a permanent human colony on the planet for a partial victory.

The focus of the game is on building, exploring, and adapting mechanics to the unique situation presented to the player. We want the player to focus on building up their power specifically to achieve escaping the planet, rather than building power just for building powers sake.

Important Details

The game is single player. The game uses a real time system for in game time system. The map is tile based. There is a time limit to complete the game. The player will view the game from an angled top-down perspective that can be panned but not tilted. An excel with all of Polypore's numbers and formulas can be found here: [Polypore Number Balance Sheet](#).

Theme

The theme will be about self-preservation and what one person or group will experience or inflict on others to survive. If something is done to survive, is it considered bad to do even if it hurts someone else? How far is going too far when it comes to self-preservation? Is a choice made for survival different than one made for lust or greed? Explore the idea about what it means to preserve a civilization or colony, what is considered preserving and what is considered conquering?

Game Loop

The game loop of Polypore can be separated into 4 main sections, Survival, Exploration and Combat, Diplomacy, and Endgame.

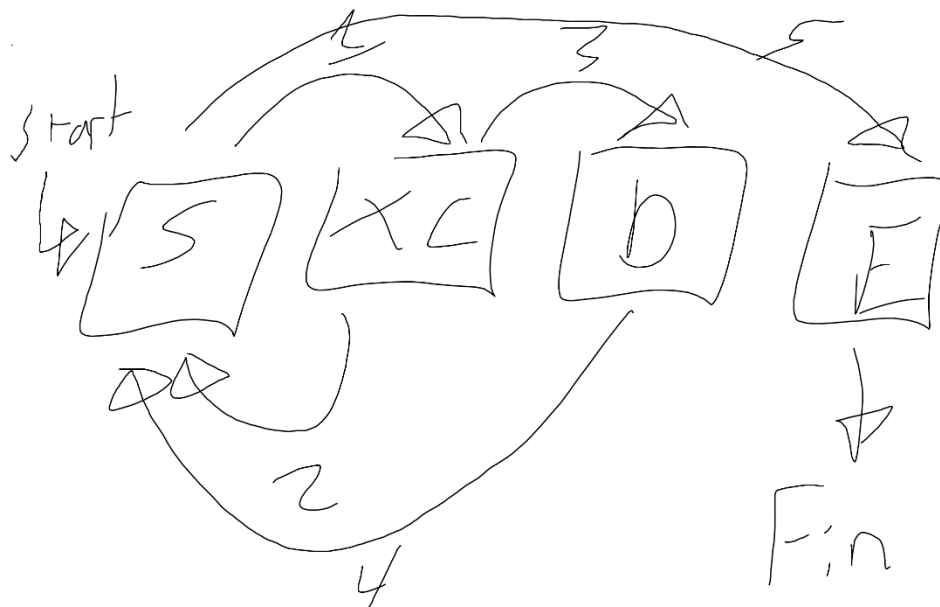
The survival section is centered around collecting resources to raise the players' power level. The player will start with a small amount of land and resources in a random location and build it up by utilizing their population to extract resources. They will manage their workers to harvest energy, food, and production so that they can construct buildings to increase harvests and robots to explore the planet.

The exploration and combat section is centered around what the player does with robot troops and the ways they interact with the planet. There are different robots that can be created for combat, exploration, and labor. Robot troops can be combined into custom armies made up of the troops that the player wants. The player uses armies to explore the map and fight battles against the alien armies. Troops can attack other troops and siege buildings. The player also uses troops to create new outposts and expand their land zone of control.

The diplomacy section is centered around what the player can do with alien civilizations once the player has interacted with them in some way. These interactions can be positive or negative and all start from the diplomacy UI menu. The actions the player can take are declaring war, improving relations, creating treaties, and making trades. The chance of success of these interactions depends on the personality of the civilization. The aliens have 4 different personality traits that are randomly determined in each game that impact their decision making.

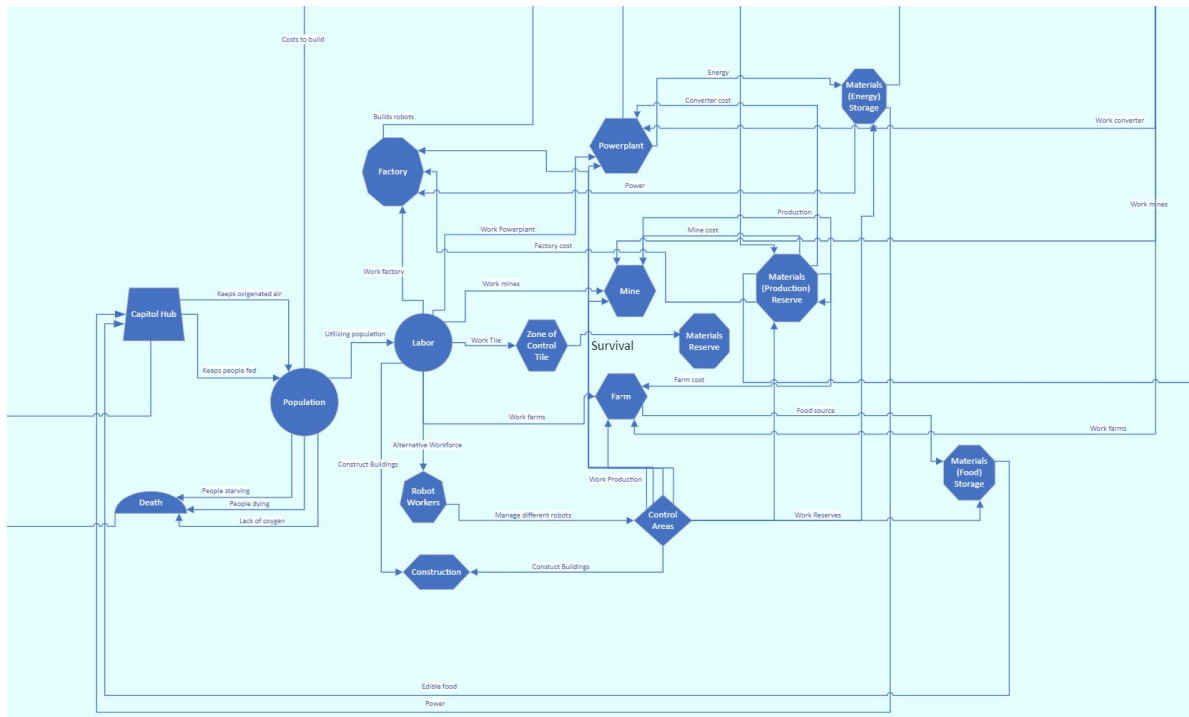
The endgame section is centered on what the player does after they locate the meteor the humans need to escape the planet. The player decides how they want to extract the fuel from the meteor and attempts to execute the plan. The player can get the fuel by drilling into the rock, stealing the rock, buying or trading the rock, getting gifted the rock, or replacing the rock. Once the fuel source has been acquired, it must be taken back to the ship. How this looks depends on how the player acquires the fuel. Once the fuel is back to the ship, the player will be able to escape the planet.

The player must take care to keep their population safe while they are going through the different stages above trying to get the fuel. The victory screen will show how long it took you to escape the planet and how many people you were able to save. A visualization of this can be found here: [Polypore Game Flow Visualizer](#) and at the bottom of the document. Survival, Exploration and Combat, Diplomacy, Endgame



Survival

This flow chart visualizes how the different gameplay elements relate to each other when it comes to the player's survival loop. The player must balance their resource production and needs while growing their power and capabilities. This loop shows the process of how they will achieve this. Let's break this down to help explain the purpose of the pieces.



The player begins the game in a random tile location on the map. Their starting tile will contain the Capitol Hub and generate a zone of control for them to harvest resources from. The player will assign their labor (population and worker robots) to the different tiles within their zone of control to collect these resources. The start of this flow takes place at the Capitol Hub.

The three main resources the player can harvest from their tiles are energy, production, and food. These harvested resources are stored automatically into the player's storage. The resources in storage are automatically consumed when necessary, so it requires no action from the player. The different materials storage listed in this picture are all the same building/location, they are just split up to help visualize the flow of resources. This can be seen in the different connections the Labor circle has.

Buildings can be constructed on tiles within the players' zone of control. These buildings are a mix of buildings that take up a tile and buildings that exist within the Capitol Hub or Outpost Tile. The buildings important to the survival loop are the mine, the powerplant, the farm, material storage, and robot factory, because they are all related to producing and storing resources. You can find the names of these buildings on the flow chart to see what they connect to.

Robots can be used to supplement the labor you need from the human population. They can be produced within the robot factory and can be used in anything labor needs the player has. Robots can be created within the robot factory for both combat and labor purposes. You can see where the robots can be utilized for labor through the Robot Workers heptagon.

To keep the human colony alive, the player must keep the population healthy. This is done by maintaining a level of food and energy for the population to consume every “day tick.” If the player doesn’t maintain these levels, the population will slowly die out. This is visualized within the population and death circles.

Below are the systems and components that make up the survival section. The section on loss conditions can be found in the Endgame section.

Time System

The game will be played in real time, so the time system will be tick based. The captain will die after a year on the alien planet Klequo and the game will end.

The year will be made up of 17520 “ticks,” each tick represents a half an hour (30 minutes) of time passing on the planet. A tick at base game speed will be equivalent to a second of real time, so one game would be 4.8 hours long. The player and the AI can execute their actions at any point during the game assuming that the game is not paused. year

Certain game calculations occur after a certain number of ticks. During combat, casualties happen every 2 ticks, something referred to as a “combat tick”. Resources are gathered every 8 ticks, which is referred to as a “harvest tick”. Events occur every 336 ticks in what is referred to as a “event tick”. 24 hours is represented in 48 ticks, which is referred to as a “day tick”. Other properties can be tied to these defined ticks even if they aren’t directly related to them.

Energy, food, and production will be consumed and updated every tick when constructing, this is to ensure construction feels as realistic as possible and allows for more unique decision making by the player.

The player can change the flow of time at any point through a game speed UI controller. This will allow the player to pause, resume, speed up, and slow down the flow of time in the game.

Trading, events, and peace deals will automatically pause the flow of time for the player. Other UI interactions such as building, upgrading, and researching will not.

The player will see a clock in the Time Controller UI, it will show the “in-game” time. The player will be able to pause or speed up time using the time controller.

	1 Tick = 30 Minutes in Game = 1 Second Game Time							
Real Time	1s	2s	3s	4s	5s	6s	7s	8s
Game Time	30min	1hr	1hr 30min	2hr	2hr 30min	3h	3h 30min	4hr
Construction								
Combat								
Harvesting								

Camera System

The camera will be locked into a 45-degree angle pointing towards the tiles. The camera will be able to pan and zoom but cannot adjust the angle or rotate the camera. The player can move the camera to any point inside the map, but not past the first boundary tile on any side of the map.

Population System

Population is the number of people in the crew. If you lose more than 95% of your population, you lose the game. The player has a starting population of 1000 humans at the beginning of the game that cannot increase as the game progresses except through rare events. The player can track their total population through the bar at the top of the screen. The player can also allocate the population to perform labor for the colony but not combat, see worker system section for details.

Starvation System

To maintain the population, the player must keep a level of food for the population to consume every “day tick”. If the player doesn’t maintain these levels, the population will begin to slowly die out depending on how many resources the player missed the minimum by.

For every 50 population, they will consume 1 food every “day tick”. Human workers will consume 1 extra food every “day tick” they are working. Alien workers will only consume 1 food every “day tick”. The system prioritizes feeding the human population, then the workers.

Once a player hits 0 food in their storage, an event notification pops up and warns them what happens if they continue to run out of food. A small starvation icon will be shown on screen until the player can pass a day tick without hitting 0 food in storage. If a player is not able to fully feed their population for 3 “day ticks” in a row, on the next day, deaths will begin to occur from starvation if the population is not fully fed on the 4th day tick. The player is notified about the starvation state through an event pop up. After the event pop up is closed, a small starvation icon is shown on screen to represent starvation.

Once starvation occurs, the player will lose X population for each food piece short they were (2 pieces short, X deaths) when that day tick occurs. When it comes to workers, the player will lose 1 worker for each food piece short they were (2 pieces short, 2 dead humans and 2 dead aliens) when that day tick occurs. After the population has been successfully fed for 2 days straight, the starvation status will disappear.

Players Resources

These are all the resources the player will have access to throughout the game. The sum of the value of all the resources combined is the civilization's power level; the power value of each resource can be found in the value section later in the document. The game will use this power level to compare the states of the civilizations at any point in the game. The player will be able to keep track of the energy, production, food, population, and wealth in the main UI view, the rest are not actively shown to the player.

- **Energy**
- The material found on the planet that can be used to power all the human machines.
 - Harvested by worker units on a tile.
 - Provides power to buildings and robots to keep them functioning.
 - Sellable resource.
- **Production**
- The material found on the planet that can be used to create the buildings and troops the humans need to survive.
 - Harvested by worker units on a tile.
 - Provides building materials to build buildings and robots.
 - Sellable resource.
- **Food**
- The material found on the planet that can be used to keep humans alive. The aliens will also eat the same thing, so you can sell excess goods to them.
 - Harvested by worker units on a tile.
 - Provides food for population.
 - Sellable resource.
- **Troops**
- Robots are designed by humans to keep themselves defended without having to fight themselves.
 - Gained by creating troops in the robot factory.
 - Defend and take tiles for players.
 - Requires energy to upkeep.
 - Represented by tokens, are large groups of troops that are combined into an army.
- **Land**
- Hexagon tiles that make up the world with 6 different biomes.
 - Gained through a building that emits a zone of control.
 - Gives the player tiles where they can harvest energy, production, and food.
 - Give the player space to construct buildings.
- **Buildings**
- Human structures that can be built on different tiles to improve the humans efficiency.
 - Gained by constructing buildings on a controlled tile.
 - Increases harvest output from tiles.
 - Can be occupied or destroyed by aliens.
 - Requires energy and workers to upkeep.
- **Population**
- The surviving crew from the crash that you have with you on the planet that you need to save.
 - Gained at the start of the game, start with 1500 people.
 - Amount of human labor you can use/amount of people you need to save.
 - It is not replenishable and needs to be protected.
 - Requires food to keep population from shrinking.
- **Wealth/Money**
- The universal currency of the alien planet you are on. All alien civilizations respect this currency.
 - Gained through winning combat, making diplomatic trades, and selling resources.
 - road

- Each friendly civilization you meet increases the amount of money you passively generate.
- Used in trades to gain other resources and increase opinion.
- Sellable resource.

