

Heuristic Evaluation of TinyPlanet (Team mömo)

1. Problem Statement

TinyPlanet is a mobile app where users can complete environmentally-friendly challenges to grow a virtual planet, which reflects their real-life environmental impactfulness and habits, as well as visualize their resulting personal benefits and compete with their friends' planets.

2. List of Heuristic Violations

1. H2: Match between system and the real world / Severity 2 / Found by A

On the Eco-Action Log page, it isn't immediately clear that the white up arrow is clickable because it doesn't have enough contrast with the planet image in the background. Indicate more clearly that the arrow is clickable (e.g., adding a shadow or glow to the arrow, removing the image).

2. H2: Match between system and the real world / Severity 2 / Found by A, C

On the Personal Benefits page, it isn't clear how the numbers and the progress semicircles are correlated. Why is the 100L water bar half-filled? Does it mean that the user's goal is 200L, so the user is halfway to reaching their goal? The curved bars above the icons make it seem like the user is trying to reach a certain goal by filling up the bar. However, I don't think the app incorporates this kind of overall goal setting, so this may be confusing to users and make them think that they are trying to achieve some goal for each of the categories. Indicate what the progress semi circles represent (e.g., add labels to represent the scale, add an informational button). Alternatively, just have the icons (and get rid of the curved bars) so users aren't confused about if they are trying to achieve some overall goal for each of the categories, since there aren't goals in the app.

3. H2: Match between system and the real world / Severity 3 / Found by B

The flow of setting goals, logging actions and monitoring progress is not clear. As a user, I only create eco-actions, but it is not clear whether that is a goal or a task I executed. The recommendation is to use familiar language and a clear definition of words (goals, actions, logs/progress, e.g.)

4. H2: Match between system and the real world / Severity 2 / Found by A

On the Eco-Action Log page, the user might not know what the numbers represent. (items/actions/objects/routines?). The meaning of the numbers is only explained once, when they first pledge to complete the Eco-Action. For example, when the user initially decided to do "Compost Leftovers", they might have remembered what the "03/10" meant, but now it might not be clear to them whether the numbers mean they composted leftovers of 3 different meals, or on 3 different days, etc. Indicate what the numbers mean (e.g., add labels to represent the scale, add an informational button).

- 5. H7: Flexibility and efficiency of use / Severity 3 / Found by A, C**

On the Eco-Action Log page, after adding “Reuse Paper”, the “Add Eco-Action” button suddenly disappears. What if the user wants to pledge to complete more than 4 Eco-Actions? Add the button back, or add an explanation of why the user can’t have more than 4 Eco-Actions at a given time. Alternatively, put the “Add Eco Action” button at the top of list and have all the in progress eco actions below it, so that way the button is always in the same place and easy for users to find.
- 6. H3: User control and freedom / Severity 3 / Found by A**

Once an Eco-Action is added, there is no way for the user to delete it. What if the user doesn’t want to complete the Eco-Action anymore or added it by accident? Support deletion of Eco-Actions, or add an explanation of why the user can’t delete an Eco-Action once they pledge.
- 7. H3: User control and freedom / Severity 3 / Found by A, C**

When adding an Eco-Action, the pledge is not customizable. What if the user wanted to go above and beyond and reuse 100 sheets of paper (and would find it annoying to have to pledge 4 times to the 25 sheets action)? Alternatively, what if the user found 25 sheets to be too ambitious and would like to start out with 10 sheets instead? Support customization of pledge level of Eco-Actions, or add an explanation of why the user can’t customize an Eco-Action. For example, maybe make a drop down menu of options of number of sheets, rather than making 25 the only option, to give users flexibility.
- 8. H2: Match between system and the real world / Severity 3 / Found by A**

