

Bee the Change

Game Design Document

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1. Five Sentence Pitch

Bee the Change is a turn-based government simulator game in which you are a bee politician trying to be reelected during the environmental collapse of the world. During each round, there are two phases. First, you must choose between a set of policies to respond to natural disasters. Second, you choose which honeycombs to build in. The game ends after 10 turns when the election occurs. You win if you are reelected, you lose if you are not.

2. Audience

Bee the Change is a strategy game available on Windows and Mac OS. The target audience of this game is people who enjoy playing strategy games on the computer. Moreover, Bee the Change is a game with high educational value. Our target audience is more specifically children from 6-18 years old who can learn the importance of protecting the environment through playing the game.

3. Game Details

Opening Paragraph:

Welcome to Bee the Change You are Barry, a bee politician, in charge of the Hive. This island is composed of honeycombs, each with its own characteristics and satisfaction ratings. Your job is to decide between political policies relating to natural disasters in the Hive's future. Each decision will change the fate of a honeycomb on the island. You must balance the happiness of each honeycomb and campaign strategies to be reelected and win.

Overview of Game and Game Mechanics:

The game revolves around a hive of bees. As their elected leader, you must respond to emergencies to the hive and choose where and what to build. Many of the events that you must respond to are global warming related. Over the span of 15 turns the player will improve their popularity with the colony by improving the hive's core traits, passing policies, and responding well to adverse events.

There are 5 traits associated with the hive that, depending on the player's actions, can go up or down. These traits are: Honey Production (HP), Bee Rights (BR), Flower Density (FD), Life Expectancy (LE), and Happiness (H). Each honeycomb in the hive will care solely about three of these traits. The three traits each comb cares about are ranked in order of importance to the bees that live there. These traits directly determine your popularity in that honeycomb.

Gameplay is divided into two phases:

Phase 1: Event

At the beginning of each round, an event will occur causing the player to choose between two options of how to respond. For example, one event called, "The hottest day yet" would have the description: "The human's monsters of metal have choked our forest in heat. Today the sun beats down with a dangerous intensity" Then you would choose between giving the worker bees the day off (HP↓)(BR↑)(LE↑), and making them work anyway (LE↓)(HP↑)(FD↑).

Phase 2: Build

In this phase, you will have the opportunity to build or upgrade a structure in any honeycomb. This structure will affect the one hive trait for the comb it is built in and all adjacent combs. The following buildings are available:

Honey Collector (HP↑)
Break Room(BR↑)
Pollination Station(FD↑)
Bee Hospital(LE↑)
Dance Club(H↑)