Tiles

Tiles are the building blocks that make up the map the player interacts with. There are 625 tiles that make up the map. The map will be shaped into a 25 by 25 tile square and the outline of the map (total number of tiles within the map) will always stay consistent.

- Properties
 - Hexagonal in shape
 - Buildings on tiles you own can be destroyed at any time.
 - You can only build one building per tile.
 - Tiles produce a static number of resources every resource tick (8 ticks or 4 in-game hours)
 - Tile will never run out of resources.
 - Different tile terrain types have unique properties.
 - The location and layouts of tile types will be random and change each game.
 - The player's spawn point will be affected in this as well
- Player UX
 - The player can interact by clicking on the tile and finding options for assigning labor, reading tile properties, and adding and destroying buildings.
 - Players can see how many workers and what types of workers are assigned to a tile by clicking on the tile.
- Resources
 - Each tile will have a certain number of resources (energy, production, and food) that workers can harvest.
 - Placing a building on the tile will produce more resources based on the building type and modify the number of workers that can be assigned to the tile.
 - The player assigns 10 workers to the tiles by default when they are empty.
 - Resource production is calculated by X/Y .
 - X = Workers on Tile/Building
 - Y = Total workers that can be on Tile/Building
- Miscellaneous
 - The map's borders consist of goop to fill the space left by half hexagons.

Tile Stats

These are the different stats that each of the tiles will possess.

- Starting Food

- The amount of food a tile has the chance to produce by default.
- Starting Energy
 - The amount of energy a tile has the chance to produce by default.
- Starting Production
 - The amount of production a tile has the chance to produce by default.
- Starting Robot Storage
 - The amount of robot storage a tile has the chance to produce by default.
- Starting Resource Storage
 - The amount of resource storage a tile has the chance to produce by default.
- Vision Modifier
 - The amount of vision range that a tile gives or takes by default. (per tile loop)
- Siege Damage
 - The amount of damage a tile deals to an attacking army during a siege.
- Siege HP
 - The amount of health a tile has by default during a siege.
- Defender Bonus
 - The amount of combat bonus a defensive army gets by default.
- Zone of Control Size
 - The size of the zone of control ranges a tile has by default.
- Movement Multiplier
 - How quickly an army can move through a tile by default.
- Attrition Multiplier
 - Percentage of a sieging army's HP that is taken away every "combat tick".
- Energy Upkeep Cost
 - How much energy it costs to keep a tile active.
 - Cost is charged every "resource tick"
- Max Workers
 - The maximum number of workers that can be assigned to a tile.
- Construct Roads On
 - Whether or not roads can be built on this tile.
- Construct Buildings On
 - Whether or not buildings can be built on this tile.

Tile Types

There will be different types of tiles that make up the planet's map for the player to explore. Each tile type will have different effects on the map as well as a unique visual look. These tiles will be generated randomly across the world so the layout of the map will look different for each game.

- **Moldy Plain**
- The moldy plains are the "generic" tile found in the world. It has no unique benefits or deficits and is meant to be a basic tile.

- Starting Food: 1-3, Starting Energy: 0-1, Starting Production: 0-2
- Starting Robot Storage: 0
- Starting Resource Storage: 0
- Vision Modifier: 0
- Siege Damage: 0
- Siege HP: 0
- Defender Bonus: 0
- Movement Multiplier: 1
- Attrition Multiplier: 1
- Max Workers: 10
- Construct Roads On: 1
- Construct Buildings On: 1
- Unique Effect: Provides no benefits or deficits.
- **Fungal Forest**
- The fungal forest is a lush forest made of different types of mushrooms. This tile is meant to give the player more access to food while slowing down their troop movement on the tile.
 - Starting Food: 2-4, Starting Energy: 0-1, Starting Production: 1-3
 - Starting Robot Storage: 0
 - Starting Resource Storage: 0
 - Vision Modifier: 0
 - Siege Damage: 0
 - Siege HP: 0
 - Defender Bonus: 1
 - Movement Multiplier: 0.85
 - Attrition Multiplier: 1.10
 - Max Workers: 10
 - Construct Roads On: 1
 - Construct Buildings On: 1
 - Unique Effect: Provides 1 additional Food.
- **Oozing Jungle**
- The oozing jungle is an extremely thick section of mushrooms that is overrun with fungus. Its dense nature makes it impossible to build anything on it, but it is so thick that troops can hide unseen when in the tile.
 - Starting Food: 1-3, Starting Energy: 0-1, Starting Production: 1-3
 - Starting Robot Storage: 0
 - Starting Resource Storage: 0
 - Vision Modifier: -1
 - Siege Damage: 0
 - Siege HP: 0
 - Defender Bonus: 1
 - Movement Multiplier: 0.7
 - Attrition Multiplier: 1.20
 - Max Workers: 10
 - Construct Roads On: 0

- Construct Buildings On: 0
 - Unique Effect: Armies within the tile are hidden from view.
- **Capped Hills**
- The capped hills are a tile filled with compressed mushrooms caps that turned the area into hilly place. This tile gives the player extra production and the height to see further across the planet.
 - Starting Food: 0-1, Starting Energy: 0-2, Starting Production: 2-4
 - Starting Robot Storage: 0
 - Starting Resource Storage: 0
 - Vision Modifier: 1
 - Siege Damage: 0
 - Siege HP: 0
 - Defender Bonus: 1
 - Movement Multiplier: 0.8
 - Attrition Multiplier: 1.10
 - Max Workers: 10
 - Construct Roads On: 1
 - Construct Buildings On: 1
 - Unique Effect: Increases army's vision by 1 additional tile while on tile. Provides extra production.
- **Stemstack Mountains**
- The stemstack mountains are groups of mushroom stems that fused together and grew to create giant mountains. These tiles are inaccessible to the player due to the material they are made off so the player must work around them. They hide vision and block off areas for troops to move to.
 - Starting Food: 0, Starting Energy: 0, Starting Production: 0
 - Starting Robot Storage: 0
 - Starting Resource Storage: 0
 - Vision Modifier: -5
 - Siege Damage: 0
 - Siege HP: 0
 - Defender Bonus: 0
 - Movement Multiplier: 0
 - Attrition Multiplier: 0
 - Max Workers: 0
 - Construct Roads On: 0
 - Construct Buildings On: 0
 - Unique Effects: Armies cannot travel through mountains; mountains are unable to be harvested; mountains hide vision of tiles behind them. (maybe allow workers or buildings)
- **Toxic Spore Field**
- The toxic spore field is a large area covered in a cloud of toxic mushrooms spores that are dangerous to humans and their creations. These spores were highly conductive, so the player can extract more energy from this tile at the cost of troop morale if they keep units inside of it.
 - Starting Food: 0-1, Starting Energy: 3-5, Starting Production: 0-2
 - Starting Robot Storage: 0

- Starting Resource Storage: 0
- Vision Modifier: -1
- Siege Damage: 0
- Siege HP: 0
- Defender Bonus: 0
- Movement Multiplier: 0.8
- Attrition Multiplier: 1.0
- Max Workers: 10
- Construct Roads On: 0
- Construct Buildings On: 1
- Unique Effect: Army Morale -1 each resource tick
- **Map Boundary**
- The boundary is a soup like liquid that borders the entire map in Polypore. It is a liquid mold that is highly toxic to everything on the planet. There is nothing for the player to do with this tile and it should clearly visualize that it is the end of the map.
 - Shows the borders of the map.
 - Unable to interact with tile

Cities

Cities are a combination of a tile type and a building. They are large clusters of buildings that humans and aliens operate out of. Once a city has been established, it is unable to be moved. Cities can be created by building outposts on empty buildable tiles. City tiles will substitute the total workers available in the tile with their own value.

The owner can build other buildings on tiles within their zone of control. The owner can build other buildings on tiles within their zone of control. The zone of control is determined by the type of building that is created. The different cities can be seen below.

Cities always exist in an active state. The state of the city can only be adjusted if a city is occupied by another civilization. An occupied city will have a different visual look than an active city.

Cities have specific buildings that can be built in them under specific circumstances. The details of this will be discussed below the city descriptions.

Building: active: animation, inactive: dulled and no animation

Cities: normal: animation, occupied: no animation and smoke

- **Capitol Hub**
- The capitol hub is the main point of operation for the player. This is where the colony's population is stored, so if lost, the player loses the game. The player can build troops, store troops, and store resources for their colony here.
 - Starting Food: 2, Starting Energy: 4, Starting Production: 3
 - Starting Robot Storage: 50

- Starting Resource Storage: 2500
- Vision Modifier: 0
- Siege Damage: 3
- Siege HP: 5
- Defender Bonus: 3
- Zone of Control Size: 3
- Movement Multiplier: 1.0
- Attrition Multiplier: 1.0
- Energy Upkeep Cost: 2
- Max Workers: 50
- Construct Roads On: 1
- Construct Buildings On: 0
- Unique Effect: None.
- **Normal Klequeen City**
- The normal klequeen city is an alien civilization that has already established a city on the planet. These cities are the hubs of the alien civilizations and act very similar to the human capitol hub. The player can diplomatically or combatively interact with the city to gain their resources, their harvesting means, and their favor. Different alien civilizations will have the same visual looks with different colors depending on the civilization.
 - Starting Food: 3, Starting Energy: 1, Starting Production: 2
 - Starting Robot Storage: 20
 - Starting Resource Storage: 2000
 - Vision Modifier: 0
 - Siege Damage: 3
 - Siege HP: 5
 - Defender Bonus: 2
 - Zone of Control Size: 3
 - Movement Multiplier: 1.0
 - Attrition Multiplier: 1.0
 - Energy Upkeep Cost: 0
 - Max Workers: 50
 - Construct Roads On: 1
 - Construct Buildings On: 0
 - Unique Effect: None.
- **The Rock City**
- The rock city is an alien civilization that establishes itself around the giant meteor that crashed onto the planet. The properties of the rock that humans need for fuel also increased the resources harvested in the surrounding area. Rock city functions the exact same as the normal klequeen city, except they are a little more powerful due to the rock providing them more power and influence. The way rock city is visualized will always remain constant in every playthrough. The player will be able interact differently with this city due to the endgame conditions associated with the rock, see the endgame section for more details.
 - Starting Food: 3, Starting Energy: 3, Starting Production: 3
 - Starting Robot Storage: 20

- Starting Resource Storage: 2500
- Vision Modifier: 1
- Siege Damage: 5
- Siege HP: 7
- Defender Bonus: 3
- Zone of Control Size: 4
- Movement Multiplier: 1.0
- Attrition Multiplier: 1.0
- Energy Upkeep Cost: 0
- Max Workers: 50
- Construct Roads On: 1
- Construct Buildings On: 0
- Unique Effect: Endgame effects, see endgame section.
- **Outpost** (A buildable City, Creates Zone of Control Tiles)
- The outpost is a version of the capitol hub that can be built anywhere on that map that is not controlled by an alien civilization. It creates a zone of control that allows the player to construct more buildings and harvest more resources.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 1000
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Vision Modifier: 1
 - Siege Damage: 7
 - Siege HP: 15
 - Defender Bonus: 2
 - Zone of Control Size: 2
 - Movement Modifier: 1.0
 - Attrition Modifier: 1.0
 - Zone of Control Size: 1
 - Energy Upkeep Cost: 1
 - Max Workers: 50
 - Must be operated by at least 10 humans at the site.
- **Klequeen Outpost** (A buildable City, Creates Zone of Control Tiles)
- The outpost is a version of the capitol hub that can be built anywhere on that map that is not controlled by an alien civilization. It creates a zone of control that allows the player to construct more buildings and harvest more resources.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 1000
 - Robot Storage Modifier: 100
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 7
 - Siege HP: 15
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0

- Zone of Control Size: 1
- Energy Upkeep Cost: 1
- Max Workers: 50
- Worker Addition Method: Substitutive
- Must be operated by at least 10 humans at the site.

Zone of Control

Zone of control is the number of tiles a faction controls. Zone of control is created by the placement of an outpost or city tile and the size of the zone of control is determined by the building that is creating it. A tile within a zone of control can be built on and be harvested by workers by the faction that controls the tile. A tile within a faction's zone of control is an extension of the Hub or outpost that created it, so if enemy troops enter a tile in a zone of control, it is considered an act of war, and any controlled tile can be seized like a building.

Zone of control is determined the first time the building or tile casting zone of control is created. The zone will spread based on the number of tile rings the zone emitter is set to take. Once a zone of control has been determined, the chosen controlled tiles cannot be adjusted, they can only grow through certain situations or be removed when the zone emitter is destroyed.

Zone of control will be shown to the player by highlighting the tiles that the player or aliens own with a distinct color, blue for the humans and red for the aliens.

Production Harvesting and Material Storage

Each tile will have a set number of worker slots available that limit the total amount of resources you produce every tick. The player will assign their population or robot workers to each tile or building to harvest the resources coming from the tiles. The number of workers assigned to the tile will affect how quickly resources are gained from the tile. The harvested resources will automatically go to storage.

Resources that are harvested are automatically sent into storage. Outposts and material storage buildings can be constructed to increase the storage capacity. The materials can be accessed from anywhere, but they don't exist from any specific location on the map at a given time. When a building that contains material storage is lost, the amount of storage that they provided is lost and any resources over the new cap when this happens are lost. The number that represents storage will allow for that number of each resource to be stored at maximum.

Each building or tile will require allocation of workers to produce the resource. The player sets the workers by selecting the tile they want and selecting to add workers in the UI that pops up. Having a building or tile not working at full capacity will result in the production level being reduced.

If a building is subjected to siege by an enemy army, the yields from the building will stop until the siege is stopped or if the building is destroyed. Storage areas that are destroyed reduce the total global resource cap and any resources above the new cap are lost.

Buildings

Buildings improve the efficiency and safety of your colony on the planet. There are 3 different types of buildings: buildings built on a tile, buildings built in the HUB or outpost building tiles, and buildings that can only be built in alien cities.