From the Eco-Action Log page, the Planet Rivalry page is accessible through a hamburger menu. However, once the user is on the Planet Rivalry page, they must use a back arrow to return to the Eco-Action Page. This is confusing because the point of a hamburger menu is to make different pages easily accessible from each other by returning to a common point. Include the hamburger menu on the Planet Rivalry page to make the user flow more intuitive and consistent.
- 9. H4: Consistency and standards / Severity 2 / Found by A, C**

On the Reuse Paper Eco-Action page, it is unclear whether the back arrow and the “No thanks” button would both bring the user back to the List of Eco-Actions page. If this is the case, consider removing the “No thanks” button because having multiple user flows for the same task can be confusing; you can assume users will click the back button if they are not interested. Otherwise, add an explanation (e.g., in an onboarding tutorial) of what the “No thanks” button does.
- 10. H10: Help and documentation / Severity 3 / Found by A, B, D**

There is no onboarding tutorial. Since the app involves a lot of numbers and unique terminology and pledging to an Eco-Action appears to be a significant commitment,

consider adding a tutorial that explains the significance of the numbers and Eco-Action pledging.

11. H5: Error prevention / Severity 3 / Found by A, C

On the Neptoon page, the concentric white circles appear clickable, but it is unclear what they represent or if they are in fact clickable. (In addition, there are no such circles on the Jupyter image, though this is more of a consistency issue.) Also, since the target icon at the top of “Personal Benefits” screen is the same color as the menu, I thought it was clickable. If the circles are clickable, add an explanation of what they represent, -0 add them to the Jupyter image as well, if applicable. Otherwise, if you don’t want them to be clickable, consider removing them, as they could result in the user being frustrated with mistakenly clicking something that isn’t clickable. For the target icon, I would just get rid of it, since it doesn’t seem to be adding much and it’s not necessary to have icons in the title bar.

12. H2: Match between system and the real world / Severity 1 / Found by A

On the pop-up window that appears after completing “Recycle Cans”, the only way to dismiss the window is by clicking the x in the upper right hand corner. Given that the user has just successfully completed an Eco-Action and has added an animal to their planet as a result, it may be clearer to the user if there were a confirmation button on the pop-up (e.g., a green “ok” button) to acknowledge the importance of the just-completed action, instead of just a gray x. Consider adding a confirmation button to the pop-up to attach more significance to the congratulations message.

13. H8: Aesthetic and minimalist design / Severity 2 / Found by A, C

On the Neptoon page, it is unclear what the significance of “Day 34” is. Is it just keeping track of how old the user’s planet is? Or is there some sort of challenge involved where users can compete to see whose planet improves the most within a certain time period? In addition, based on the Planet Rivalry page, it appears that the day count does not matter in the ranking system; only the animal count is taken into consideration. If this is the case, the day appears to be extraneous information. Similarly, when adding a new Eco-Action, the number of people who have completed the action is not adequately explained; does this mean that the action is easier and the reward is lower if more people have completed it? And what if you don’t go on the app on some days - is this taken into account in the day count? Consider removing these counts, or add an explanation (e.g., in an onboarding tutorial) of what they signify. Alternatively, make the day count a streak concept where it’s like how many days in a row you’ve logged an Eco-Action.

14. H1: Visibility of system status / Severity 3 / Found by A

On the “Reuse Paper” page, clicking “Act now” takes the user directly back to the Eco-Action Log page with the new action added. This transition is quite sudden, so the user might become confused about what happens in the system after they click “Act

now” since the new action suddenly appears on the list. Furthermore, pledging to an Eco-Action is a major commitment, and the user might appreciate more advance warning before they confirm their pledge. Add a confirmation screen after “Act now” is clicked asking the user to “confirm commitment” to the Eco-Action.

15. H1: Visibility of system status / Severity 1 / Found by B, C

The main screen displays a planet. Even if the illustration is beautiful, the user does not know if this is a loading screen. I would recommend to add a button or make it some sort of login page.