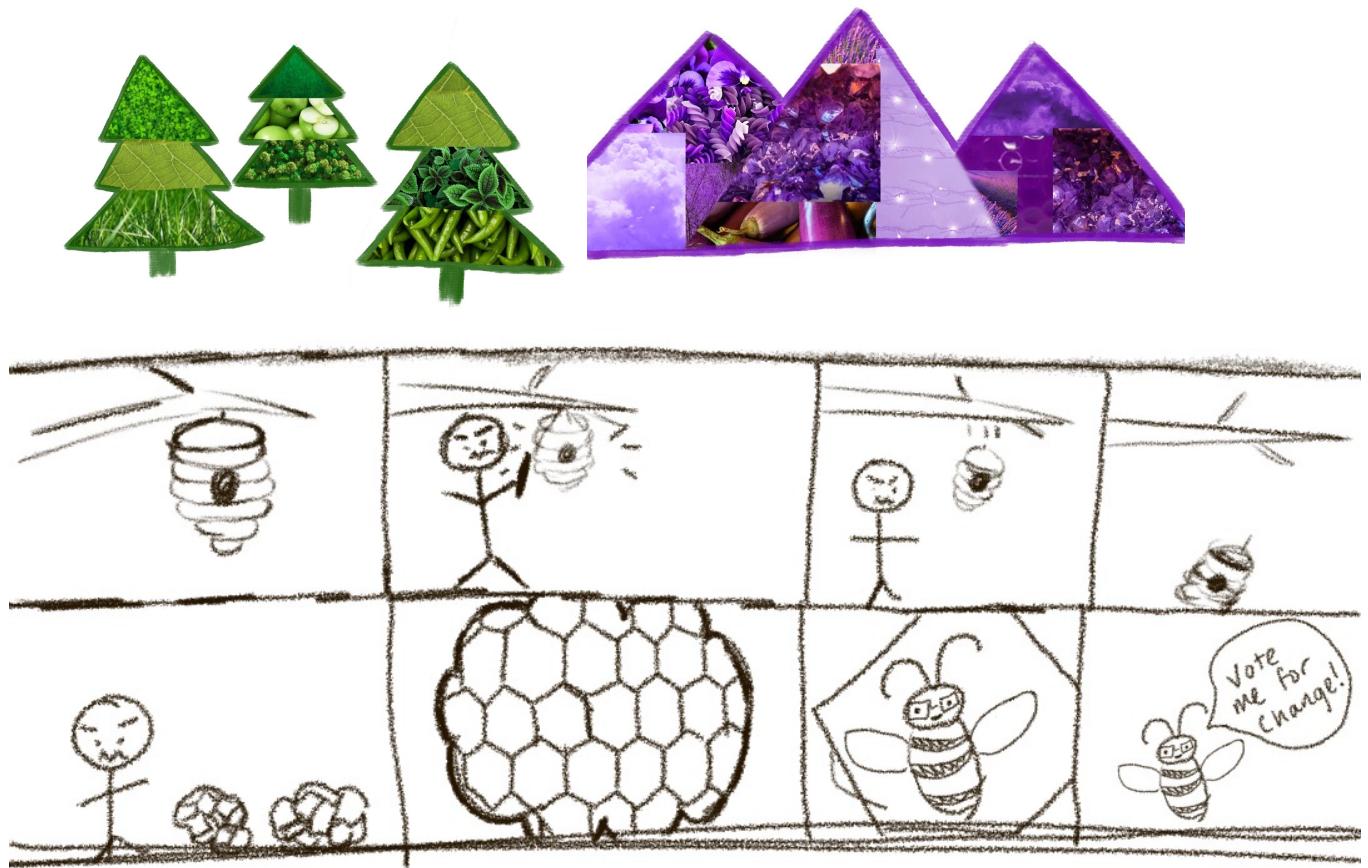
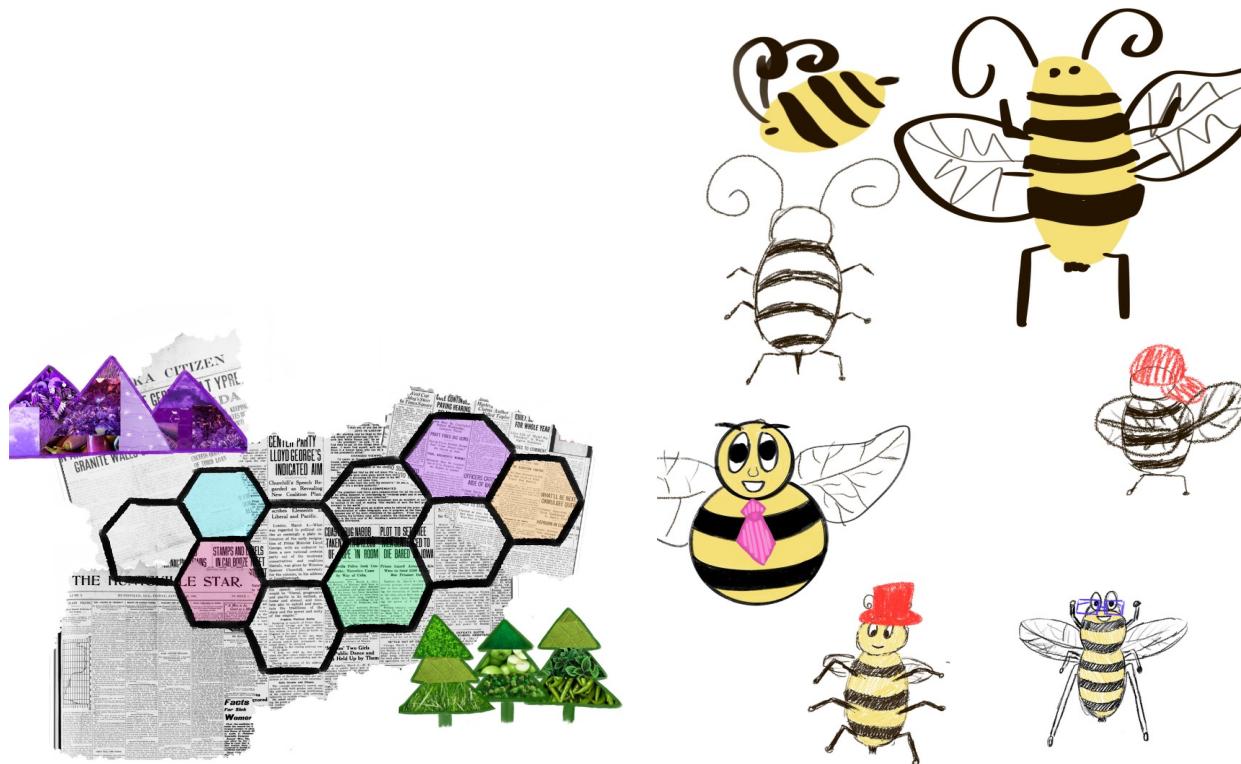
Music:

Soothing ukulele chords (Background music for most portions of the game)
Emergency siren of some kind; faster ukulele chords (When event occurs)
Sounds of hammering (when structure is built)

Characters:

Barry, the bee politician, is the most important character in the game. Players can control his decisions on policies, determining the fate of the honeycombs on the island. Barry carries a lot of weight on his back; he must make decisions that are going to harm honeycombs on the Hive, possibly killing bees in those areas.

4. Storyboards, Samples, Diagrams, Maps





5. Competition Scan

Our main competitor is other light strategy environmental games like [World Rescue](#) (ZU Digital, 2017). The strength of our game is our special bee theme which differs from other games that generally adopt the realistic style. Moreover, we aggregate political factors into our games, which is also innovative to the genre of the environmental game. Compared with our competitor, our main weakness may be our background story. Bee the Change does not have complete background information, which may cause our game to lack depth.

The inspiration of Bee the Change mainly sprouted from two games: [Catan](#) (Klaus Teuber, 1995) and [Civilization VI](#) (Ed Beach, 2017). Similar to Catan, Bee the Change also adopts a hexagonal map (hex map). Since the distance between the center of each and every pair of adjacent hex cells is the same, the hex map makes the game interface to be more compacted and better fitted to curved surfaces. Moreover, the mechanism of Civilization VI inspired us. Similar to Civilization VI, we adopt the turn-base system which makes the game organized. The most intriguing part of Civilization VI is to balance science, the army, and culture. Thus, we create a unique parameters system for Bee the Change, and players need to make appropriate decisions to reach a balance, which is challenging but also interesting.

6. Annotated Bibliography

Fixaris Games. Sid Meier's Civilization IV. 2K Games, 2005.

The mechanics of Civilization VI inspired us. Similar to Civilization VI, we adopted the turn-base system which makes the game organized. The most intriguing part of Civilization VI is to balance science, the army, and culture. Thus, we create a unique parameters system for Bee the Change and players need to make appropriate decisions to reach a balance, which is challenging but also interesting.

Goethe O. (2019) Visual Aesthetics in Games and Gamification. In: Gamification Mindset. Human–Computer Interaction Series. Springer, Cham.

https://doi.org/10.1007/978-3-030-11078-9_8

This article describes different game aesthetics and how aesthetic experiences greatly affect gameplay. The game aesthetic should set the mood and reinforce the theme/concept. It should also help to immerse the player into the game. Aesthetics also help to boost games where the content might be a bit dry. Some visual elements that set the game aesthetics in a game include color, tone, and mood. Feedback during the game creation stage is also essential to improving the game aesthetics and the game overall.