Every building will require workers (population or robot) to harvest its respective resources. Each building will have a maximum. Failing to fully staff a building will result in the harvest levels decreasing depending on the number of workers missing. Buildings with no workers will become inactive buildings, while buildings with at least a single worker active are considered an active building. A building that is active is harvesting. All active buildings will provide 1 loop of vision to the player, non-active buildings provide no vision.

Buildings can be occupied through a siege by hostile alien civilizations. If they send an army to siege the tile, the tile will stop producing resources once it is occupied and the player won't be able to move their workers out of the tile.

The player can construct buildings by selecting a tile or navigating through the UI to the construction page. Once they choose a building, they select the tile they want it to be on and the game will check to see if it is possible. If it is possible, the building will begin to construct, if it is not possible, UI will pop up telling the player they aren't allowed to place that building on the tile.

Buildings can be destroyed by the player at any time for no cost of resources. The building will take a certain amount of time to be destroyed depending on the type of building. When a building is destroyed, the player will get 25% of their resources back that it cost to build it. A building can also be modified into another building type for 50% of the resource cost it would take to build it from nothing on an empty tile.

Building Stats

- Energy Modifier
 - The amount of extra energy a building will produce on the tile.
- Food Modifier
 - The amount of extra food a building will produce on the tile.
- Production Modifier
 - The amount of extra production a building will produce on the tile.
- Wealth Modifier
 - The amount of extra wealth a building will produce on the tile.
- Resource Storage Modifier
 - The amount of extra resource storage a building will produce on the tile.
- Robot Storage Modifier
 - The amount of extra robot storage a building will produce on the tile.
- Diplomacy Modifier
 - The amount of extra positive diplomacy chance a building will produce on the tile.
- Trade Modifier
 - The amount of extra positive trade chance a building will produce on the tile.
- Siege Damage

- The amount of damage a building will deal during a siege by default.
- Siege HP
 - The amount of extra siege HP a building gets by default.
- Speed Modifier
 - The amount of extra speed a building creates for troops on that tile.
- Unrest Modifier
 - A percentage that slows down the unrest gains within a captured alien city.
- Zone of Control Size (Ring)
 - The size of the zone of control that a building can produce.
- Energy Upkeep Cost
 - The amount of energy it costs to keep a building active.
 - Cost is charged every “resource tick”
- Max Workers
 - The maximum number of workers that can be applied to a building.
- Workers Additive
 - The way in which the worker total is determined on a tile with a building. Additive means the total number of workers is the tile total plus the building total, substitutive means that the total number of workers is replaced by the number of workers in the building.

Building Types

These are the different types of buildings the player can build.

- **Mining Station** (Can only be built in Zone of Control Tiles)
- The mining station is responsible for increasing the production harvest of a tile.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 2, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 2
 - Siege HP: 5
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0
 - Energy Upkeep Cost: 1
 - Max Workers: 30
 - Worker Addition Method: Substitutive
- **Farming Field** (Can only be built in Zone of Control Tiles)
- The farming field is responsible for increasing the food harvest of a tile.
 - Energy Modifier: 0, Food Modifier: 2, Production Modifier: 0, Wealth Modifier: 2
 - Can be toggled to turn food yield into wealth, only one can occur at a time.
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0

- Siege Damage: 2
 - Siege HP: 5
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0
 - Energy Upkeep Cost: 1
 - Max Workers: 30
 - Worker Addition Method: Substitutive
- **Powerplant** (Can only be built in Zone of Control Tiles)
- The powerplant is responsible for increasing the energy harvest of a tile.
 - Energy Modifier: 2, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 2
 - Siege HP: 5
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0
 - Energy Upkeep Cost: 1
 - Max Workers: 30
 - Worker Addition Method: Substitutive
- **Roads** (Can only be built in Zone of Control Tiles)
- The roads are responsible for increasing the movement speed of troops while they are crossing over it. Any buildings created are automatically fitted with roads.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 0
 - Siege HP: 0
 - Troop Speed Modifier: 2
 - Unrest Modifier: 0
 - Energy Upkeep Cost: 0
 - Max Workers: 0
- **Material Storage** (Can be built in Outposts and captured alien cities)
- The material storage is responsible for allowing the player to increase their storage capabilities of the capitol hub or an outpost.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 2000
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 5
 - Siege HP: 10
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0

- Energy Upkeep Cost: 1
 - Max Workers: 15
 - Worker Addition Method: Additive
- **Defensive Station** (Can be built in Outposts and captured alien cities)
- The defensive station is responsible for increasing the defensive capabilities of the capitol hub or an outpost. It increases the siege defense to make outposts and the hub harder to capture.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 10
 - Siege HP: 20
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0
 - Energy Upkeep Cost: 1
 - Max Workers: 20
 - Worker Addition Method: Additive
 - Attacks incoming enemies.
- **Robot Factories** (Can be built in Outposts and captured alien cities)
- The robot factories are responsible for producing robot units.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 5
 - Siege HP: 10
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0
 - Energy Upkeep Cost: 1
 - Max Workers: 30
 - Worker Addition Method: Additive
 - Allows different robot units to be constructed.
- **Robot Barracks** (Can be built in Outposts and captured alien cities)
- The robot barracks are responsible for storing robot units created from the robot factory that you do not want to be actively consuming energy. Robots stored in the barracks will not consume energy and will automatically have their health and morale increased to 100% after storage at a rate of 1% per tick. Robots in the barracks can be scrapped for production.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 1000
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 5
 - Siege HP: 20
 - Troop Speed Modifier: 1

- Unrest Modifier: 0
 - Energy Upkeep Cost: 1
 - Max Workers: 15
 - Worker Addition Method: Additive
- **Trade Outpost** (Can only be built in friendly alien cities)
- The trade outpost is responsible for increasing the chance of a successful trade with a specific civilization. It allows the player to make trades that better benefit them with a higher success rate. The building can be created once the player has at least 10% favor with a civilization.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 15%
 - Siege Damage: 2
 - Siege HP: 5
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0
 - Energy Upkeep Cost: 1
 - Max Workers: 5
 - Worker Addition Method: Additive
- **Embassy** (Can only be built in friendly alien cities)
- The embassy is responsible for increasing the chance of diplomatic success and the diplomatic options available to the player. The building can be created once a player has at least 10% favor with a civilization.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 15%, Trade Modifier: 0
 - Siege Damage: 2
 - Siege HP: 5
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0
 - Energy Upkeep Cost: 1
 - Max Workers: 5
 - Worker Addition Method: Additive
- **Police Station** (Can only be built in captured alien cities)
- The police station is responsible for allowing the player to occupy a city without any troops being present on the tile. While the building is active, the player can easily control an occupied city without troops standing on it. An active police station stops the occupied city from building troops, an inactive police station will allow the player to occupy the city without troops.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 5

- Siege HP: 10
- Troop Speed Modifier: 1
- Unrest Modifier: -15%
- Energy Upkeep Cost: 1
- Max Workers: 20
- Worker Addition Method: Additive

Visibility

The player's visibility of the map changes depending on where their buildings and armies are on the map. Each building and troop type will have their own visibility range. Any tile, including anything on it at the time, within the visibility range of an active building or army is considered live visibility.

Tiles are discovered when a troop or active building get in range of a tile. This range is determined by a building or armies vision number.

There are three types of visibility; active, discovered, and undiscovered:

- Active tiles are tiles that you have live visibility on, you can see any activity that takes place on the tile. This tile will look normal and any animations on the tile will be active.
- Discovered tiles are tiles that you have spotted before but do not have live visibility of anymore, any army action that takes place on this tile cannot be seen, but the resource values, buildings, and terrain of the tile remain visible. This tile would be dulled out to show that it hasn't been looked at in a while and any animations on the tile would not be active.
- Undiscovered tiles are tiles that you have not had live visibility on at any point during the game. You do not know what terrain the tile is or what buildings are on the tile until it is discovered. The fog of war is completely covering this tile so you wouldn't know anything about the tile.

Once the fog of war has been lifted from an undiscovered tile, it will not return.

Fog of war will be visualized by showing the player a dark plain tile for each undiscovered tile. If a tile is discovered and actively being seen, the tile will be vibrant. If a tile is discovered but not actively being seen, the tile will be dulled out, but the tile type and building will still be visible.

Power Outage System

To keep the buildings and robots operational, they will all have an energy consumption cost that is consumed each "day tick". Every building and robot type will have an energy consumption cost. The energy will prioritize powering the buildings, then the robot troops, then the robot workers.

If a player is not able to fully power their buildings and robots for 3 "day ticks" in a row, on the next day, powered units will be shut down on the 4th day tick. The player is notified about the power outage through an event pop up. After the event pop up is closed, a small energy icon is shown on screen to represent the power outage.

Once the power outage occurs, the player will lose the ability to interact with any of their armies on the map for 2 “day ticks”, the energy that the robots would have consumed will go into storage instead. On the 3rd “day tick”, the status will end, and the player will regain control of their armies with power still being sent to storage on the 3rd “day tick”.

Robot workers function differently when they run out of power. If the robot workers are not fully charged for 3 consecutive “day ticks”, they will go into power outage. Once a power outage occurs, robot workers will be removed from the tiles they are working on and placed into robot storage.

If the player cannot meet the costs of the buildings while the robot troops are inactive for any reason, a life support outage will trigger. During a life support outage, the player will lose 5 population for each energy short they were (2 pieces short, 10 deaths) when the day tick occurs. The player will remain in a life support outage until they fully power their buildings for 1 “day tick”, where they will then return to the start of a normal power outage.

Construction

Building construction will cost the player production and energy to start constructing a building. Once the production has started, the building or robot will take a certain amount of time to complete construction, which is specific to the building being constructed.

Once a worker has started constructing a building, those workers are unable to be removed from the construction process. After the construction process is complete, the workers will continue to work in that building but are not locked into working there. The player can move workers around like normal as long as they are not actively constructing a building.

Robot construction is different because the build time is dependent on the number of workers laboring in the factory. The production and energy cost of the building are static and are not affected by the construction time.

Before confirming the start of construction, the player will see the time and resource cost of the construction. The player will be notified once the construction process is complete. The construction process will be shown through an animation of a construction site and sounds during the construction.

Construction Components

These are the components that make up the construction of everything in the game. All 3 of these resources will have a cost in each construction that takes place.

- Cost
 - How many resources does the creation process require.
- Time
 - How long does it take to finish the creation process.
- Workers
 - How many workers does the construction process take.

Building Construction Costs

These are the resource costs of constructing the buildings above.

- Mining Station
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 200
 - Time Cost (Ticks): 180
 - Worker Cost: 30
- Farming Field
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Time Cost (Ticks): 150
 - Worker Cost: 30
- Power Plant
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 200
 - Time Cost (Ticks): 200
 - Worker Cost: 30
- Material Storage
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Time Cost (Ticks): 120
 - Worker Cost: 15
- Road
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 20
 - Time Cost (Ticks): 30
 - Worker Cost: 0
- Outpost
 - Energy Cost: From Settler Creation Cost
 - Population Cost: From Settler Creation Cost
 - Food Cost: From Settler Creation Cost
 - Production Cost: From Settler Creation Cost

- Time Cost (Ticks): 180
 - Worker Cost: 30
- Defense Station
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Time Cost (Ticks): 120
 - Worker Cost: 20
- Robot Factory
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Time Cost (Ticks): 150
 - Worker Cost: 30
- Robot Storage
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Time Cost (Ticks): 120
 - Worker Cost: 15
- Trade Outpost
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 50
 - Time Cost (Ticks): 80
 - Worker Cost: 5
- Embassy
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 50
 - Time Cost (Ticks): 100
 - Worker Cost: 5
- Police Station
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Time Cost (Ticks): 120
 - Worker Cost: 4

Worker System

The worker system covers everything that provides labor for the humans. The player can utilize human, robot, and alien populations to fulfil these needs. Worker variants give players different options for the cost they want to spend to achieve when using workers. The energy and food upkeep cost will be applied every “day tick”.

Worker Type	Energy Upkeep Cost (per 1)	Food Upkeep Cost (per 1)	
Robot	1	0	
Human	0	1	
Alien	0	1	

Workers can be moved around among the different labor options without travel time, no matter the distance between them. If humans are working in an area that gets successfully sieged by aliens, they will die. Robots working in that area will be destroyed as well. Any workers in a tile that is being sieged cannot be moved off that tile until after the siege is complete.

Human workers will consume 1 extra food every “day tick” they are working. Alien workers will only consume 1 food every “day tick”, and the Robot workers will consume 1 energy every “day tick”. If there is not enough food to feed all the workers after the population is fed, they are considered not fed.

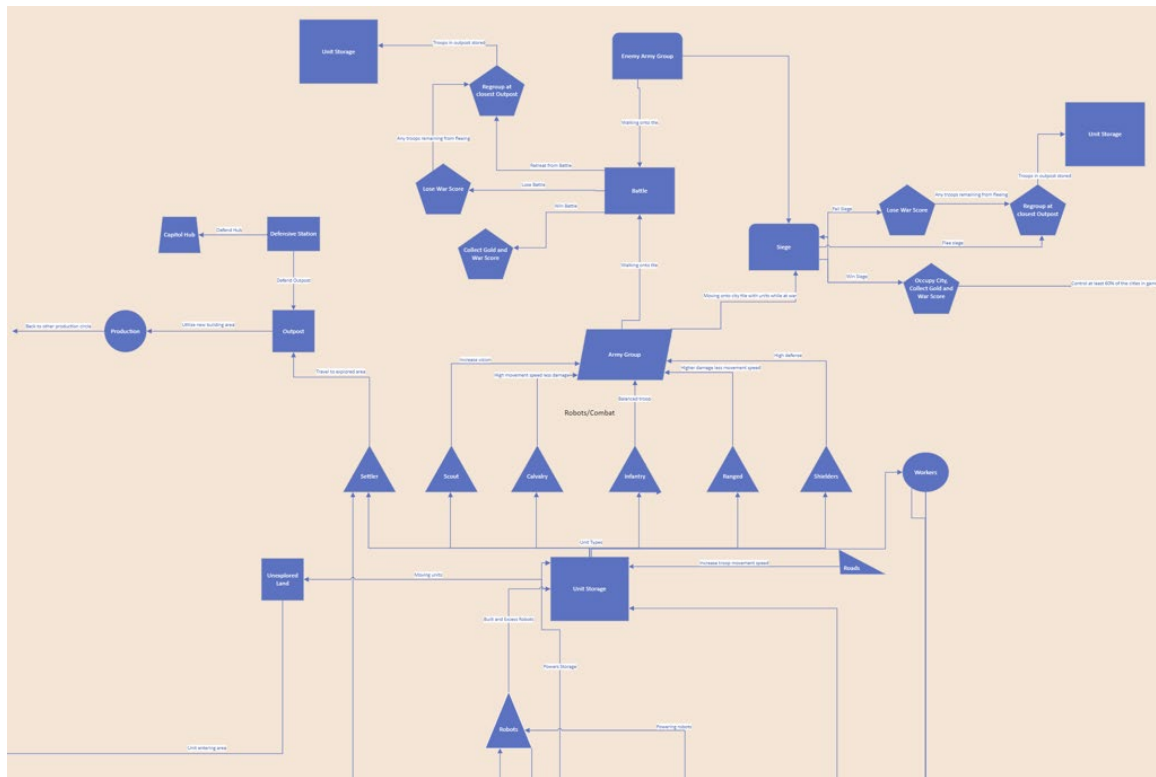
If a player is not able to fully feed their population for 3 “day ticks” in a row, on the next day, deaths will begin to occur from starvation if the population is not fully fed on the 4th day tick. The player is notified about the starvation state through an event pop up. After the event pop up is closed, a small food icon is shown on screen to represent starvation. Once starvation occurs, the player will lose 1 worker for each food piece short they were (2 pieces short, 2 dead humans and 2 dead aliens) when that day tick occurs. After the population has been successfully fed for 2 days straight, the starvation status will disappear.