16. H8: Aesthetic and minimalist design / Severity 1 / Found by B, D

As a user landing into the “Reuse paper” screen, there is too much information. Suggest to add a vertical scroll to declutter the screen or organize the information into better sections to strengthen the visual hierarchy and distinguish actionable information from informative content.

17. H6: Recognition rather than recall / Severity 2 / Found by C

When you click “Add Eco Action,” the title of the next page says “List of Eco-Actions”.
Fix: I would change it to “Add Eco Action” so that it is consistent and reminds users what they are doing.

18. H2: Match between system and the real world / Severity 1 / Found by C

On the page where user is adding an eco action, the language under “Water Usage” is not consistent. “Take shorter shower” vs. “Use a rainwater tank”. Similarly, under Waste Reduction when adding eco-action - bring your own mug where? Also, “Find Friends” text in search bar doesn’t indicate that you’re only finding friends to compare planets. Make the language more specific and that all the actions are understandable for users (e.g., reduce shower time by 30 seconds, bring own mug to coffee shop, “Find friends to compare planets” to indicate that the goal of searching is to compare planets with that user, etc.).

19. H4: Consistency and standards / Severity 1 / Found by C

The + buttons when adding an eco action don’t do what I would intuitively expect them to do. It seems like a shortcut button to just adding the eco action and might be confusing for some users. I think a different visual, like the arrows on the eco action progress bars, would make more sense for it to go to a page with more info, rather than just simply adding the eco action.

20. H7: Flexibility and efficiency of use / Severity 1 / Found by C

When logging the Recycle Cans, automatically having the greyed out smiley there could influence users’ responses. Maybe have something more neutral / not a face so that users are able to select their own without any influence. Maybe a question mark or empty box or something.

21. H4: Consistency and standards / Severity 2 / Found by A, C

On “Planet Rivalry”, the back button has different functions for when you have selected a friend vs. when you have not. I would add a little ‘x’ button somewhere to exit viewing another planet, and reserve the back button for only when you are going back to the menu.

22. H2: Match between system and the real world / Severity 2 / Found by B, C

On Planet Rivalry, it’s not clear what the other planets represent. I assumed they might be your friends, but since I don’t see a way to add friends, I’m confused. Also if did represent your friends, what if you had 100 friends? It’s not practical to show them all on that page.

Fix: Change the graphics so that it’s clearer what they represent.

23. H8: Aesthetic and minimalist design / Severity 1 / Found by A, C

The text on planet rivalry of usernames and planet names looks a little “off” when it is indented below. Align the username text under the planet name or put in parentheses next to it.

24. H1: Visibility of system status / Severity 2 / Found by A, C

There is no way to view past logs of emotions, notes, photos for an eco-action on a particular day. Maybe have a calendar view of past eco-actions taken, or implement a different way to view the past emotions, notes, photos data.

25. Aesthetic and Minimalist Design / Severity 1 Found by D

When adding a new eco-action the screen explaining the results is a little cluttered. As a user I was a bit overwhelmed and decided not to read the screen. This may result in user’s missing out on key information on messaging the app wants to promote.

26. User Control and Freedom / Severity 1 Found By D

After completing the first task I began looking for where to find the next task. I noticed two button indicating there was another screen. I tried to swipe to find the other screen. It took me a while to find the area that could be interacted with. Therefore I think the whole screen should be able to interact with a swipe.

27. Flexibility and efficiency of use / Severity 2 Found by D

I noticed when trying to get back from the planet rankings. The screen took me back to where the slide out menu was still there. As a user I was expecting to be taken directly back to the main eco-task screen.

28. Recognition rather than recall / Severity 2 Found by D

When completing the task of comparing my planet to another user's planet. It took me awhile to realize the extra planets were my friends and that was how I would compare. I

think the planets could have labels of what user's they are and it would help me recognize their purpose

29. Error Prevention / Severity 2 Found by D

When the slide out menu appears, if I click the far edge of the screen I am taken to the screen where I can track my progress. As a user I am expecting to go back to the page where we can log eco-tasks.