Klaus Teuber. The Settlers of Catan: Award-Winning Game of Discovery, Settlement & Trade. Mayfair Game, 2007.

Bee the Change inspired us to adopt a hexagonal map (hex map). Since the distance between the center of each and every pair of adjacent hex cells is the same, the hex map makes the game interface to be more compacted and better fitted to curved surfaces. Also, the artistic style of Catan inspired us. They painted the forests and mountains in 2D vividly. We learned a lot from their drawings.

The Morality of Shadow of the Colossus - YouTube. Folding Ideas, 27 Feb. 2017,
https://www.youtube.com/watch?v=jhJ_qTU61g4.

The YouTube video *The Morality of Shadow of Colossus* follows the game storyline and explains how the creator Fumito Ueda uses game tactics to create empathy in the game. Specifically, Ueda provokes emotions other than empathy like uncertainty and fear. The use of other emotions causes the player to feel for the characters and invest in the bond between them. In our game Bee the Change, we hope to provoke empathy in a similar way by having the player invest in the satisfaction of each honeycomb. Barry must decide between policies, putting pressure on the player to feel for each honeycomb and want to please all the bees.

"Reaching the PlayStation 4's most beautiful moment takes a lot of patience". Jacob Geller.
<https://www.polygon.com/2020/3/11/21170580/beautiful-moments-playstation-4-last-guardian>

Another one of Ueda's games that provokes emotional empathy is The Last Guardian. The Last Guardian is a story about a boy who controls the furry animal, Trico. The Last Guardian is different from other games because of the indirect game mechanics. The

boy cannot directly control the animal, creating a bond between them as the game is played. This can apply to our game in the way that Barry interacts with the different honeycombs. He can directly decide the fate of some and indirectly influence the traits of others by constructing buildings.

7. Milestones

Using the production schedule below, identify 4 sequential milestones to track your team's progress towards a finished project. For each:

1. List production goals: including art, narrative, sound, development, mechanics etc. and the team members responsible for them.
2. Summarize the resources, technical and conceptual, like books, articles, tutorials, videos, etc.
3. Explain the unknowns; those aspects (tech, patterns, culture) which you don't yet know or understand, in order for your instructor to help you.

Milestone 1: Playable greybox

- The link (Github or Google Drive) to download your current project.
 - <https://github.com/JerryLi620/Bee-the-Change>
- List the progress you wanted to make and what you accomplished.
 - Pauline: Basic bee character and ways to customize the character. Perhaps a couple animations for bee movement.
 - Claire: I wanted to complete the environments and I was able to complete them as well as the final map.
- What did you do and how many hours did you work on your portion?
 - Pauline: I did background research on bees and how they communicate, and their behavioral patterns. Then, I looked at a few inspirations for ways to customize characters. I worked on this milestone for about 9 hours, 3 hours for brainstorming and 6 hours for working with photoshop and animations.
 - Claire: I worked on the environments/buildings for the pop-ups and the final map for the game as well. I spent about 7-8 hours on the artwork itself and a couple other hours brainstorming
- What was the hardest part? How did you overcome it? What did you learn?
 - Pauline: The hardest part was figuring out a way to customize the bees. This was difficult because I was trying to keep the same simplistic style while trying to make obvious changes to the bee. I learned how to use an overlay in photoshop and how to use different blending options.
 - Claire: The hardest part for me was deciding which perspective the game player would view the map and buildings from. I overcame this by comparing different perspectives and choosing the one that made the most sense and made gameplay flow smoothly. I learned that perspective is important when designing the artwork for a game.
- List the materials (readings, videos, etc.) you used in your work.
 - <https://lisbdnet.com/how-to-draw-environment-concept-art/>
 - <https://discover.therookies.co/2019/02/23/creating-compelling-3d-game-environments/>