Robot workers function differently from humans and aliens when they run out of power. If the robot workers are not fully charged for 3 consecutive “day ticks”, they will go into worker power outage. An event pop up occurs to tell the player that worker power outage has started. Once a worker power outage occurs, on the next “day tick”, robot workers will be removed from the tiles they are working on and placed into robot storage. After 3 “day ticks”, the power outage status will go away.

The player will see which workers they have assigned to a tile by selecting the tile. They will also be able to change the type of workers they have assigned to that tile or building from the same menu.

Exploration and Combat

This loop visualizes how the different gameplay elements relate to each other when it comes to interactions relating to troop exploration combat. The player can build robots to defend against and attack aliens on the planet but can also use robots to scout the planet and grow their territory. Let's break down the different ways robot troops are used in Polypore.



This section begins at the bottom with robots being created by the player. The player will craft robots from the robot factory through a UI menu. Once a troop has been crafted, they are automatically sent into Robot Storage. If the storage is full, they will begin to populate into an adjacent tile until the army is completely full of units. All robots can be stored in robot storage.

From the unit storage there are two connections, roads and exploring land. Roads will allow for troops to move quicker over a tile that has a road. Troops are also your primary way to explore land in Polypore, moving your army through the map will let the player discover new tiles, alien buildings, and alien cities.

The player has 5 combat related troops and 2 non-combat related troops to build. The non-combat related troops are there to help with exploration and labor. These troops can be combined into armies (excluding the worker robot) made up of different troops to create unique combinations of stats and troop relationships. The player can tune each army to be strong or weak in whatever area they feel is necessary.

Once an army has been created, the player can decide where they want it to move by selecting a target tile for the movement destination. The speed at which the army moves is determined by the average combined speed of the troops and any speed modifiers from a building or tile. The player is also able to manipulate the army size adjust troops in the army after it has been created.

The player starts combat by moving their army into a tile with another army while at war with that civilization. Combat itself is an automatic process once it has been started, the player is only able to decide if they want to flee the battle or wait to see the results of the battle.

If a battle is won by the player, the player will be awarded wealth dependent on the size of the army they beat. The player is also able to decide if they want to let the army they beat flee or not. If the battle is lost, the player will lose wealth, war score, and however many troops were destroyed before the battle ended. Any fleeing or retreating troops will automatically head to the nearest zone of control emitter and cannot be interacted with until they have returned to one.

Sieging is very similar to battle except it occurs when troops move onto an enemy zone of control tile instead of a tile with an army on it. Sieging is also an automatic process. Once it has been started, the only thing the attacking army can do is flee and the defending tile just must fight. If a siege is successful, the winning army gains control of the tile, wealth, and war score. If it is unsuccessful, the losing army loses war score and the troops that were destroyed. Units that are retreating or fleeing automatically head back to the nearest storage or city. If enough civilizations are seized, an endgame path will open.

Robot Units

Humans can manufacture robots to do the work on the planet for them. The player needs robots to do anything combat related, but they have the option of using robots for labor or not. The upkeep cost to maintain robots is energy. The energy robots consume is updated once per “day tick” and it will consume the energy upkeep cost amount for every robot unit that is not actively in storage when the energy is consumed.

Creating Units

The player can create units through the robot factory. The player will click into the factory and select up to 3 units at once to start constructing. Resources needed for construction are consumed immediately upon the start of construction. Once a unit has been created, it will spawn on the factory tile; if the tile has a troop, it will spawn adjacent to the tile that the factory is on. The units that are created are automatically filled into the army on the adjacent tile until the army is full. Once it has filled, a new army will start to be formed on another adjacent tile. If all adjacent tiles are filled with full armies, the constructed units will be put in the robot barracks.

Storing Units

The player can store units by moving them onto a tile with a barrack, select the barracks on the tile, and then select the store option. Robots stored in the barracks will not consume energy and will

automatically have their health and morale increased to 100% after storage. If a tile is getting sieges that has a barracks with troops in it, the player can move those troops out of storage to fight off the sieging army.

The barracks also has the capability of scrapping robots in storage to recover production. A robot that is scrapped will have 75% of their production cost returned to the player.

Troop Combat Stats

- Health Points (HP)
 - How much health a unit has.
 - Correlates to # of robots in the unit (100/100 robots).
 - 0 HP means army is destroyed.
 - HP can only be restored at a barracks in a zone of control. Will not restore outside of battle.
- Speed
 - How fast an army can move across a hex tile
 - Speed is affected by different tile types and troop types.
 - Measured in how long it takes to cross one tiles worth of distance, calculated in seconds per tile
- Damage
 - How much damage a unit deals to another unit by default.
 - Damage delt is affected troop matchups.
- Siege Power
 - How much damage a unit deals to a building or city per combat tick.
- Vision
 - The range of tiles a troop can see actively.
 - This is calculated as rings from around the troop (I.e. a troop with 3 can see 3 rings of tiles actively from its location)
- Morale
 - How likely an army is to flee the fight and give up (Alien)/How quickly the gun batteries drain for the robots (Human).
 - Decreases during combat.
 - Will restore as long as the army is not in battle.
 - If the morale of an army is put to 0 in the first 5 combat ticks, the entire army will be destroyed.
- Reinforce rate (for morale)
 - How quickly morale returns to an army after a battle.
- Energy Upkeep Cost
 - How much energy a robot consumed per “resource tick”

Unit Types

Unit types are the different choices the player must fill their army with. Each troop will have different stats, and the combination of how you put the troops together is up to the player. The player will see what their combination of army units is effective towards and against. This will be shown in the army UI screen when an army is selected.

- **Worker**
 - A unit that cannot be sent into combat but is in this section because they are created in the robot factory. Its related stats can be found in the worker section. When these are produced in the factory, only 1 robot is created instead of an entire unit. This unit can be stored in the barracks like the rest of the troop types.
- **Infantry**
- The “standard” troop the player can produce. It does everything ok.
 - Health Points: 100
 - Speed: 60
 - Damage: 6
 - Siege Power: 10
 - Vision: 1
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1
- **Cavalry**
- A troop meant for attacking armies. It has a quicker speed and higher attack, but it is not very good for sieging cities and buildings.
 - Health Points: 120
 - Speed: 45
 - Damage: 8
 - Siege Power: 5
 - Vision: 1
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1
- **Ranged**
- A troop meant for sieging. It has a slower speed and damage but higher sieging power. The increased vision allows your army to see a little further.
 - Health Points: 80
 - Speed: 80
 - Damage: 4
 - Siege Power: 20
 - Vision: 2
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1
- **Shielders**

- A troop meant for bolstering army defense. It is decent at sieging but does not do a lot of damage to other troops.
 - Health Points: 150
 - Speed: 75
 - Damage: 3
 - Siege Power: 15
 - Vision: 1
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1
- **Scout**
- A troop meant to increase an army's vision and speed. It isn't very good in combat, but having one in the army will be helpful to the group. The player can also send them alone to explore the map.
 - Health Points: 50
 - Speed: 30
 - Damage: 2
 - Siege Power: 1
 - Vision: 3
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1
- **Settler**
- A troop that is meant specifically for creating outposts in new areas. They do not do any damage and have slightly lower than normal stats because they are the only way to create new zones of control areas with the outpost.
 - Health Points: 75
 - Speed: 60
 - Damage: 0
 - Siege Power: 0
 - Vision: 1
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1

Upgraded Troops

Upgraded troops are more powerful versions of the troop that must be unlocked before they are available for crafting. The upgraded troops are unlocked by completing tasks on the research tree.

- **Upgraded Infantry**
 - Health Points: 110
 - Speed: 55
 - Damage: 10
 - Siege Power: 10
 - Vision: 1

- Morale: 120
- Reinforce Rate: 2
- Energy Upkeep Cost: 1
- **Upgraded Cavalry**
 - Health Points: 120
 - Speed: 30
 - Damage: 12
 - Siege Power: 5
 - Vision: 1
 - Morale: 120
 - Reinforce Rate: 2
 - Energy Upkeep Cost: 1
- **Upgraded Ranged**
 - Health Points: 90
 - Speed: 70
 - Damage: 6
 - Siege Power: 10
 - Vision: 2
 - Morale: 120
 - Reinforce Rate: 2
 - Energy Upkeep Cost: 1
- **Upgraded Shielder**
 - Health Points: 200
 - Speed: 70
 - Damage: 3
 - Siege Power: 15
 - Vision: 1
 - Morale: 120
 - Reinforce Rate: 2
 - Energy Upkeep Cost: 1
- **Upgraded Scout**
 - Health Points: 60
 - Speed: 25
 - Damage: 2
 - Siege Power: 1
 - Vision: 4
 - Morale: 120
 - Reinforce Rate: 2
 - Energy Upkeep Cost: 1
- **Upgraded Settler**
 - Health Points: 85
 - Speed: 50
 - Damage: 0
 - Siege Power: 0

- Vision: 1
- Morale: 120
- Reinforce Rate: 2
- Energy Upkeep Cost: 1

Troop Creation Cost

- Robot Workers
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 10
 - Population Cost: 0
 - Time to Build (Ticks): 12
- Infantry
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 48
- Cavalry
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 60
- Ranged
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 48
- Shielder
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 60
- Scout
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 20
 - Population Cost: 0
 - Time to Build (Ticks): 24
- Settler

- Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 400
 - Population Cost: 50
 - Time to Build (Ticks): 60
- Upgraded Infantry
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 48
- Upgraded Cavalry
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 60
- Upgraded Ranged
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 48
- Upgraded Shielder
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 60
- Upgraded Scout
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 20
 - Population Cost: 0
 - Time to Build (Ticks): 24
- Upgraded Settler
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 400
 - Population Cost: 40
 - Time to Build (Ticks): 60

Troop Relationships

Different troop types are stronger or weaker towards certain troop types. This gives more depth to army crafting as the player will have to think about how they want to balance their army. The chart below shows these relationships. The percentages affect the amount of damage that a troop will deal to another troop. The relationships do not change for upgrades troops.

Troop Type	Infantry	Calvalry	Ranged	Shielder	Scout	Settler
Infantry	100%	100%	200%	100%	100%	100%
Calvalry	50%	100%	100%	100%	100%	100%
Ranged	100%	200%	100%	50%	100%	100%
Shielder	200%	50%	50%	100%	100%	100%
Scout	100%	100%	100%	100%	100%	100%
Settler	100%	100%	100%	100%	100%	100%
		Attacking on top, defending on sides				

Armies

An army is a combination of troop units that move and fight as a group. The army is represented as a singular troop token on the map, but when you select it, you will see the stats of the army and what troops the army consists of.

When it comes to stat combination, this is how an army will calculate its stats from the troops it's made of. Armies can have a maximum size of 20 troops per army.

- Health Points (HP)
 - Add together all of the units HP.
- Speed
 - Average of all of the units' troop speeds.
- Damage
 - Average of all of the units' troop damage.
- Siege Power
 - Average of all of the units' troop siege power.
- Vision
 - Select the highest vision from all units in army.
- Morale
 - Average of all of the units' troop morale.
- Reinforce rate (for morale)
 - Applied individually for units.
- Energy Upkeep Cost
 - Applied individually for units.

When it comes to how these stats change as a battle progresses and troops die, this is how the army will calculate its stats.

- Health Points (HP)
 - Damage taken is evenly spread across all of the units.
- Speed
 - Changes to average of remaining units.
- Damage
 - Changes to average of remaining units.
- Siege Power
 - Changes to average of remaining units.
- Vision
 - Uses the highest vision from all units in army.
- Morale
 - Changes to average of remaining units.
- Reinforce rate (for morale)
 - N/A, not affected in battle.
- Energy Upkeep Cost
 - Applied individually for units.

Army Movement

The player controls where they want their troop to go by selecting the army with their mouse, moving the mouse over the tile they want their army to move to, and clicking on the tile with mouse 1 (left click). The tile that the troops are moving to will be visualized by a small indicator/under glow on the map.

Armies can be moved to any tile that has a movement multiplier value assigned to the tile (every tile except Stemstack Mountains and the Boundry). The movement multiplier will adjust the length of the army's travel when they are moving out of the tile to a new one. It will be calculated by multiplying the value of the movement multiplier to the army's movement speed.

An army's movement speed stat is the number of ticks that the troop takes to move from one tile to any adjacent tile at a 1.0 movement multiplier. The movement speed of an army is determined by the average movement speed of all the different troops that army is made from. Armies move from the tile they are on to the next tile in their path every time X number of ticks passes ($X = \text{army's overall speed} * \text{tile movement modifier}$).