30. Consistency and Standards / Severity 1 Found by D

It is not clear when we track progress whether these accomplishments are consistent with one or all of our eco-tasks. The task was to track progress of one of our eco-tasks but it seems that the progress is associated with all of the tasks.

31. Aesthetic Severity 1 Found by D

The design changes pretty heavily when logging eco tasks and adding to their results. It was a bit of a shock as a user, it did not feel like I was using the same app. I think a consistent design would create a more coherent experience for the user.

3. Summary of Violations

Category	# Viol. (sev 0)	# Viol. (sev 1)	# Viol. (sev 2)	# Viol. (sev 3)	# Viol. (sev 4)	# Viol. (total)
H1: Visibility of Status	0	1	1	1	0	3
H2: Match Sys & World	0	2	4	2	0	8
H3: User Control	0	1	0	2	0	3
H4: Consistency	0	2	2	0	0	4
H5: Error Prevention	0	0	1	1	0	2
H6: Recognition not Recall	0	0	2	0	0	2
H7: Efficiency of Use	0	1	1	1	0	3
H8: Minimalist Design	0	4	1	0	0	5
H9: Help Users with Errors	0	0	0	0	0	0
H10: Documentation	0	0	0	1	0	1
Total Violations by Severity	0	11	12	8	0	31
Note: check your answer for the green box by making sure the sum of the last column is equal to the sum of the last row (not including the green box)	0	11	12	8	0	31

4. Evaluation Statistics

Severity counts per evaluator

Severity / Evaluator	Evaluator A	Evaluator B	Evaluator C	Evaluator D
sev. 0	0	0	0	0
sev. 1	2	1	5	5

sev. 2	7	1	6	3
sev. 3	7	2	4	1
sev. 4	0	0	0	0
total (sev. 3 & 4)	7	2	4	1
total (all severity levels)	16	4	15	9

Severity percentages per evaluator

Severity / Evaluator	Evaluator A	Evaluator B	Evaluator C	Evaluator D
sev. 0	0%	0%	0%	0%
sev. 1	15%	7%	38%	38%
sev. 2	41%	6%	35%	18%
sev. 3	50%	14%	28%	7%
sev. 4	0%	0%	0%	0%
total (sev. 3 & 4)	50%	14%	28%	7%
total (all severity levels)	36%	9%	34%	20%

5. Summary Recommendations

Overall, we thought that TinyPlanet has a simple, polished, and easy-to-use interface with fun and colorful illustrations. Our main concerns centered around the significance of the numbers, the familiarity of the language, and the lack of user control and freedom for the Eco-Actions.

Regarding the numbers, the relative scale of the progress bars and semicircles need to be clarified (perhaps with labels) so that the user knows what they are working towards, especially considering that this app is trying to create behavior change.

As for the language, there were some consistency issues throughout the app (these are pointed out in the heuristic evaluation), but more pressingly, we found the “Personal Benefits” page confusing and not completely accurate about what the page is actually showing. “Personal Benefits” implies rewards rather than the progress that is shown with the curved bars. Furthermore, the curved bars above the categories also imply that the user is working toward a certain goal, but there is no way for users to set these overall categorical goals. We suggest that you explain the purpose of this page and clarify to the user that you can set your own

goals, log your progress, and monitor your achievements. Also, the app could benefit greatly from an onboarding section, which could explain the new concepts to the user as well as the dynamics/mechanics of the rivalry.

For the user control and freedom issue with th Eco-Actions, the process could benefit from increased user freedom as Eco-Actions seem quite binding - e.g., being able to pledge to more than 4 Eco-Actions, customizing the numbers used in the pledge, more explicitly committing to their pledge before the action is added to the list, and possibly being able to delete pledges.

If these issues are addressed, we believe that TinyPlanet will have an even more intuitive and flexible interface than it does now. We can't wait to see how the final prototype turns out!