- <https://theconversation.com/curious-kids-how-do-bees-make-honey-143450>
 - <https://www.epa.gov/pollinator-protection/colony-collapse-disorder>
 - <https://www.adobe.com/creativecloud/photography/discover/overlay-images.html>
 - <https://helpx.adobe.com/photoshop/using/blending-modes.html>
- List specific questions (3-5) you have about your game that you would like to discuss with the class. These can be about a tech issue, requests for feedback on art, story, etc.
 - How can we communicate better/more effectively with the team members in the other class?
 - What are more ways to customize a simple character?
 - What type of art elements are included in our game and can be worked on for the next milestone?
 - Typography
 - Opening Scene
 - More bee movements/animations
 - Natural disaster animations
- List specific questions for your professor. What tutorials or examples would you like the professor to share?
 - What are ways we can add more complexity to our artwork without changing the simplistic style?
 - What suggestions do you have in terms of us being able to contribute more to the game production as artists in the team?
- Questions for the Team:
 - Opening scene? (What is the concept for the artwork?)
 - Specifics on how art aspects fit into the game?
 - Where exactly is the bee going to be in the game screen?
 - Will it be placed in the scene? On the corner of the textboxes?
 - 2048 x 2048?
 - What will the game button features look like on screen?
- [Rubric](#)

- Comb prefab
 - ~~Hive traits tracker~~
 - ~~Popularity tracker~~
- Grid of Combs
- Utility to click on combs to pull up menu
 - ~~Display hive traits~~
 - ~~Display popularity~~
- Button to make next turn
- Hive tracker UI
 - ~~Top right stat display~~
- Art for hexes and buildings (Claire)
 - ~~Basic honeycomb hexagon with bees and a house in the middle~~

- ~~Specialized honeycomb for different buildings~~
- Art for customizable bee (Pauline)
 - Basic bee character
 - Different suit combinations
 - Bee animation (waggle?)

Milestone 2: Playable version

A successfully achieved milestone 2 will be the same as milestone 1, with art and music added, and the ability to move between turns and place buildings.

Paige:

- Opening Scene
 - Start a customizable character
 - Button to open playable scene
 - UI background
- List of policies (at least 10)
 - Event and resulting policy pair
 - What traits does it effect and how much

Jack:

- Internal calculations
 - How you get overall hive traits from individual hexes
 - Calculate popularity
 - Research resource management
- Feedback mechanisms
- Camera zoom slowly

Jerry:

- UI navigation for action bar
 - Trigger policy for next scene
- Refactor Position of map/UI
 - New scene for policy decision

Artists:

- Game Poster
- Art:
 - Game text typography
 - Storyboard

Milestone 3: Playable version nearly complete

A successful milestone 3 will fully implement the mathematical equations to calculate voter percentage based on the hive traits and will have all event cards completed.

Design/art:

- Art implemented onto each hex
- Transition from opening scene to map scene
- Wireframe UI ideas

UI:

- Some kind of system to tell user how what results his actions are having
- Implement bars into hive tracker
 - Transition to show change in bar (Paige)
- News can become feedback system for build/policy decisions

Other:

- Events are connected to stat changes
- Implement random events
- Music

11. Milestone 4: Finished Game with Documentation

A successful milestone 4 will be fully completed, with all in game systems balanced and complete documentation.

- Improved opening scene (smoother writing)
- Sound for opening scene
- Edit ui so policy pop up doesn't cover half of the UI
- Change food stamps to honey stamps
- Urban vs rural change to center vs rural
- Need to know more about the hive
- Flower density increase with influenza event
- Add outcomes to show the after effects of a decision and how it affected statistics
 - Expand news
- Explain that the initial map is aesthetic
 - Change initial map so that the buildings aren't confusing
- Building menu is hexagons to add
- Fix random event appearing twice
 - Shuffle "source" list into random list of policy choices to be chosen and pop policy off when used