Movement can be cancelled or altered at any time by selecting a new target tile on the map. Cancelling a movement to another tile will cause the army to remain at whatever tile they are in. Movement is also cancelled if an army you are at war with moves onto the tile you are on before you can leave it.

Buildings do not restrict an army's ability to move onto a tile. Enemy or allied armies do not restrict an army's ability to move onto a tile. There is no cap to the number of different faction armies

that can be on a single tile at once. The cap for the number of armies a single owner can have on one tile at a time is 3.

Armies can be on tiles with allied armies, neutral armies, allied buildings and neutral buildings with no effect or concern. Armies on tiles with other buildings or armies that you are at war with will automatically initiate a siege or battle with the faction they are at war with.

Army Commands

After an army has been created, the player is still able to adjust what troops they may or may not want in the army. These actions cannot be taken during combat or while an army is moving to another tile. None of these actions cost anything to the player.

- Split Off Individuals
 - The player can decide what units from the army they want to remove and split them into their own army on the current tile.
 - Selecting this option will bring up a UI screen to separate your army.
- Split in 2
 - The game will try to split the army in 2 as evenly as possible and place the second army on the current tile.
- Merge
 - The game will look for armies owned by the player on a tile and combine them. If the armies separately are too big to be combined, the game will merge as many troops as possible. Any extra troops that couldn't fit into the selected army will be left in their own army on the current tile.

Army Reinforcing

Reinforcing is when an army takes time after a battle to increase their morale. Armies have the option to reinforce when they have less than 100% moral and are not in a battle. An army must be standing still to reinforce. HP cannot be recovered through reinforcing in a neutral or enemy tile; the army must go back to a tile that is controlled by them to recover HP when reinforcing. Sparing an army will provide an immediate 10 ticks of reinforcement and increase the HP of the army by 10.

War Score

War score is a value that shows the player how well they have been doing against the civilization they are at war with. War score has an impact on a civilization's decision to accept or reject diplomatic actions related to ending the war. This system can be applied to any two civilizations within the game instead of the player, this way alien wars can be tracked just like the players.

The score is determined by a player or AI's success in battles and sieges. The more battles they win, the higher the war score. War score can be increased by winning battles with enemy armies,

successfully sieging cities, successfully defending against an enemy siege, and hunting down a fleeing army. War score can be decreased by losing battles with enemy armies, failing a city siege, or failing to defend against an enemy siege.

- Winning a Battle: +5
- Winning a Siege: +10
- Successfully defend against a siege: +10
- Hunting a fleeing army: +3
- Losing a Battle: -5
- Failing a Siege: -10
- Unsuccessfully defend against a siege: -10
- Spare a fleeing army: 0
- Releasing a city: +20
- Occupying a city: +10

The war score will be displayed in the diplomat UI when you select another civilization you are at war with.

Fighting a Battle

A battle begins when a player or AI moves their army into the same tile as another city's army while both sides are at war with each other. If the two armies are not at war, they are allowed to occupy the same tile space. If they are at war, that battle will begin as soon as the attacking army finished moving onto the tile containing the defending army.

Once a battle has started, each side will do damage to each other every combat tick based on each army's stats. Each army will deal each other damage at the same time. Every 5 combat ticks, each army will have a die roll for them called a combat roll. Based on the number they roll; they will get a boost or a drawback in combat. A normal 1-6 die is rolled: if it lands as a 1 or 2, the army that rolled it will have their damage reduced by 15% until the next combat roll. If it lands 3-4, nothing happens. If it lands 5-6, the army that rolled it will have their damage increased by 15% until the next combat roll.

Armies can flee a battle at almost any time at the cost of losing 50% of the remaining troops in the army, unless they are under 15% of their total HP. Armies that flee before losing the battle by choice cannot be attacked or pursued by the enemy. An army that is fleeing will always return to the nearest zone of control emitter. Armies are not able to flee from battle for the first 5 combat ticks but are able to flee at any other time.

Other armies can interfere with an army's battle. The third party that enters the siege can pick a side to help fight with. The aiding army will have its stats combined with the side it chooses to help but does not get any rewards from fighting in the battle. A third party is only able to join if they are currently at war with the party they are attempting to fight against.

Once an army has had all of its morale or HP reduced to 0, they will lose the battle. An army that loses its morale will flee from the fight and the winning army can decide if they want to go after the

remaining fleeing troops or let them go. If the winning army decides to let them flee, their relation with the civilization they spared increases by 10, and their army is provided with 10 reinforcement ticks.

If the winning army decides to hunt the fleeing troops, their relation with the civilization will decrease by 10. A normal 1-6 die will also be rolled to determine how much of the fleeing army is wiped out if the winning army chooses to go after them. If the winning army rolls 1-2, they will only kill 10% of the fleeing troops, if they roll 3-4, they will kill 50% of the fleeing troops, if they roll 5-6, they will kill 100% of the fleeing army.

The winning army will receive a certain amount of wealth based on the army's size. The wealth awarded is determined by the combined power value of the troops that made up the army. If the enemy army flees from battle, the army that stayed will be awarded 75% of the wealth reward that they would have earned from fully defeating the army. Once rewards have been given or the players' troops have fled, the battle ends.

Sieging a Tile/Building/City

A siege automatically begins when a player or AI moves their army onto the same tile as another civilization's city or buildings while both sides are at war with each other. If the two armies are not at war, they can inhabit the same tile space. If they are at war, that siege will begin as soon as the attacking army finishes moving onto the tile containing the defending building or city. An army must have at least 3 units within the army to siege.

Once a siege has started, each side will do damage to each other every combat tick based on each side's siege stats. Each army will deal each other damage at the same time. The amount of HP it has is determined by the value of the tile/building's siege HP and a tile's defender bonus. The siege damage for a city/building determines how much damage the army will receive every "combat tick". The army and the city/building will do damage to each other each "combat tick" exactly like it happens in a battle. Buildings are easier to siege than cities.

Other armies can interfere with an army's siege. The third party that enters the siege can pick a side to help fight with. The aiding army will have its stats combined with the side it chooses to help but does not get any rewards from fighting in the siege. A third party is only able to join if they are currently at war with the party they are attempting to fight against.

Every 5 combat ticks, each army will have a die roll for them called a combat roll. Based on the number they roll; they will get a boost or a drawback in combat. A normal 1-6 die is rolled: if it lands as a 1 or 2, the army that rolled it will have their damage reduced by 15% until the next combat roll. If it lands 3-4, nothing happens. If it lands 5-6, the army that rolled it will have their damage increased by 15% until the next combat roll.

When other armies join into a siege, they will be sorted into two different combat groups. The troops in each group will deal the damage that is appropriate against their target group. A troop will always deal troop damage to another troop, a building will always deal siege damage to a troop, and a troop will always deal siege damage to another building.

Armies can flee a siege at almost any time at the cost of losing 50% of the remaining troops in the army, unless they are under 15% of their total HP. Armies that flee before losing the siege cannot be attacked or pursued by the enemy. An army that is fleeing will always return to the nearest zone of control emitter. Armies are not able to flee from siege for the first 5 combat ticks but are able to flee at any other time.

Once the attacking army has had all its morale depleted or goes under the 3-unit minimum within the army, the siege is considered lost and ended. The remains of the sieging army will flee to the nearest outpost and cannot be hunted down. No rewards are given for a failed siege attempt. The city/building that was being sieged will recover its HP by 1 resource tick once it is not being attacked.

Once the city/building being sieged has its HP lowered to 0 and all supporting army units have been defeated, the siege is considered won and has ended. The winning army is given resources and wealth equivalent to what the building/city produced during the time the siege was taking place. If a tile/building is successfully sieged, it will be set to inactive until an army in control of the tile occupies the inactive tile/building. If a city is successfully sieged, the winning army will occupy the city (see occupying a city for more details). Once rewards have been given or the players' troops have fled, the siege ends. The building's HP is reset to its maximum amount.

Occupying a City

Occupation is when a civilization takes control of a city that is not theirs. This occurs once an army has successfully sieged a city. The army that has sieged the city must leave at least three troops in the city for it to remain occupied after a siege. If less than 3 troops occupy the city at any time, the city will be released from occupation after a consecutive day tick with not enough troops occupying the tile.

Armies from the occupied city's civilization will function as normal when their city gets occupied, they will change their objective to try and take the city back. An occupied city can also be liberated if that city's army can stay on that city tile for one consecutive day tick.

The civilization that is occupying another city will collect 25% of all resources coming into the occupied city. The occupied city will not be able to create any more troops from that city while there are troops occupying it. Any buildings that were successfully sieged and deactivated do not provide any resources to their city until the war has ended or they have been reactivated. The resource number will be a static value that is consistent across a few chosen values.

While a city has troops in an occupied city, they have the option to build a police station in the occupied city. Building a police station will increase the number of resources the occupier gains from the occupied city to 50% of the incoming resources. Once a police station is built in an occupied city, the occupier does not need to keep troops in the city to occupy it, the police station will take the place of troops on the tile. An army must be present on the city tile to build the police station, if the army is removed from the tile while the police station is being built, the police station construction will be cancelled and reset.

Enemy armies can resiege their occupied city to attempt to regain control. If the siege is successful, the police station will be destroyed, and the city will be returned to the control of the civilization who built it. The occupier will become the defender during the siege and the stats of the city

before it was occupied during battle. If the player releases a city from occupation after building a police station in it, that city will not declare war on the player for the rest of the game.

After the war, the police station would exist in the city if it was built there. The location of the police station is the same as the embassy, so the player can only have one of the two existing in any alien city at once. If a police station is built in a city with an embassy, the embassy will be destroyed. If the embassy is built in a city with a police station, the police station will be destroyed. If a city already has a police station, successfully sieging it again will automatically put it under occupation.

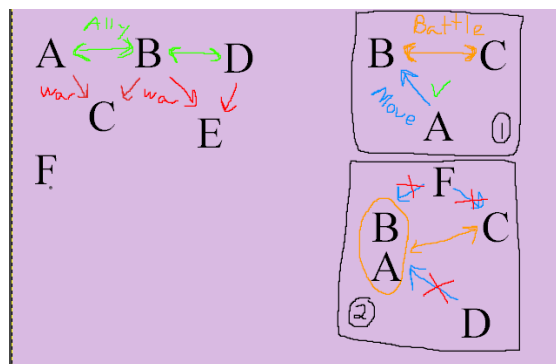
Disabling a Tile/Building

Disabling a tile/building is something that automatically occurs after a successful siege occurs on a building or tile hex. Any buildings/tiles that were successfully sieged are disabled and do not provide any resources to their city until the war has ended or they have been liberated.

Enemy armies can liberate a disabled tile/building to regain production from the tile. Troops can liberate a tile by standing on the disabled tile for 1 consecutive day tick. After 1 day tick, the tile will automatically be liberated and production will continue.

Other Battle Info

This graph shows whether certain factions (displayed by letters) can move an army into a tile containing an ongoing battle. Assuming that A and B are allies, B and D are allies, A and B are both at war with C, and B and D are both at war with E.



A would be able to aid B in battle but not C. D cannot start battle with A, F cannot join the war with B and C.

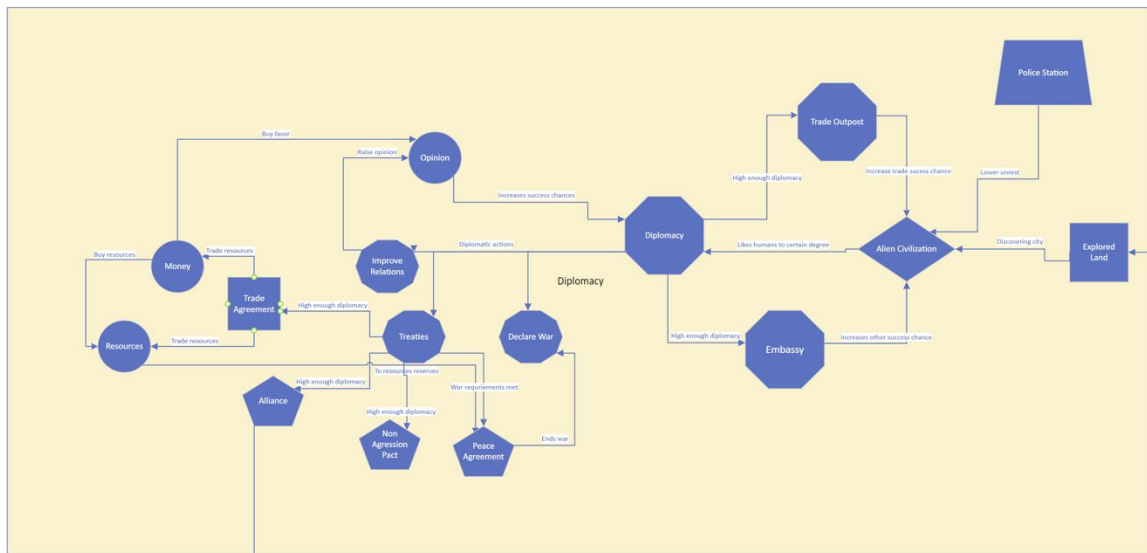
A mockup of what the battle and siege UI will look like. The player can see what both armies consist of.

Clathrus Army 3

[illegible]

Aliens and Diplomacy

This loop visualizes how the different gameplay elements relate to each other when it comes to interactions relating to alien interaction and diplomatic actions. The player can create relationships with the civilizations they discover, work and trade with them, and even alliance with them. Let's break down the different ways robot troops are used in Polypore.



This section begins with undiscovered tiles being discovered. As the player explores more tiles, they will eventually discover an alien civilization, whether it being a building or a city tile. When the player first makes contact with an alien city or building, a screen will pop up with a representative from that civilization giving you an introduction message.

The aliens themselves call themselves the Klequeen, natives of the planet Klequo. They are a semi humanoid looking race that have a developed culture and history. The Klequeen race has advanced to a point similar to the Humans during the middle of the industrial age. There are 8 different Klequeen civilizations that the player can run into, one for each major personality trait.

The Klequeen have 8 different personality traits that influence their decision making during the game. These 8 traits are made up of 4 different behaviors, with each behavior having two extreme traits. Those traits are xenophobic, xenophilic, spiritual, secular, compliant, noncompliant, peaceful, and warlike. The player will only know the primary trait of a civilization upon discovery and will have to learn the rest through interactions.

