Family FEWd

4/2/2022

Game Design -

There will be 4 levels in the game, the first 3 represent the different impacts and the final will be a test for all of them. A completion of the game will be to finish all 4 levels. You can not go back a level, you must finish the game.
Users will be told their score at the end of each level.
Once completing the game, the user will be given the information to send to their teacher. They will save this information by clicking on the download results button and then can email it to their teacher.

Level Design -

All of the levels will have the same items. We will choose items that specifically get the results we are looking for.
Users must grab a specified number of items, they will not be able to add more or progress with less.

3 Food Items Per MyPlate Category
1: one good for water use
2: one good for energy use
3: one good for gas use

The player will select one item per MyPlate Category. To incorporate MyPlate requirements, the player will choose one item that is worth the entire MyPlate daily requirement amount per category.

Score Changes -

For scoring we decided to go with a system that prints out a letter grade, to help the teachers out. We will do the scoring based on the best possible score they could have gotten and the worst possible score, assigning a letter grade as satisfied. A: 100 to 81. B: 80-61 C: 60-41 D: 40-31 E: 30-21 F: 20-0.

<u>Total Score is capped at 100</u>

- Find the maximum impact that can be obtained on any given level
- Find the impact that was obtained by the player’s choices on a given level

- Find the proportion of the player's impact versus the worst case (helpful for defining tiers)
- Assign a score out of 100 based on predefined standards
    - As there are 3 categories, there can be 3 standards with each of the impact categories being able to award the player a maximum of 33.33 points

Example:

Total worst case impact on a given level (in their respective units):

- CO2: 4.5 (best case: 2.5)
- m3: 1.5 (best case: 1.0)
- KWH: 8.0 (best case: 4.0)

	CO2	**m3**	**KWH**
Tier 1 (best case – 33.33 pts)	2.5	1.0	4.0
Tier 2 (average case – 23.33 pts)	2.51 – 3.0	1.01 – 1.25	4.01 – 6.0
Tier 3 (worst case – 13.33 pts)	>4.5	>1.5	>8.0

In a realistic scenario, based on the complexity of a level, we can have many more standards for tiered scoring.

UI Changes -

- Add a way to toggle music/sound
- Added hover behavior: Items are darkened when selected and buttons get bolded or darkened.
- Finalized the design of the results window.
- Feedback sounds when hovering/grabbing items.

Design Change Rationale -

We made these changes to help implement everything Dr. Wallace and Dr. Daignault wanted us to include in the game and to address feedback. Our design is mostly similar to what we presented as there was not much feedback on the design, just to add some things to it.