After the message, the player will be able to see that civilization in the diplomacy menu. From that menu they will have access to their current relationship status with that civilization, the option to create treaties or declare war, and the chance to improve relations. Certain options are restricted until the player has a high enough relationship with the civilization. The player can interact with these civilizations however they want. The relationship that has the biggest impact on the players goals is the

relationship with the civilization that has the big rock, but those details will be discussed in the endgame section.

Klequeen Civilizations

The Klequeen are the native alien race of this planet Klequo and are made up of different cultural civilizations that live across the planet. Their politics and social problems are very similar to what we experience on Earth. Their technology has advanced to a point similar to the Humans during the middle of the industrial age.

The Klequeen are fundamentally very similar to the Humans, they have the same troops and buildings, they can make the same diplomatic decisions, and can interact with each other in the same way the player can. The major difference between them is what determines the decisions they make. The different personality traits are tied to values that determine how likely they are to make a certain decision. All civilizations start off with a similar power level, all within the range of 20 power.

Klequeen Personality

The predetermined personality of a civilization will relate to the likelihood of them taking certain actions. Based on what a civilization ranks in each category, they will be more or less likely by default to take certain actions against the player. A single personality trait doesn't determine the decision but a combination of all of the traits.

The different personality traits will be on a range of these 4 spectrums. Each civilization will have a random value determined for each of these spectrums. The trait with the highest value will be assigned as the primary trait for the civilization. These spectrums are calculated with the left option being valued at -100 and the right option being valued at 100.

- Xenophobic - xenophilic
 - How much do they like humans.
- Spiritual - secular
 - How religious or non-religious they are.
 - Has significance to how they will react to actions taken upon the big rock.
- Compliant – noncompliant
 - Willingness to engage in diplomacy/ interaction/alliances.
- Peaceful - warlike
 - How likely they are to start war with humans.

Below are the 8 different Klequeen civilizations that the player has the chance to meet every game. Each civilization is tied to one of the eight different personality traits.

Civilization name	Primary characteristic	Short desc of culture
Siatus	Xenophobic	Will be an ally to nearby civs who are against you... not helpful. If they are located near a hostile civ will always join them.
Clathrus	Warlike	Will defend the rock at all costs! Warrior priests!
Boletus	Compliant	True neutral... can be beneficial, a breath of fresh air.
Ticularia	Peaceful	Not harmful... can be useful if invested in
Baorangia	Xenophilic	An asset to humanity if used correctly
Serpula	Secular	Merchants - love luxury and excess, will sell out their people for shiny things
Chartarum	Spiritual	Fundamentalist hermit kingdom... not well liked among the planet, considers both humans and other civs as "others"
Mycena	Noncompliant	Watch out! Not well liked amongst the aliens. INTENSE & IMPERSONAL VIBE

Klequeen Buildings

The Klequeen buildings will function the same exact way as their human counterpart. This will make it simple for buildings and cities to be occupied by any civilization. The list of buildings that the Klequeen can build is below.

- **Klequeen Mining Station** (Can only be built in Zone of Control Tiles)
- The mining station is responsible for increasing the production harvest of a tile.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 2, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 2
 - Siege HP: 5
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0
 - Zone of Control Size: 0
 - Energy Upkeep Cost: 1
 - Max Workers: 30
 - Worker Addition Method: Substitutive
- **Klequeen Farming Field** (Can only be built in Zone of Control Tiles)
- The farming field is responsible for increasing the food harvest of a tile.
 - Energy Modifier: 0, Food Modifier: 2, Production Modifier: 0, Wealth Modifier: 2
 - Can be toggled to turn food yield into wealth, only one can occur at a time.
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 2
 - Siege HP: 5
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0
 - Zone of Control Size: 0
 - Energy Upkeep Cost: 1
 - Max Workers: 30
 - Worker Addition Method: Substitutive
- **Klequeen Powerplant** (Can only be built in Zone of Control Tiles)
- The powerplant is responsible for increasing the energy harvest of a tile.
 - Energy Modifier: 2, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 2
 - Siege HP: 5
 - Troop Speed Modifier: 1
 - Unrest Modifier: 0

- Zone of Control Size: 0
- Energy Upkeep Cost: 1
- Max Workers: 30
- Worker Addition Method: Substitutive
- **Klequeen Roads** (Can only be built in Zone of Control Tiles)
- The roads are responsible for increasing the movement speed of troops while they are crossing over it. Any buildings created are automatically fitted with roads.
 - Energy Modifier: 0, Food Modifier: 0, Production Modifier: 0, Wealth Modifier: 0
 - Resource Storage Modifier: 0
 - Robot Storage Modifier: 0
 - Diplomacy Modifier: 0, Trade Modifier: 0
 - Siege Damage: 0
 - Siege HP: 0
 - Troop Speed Modifier: 2
 - Unrest Modifier: 0
 - Zone of Control Size: 0
 - Energy Upkeep Cost: 0
 - Max Workers: 0

Building Construction Costs

These are the resource costs of constructing the buildings above.

- **Mining Station**
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 200
 - Time Cost (Ticks): 180
 - Worker Cost: 30
- **Farming Field**
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Time Cost (Ticks): 150
 - Worker Cost: 30
- **Power Plant**
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 200
 - Time Cost (Ticks): 200
 - Worker Cost: 30

- Road
 - Energy Cost: 0
 - Population Cost: 0
 - Food Cost: 0
 - Production Cost: 20
 - Time Cost (Ticks): 30
 - Worker Cost: 0
- Outpost
 - Energy Cost: From Settler Creation Cost
 - Population Cost: From Settler Creation Cost
 - Food Cost: From Settler Creation Cost
 - Production Cost: From Settler Creation Cost
 - Time Cost (Ticks): 180
 - Worker Cost: 30

Klequeen Troops and Armies

Klequeen troops are made up of the Klequeen themselves. They have the same troop stats, troop creation costs, and troop relationships as the humans. The one difference is that their troop upkeep cost every “day tick” is done with food instead of energy. The Klequeen do not need any building to produce or store troops, they just are created at the cost of the resources needed to produce the unit. Troops are stored in the city, but not with any particular building in the city.

The Klequeen armies work the exact same way as the human armies, they have the same army stats, the stats calculate the same way, army movement works the same way, army commands are the same, army reinforcing, war score, and combat work the same.

Klequeen Troop Types

- **Klequeen Infantry**
- The “standard” troop the player can produce. It does everything ok.
 - Health Points: 100
 - Speed: 60
 - Damage: 6
 - Siege Power: 10
 - Vision: 1
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1
- **Klequeen Cavalry**
- A troop meant for attacking armies. It has a quicker speed and higher attack, but it is not very good for sieging cities and buildings.

- Health Points: 120
 - Speed: 45
 - Damage: 8
 - Siege Power: 5
 - Vision: 1
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1
- **Klequeen Ranged**
- A troop meant for sieging. It has a slower speed and damage but higher sieging power. The increased vision allows your army to see a little further.
 - Health Points: 80
 - Speed: 80
 - Damage: 4
 - Siege Power: 20
 - Vision: 2
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1
- **Klequeen Shielders**
- A troop meant for bolstering army defense. It is decent at sieging but does not do a lot of damage to other troops.
 - Health Points: 150
 - Speed: 75
 - Damage: 3
 - Siege Power: 15
 - Vision: 1
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1
- **Klequeen Scout**
- A troop meant to increase an army's vision and speed. It isn't very good in combat, but having one in the army will be helpful to the group. The player can also send them alone to explore the map.
 - Health Points: 50
 - Speed: 30
 - Damage: 2
 - Siege Power: 1
 - Vision: 3
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1
- **Klequeen Settler**

- A troop that is meant specifically for creating outposts in new areas. They do not do any damage and have slightly lower than normal stats because they are the only way to create new zone of control areas with the outpost.
 - Health Points: 75
 - Speed: 60
 - Damage: 0
 - Siege Power: 0
 - Vision: 1
 - Morale: 100
 - Reinforce Rate: 1
 - Energy Upkeep Cost: 1
- **Upgraded Klequeen Infantry**
 - Health Points: 110
 - Speed: 55
 - Damage: 10
 - Siege Power: 10
 - Vision: 1
 - Morale: 120
 - Reinforce Rate: 2
 - Energy Upkeep Cost: 1
- **Upgraded Klequeen Cavalry**
 - Health Points: 120
 - Speed: 30
 - Damage: 12
 - Siege Power: 5
 - Vision: 1
 - Morale: 120
 - Reinforce Rate: 2
 - Energy Upkeep Cost: 1
- **Upgraded Klequeen Ranged**
 - Health Points: 90
 - Speed: 70
 - Damage: 6
 - Siege Power: 10
 - Vision: 2
 - Morale: 120
 - Reinforce Rate: 2
 - Energy Upkeep Cost: 1
- **Upgraded Klequeen Shielder**
 - Health Points: 200
 - Speed: 70
 - Damage: 3
 - Siege Power: 15
 - Vision: 1

- Morale: 120
 - Reinforce Rate: 2
 - Energy Upkeep Cost: 1
- **Upgraded Klequeen Scout**
 - Health Points: 60
 - Speed: 25
 - Damage: 2
 - Siege Power: 1
 - Vision: 4
 - Morale: 120
 - Reinforce Rate: 2
 - Energy Upkeep Cost: 1
- **Upgraded Klequeen Settler**
 - Health Points: 85
 - Speed: 50
 - Damage: 0
 - Siege Power: 0
 - Vision: 1
 - Morale: 120
 - Reinforce Rate: 2
 - Energy Upkeep Cost: 1

Klequeen Troop Creation Costs

- **Klequeen Infantry**
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 48
- **Klequeen Cavalry**
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 60
- **Klequeen Ranged**
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 48

- **Klequeen Shielder**
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 60
- **Klequeen Scout**
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 20
 - Population Cost: 0
 - Time to Build (Ticks): 24
- **Klequeen Settler**
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 400
 - Population Cost: 50
 - Time to Build (Ticks): 60
- **Upgraded Klequeen Infantry**
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 48
- **Upgraded Klequeen Cavalry**
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 60
- **Upgraded Klequeen Ranged**
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 48
- **Upgraded Klequeen Shielder**
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 100
 - Population Cost: 0
 - Time to Build (Ticks): 60
- **Upgraded Klequeen Scout**
 - Energy Cost: 0

- Food Cost: 0
- Production Cost: 20
- Population Cost: 0
- Time to Build (Ticks): 24
- **Upgraded Klequeen Settler**
 - Energy Cost: 0
 - Food Cost: 0
 - Production Cost: 400
 - Population Cost: 40
 - Time to Build (Ticks): 60

Klequeen Actions/AI

The Klequeen civilizations can perform similar actions that the player can take. They can engage in diplomacy, start wars with each other, and have different relationships with each other just like the player has with them.

The actions they are more predisposed to taking are determined by their assigned personality traits. These modifiers can also be manipulated through event scenarios based on the player decision. The consequences of the event situations will be reflected in game in game by the AI's actions.

Below is a list of actions that the Klequeen are able to take against any civilization in the game.

- Modifier to Declare War on Other Aliens
 - How likely they are to declare war on another alien civilization.
- Modifier to Declare War on Player
 - How likely they are to declare war on the player.
- Modifier to Accept Peace Deal
 - How likely they are to accept a peace deal.
 - This is before war score becomes part of the calculation
- Modifier to Want Larger Army
 - How likely they are to want to build troops and armies.
- Modifier to Want More Scouts
 - How likely they are to want to put scouts in their armies.
- Modifier to Build Farms
 - How likely they are to build farms.
- Modifier to Build Mines
 - How likely they are to build mines.
- Modifier to Build Energy
 - How likely they are to build energy stations.
- Modifier to Build Outpost
 - How likely they are to build outposts.

- Modifier to Go on Offensive over Defensive
 - How likely they are to go aggressively push armies out and take space.
- Modifier to Stay Close to Ally Troops
 - How likely they are to other civilizations troops that they have allied with.
- Modifier to Flee When Seeing Larger Army
 - How likely they are to engage with an army that is bigger than their own.
- Modifier to Prioritize Battles over Sieging
 - How likely/unlikely they are to enter a battle or siege.
- Modifier to Declare War on Player if Player Holds Alien City
 - How likely they are to help another civilization.
- Modifier to Initiate Non-Aggression Pacts
 - How likely they are to request a non-aggression pact with another civilization.
- Modifier to Initiate Alliance deals
 - How likely they are to request an alliance deal with another civilization.
- Modifier to Initiate Trade requests
 - How likely they are to initiate a trade request.
- Modifier to Want to Gain Money
 - How likely they are to take actions towards gaining money.
- Modifier to Want to Gain Land
 - How likely they are to take actions towards gaining land.
- Modifier to Want to Gain Value (Power)
 - How likely they are to make actions towards gaining power.
- Modifier to Want to Protect the Rock
 - How likely they are to want to protect the rock if it is stolen by the humans.

The relationship of the personality traits and the modifiers can be seen here.

Effect	Xenophobic 100%	Xenophilic 100%	Spiritual 100%	Secular 100%	Compliant 100%	Noncompliant 100%	Peaceful 100%	Warlike 100%	Neutral
Modifier to Declare War on Other Aliens	0.75	1	0.75	1	0.75	1.25	0.5	2	1
Modifier to Declare War on Player	1.5	0.75	1.25	1	0.75	1.25	0.5	2	1
Modifier to Accept Peace Deal	0.75	1.25	0.75	1	2	0.5	2	0.5	1
Modifier to Want Larger Army	1.25	1	1	1	0.75	1.25	0.5	2	1
Modifier to Want More Scouts	1	1.25	0.75	1.25	1	1	1	1.25	1
Modifier to Build Farms	1	1	1	1	1	1	1.25	1	1
Modifier to Build Mines	1	1	1	1	1	1	0.75	1.25	1
Modifier to Build Energy	0.75	1.25	0.75	1	1	1	1	1	1
Modifier to Go on Offensive over Defensive	1.25	0.75	1.25	1	0.75	1.25	0.5	2	1
Modifier to Stay Close to Ally Troops	1	1	1	1	1.25	0.75	1	1.25	1
Modifier to Flee When Seeing Larger Army	1	1	1	1	1	1	1.25	0.5	1
Modifier to Prioritize Battles over Sieging	1	1	1	1	0.75	1	0.75	1.25	1
Modifier to Declare War on Player if Player Holds Alien City	2	1	1.5	1	0.75	1	1	1.25	1

Key

Modifiers are shown as multipliers (0.5 = half as likely and 2 = twice as likely)

1 = does not change chance to do something

Neutral represents the middle-ground between all personalities.

If a personality at 100% in one direction is 1, then all other percentages of that side of the personality spectrum will also be 1 since Neutral is always at 1.

Diplomatic Actions

Diplomatic actions with a civilization become available once the player or a civilization has discovered the corresponding civilization's outpost or city. The relationship with the new civilization upon contact is dependent on the actions targeted towards that civilization during the game and predetermined feelings the civilization may possess dependent on their personality. The level of a civilization's projected diplomacy is called favor.

Diplomatic actions have a percentage chance of success/failure that is displayed to the player when they attempt an action. This chance is determined by the civilization's current relation with the requestee and their personality type. Establishing embassies, having high relations, and certain alien personalities increase the chance of success. Low relations, being at war, and certain alien personalities decrease the chance of the alien civilization accepting your request.

A player can request any treaties, improve relations, or declare war at any time through the diplomacy menu. The player can declare war whenever they want, they can improve relations once every 7 "day ticks", and they can request each treaty once every 4 "day ticks" for each civilization. Upon a declined offer, the player must wait a week in-game (7 "day ticks") before sending a new offer of the same type.

- Declare War
 - Created by the player and AI.
 - No alien civilization acceptance needed.
 - Will begin the war score system between the two civilizations.
- Improve Relations
 - Improves favor by 10.
 - Will prompt a player with an event, will ask player for something (resources, action, nothing)
 - Has a cooldown of 3 "day ticks"
- Treaties
 - Non-aggression Pact
 - Created by the player and AI. Civilizations cannot declare war on each other for a specified amount of time determined within the treaty.
 - Longer non-aggression pacts are less likely to be accepted than shorter ones.
 - Alliance
 - Created by the player and AI. Civilization automatically call each other into wars you have declared on other civilizations (assuming you/them don't have an alliance/non-aggression pact with the declared-on civilization) or wars in which you/them have been declared on.
 - Defensive calls to arms always supersede offensive calls to arms.
 - The player can decide whether to follow through with their help, but their favor will be impacted by the decision.
 - +10 For helping, -10 for ignoring.
 - Aliens will always try to help and send troops when the player requests.
 - Trade Agreements

- Created by the player and AI. Civilizations can trade production, energy, food, and wealth.
- Trades can also be used to give gifts/favorable trade agreements that result in improved opinion.
 - Favor dependent on power value of resources given in trade.
- Peace Agreements
 - Created by the player and AI. Uses a war score to determine what side is performing better and should be getting the favorable.
 - Acts like a trade to stop the war with both sides through giving resources, money, or **outposts/cities** depending on the outcome of the war.

The picture below shows the different ways the Klequeen's personality affects the favor of a particular action in relation to how many points are needed to successfully complete the action.

Action	Relation Needed for 50% Chance	Relation Needed for 100% Chance	Xenophobic 100%	Xenophilic 100%	Spiritual 100%	Secular 100%	Compliant 100%	Noncompliant 100%	Peaceful 100%	Warlike 100%	Modifiers for Actions
Non-Aggression Pact	25	50	+20	-20	0	0	-20	+20	-20	+20	Establishing Embassy
Alliance	40	80	+20	-20	0	0	-20	+20	-20	+20	Establishing Trading Post
Rock Treaty 1	50	80	+20	-10	+20	-10	-20	+15	-20	+10	Being in an Alliance
Rock Treaty 2	60	90	+20	-10	+20	-10	-20	+15	-20	+10	Being in a Non-Aggression Pact
Rock Treaty 3	70	100	+20	-10	+20	-10	-20	+15	-20	+10	Being at War
Build Embassy	10	40	+20	-20	+10	-10	-10	+10	-20	+20	
Building Trading Post	10	40	+20	-20	+10	-10	-10	+10	-10	+10	
Improve Relations											
KEY											
Raises Relation Needed for 100% Chance											
Reduces Relation Needed for 100% Chance											

War Score Impact

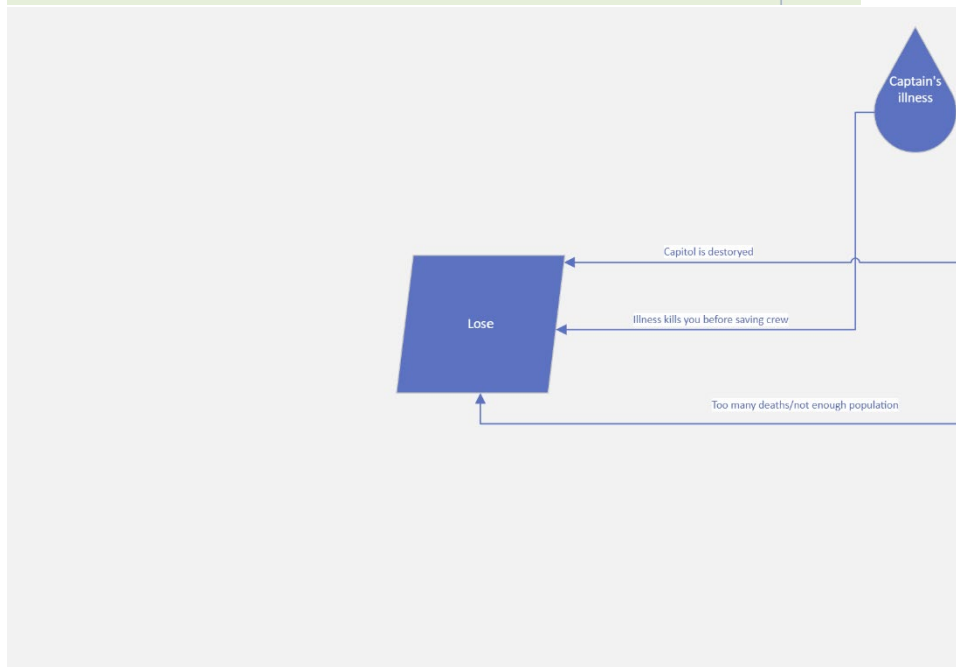
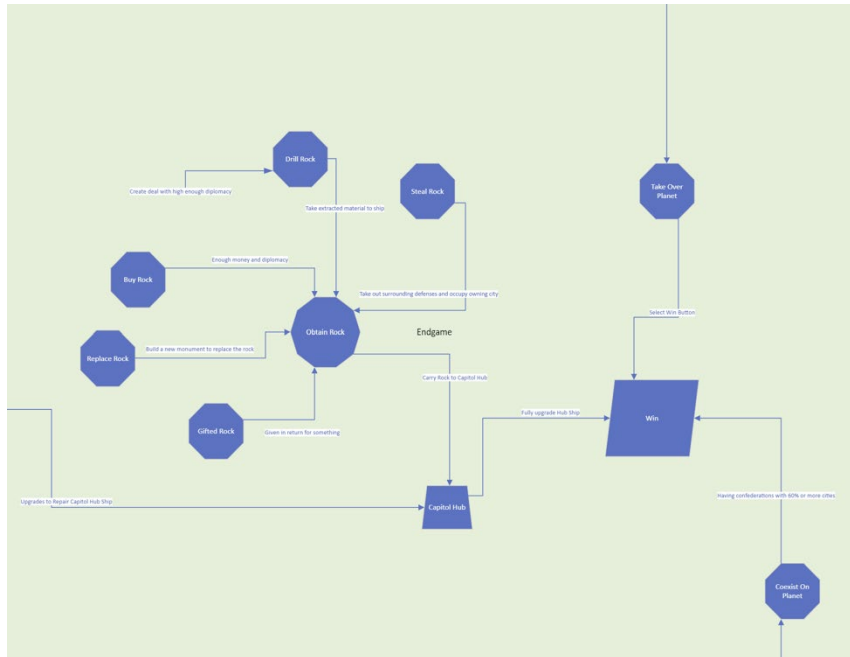
The war score will impact the chance of civilizations when they are accepting or declining diplomatic offers. The section below shows how each point of war score will affect the chance of an outcome happening or not.

- +1
 - Peace agreement chance will increase by 5%
- +2
 - Peace agreement chance will increase by 7%
- +3
 - Peace agreement chance will increase by 9%
- +4
 - Peace agreement chance will increase by 10%
- +5
 - Peace agreement chance will increase by 12%
- +8
 - Peace agreement chance will increase by 16%
- +10
 - Peace agreement chance will increase by 20%
- -1
 - Peace agreement chance will decrease by 5%
- -2
 - Peace agreement chance will decrease by 7%

- -3
 - Peace agreement chance will decrease by 9%
- -4
 - Peace agreement chance will decrease by 10%
- -5
 - Peace agreement chance will decrease by 12%
- -8
 - Peace agreement chance will decrease by 16%
- -10
 - Peace agreement chance will decrease by 20%

Endgame Loop

This loop visualizes how the different gameplay elements that occur in the endgame. The endgame is considered to have started once the player attempts to obtain the big rock from the civilization that has it in their city. The player can use different methods to obtain the rock depending on the type of civilization that has the big rock. The player has 5 different ways to obtain the rock, and 2 ways to entrench themselves on the planet. Let's look at how the endgame state is entered, played, and finished below.



The first thing the player must do is locate the Klequeen city that contains the big rock. It will spawn and function as a normal city at the start of the game, but they will have a higher power value level to make interactions with the player feel harder. The player can perform the same diplomatic actions to rock city, except there will also be a few other related specifically to obtaining the rock.

The player will have access to 3 diplomatic treaties related to the rock. Each treaty will open up a potential path to obtaining the rock. The first treaty will allow the player to buy the rock for an extreme price, the second treaty will allow the player to attempt to trade with the civilization to replace the rock, the third treaty will allow the player to drill into the rock to acquire the fuel. The player can attempt to steal the rock at any time. The player can complete an event chain to be gifted the rock.

As the player creates rock treaties with the civilization, different civilizations will declare war on the player out of anger of acquiring the rock. The first treaty does not anger any civilizations; the second will anger one civilization with the most spirituality; the third will anger the next two with the highest spirituality. Angering these civilizations doesn't guarantee war with them if the players' relationship with them is high enough.

The player must send an army to the rock city to collect whatever sample of the fuel they can acquire so that they must transport it back to the capitol hub as the last challenge of the game. Once the player has the fuel source back on the ship, they can escape if they have upgraded their capitol hub 3 times. If the ship is upgraded and the player returns the fuel, they win the game with a full victory.

The player is also able to achieve partial victories through entrenching themselves on the planet. The player can either take over the planet by conquering a certain number of civilizations or coexist on the planet by creating peace treaties with a certain number of civilizations. These endings are only achieved if the conditions are met and the player captain dies before escaping the planet, or if the player is able to conquer or treaty with every civilization on the planet. This is classified as a partial victory.

The player can lose the game by having their capitol hub occupied by an alien civilization, losing too many humans to the point where the humans can't survive, and if the captain dies before the player can secure a future for the crew (achieving one of the endgames full or partial victories). The player must maintain the human population with food and energy to keep them alive throughout the game.

Endgame Conditions

The end game starts once the player signs their first rock treaty deal with the civilization that owns the rock, if the player attempts to siege rock city, or if the player starts the event chain to be gifted the rock. These are the players' first step into seriously attempting to achieve the rock and so it is considered the start of the endgame. The method that the player uses to achieve the rock will dictate the reactions of rock city and other civilizations in the game.

Rock Treaties

Rock treaties are the way that the player creates a deeper relationship with rock city to acquire the rock. There are 3 different treaties that unlock 3 different ways for the player to achieve the rock. Each method unlocked gets easier than the prior but has harder consequences for the player not achieving the rock.

The first treaty can be requested by the player after they discover the civilization. It requires at least 40 favor with the city to achieve and allows the player to attempt to buy the rock. This treaty will not anger any other civilizations on the planet but will trigger the endgame state.

The second treaty can be requested by the player 3 “day ticks” after the first one. It requires at least 50 favor with the city to achieve and allows the player to attempt to trade for the rock. This treaty will anger the city with the highest spirituality that is not the rock city and will lower their favor with the player by 30. If the favor dips below 25, the civilization that was angered will declare war on the player.

The third treaty can be requested by the player 3 “day ticks” after the second one. It requires at least 60 favor with the city to achieve and allows the player to drill into the rock to gain the fuel source. This treaty will anger the next 2 cities with the highest spirituality that is not the rock city and will lower their favor with the player by 30. If the favor dips below 25, the civilization that was angered will declare war on the player.

Winning Conditions

Reaching any of these conditions during the game will result in a win for the player. This win is considered a full victory, as you were completely successful in the goal of the game. This section will break down how to enter the endgame state, what happens when the state is entered, and how the player achieves a victory from that state. Once the player is in a place to win the game, they must confirm on a pop-up screen that they are ready to end the game.

For the player to transport the fuel source, they need to have an army carry it back. The army must be moved onto the city tile once a deal for the rock has been made to collect it. After the army has acquired the fuel source, they will move 20% slower while they carry it. The army will only lose the fuel source if the army loses in combat and is destroyed or forced to flee. Once the army makes it back to the capitol hub, the fuel source is automatically deposited into the ship.

Buy the Rock

- The player is able to spend their wealth to buy the rock.
 - Costs 2000 wealth to acquire.
 - Must have signed the first of three rock treaties.
 - Minimum amount of 60 favor required to request trade.
 - Requested through the diplomacy section.

Trade for the Rock

- Trade for a high value number of resources.

- Costs 500 wealth, 2000 production, 2000 energy, 2000 food to succeed.
- Must have signed the second of three rock treaties.
- A minimum amount of 50 favor required to request trade.
- Requested through the diplomacy section.

Drill Rock

- Work out a deal with rock city to drill into the rock to gain the fuel.
 - Costs nothing for the player.
 - Must have signed the third of three rock treaties.
 - A minimum amount of 40 favor required to request drilling.
 - Requested through the diplomacy section.

Get Gifted the Rock

- Work with the civilization that holds the rock to help them solve a problem.
 - The player must complete a 4-event chain to be gifted the rock.
 - Required no rock treaties to be signed.
 - Event chain is started once the player has created an alliance with rock city.
 - Once the player has completed the 4th event, they are given the fuel source they need.

Steal the Rock

- Send an army to occupy the civilization with the rock to start the stealing process.
 - The army must remain still for 10 combat ticks before acquiring the rock.
 - When an occupation attempt is started by the player, all civilizations that are not currently allied with the player will get angry and declare war against the player.

Repair Ship

The HUB will require upgrades before the player is able to use it to escape. The player will have to spend resources on 3 different upgrades throughout the game before the ship is fully repaired.

- Upgrade 1: Costs 500 production, 500 food, 500 energy.
- Upgrade 2: Costs 1000 production, 1000 food, 1000 energy.
- Upgrade 3: Costs 1500 production, 1500 food, 1500 energy.

These ship upgrades will also increase the yields of the ship in each category by 1 for each upgrade.

Neutral Conditions

Reaching any of these conditions during the game will result in a partial win for the player. This win is not a full victory relative to the goal, but a partial victory. The game treats this outcome as if it were a win, but the situation you leave your crew in is not the most optimal for them. Once the player is in a place to win the game with one of these options, they must confirm on a pop-up screen that they are ready to end the game.

Conquer the planet

- Conquer the majority of the existing civilizations (66% of them).
 - If the game is ended or captain dies in this state, game ends with this ending.
- Conquering 100% of the planet will automatically end the game with this ending.

Coexist with the Klequo

- Be allied with the majority of alien civilizations (66% of them).
 - If the game is ended or captain dies in this state, game ends with this ending.
- Allying with 100% of the planet will automatically end the game with this ending.

Losing Conditions

Reaching any of these conditions during the game will result in a loss for the player. Once one of these conditions is achieved, the player will be brought to a losing screen menu that tells them how they lost and then takes them to the main menu.

- Colony conquered by aliens/losing HUB.
- Losing 95% of the human population.
- Captain dying from the serious illness before completing any other end conditions.

Quit Reaction

- Can prematurely end campaign by resigning as captain and abandoning colony at any point (Completely ending their game run)
 - The player is told that the fate of the colony is left uncertain, and the captain's fate is unknown.

Endgame Screen

Once the player has ended their game run, either through giving up or achieving one of the endings, they will be met with a final screen that shows them stats about how their run went. It will show them how many people they were able to save, how many days they spent on the planet, and how many civilizations they met during their game. From here, the player can return to the main menu or restart the game.

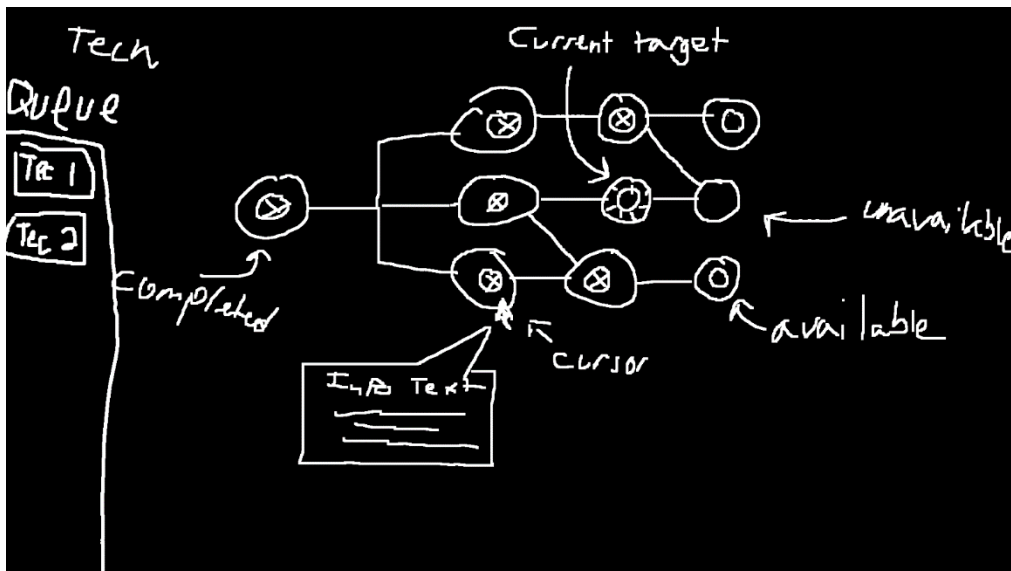
Research Trees

The research trees are upgrading that the player can achieve through completing certain objectives/achievements throughout the game. Below is a list of what these upgrades look like and how they impact the player game.

- **Adaptation tree:** Allows humans to find more efficient ways to live and build on the planet to increase their quality of life.
 - Immunity to tile's negative effects.
 - Can see past mountain tiles.
 - No longer takes moral damage from toxic spore fields.
 - Can build in oozing jungles.
 - Reduces building time for buildings.
 - Reduces building time for troops.
 - Allows for the conversion of food into energy.
 - All troops speed increased by 10%.
 - Reduces the chance of some negative events.
- **Culture tree:** Allow humans to better understand the aliens they are interacting with and work with them in unique ways.
 - Increases opinion with alien civilization by a one-time flat amount.
 - Increases the likelihood of alien civilizations accepting trades.
 - Increases the likelihood of alien civilizations accepting peace deals.
 - Reduces the likelihood of alien civilizations declaring war on the colony.
 - Reduces the alien relation threshold needed for alien civilizations to accept nonaggression pact.
 - Reduces the alien relation threshold needed for alien civilizations to accept alliances.
 - Reduces the alien relation threshold needed for alien civilizations to accept rock treaties.
 - Reduces the alien relation threshold needed for alien civilizations to accept building embassy/trade outpost.
- **Tech tree:** Allows humans to increase their technological building capabilities to better survive on the planet.
 - Unlocks upgraded versions of troops. Increasing their stats.
 - Upgrading Infantry
 - Upgrading Ranged
 - Upgraded Cavalry
 - Upgraded Shielder
 - Upgraded Scout
 - Upgraded Settler
 - Increases farm fields yield by +1.

- Increases mining stations yield by +1.
- Increases powerplants yield by +1.
- Increases storage capacity of material storage buildings by 1000.
- Extends the captain's lifespan by 3 months one time.

The upgrade tree will provide the player with upgrades to their base and troops that allow for the player to interact with the world in a more impactful way. Upgrades are gained by completing certain tasks or advancements selected in the research screen. Tasks are auto selected for the player if they do not select one themselves based on a queue system. Completed advancements will be unlocked for the player immediately to use as needed. Advancements will get harder to match the players' game progression and the number of achievements will match the number of upgrade tree upgrades.



Event System

Events will be a core part of the game loop that changes the player's state randomly during the game. Every event tick (331 ticks), the player will be faced with a situation where they must make a choice between two options. The outcomes of the events can range from being all negative, a mix of negative and positive, and all positive. Events will be sculpted to the player's power level to properly support or detract from their current game position.

The event will pop up on screen and stop the player from doing anything until they decide. Time will be paused while an event is on screen. Once the player chooses an outcome, their consequence will be immediately dealt, and the player moves on with the game. Some events can trigger multiple times in a game, others can only trigger once per game. Certain events will trigger states that will only persist for a certain number of ticks.

The event outcomes will be able to affect the values of population, energy, food, production, wealth, workers, and all the different values that tiles and buildings have. The number of resources that are used in the event scenario outcomes will scale depending on the total amount of resources that the player has. The number of resources gained or lost will be 15% of the player's current resource amount. Any exceptions for resource calculation will be listed here (none right now).

Types of events can range from human equipment breaking down, planet weather events, planet flora and fauna events, human breakthroughs, alien actions, resource gathering (good and bad), tile specific, combat or troop related, diplomacy related, and end game related.

Event Stories

Event stories will be connected event chains that take place linearly throughout a game. If a player is prompted with an event story, their decision will be remembered in the next connected event and have an impact on the new event. Each story will operate with a branching tree model with about 5 different choices/events for each story. Event stories will not be shown differently to the player i.e., the player should think it is just a normal event the first time they encounter it. Each event will still provide the player with an immediate consequence, but deeper story endings will result in deeper positive or negative consequences to the player's game.

Event List

This is a list of the events that can occur in the game. They will have the situation detailed, along with the resources the player can gain or lose from the situation.

- Situation
 - Choice 1
 - Outcome 1
 - Choice 2
 - Outcome 2
 - Single or Multiple Trigger

- A lost crew member thought to be dead has returned!
 - You got him fed and healed.
 - +1 Population
 - Multiple Trigger
- Scouting robots find a stash of materials for the crew.
 - The robots collect it and bring it back.
 - +5 Production
 - Multiple Trigger
- The crew finds some mold growing on the side of the ship that is good to eat.
 - The mold gets collected
 - +5 Food
 - Leave the mold there
 - +0 Food
 - Multiple Trigger
- Your mining rig hit a large deposit of production resources!
 - Obtain the extra resources
 - +1 production for the next 10 resource ticks
- Toxic spore field has a massive release of Toxic spores, only seen once in 10 generations.
 - The workers perish from the blast
 - - # = All workers on toxic spore field tile
 - Single Trigger

Procedural Generation System

The procedural generation system is designed to make certain variables of the game randomized in a controlled manner to make each game feel situationally unique. Within a game instance, objects that will be procedurally generated include the tile type clusters and locations, tile resources, player spawn location, number of alien civilizations spawned, alien civilization spawn locations, alien civilization spawn set-ups, alien civilization personalities, and rock spawn point. The procedural system will set limits to what, where, and how tiles, civilizations, player spawn point, and the rock can spawn in the PREMADE area (map hex arrangement is static). The alien cities and tiles will have prefabs of different premade arrangements that will be chosen at random and placed into the game that meet the limits set by the procedural system. The procedural system will track the maximum amount of a certain tile type, the minimum amount of a certain tile type, the maximum number of civilizations, the minimum number of civilizations, maximum and minimum amounts of resources in each tile type and limits in the alien's personalities.

Save System

The save system will automatically save every 1440 ticks (30 days in game time). The player can almost manually save through the pause menu. Saving will record troop data (position, health, moral, stats), tile arrangement, tile resources, research progress, on-going battles, buildings, current in-game date, alien personalities, alien opinion of the player, current event chains, events on cooldown or that are no longer available to trigger, and current number of resources the player has.

UI

The UI is intended to give the player full control over their colony from anywhere on the map, making sure the player is able to complete their task no matter where they are on the map.

Visual Theme Futuristic/neon/metallic for humans, ALIEN steampunk vibe for aliens (pre-WWI/Victorian/ early industrial age).

- Both sides' armies, cities, troops, and key-points stand out from the planet

Control Layout

This is a list of all the player actions and the default button to activate the action.

- WASD or arrow keys to pan
- Scroll wheel to zoom in/out
- PgUp and PgDn to increase and decrease the time scale by 0.5, with a max of 2 and a minimum of 0.
 - Alternatively, you can select a time scale preset in the top-right corner of the screen, beneath the date display
- Left Click to select
 - Right Click to deselect
- When hex is selected (by clicking the sphere in the hex):
 - 1 to enter building mode
 - 1 – 4 to build different buildings
 - Can alternatively enter building select by clicking the “+building” box in the tile menu, then clicking a building option to build a building
 - 3 to add workers to selected tile (click on tile first)
 - 4 to remove workers
- When a troop is selected (by clicking the sphere at their feet):
 - 2 to enter army merging mode
 - Click on another friendly unit when in merging mode to combine
 - 3 to split up armies (need to have combined first)
 - Click an enemy troop to move to attack
 - When a battle begins, both troops vanish and deal random amounts of damage to each other every 2 (scaled) seconds until one troop is killed, then that troop reappears with its updated health values
- When an outpost building is selected (by clicking the box around the building):
 - 1 to enter troop building mode
 - 1 to build a generic troop
- When a battle is selected:
 - 1 to make your army flee from the battle and teleport to the closest outpost.
- Use ESC to bring up pause menu
 - Can also click left uppermost button (looks like a P) to bring up pause menu
- Press C to pull up the cheat menu
 - There are Input Resources and Desired Value text input fields with a Confirm Change button.
 - For Input Resources type “1” for Energy, “2” for Production, “3” for Food, or “4” for Wealth.
 - Then type the amount of the resource you want in Desired Value.

Player Agency & Experience

This section explains the tangible mechanics of the game and how specifically the player can interact with them. Anything the player can select and click on will be covered here.

On The Map

- Units: All units can be selected to show their statistics. Enemy units' stats can only be seen during combat with the player or allied-nations. (These stats can be found by clicking on the battle occurring on the tile)
- Player Controlled Units:
 - Infantry, Cavalry, Ranged, Shielder, and Scout: Can move across spaces, engage in combat with units of a warring nation, or siege buildings of a warring nation. (Each unit has varying levels of effectiveness at each action)
 - Settler: Can move across spaces and build outposts on unclaimed land.
- AI Controlled Units: If they have not engaged in combat with the player, clicking on them shows name only. AFTER engaging in combat, stats are revealed. If they are allied, all stats are visible.
- Tiles: All tiles can be selected to show their statistics.
 - Empty unclaimed tiles: An outpost may be built on them, adding all unclaimed tiles within a certain radius to your territory. Settlers must be sent to them and ordered to build one.
- Outpost tiles (player's territory): A building may be built or the resources of the tile may be harvested if workers are sent to them and ordered to build one.
- Player Capitol: Opens the ship repair status menu.
 - Empty tiles claimed by neutral nations: Can be crossed by units.
 - Empty tiles claimed by Enemy nations: Can be crossed by units and certain buildings can be built if the nearby city has been captured.
 - Empty tiles claimed by Ally nations: Can be crossed by units and certain diplomatic buildings can be built.
- Buildings: All buildings can be selected to show their statistics.
 - Player-owned buildings: Can be demolished for extra resources or converted to other buildings.
 - Enemy-owned buildings: Can be sieged by offensive units. Sieged buildings can be either demolished for resources or kept running, yielding the potential resources for the player.
 - Ally-owned buildings: Cannot be accessed.
- Enemy Alien City: Clicking on the city brings up that nation's diplomacy menu
- Ally Alien City: Clicking on the city brings up that nation's diplomacy menu